Sponsor: Brun/Elliott

ORDINANCE NO. 45-13

AN ORDINANCE OF THE LEGISLATIVE AUTHORITY OF THE CITY OF JACKSON, OHIO TO ACCEPT THE PROPOSAL OF CT CONSULTANTS TO PROVIDE ENGINEERING SERVICES FOR THE SEWER EVALUATION AND CAPACITY ANALYSIS PLAN (SECAP) IMPROVEMENTS TO THE WASTEWATER TREATMENT PLANT, PHASE I, AND SLUDGE HANDLING ALTERNATIVE STUDY AND DECLARING AN EMERGENCY.

WHEREAS, in response to a request for proposals for engineering services for the City of Jackson, a proposals has been reviewed and a determination has been made to accept the proposal of CT Consultants as attached hereto; and

WHEREAS, the project is a continuation of the project for which CT Consultants was selected on December 20, 1011 and CT Consultants is uniquely qualified to complete this project and will do so for an amount not to exceed $241,000.00.; and

WHEREAS, the completion of the SECAP Phase I and sludge handling alternative study must be completed as soon as possible due to Court imposed deadlines and this matter constitutes an emergency which is necessary for the preservation of the public's health, safety and welfare.

NOW, THEREFORE, BE IT ORDAINED AS FOLLOWS:

Section 1. The legislative authority of the City of Jackson hereby authorizes the Mayor or Director of Service and Public Safety of the City of Jackson, Ohio to accept the proposal for engineering services of CT Consultants, as attached hereto, in an amount not to exceed $241,000.00 to be paid from the City budget line item 441-7525-53064.

Section 2. This matter is hereby declared to be an emergency necessary for the immediate preservation of the public peace, health or safety of the City of Jackson, Ohio in order to maintain the safety of the City and its residents.

Section 3. In the event this Ordinance receives a majority vote for passage but fails to receive the required number of votes to pass as an emergency, then this Ordinance shall be deemed to have passed but with no emergency clause, and shall take effect at the earliest time permitted by law.

It is hereby found and determined that all formal acts of this council concerning and relating to adoption of this Ordinance were adopted in an open meeting of this council and that the deliberations of the council and any of its committees resulted in such formal action, wherein meeting open to the public, in compliance with all legal requirements including Section 121.22 of the Ohio Revised Code.

PASSED AND ADOPTED by the Legislative Authority of the Political Subdivision on this 25th day of November, 2013.

Presiding Officer

President of Council

ATTEST:

Lisa Brown
Clerk of the Legislative Authority

Approved this 25th day of November, 2013.

Randy P. Heath
Mayor

CT Consultants
engineers | architects | planners

November 5, 2013

Mr. Bill Sheward
City Administrator
City of Jackson
145 Broadway Street
Jackson, Ohio 45640

Re: Proposal for Design Engineering Services for the Sewer Evaluation and Capacity Analysis Plan (SECAP) Improvements to the WWTP, Phase I and Sludge Handling Alternative Study

Dear Mr. Sheward:

CT Consultants, Inc. is pleased to submit this proposal for the referenced project. We understand that the City desires professional engineering services to proceed with design work for certain improvements necessary at the WWTP in accordance with the first phase of work recommended in the SECAP report. This proposal includes by reference the General Conditions previously agreed to by both parties and dated June 7, 2005. In addition, an evaluation of alternatives to upgrade or replace the current methods of sludge stabilization, drying and disposal will be conducted. Therefore, we propose to provide Engineering Services to the City of Jackson in accordance with the terms and conditions set forth herein.

The scope of services for this design contains the improvements identified in the SECAP Report. The timeline for completing these improvements was recently discussed with the City, Southeast OEPA and the Attorney General's office. In order to comply with the dates agreed upon, it is important to authorize these services as soon as possible. To delay authorization will jeopardize meeting the revised schedule that went to the Attorney General's office.

The Scope of Improvements for which Design Services selected from the SECAP Report includes the following:

1. **Headworks** - Consolidation of the two influent pumping stations and capacity increase to 12 MGD. Along with this consolidation, the restrictions to the influent sewer will be studied and mitigated and the main influent screen will be removed and replaced at a lower elevation.

7965 North High Street, Suite 340 Columbus, Ohio 43235 phone 614-885-1700 fax 614-885-1701 www.ctconsultants.com

2. **Site Piping Modifications**- New pump station force main routed to a new flow splitting structure. The new chamber is needed to proportion the flow split between the oxidation ditch plant, the MBR plant and the flow equalization basin. The design will include a new MBR meter chamber. Other process lines which may be modified include sludge transfer lines, and air lines to the new sludge holding tank.
3. **Final Clarifiers** - Refurbish two final clarifiers including structural repairs and weir brackets. This includes sandblasting/and painting the sludge collection sweeps, the walkway bridge, and center column. The weirs are corroded and pitted on the two older clarifiers and will need to be replaced. The scum baffles are pitted and require maintenance. During our site investigation it was noted that there may also be electrical improvements needed in the clarifier section of the plant. Repair at leaking connection at the clarifier discharge is needed.
4. **Oxidation Ditches** – The influent gates at the Oxidation Ditch will be upgraded to provide motorized influent gate and instrumentation control. This will allow the oxidation ditches and one final clarifier to operate in a storm mode and be available during peak flows.
5. **Sludge Holding** - Upgrade the mixing system in the existing sludge holding tank from mechanical to diffused aeration. Replace the digested sludge pump in the lower level of the blower room. Construct a new above ground glass lined bolted steel waste sludge holding tank, air supply and sludge pumping and piping and instrumentation and controls to transfer sludge to the tank and either back to the wet stream for reseeding or to the sludge disposal unit processes.
6. **Electrical** – Electrical and instrumentation to support the improvements described above.

I. Scope of Services for SECAP Improvements Design

1. Meet with City to confirm the proposed scope of Work.
2. Provide preliminary engineering services including site survey and geotechnical work necessary for new structures.
3. Detailed design and specifications for the scheduled improvements including all site, process, architectural, structural, mechanical and electrical disciplinary work.
4. Develop bid proposal and contract documents using DEFA current standard forms.
5. Submit contract documents to Ohio EPA for PTI approval.
6. Provide engineering support services during bidding and award of contract(s). Services will include receiving questions from contractors, issuing any necessary addenda, attending a prebid meeting, preparation of a tabulation of bids, preparation of

a bid evaluation letter including research of lowest three bidders, submittal of contract to funding agency, preparation and distribution of executed contracts.

7. The City desires to use Ohio EPA -DEFA for project funding. We understand the City may use EPA's Rural Community Assistance Program (RCAP) and their internal staff to complete the funding applications and the subsequent paperwork. Continued support with EPA communications and consent order extension and acceptance of the SECAP services is necessary CT will provide continued coordination with these agencies when necessary.

II. SCOPE OF SERVICES FOR THE SLUDGE HANDLING IMPROVEMENTS STUDY INCLUDES THE FOLLOWING:

1. Collect operating data to establish existing and future biosolids loadings.
2. Summarize current practices for stabilization, dewatering, disposal and outline areas for improvements.
3. Summarize current and pending regulatory requirements for sludge stabilization, dewatering and disposal and the impacts to the alternatives identified.
4. Describe alternatives for biosolids treatment and disposal as a Class A and Class B product and present advantages and disadvantages.
5. Identify potential for disposal of biosolids as a Class B or Class A material. Class B limited by Phosphorus.
6. Prepare preliminary capital cost estimates and life cycle analysis cost summary for five alternatives selected by the Owner. This analysis will include gas, power consumption, chemical requirements, operational time, and other cost associated with disposal such as hauling and tipping fees, and potential revenues for residual solid sales and power generation. At this time it is anticipated that the following alternatives will be evaluated.

   a. Additional Drying Beds for Class B Residuals- Aerobic digestion, drying beds and land application of Class B cake. For this alternative cost for additional beds and construction of a dike for flood protection will be included, or raising the beds will be added. The cost of raising the beds above the flood plain versus a dike construction will be pre-evaluated.

   b. Enhanced Drying Beds for Class B Residuals - Incorporation of a mechanical mixing device to dry to a Class B product will be evaluated. For this alternative the existing

aerobic digester stabilization process would remain. The cost of raising the beds above the flood plain versus a dike construction will be pre-evaluated.

c. Enhanced Drying Beds for Class A Residuals - Incorporation of a solar drying system with translucent roof and mechanical mixing system for Class A will be evaluated. For this alternative the existing aerobic digester stabilization process would not be required. The cost of raising the beds above the flood plain versus a dike construction will be pre-evaluated.

   The aerobic digester will take the place of the proposed 300,000 gal WAS storage tank since it would not be required for stabilization; and the cost of the tank will be shown as a savings for this alternative. If this alternative is selected, the drying system would have to be installed to meet the SECAP schedule in order to non-perform constructing a new 300,000 gallon WAS tank. If the 300,000 gallon tank is constructed it would serve as flow equalization which is scheduled for phase II SECAP improvements.

d. Hot Oil Drying for Class A Residuals - Use of hot oil driers will be investigated to take thickened sludge to a Class A dried product. For this alternative the aerobic digester will as noted in the above alternative, take the place of the proposed 300,000 gal WAS storage tank since it would not be required for stabilization; and the cost of the tank will be shown as a savings for this alternative. If this alternative is selected, the drier would have to be installed to meet the SECAP schedule in order to non-perform constructing a new tank. If the 300,000 gallon tank is constructed it would serve as flow equalization which is scheduled for phase II SECAP improvements.

   The drier alternative would also include pre-evaluating a screw press, centrifuge or belt filter press to take waste activated sludge from the holding tanks to around 20 -25 % D.S. before introducing to the drier. The drier would then pasteurize and reduce the residual material to over 95% D.S.

   The existing beds would be used as a standby drying facility; therefore a duplicate drier would not be required in the alternative analysis.

e. Lime Stabilization Press for Class A Residuals - An additional alternative which stabilizes biosolids for a Class A product is lime stabilization. Lime is incorporated into the sludge cake with a mixing devise with preliminary dewatering accomplished using a

machine as preselected and noted above. While there are numerous patented processes which can be evaluated one system which recycles released ammonia back into the inlet cake will be evaluated as this is a newer adaptation which has limited chemical demand and reduced odor generation.

For this alternative the aerobic digester will, as noted in the above alternative, take the place of the proposed 300,000 gal WAS storage tank since it would not be required for stabilization; and the cost of the tank will be shown as a savings for this alternative. If this alternative is selected, the drier would have to be installed to meet the SECAP schedule in order to non-perform constructing a new tank. If the 300,000 gallon tank is constructed it would serve as flow equalization which is scheduled for phase II SECAP improvements.

This alternative would also include pre-evaluating a screw press, centrifuge or belt filter press to take waste activated sludge from the holding tanks to around 20 -25 % D.S. before introducing to the lime stabilization process. The lime feed and ammonia capture and injection would then pasteurize and reduce the residual material to over 95% D.S.

The existing beds would be used as a standby drying facility; therefore a duplicate drier would not be required in the alternative analysis.

III. Information / Services Provided by City

The Client will provide information or services which may include, but are not necessarily limited to, the following:

1. Meet with CT to provide them with the various criteria for the project. Some examples of this information could be design objectives and constraints, space, capacity and performance requirements, desired flexibility and expandability options, and any budgetary limitations.

2. Furnish copies of Client's design details, construction standards, contract documents, and specifications as may be applicable.

3. Furnish CT with other available information pertinent to the project including previous reports and other data relative to design or construction of the project that may be relied upon.

4. Give timely notice to CT whenever the Client observes or otherwise becomes aware of any development that affects the scope or timing of CT's services.

IV. Fee Estimate and Billing

Our lump sum fees for the completion of above Scope of Services will be invoiced monthly based on an estimate of the percent of work completed. Our fee is provided in two parts.

Part I – SECAP Improvements Design Fee through Bidding and Award– $197,500
Part II – Sludge Handling Improvements Study - $43,500

Invoices will be submitted monthly and considered payable within 30 days of receipt of invoicing. Invoices will be submitted on the basis of a CT Consultants estimated percent of completed work applied to the lump sum fee.

V. Schedule

In accordance with the current overall schedule as we understand, CT will submit plans to EPA for a Permit to Install (PTI) by June 30, 2014. A draft of the Sludge Handling Report will be submitted in March 2014. CT will require authorization by December 9th ,2013 in order to meet this schedule.

VI. Additional Services

If authorized in writing, Engineer shall furnish Additional Design Services for the following other improvements which have been identified by the City:

- Convert Primary Clarifier to Cake storage facility
- Emergency generator load analysis, size analysis and rewiring
- Asbestos investigation
- Concrete repairs throughout plant
- NPW system upgrade

- Repurpose tertiary filters
- New grit, grease and screenings removal facility
- Evaluation of other drying and stabilization processes
- The scope envisions that all new equipment will be located in existing building space or outdoor enclosures. Additional building space will require City authorization. Other Engineering which may be authorized includes construction administration services, post construction, monitoring in accordance with the SECAP report.

VII. CLOSURE

If you concur with these terms and conditions and wish us to proceed with the aforementioned work, please sign below. Upon receipt of one (1) executed copy, we will proceed with the work. Fees and terms stated herein are valid for sixty days from the date of this proposal. Please contact me if you have any questions regarding this proposal. We look forward to the opportunity to provide professional services to the City of Jackson, Ohio.

Respectfully,

CT CONSULTANTS, INC.

Timothy Clapper, P.E.

TDC/saa

Enclosure

cc: Thomas E. Voldrich, P.E.

Accepted by:

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City of Jackson, Ohio .

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