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**WATER POLLUTION CONTROL**

**MEMORANDUM**

To: Gregg Mandsager, City Administrator

CC: Nancy Lueck, Finance Director  
Fran Donelson,

From: Jon Koch, WPCP Director

Date: March 17, 2016

Re: Supplemental Agreement No.1 for High Strength Waste Project

**INTRODUCTION:** A Supplemental Agreement has been updated for the High Strength Waste (HSW) Project to proceed with design, engineering, bidding and construction services. This agreement was originally drafted in 2014 and has been updated to reflect on-going concept modifications. The cost of this agreement with Stanley Consultants, Inc. is \$283,450.00 and is the engineering and design portion of the budgeted \$2.2 million project.

**BACKGROUND:** The Supplemental Agreement is an extension of the original HSW Screening Study performed to determine basic concepts for receiving extra waste at the Water Pollution Control Plant (WPCP) with the intention of generating revenue from biogas. The Agreement allows for preliminary design work to begin on the project while the Biogas Utilization Phase 2 Study is completed. If at that time it is determined that return on investment is not sufficient to continue, alterations and/or alternative recommendations can be made before proceeding further into engineering and design.

**RECOMMENDATION/RATIONALE:** Staff recommends proceeding with the HSW Supplemental Agreement No.1 with Stanley Consultants, Inc. at a cost of \$283,450.00.



## SUPPLEMENTAL AGREEMENT NO. 2

This Supplemental Agreement, made and entered into by and between STANLEY CONSULTANTS, INC. (Consultant) and CITY OF MUSCATINE, IOWA (Client) amends their agreement of April 18, 2014 for Consultant to provide services to the Client for the Muscatine WWTP HSW Project, as follows:

### Scope of Services

Phase 1 Screening Study performed under the original agreement identified the following concepts for the High Strength Waste (HSW) facilities that include two buildings – HSW Receiving Facility, HSW Storage and Processing Facility:

HSW Receiving facility will consist of HSW truck unloading with hose connection and automated payment panel, rock trap and screening, and HSW pump system consisting of a wet well and HSW transfer pump. An alternate unloading area will be provided for receiving unpackaged organic waste containing larger solids such as unsellable retail produce. This unloading area will be equipped with a horizontal tub grinder or similar equipment for grinding, slurrying and pulping the waste. The receiving facilities will be housed in a new pre-engineered metal building. Building exhaust will be captured, pressurized and discharged into the plant's activated sludge process for odor reduction. Building will be heated by a gas fired makeup air unit providing a minimum of 6 air changes per hour continuous ventilation.

A new vacuum truck unloading pad will be provided adjacent to the HSW receiving facility. The HSW receiving facilities rock trap will be connected to the truck unloading pad to facilitate trap cleaning. The unloading pad will receive water with significant solids and debris. A sloped concrete floor and surround walls to minimize splash beyond the pad. The sloped floor will retain the solids and allow water to drain to a sand trap prior to discharge to the plant drain for return to the head of the plant. The remaining solids and debris will be removed by skid steer or end loader for truck loading and transport to solid waste transfer station. The unloading pad floor will be heated by electric cables to minimize freezing.

The HSW storage and processing facility will consist of three insulated HSW storage tanks with pumped circulation loops through spiral heat exchangers for heating HSW and keeping tank contents mixed. HSW digester feed pumps will convey HSW through heat traced and insulated piping to the digester complex sludge piping and the anaerobic digesters. The HSW tank vents will be equipped with continuous ventilation with pressurization for discharge into the plant's activated sludge process for odor reduction. The HSW storage and feed equipment will be housed in a new pre-engineered metal building located north of the digester complex. Building will be heated by a gas fired makeup air unit providing a minimum of 6 air changes per hour continuous ventilation.

### **BASIC SERVICES**

#### **1. Concept Design**

Concept design will be performed in cooperation with Client to further develop and refine study concepts. Approximately 30 percent level drawings of major concepts will be developed.

- a. Conduct a project kickoff with Client and design teams to review scope, schedule, project communications, information needs, and design concepts.
- b. Conduct site topographic and utility survey of the proposed HSW receiving station area and the proposed HSW Processing area.
- c. Conduct geotechnical investigation consisting of one soil boring at each of two building sites. Geotechnical will prepare a report to assist with building design.
- d. Prepare demolition concept design for existing facility and features at HSW Receiving Station Location.
- e. Prepare concept design for HSW Receiving Station outlined above in new pre-engineered metal building.
- f. Prepare concept design for Vacuum Truck Unloading Pad as outlined above.
- g. Prepare concept design for HSW Storage and Processing outlined above in new pre-engineered

metal building near the digester control building.

- h. Prepare conceptual site work including interconnecting utilities and pavement modifications.
- i. Prepare design development report summarizing preliminary equipment types, sizes, and functions.
- j. Three copies of the concept design drawings and design development report will be provided to Client for review.
- k. Meet with Client to review and discuss concept design drawings and design development report.
- l. Initiate Iowa Department of Natural Resources (IDNR) construction permitting process by submitting a work request to IDNR.
- m. Submit concept design documents to IDNR along with IDNR forms A and F.
- n. Attend with Client initial IDNR project kickoff meeting in Des Moines. Verify that anti-degradation analysis is not required. In same trip, visit with IDNR solid waste section to determine what if any solid waste permits are required.
- o. Conduct an interim progress meeting with Client to provide updates on design concept development and discuss design aspects.
- p. Provide email updates every two weeks.
- q. Prepare engineer's estimate of construction cost.

## 2. Preliminary Design

Preliminary design will advance drawings to 65 percent level with process drawings approximately 90 percent complete. Preliminary design will include outline of anticipated specifications and draft process equipment specifications.

- a. Prepare preliminary design drawings.
- b. Prepare outline specification list and draft process equipment specifications.
- c. Provide three (3) copies of the preliminary design documents to Client for review.
- d. Meet with Client to discuss preliminary design and obtain Client input.
- e. Submit preliminary design documents and preliminary IDNR construction permit forms to IDNR.
- f. Discuss IDNR review by teleconference.
- g. Conduct an interim progress meeting with Client to provide updates on design progress and design aspects.
- h. Provide email updates every two weeks.
- i. Update engineer's estimate of construction cost.

## 3. Final Design

Final design will advance drawings to 100 percent level suitable for final permitting and construction.

- a. Prepare final design drawings.
- b. Prepare final project manual using Engineering Joint Contract Documents Committee (EJCDC) General Conditions and Stanley Consultants technical specifications.
- c. Provide three (3) copies of the final design documents to Client for review.
- d. Submit final design documents and IDNR construction permit forms to IDNR.
- e. Conduct an interim progress meeting with Client to provide updates on design progress and design aspects.
- f. Provide email updates every two weeks.
- g. Update engineer's estimate of construction cost.

## 4. Bidding Assistance

Consultant will provide the following services during the Bidding Phase:

- a. Prepare revision 1 of documents for bidding.
- b. Provide electronic pdf format contract documents to prospective bidders. Contract documents will be printed and provided to prospective bidders at reprographics cost upon request. Electronic plan files will be distributed to the plan houses and other interested parties.
- c. Attend and administer pre-bid meeting.
- d. Receive and respond to bidder questions during the bid period.
- e. Prepare and issue necessary addenda.
- f. Attend bid opening and tabulate bids.
- g. Evaluate bids and make recommendation of award of contract.

h. Assemble and process documents for contract award and notice to proceed to contractor.

5. Construction Phase Services.

Consultant will provide the following Construction Phase services for the Project. Construction Phase will consist of office-based construction services to assist Client in implementing contract.

Client's Construction Observer will perform day-to-day observation of work performed by Contractor. Client's Construction Observer will be responsible for verifying that the Contractor is complying with all permits and the plans and specifications, and documenting the work.

Upon written authorization from Client to proceed, the Consultant shall perform Basic Services consisting of those described below.

This proposal is based on a project construction phase duration of 9 months.

- a. Attend Pre-Construction Conference with Contractor, Client, and others. Client or its representative will conduct the pre-construction conference and keep meeting notes.
- b. Clarifications and Interpretations:
  - i) Evaluate and respond to up to ten (10) Requests for Information (RFIs). Prepare and issue necessary clarifications and interpretations of Contract Documents in form of Instructions to Contractor as required to respond to RFIs.
  - ii) Review up to three (3) proposed change orders initiated by Contractor or Client. Prepare design-initiated Change Orders (COs) as required. Cost for changes necessary due to Contractor fault shall be backcharged through Client to Contractor. Change Order processing, administration, and records keeping shall be performed by Client's representative.
- c. Shop Drawings and Samples: Review shop drawings, samples, test certificates, and other data which Contractor is required to submit but only for conformance with information given in Contract Documents and compatibility with design concept of completed Project as a functioning whole as indicated in Contract Documents. Such reviews will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. Consultant will perform submittal review per contract document requirements.
- d. Substantial Completion Walk-Through: Promptly after Contractor submits notice that entire Work is ready for its intended use, conduct preliminary walk-through of the Work with Client and Contractor to determine if Work is Substantially Complete. Provide opinion of substantial completion in letter form to Client. Prepare written list of deficiencies in event Work is not considered to be substantially complete.
- e. Final Acceptance Walk-Through: Conduct final walk-through of the Work to determine if Work is complete and acceptable so that Consultant may recommend final acceptance to Client.
- f. Record Drawings: Incorporate construction phase changes based on markups provided by the Contractor and the Client or Construction Observer to produce Record Drawings. Furnish one hard copy for Client records.
- g. Progress Meetings: Attend up to six (6) monthly progress meetings during construction.

**ADDITIONAL SERVICES**

1. Extensive changes in concepts changing the nature of the design.
2. Additional meetings and site visits.
3. Supplemental geotechnical investigations and consultation in the event unusual subsurface conditions are encountered.
4. Additional costs incurred due to design schedule being extended due to Client or permitting agency actions.
5. Additional Requests for Information and Change Orders beyond those listed in basic services.
6. Additional costs incurred due to construction duration exceeding the anticipated duration as listed herein.
7. Additional progress meetings or site visits during construction.
8. Construction Contract Administration including pay application processing.

9. Resident Engineering/On-site observation full or part time.
10. Factory test witnessing.
11. Commissioning.
12. State Revolving Loan Funding Assistance.
13. Antidegradation Analysis
14. Upgrade or modifications to the existing communication system.
15. Upgrade or modifications to the existing electrical system to provide power to the HSW area.
16. Wiring and termination diagrams.
17. Access control and CCTV.
18. Fire alarm and detection system.
19. Fire suppression system.
20. New natural gas service. Assume existing service to digester building is adequate.
21. Emergency eyewash and shower system.
22. Additional plumbing facilities. Assume plant drain system and service sink are all that will be required.
23. Chemical storage.
24. Glycol heating system for vacuum truck unloading pad including boiler, pump, expansion tank, glycol feed system, and mechanical equipment room.
25. Compressed air system.
26. Electrical classification for space. Assume continuous ventilation will allow the space to not be classified.

#### Conditions of Service

Services are performed based on the following Conditions:

1. Design services are based on preparing contract documents for execution of the work under one construction contract.
2. Duration of Construction Phase. Construction Phase will commence with execution of first Construction Agreement for Project or any part thereof and will terminate upon written recommendation by Consultant for final payment to Contractor. Construction contract duration is nine (9) months
3. General Administration of Construction Contract. Client shall be responsible for general administration of the Construction Contract including pay application review and processing, conduct periodic meetings and prepare notes, overall coordination of the project communications, maintenance of project files including RFI, ITC, and CO logs, and day-to-day jobsite administration.
4. Disagreements between Client and Contractor. Render formal written decisions on claims of Client and Contractor relating to acceptability of Contractor's work or interpretation of requirements of Contract Documents pertaining to execution and progress of Contractor's work shall be final. In rendering such decisions, Consultant shall be fair and not show partiality to Client or Contractor and shall not be liable in connection with any decision rendered in good faith in such capacity.
5. Payment application review and processing will be performed by Client.
6. Inspections and Tests. Consultant's review of test certificates will be for purpose of determining that results certified indicate compliance with Contract Documents and will not constitute an independent evaluation that content or procedures of such inspections, tests, or approvals comply with requirements of Contract Documents. Consultant shall be entitled to rely on results of such tests.
7. Consultant shall not be responsible for acts or omissions of any Contractor, of any of their subcontractors, suppliers, or of any other individual or entity performing or furnishing any of Work. Consultant shall not be responsible for failure of any Contractor to perform or furnish the Work in accordance with Contract Documents.
8. The purpose of Consultant's visits to Site will be to enable Consultant to better carry out duties and responsibilities assigned to and undertaken by Consultant during Construction Phase, and, in addition, by exercise of Consultant's efforts as an experienced and qualified design professional, to provide for Client a greater degree of confidence that completed Work will conform in general to Contract Documents and that integrity of design concept of completed Project as a functioning whole as indicated in Contract Documents has been implemented and preserved by Contractor. Consultant shall not,

during such visits or as a result of such observations of Contractor's work in progress, supervise, direct, or have control over Contractor's work, nor shall Consultant have authority over or responsibility for means, methods, techniques, sequences, or procedures of construction selected by Contractor, for safety precautions and programs incident to Contractor's work, or for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the Work. Accordingly, Consultant neither guarantees performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform its work in accordance with Contract Documents.

9. Defective Work. Recommend to Client that Contractor's work be disapproved and rejected while it is in progress if, on basis of such observations, Consultant believes that such work will not produce a completed Project that conforms generally to Contract Documents or that it will prejudice integrity of design concept of completed Project as a functioning whole as indicated in Contract Documents.
10. Equipment controls for HSW Receiving will be vendor provided control panel with Ethernet communication to Plant's SCADA system. HSW Storage and Process will be controlled by new plant PLC that will be integrated into Plant's SCADA system. Controls design will include P&IDs, performance specification, technical specifications, instrument index, and I/O listing. Network diagram, control schematics, and panel layouts and wiring schematics are not included.
11. Performance specifications will be provided for:
  - a. Pre-engineered metal buildings.
  - b. Pipe supports.
  - c. HVAC Controls.

#### Time of Beginning and Completion

Anticipated schedule is May 22, 2015 to July 31, 2016

#### Fees and Payments

##### 1. Compensation for Basic Services:

Client shall compensate Consultant a Lump Sum amount of Two-Hundred Eight-Three Thousand Four-Hundred Fifty Dollars (\$283,450) for Basic Services described in this Supplemental Agreement.

Approximate Fee Breakdown:

Concept Development and Design Services: \$228,450 (Includes \$7,600 of outside subconsultants services)

Bidding Assistance: \$11,000

Construction Phase Services: \$44,000

##### 2. Compensation for Additional Services:

Additional Services performed by the Consultant at Client's direction, shall be compensated on an Hourly basis for Direct Labor, Plus Reimbursable Expenses in accordance with the attached current "Hourly Fees and Charges 2016-2017" (Form BC\_C 16-17).

Except as specifically amended by this Supplemental Agreement, all the terms and conditions of the original Agreement dated April 18, 2014 shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have caused this Supplemental Agreement to be executed on the date below indicated.

**STANLEY CONSULTANTS, INC.**

**CITY OF MUSCATINE, IOWA**

By: \_\_\_\_\_  
Michael R. Helms, P.E., Vice President

By: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Attest:

Attest:

By: \_\_\_\_\_  
Jay Brady

By: \_\_\_\_\_