

RESOLUTION NO. _____

A RESOLUTION AUTHORIZING THE ADMINISTRATOR FOR THE DEPARTMENT OF PUBLIC WORKS TO EXECUTE A PROFESSIONAL SERVICES AGREEMENT WITH HAZEN & SAWYER, AN ENVIRONMENTAL ENGINEERING FIRM, FOR ECONOMIC ANALYSIS AND PLANNING OF SOLIDS OPERATIONS AT THE MOCCASIN BEND WASTEWATER TREATMENT PLANT, FOR AN AMOUNT NOT TO EXCEED ONE HUNDRED NINETY-FIVE THOUSAND DOLLARS (\$195,000.00).

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHATTANOOGA, it is hereby authorizing the Administrator for the Department of Public Works to execute a Professional Services Agreement with Hazen & Sawyer, an environmental engineering firm, for economic analysis and planning of solids operations at the Moccasin Bend Wastewater Treatment plant, for an amount not to exceed \$195,000.00.

ADOPTED: _____, 2014

/mem

City of Chattanooga



Resolution Request Form

(This form is only required for resolutions requiring expenditure of City funds)

Date Prepared: May 7, 2014

Preparer: Alice L. Cannella, Director

Department: Waste Resources Division

Brief Description of Purpose for Resolution:

Resolution Number (if approved by Council): _____

A resolution authorizing the Administrator of Public Works to execute a Professional Services Agreement with Hazen & Sawyer, an environmental engineering firm, for Economic Analysis and Planning of Solids Operations at the Moccasin Bend Wastewater Treatment Plant for an amount not to exceed \$195,000.00.

Name of Vendor/Contractor/Grant, etc.	<u>Hazen & Sawyer</u>
Total project cost \$	<u>195,000.00</u>
Total City of Chattanooga Portion \$	<u>195,000.00</u>
City Amount Funded \$	<u>0.00</u>
New City Funding Required \$	<u>195,000.00</u>
City's Match Percentage %	_____

New Contract/Project? (Yes or No) Yes
 Funds Budgeted? (YES or NO) Yes
 Provide Fund 6010
 Provide Cost Center K30110
 Proposed Funding Source if not budgeted FY15 ISS
 Grant Period (if applicable) _____

List all other funding sources and amount for each contributor.

<u>Amount(s)</u>	<u>Grantor(s)</u>
_____	_____
_____	_____
_____	_____

Agency Grant Number _____

CFDA Number if known _____

ISS Operations Budget

Approved by: _____

DESIGNATED OFFICIAL/ADMINISTRATOR

Reviewed by: FINANCE OFFICE

Please submit completed form to @budget, accounting, City Attorney, City Finance Officer and Deputy Administrator Finance

- The purpose of the study is to determine the most cost-effective approach in going forward with biosolids production and final disposal.
- The study will determine the feasibility of energy saving as well as any potential energy-producing options for solids processing (methane gas increases, co-generation, reduction of digester heating requirements, etc.).
- The study will determine which processes the City should keep, revise, or replace based on cost-effectiveness.
- The project team includes a portion of the work performed by a woman-owned business, including potential marketing of biosolids of varying qualities, and any benefits gained by the City.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-9
Date of Issue 10-16-03
Rev. 03-03-11

THIS AGREEMENT, is between the City of Chattanooga, Tennessee, a municipal corporation in the state of Tennessee, hereinafter called Owner, and

Hazen and Sawyer, P.C.,

hereinafter called Engineer.

The Owner wishes to employ the Engineer to perform professional engineering services for

Economic Analysis and Planning of Solids Operations for Moccasin Bend Wastewater Treatment Plant (Project W-14-003),

hereinafter called Project.

In consideration of the provisions contained in this Agreement, the Owner and Engineer agree to the following:

1. **EFFECTIVE DATE**

The effective date of this Agreement shall be _____, 20_____.

2. **GOVERNING LAW**

This Agreement shall be governed by the laws of the State of Tennessee and the codes of the City of Chattanooga.

3. **SERVICES TO BE PERFORMED BY ENGINEER**

Engineer shall perform the Services described in Attachment A, Scope of Services, in accordance with applicable sections of the City of Chattanooga Design and Construction Standards in effect on the date of this agreement.

4. **COMPENSATION**

Owner shall pay Engineer in accordance with the Attachment B, Compensation.

5. **OWNER'S RESPONSIBILITIES**

Owner shall be responsible for all matters described in Attachment C, Owner's Responsibilities.

6. **SUPPLEMENTAL AGREEMENTS**

The provisions set forth in Attachment D, Supplemental Agreements, shall be incorporated into this Agreement

7. **PROJECT SCHEDULE**

The provisions set forth in the Attachment E, Project Schedule, shall be incorporated into this Agreement.

8. **RATE SCHEDULE**

The Engineer shall provide a schedule of standard hourly rates for all employees to be used in the performance of all contracts with a cost-not-to-exceed basis. This schedule shall be incorporated into the agreement as Attachment F.

9. **INVOICING**

The Engineer will use the format established in Attachment G, Standard Invoice, for all invoices submitted for services on the Project.



10. STANDARD OF CARE

Engineer shall exercise the same degree of care, skill, and diligence in the performance of Services as is ordinarily possessed and exercised by a professional engineer under similar circumstances in the same area of practice. Engineer makes no warranty or guarantee, either expressed or implied, as part of this agreement.

11. INDEMNIFICATION

Engineer hereby agrees to fully indemnify and hold harmless Owner and any of its departments, divisions, agencies, officers, employees and elected officials from all loss, damage, cost, or expenses specifically including attorneys' fees and other expenses of litigation incurred by or on behalf of the Owner and any of its officers, employees or elected officials arising out of Engineer's actual negligent performance of Services under this Agreement, including errors or omissions.

Owner hereby agrees to fully indemnify and hold harmless Engineer and any of its officers, employees, or designated agents from all loss, damage, cost, or expenses specifically including attorneys' fees and other expenses of litigation incurred by or on behalf of the Engineer and any of its officers, employees or designated agents arising out of Owner's negligence to the extent provided by the Tennessee Governmental Tort Liability Act, T.C.A. 29-20-201 et seq.

12. INSURANCE

Engineer shall purchase and maintain during the life of this Agreement, insurance coverage which will satisfactorily insure him against claims and liabilities which arise because of the execution of this Agreement, with the minimum insurance coverages as follows:

- a. Commercial General Liability Insurance, with a limit of \$1,000,000 for each occurrence and \$2,000,000 in the general aggregate.
- b. Automobile Liability Insurance, with a limit of \$1,000,000 for each accident, combined single limit for bodily injury and property damage.
- c. Worker's Compensation Insurance and Employer's Liability Insurance, in accordance with statutory requirements, with a limit of \$500,000 for each accident.
- d. Professional Liability Insurance, with a limit of \$1,000,000 for each claim and aggregate.

Prior to issuance of the Notice to Proceed by Owner, Engineer shall have on file with Owner certificates of insurance acceptable to Owner. Said certificates of insurance shall be filed with Owner in January of each year or may be submitted with each agreement. Upon completion of all Services, obligations, and duties provided for in this Agreement, or if this Agreement is terminated for any reason, the terms and conditions of this section shall survive.

Notwithstanding any other provision of the Agreement, Owner waives any claim against Engineer and, to the maximum extent permitted by law, agrees to defend, indemnify, and hold Engineer harmless from any claim, liability, and/or defense costs for injury or loss arising from Engineer's discovery of unanticipated hazardous materials or suspected hazardous materials, including, but not limited to, any costs created by delay of the project and any cost associated with possible reduction of the property value.

13. LIMITATIONS OF RESPONSIBILITY

Engineer shall not be responsible for: (1) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project, (2) the failure of any contractor, subcontractor, vendor, or other Project participant, not under contract to Engineer,



to fulfill contractual responsibilities to the Owner or to comply with federal, state or local laws, regulations, and codes; or (3) procuring permits, certificates, and licenses required for any construction unless such responsibilities are specifically assigned to Engineer in Attachment A, Scope of Services.

14. OPINIONS OF COST AND SCHEDULE

Since Engineer has no control over the cost of labor, materials, or equipment furnished by others, or over the resources provided by others to meet Project construction schedules, Engineer's opinion of probable construction costs and of construction schedules shall be made on the basis of experience and qualifications as a professional engineer. Engineer does not guarantee that costs will not vary from Engineer's cost estimates or that actual construction schedules will not vary from Engineer's projected schedules.

15. REUSE OF DOCUMENTS

All documents, including, but not limited to calculations, drawings, specifications, and computer software prepared by Engineer pursuant to the Agreement are instruments of service in respect to the Project. They are not intended or represented to be suitable for reuse by Owner or others on extensions of the Project or on any other project. Any reuse without prior written verification or adaptation by Engineer for the specific purpose intended will be at Owner's sole risk and without liability or legal exposure to Engineer. Any verification or adaptation requested by Owner shall entitle Engineer to compensation at rates to be agreed upon by Owner and Engineer.

16. OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY

Except as otherwise provided herein, engineering documents, calculations, drawings, specifications, and other documents prepared by Engineer as part of the Services shall become and be the sole property of Owner. However, both Owner and Engineer shall have the unrestricted right to their use. Engineer shall retain its rights in its standard drawing details, specifications, databases, computer software, and other proprietary property protected under the copyright laws of the United States. Rights to intellectual property developed, utilized, or modified in the performance of services shall remain the property of Engineer.

17. RECORDS RETENTION AND AUDIT PROVISION

The term "Engineer" is used interchangeably to describe signatories to contracts, grants, and agreements with the City and applies to reflect the relationship with the City (Engineer, Contractor, Licensee, Supplier, Vendor, Consultant, Grant Recipient, etc.).

a. All records relating in any manner whatsoever to the Project, or any designated portion thereof, which are in the possession of the Engineer or the Engineer's consultants, shall be made available for inspection and copying upon written request to the Owner. Additionally, said records shall be made available, upon request by the Owner, to any state, federal or other regulatory authorities and any such authority may review, inspect and copy such records. Said records include, but are not limited to, all plans, specifications, submittals, correspondence, minutes, memoranda, tape recordings, videos, or other writings or things which document the Project, its design and its construction. Said records expressly include those documents reflecting the time expended by the Engineer and its personnel to perform the obligations of this Agreement and the records of expenses incurred by the Engineer in its performance under said Agreement. The Engineer shall maintain and protect these records for no less than seven (7) years after the completion of the Project, or for any longer period of time as may be required by applicable law, good engineering practice, and upon notice during the pendency of any claims or litigation arising from the Project.

b. The Owner or its assign may audit all financial and related records (including digital)



associated with the terms of the contract or agreement including timesheets, reimbursable out of pocket expenses, materials, goods, and equipment claimed by the Engineer. The Owner may further audit any of Engineer's records to conduct performance audits (to identify waste and abuse or to determine efficiency and effectiveness of the contract or agreement) or to identify conflicts of interest.

- c. The Engineer shall at all times during the term of the contract or agreement and for a period of seven years after the end of the contract, keep and maintain records of the work performed pursuant to this Contract or Agreement. This shall include proper records of quotations, contracts, correspondence, invoices, vouchers, timesheets, and other documents that support actions taken by the Engineer. Documents shall be maintained by the Engineer, which are necessary to clearly reflect all work and actions taken. All such records shall be maintained in accordance with generally accepted accounting principles. The Engineer shall at its own expense make such records available for inspection and audit (including copies and extracts of records as required) by the Owner at all reasonable times and without prior notice.
- d. The obligations of this Section shall be explicitly included in any subcontracts or agreements formed between the Engineer and any subcontractors or suppliers of goods or services to the extent that those subcontracts or agreements relate to fulfillment of the Engineer's obligations to the Owner.
- e. Costs of any audits conducted under the authority of this section and not addressed elsewhere will be borne by the Owner unless the audit identifies significant findings that would benefit the Owner. The Engineer shall reimburse the Owner for the total costs of an audit that identifies significant findings that would benefit the Owner.
- f. This Section shall not be construed to limit, revoke, or abridge any other rights, powers, or obligations relating to audit which the Owner may have by Federal, State, or Municipal law, whether those rights, powers, or obligations are express or implied.

18. TERMINATION

This Agreement may be terminated by either party upon written notice in the event of substantial failure by the other party to perform in accordance with the terms of this Agreement. The nonperforming party shall have fifteen calendar days from the date of the termination notice to cure or to submit a plan for cure acceptable to the other party. Owner may terminate or suspend performance of this Agreement for Owner's convenience upon written notice to Engineer. If termination or suspension is for Owner's convenience, Owner shall pay Engineer for all Services performed prior to the date of the termination notice. Upon restart, an adjustment acceptable to Owner and Engineer shall be made to Engineer's compensation.

19. DELAY IN PERFORMANCE

Neither Owner nor Engineer shall be considered in default of the Agreement for delays in performance caused by circumstances beyond the reasonable control of the nonconforming party. For purposes of this Agreement, such circumstances include abnormal weather conditions; floods; earthquakes; fire; epidemics; war, riots, or other civil disturbances; sabotage; judicial restraint; discovery of unanticipated hazardous wastes; and inability to procure permits, licenses, or authorizations from any local, state, or federal agency for any of the supplies, materials, accesses, or services required to be provided by either Owner or Engineer under this Agreement. Should such circumstances occur, the nonconforming party shall, within a reasonable time of being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of the Agreement. If the Engineer is delayed in the performance of the services for more than 365



calendar days, either by the Owner or circumstances beyond his control, an equitable adjustment to the contract amount can be made to compensate for additional costs incurred.

For delays in performance by Engineer, as set forth in Attachment E, Project Schedule, caused by circumstances which are within its control, such delays shall be documented on the Engineer's Project Performance Evaluation form. Said form shall be completed at the conclusion of Project and acknowledged by both Owner and Engineer. Completed form shall be retained by Owner for a period of seven years and reviewed prior to consultant selection for City projects. In the event Engineer is delayed in the performance of Services because of delays caused by Owner, Engineer shall have no claim against Owner for damages or contract adjustment other than an extension of time.

20. HAZARDOUS MATERIALS

Hazardous materials may exist at a site where there is no reason to believe they could or should be present. The Owner and Engineer agree that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work or termination of services. Owner and Engineer also agree that the discovery of unanticipated hazardous materials may make it necessary for the Engineer to take immediate measures to protect health and safety. Owner agrees to compensate Engineer for any equipment decontamination or other costs incident to the discovery of unanticipated hazardous materials.

Engineer agrees to notify Owner when unanticipated hazardous materials or suspected hazardous materials are encountered. Owner agrees to make any disclosures required by law to the appropriate governing agencies, and agrees to hold Engineer harmless for any and all consequences of disclosures made by Engineer which are required by governing law. In the event the project site is not owned by Owner, the Owner agrees to inform the property owner of the discovery of unanticipated hazardous materials or suspected hazardous materials.

21. COMMUNICATIONS

Any communication required by this Agreement shall be made in writing to the address specified below:

Engineer: Scott Woodard, P.E.
Hazen and Sawyer, P.C.
651 East 4th Street, Suite 100, Chattanooga, TN 37403
(423) 648-9860, swoodard@hazenandsawyer.com

Owner: City of Chattanooga
Department of Public Works
Waste Resources Division
455 Moccasin Bend Road
Chattanooga, TN 37405
(423) 757-5026, cannella_a@chattanooga.gov

Nothing contained in the Article shall be construed to restrict the transmission of routine communications between representatives of Engineer and Owner.

22. WAIVER

A waiver by either Owner or Engineer of any breach of this Agreement shall be in writing. Such a waiver shall not affect the waiving party's rights with respect to any other or further breach.



23. DISPUTE RESOLUTION

Claims, disputes or other matters in question between the parties to this Agreement arising out of or relating to this Agreement or breach thereof shall be subject to mediation in Chattanooga, Tennessee, in accordance with the following provisions:

- a. The mediation shall be conducted by a mediator mutually acceptable to both parties.
- b. The parties agree to share equally in the expenses of mediations.
- c. Such mediation may include the Engineer or any other person or entity who may be affected by the subject matter of the dispute.
- d. Unless the parties agree otherwise, mediation shall be a condition precedent to the exercise of any legal remedy other than a proceeding seeking an immediate injunction or restraining order to protect the rights of a party pending litigation. Notwithstanding the issuance of an injunction or restraining order or the refusal of a court to issue such an order, the dispute shall continue to be subject to mediation.

24. SEVERABILITY

The invalidity, illegality, or unenforceability of any provision of this Agreement or the occurrence of any event rendering any portion or provision of this Agreement void shall in no way affect the validity or enforceability of any other portion or provision of this Agreement. Any void provision shall be deemed severed from this Agreement, and the balance of this Agreement shall be construed and enforced as if this Agreement did not contain the particular portion or provision held to be void. The parties further agree to amend this Agreement to replace any stricken provision with a valid provision that comes as close as possible to the intent of the stricken provision. The provisions of this Article shall not prevent this entire Agreement from being void should a provision which is of the essence of this Agreement be determined void.

25. INTEGRATION

This Agreement represents the entire and integrated agreement between Owner and Engineer. All prior and contemporaneous communications, representations, and agreements by Engineer, whether oral or written, relating to the subject matter of this Agreement, as set forth in Attachment D, Supplemental Agreements, are hereby incorporated into and shall become a part of this Agreement.

26. SUCCESSORS AND ASSIGNS

Owner and Engineer each binds itself and its directors, officers, partners, successors, executors, administrators, assigns, and legal representatives to the other party of this Agreement and to the directors, officers, partners, successors, executors, administrators, assigns, and legal representatives of such other party in respect to all provisions of this Agreement.

27. ASSIGNMENT

Neither Owner nor Engineer shall assign any rights or duties under this Agreement without the prior written consent of the other party. Unless otherwise stated in the written consent to an assignment, no assignment will release or discharge the assignor from any obligation under this Agreement. Nothing contained in this Article shall prevent Engineer from employing independent consultants, associates, and subcontractors to assist in the performance of the Services; however, other agreements to the contrary notwithstanding, in the event Engineer employs independent consultants, associates, and subcontractors to assist in performance of the Services, Engineer shall be solely responsible for the negligent performance of the independent consultants, associates, and subcontractors so employed.



ATTACHMENT A

Owner: City of Chattanooga, Tennessee

Engineer: Hazen and Sawyer, P.C.

Project Number & Name: W-14-003

Economic Analysis and Planning of Solids Operations for Moccasin
Bend Wastewater Treatment Plant

SCOPE OF SERVICES

1. BASIC SERVICES

The project is specifically defined as: The project will include the assessment and analysis of the current and potential future solids handling processes from a cost efficiency standpoint; an evaluation of potential energy-saving and/or energy-producing technologies, and an evaluation of alternative biosolids beneficial reuse options, including the cost of any and all enhancements necessary to produce all Class A or Class B biosolids compared to the benefit gained by the City. Alternatives for reducing the City's cost of off-site management of the biosolids, including an evaluation of potential markets for a Class A or Class B product as well as expected revenues produced will also be included.

The Engineer agrees to provide the following services: Engineer will perform an economic assessment of current and potential solids handling processes, evaluate alternatives that increase the cost-effectiveness of these processes and make recommendations for changes in current operations and potential future enhancements. The specific scope of work includes the following.

Task 1 - Review and Characterization of Existing Solids Operations

A. Kick-off meeting

- i. Determine and finalize project approach
- ii. Establish City's goals and objectives
- iii. Establish methodology for economic and non-economic analysis
- iv. Brief meeting summary will be distributed to all team members for review. Modifications to final meeting minutes will be made and distributed to all team members.

B. Gather project information

- i. Obtain all relevant information on current processes, practices, and procedures for handling of solids from their point of generation, the biosolids end product, and through the final end use.
- ii. Obtain process data, sludge characteristics, laboratory analyses, sludge volume production, flow data, and any other relevant data. A minimum of three years of data will be required. It is assumed that data will be provided by City in electronic format where available.
- iii. Obtain current facilities information, design parameters, structural characteristics, and plans and specifications in electronic form where available.

C. Perform site visit

- i. Observe solids handling processes in operation on the plant site.
- ii. Observe all equipment in use, equipment condition, available buildings and condition, associated electrical gear, infrastructure, redundancies, and equipment shortcomings.
- iii. Meet with City personnel to review process features, advantages and disadvantages of current practices, limitations, and future needs. Meeting will be held during site visit.
- iv. Develop solids management equipment inventory database and assessment of condition of key process equipment.



- D. Characterize and evaluate sludge production sources
 - i. Review primary and waste activated sludge production processes.
 - ii. Develop design criteria for solids handling and treatment, including primary and waste activated sludge production rates for annual average, maximum month and peak week operating conditions. Criteria for current and future conditions will be established. Future criteria will be determined based on future flow projections provided by the City.
- E. Characterize heat, material and energy balance for solids handling processes for annual average, maximum month and peak week loading rates
 - i. Develop process flow schematic for current residuals management unit processes.
 - ii. Utilize HEET model to evaluate heat, material and energy balances through the processes. Include electrical power consumption, natural gas consumption, and biogas generation.
- F. Characterize and evaluate sludge thickening, digestion, dewatering and post-dewatering alkaline stabilization unit processes
 - i. Identify "gaps" that exist in the capacity, reliability and redundancy of each major unit process relative to design criteria.
 - ii. Identify vulnerabilities based on a "failure modes and effects" assessment.
- G. Develop technical memoranda to document the findings of the initial assessment of current residuals management practices, processes, and procedures as outlined above.
- H. Brainstorming Workshop
 - i. Review preliminary findings and receive comments regarding technical memoranda
 - ii. Conduct brainstorming session to identify specific opportunities for consideration as the planning study moves forward into the alternatives analysis phase. Discussion will include consideration of optimization and process improvements using the existing infrastructure as well as concepts which could involve capital improvements.

Task 2 - Alternatives Identification

Hazen and Sawyer will work with the City to identify potential alternatives for improved biosolids management.

- A. Identify alternatives to optimize existing processes. Possible alternatives could include, but will not be limited to, optimization of gravity thickening, performance of the primary clarifiers, performance of the existing digestion process (including digestion of WAS), use of the J-VAP presses, and reduction of lime feed rates.
- B. Identify alternatives to modify current processes. Possible alternatives could include, but will not be limited to, conversion of all digesters to mesophilic digestion, dewatering of digested sludge without lime addition, addition of digester volume, and mechanical thickening of WAS.
- C. Identify alternatives for beneficial end-use of both Class A and Class B material. Include consideration of long-term viability of Class B material.
 - i. Evaluate potential markets for the biosolids product including feasibility, desirability, and life-cycle cost.
- D. Identify potential energy-harnessing, energy-saving processes and equipment that has potential for cost-effective implementation in the MBWWTP solids processing. Include consideration of a combined heat and power system.
- E. Compile list of potential alternatives and develop conceptual, order of magnitude costs associated with each alternative.
- F. Alternative Screening Workshop
 - i. Present and discuss potential alternatives
 - ii. Present and discuss findings of market evaluation for Class A and Class B products.
 - iii. Eliminate options that are not feasible based on cost and other factors
 - iv. Identify short list of alternatives to include a maximum of 10 "train" alternatives.



Task 3 - Alternatives Evaluation

Findings and the alternatives short list from Task 2 will be utilized for more detailed alternative evaluation. The objective is to assess the short list of alternatives based on their ability to enhance solids operations and improve cost savings and performance efficiencies.

- A. Evaluation Criteria Meeting
 - i. Establish cost and non-cost criteria and appropriate weight factors for each criterion. Criteria could include cost effectiveness (capital and O&M), energy savings capability, energy production capability, beneficial reuse capability, Class A biosolids market and revenues, off-site management cost reduction, long-term sustainability, operations complexity, flexibility to meet future regulations, expansion capability, and noise and odor complaints.
- B. Develop preliminary process schematics for short listed alternatives.
- C. Evaluate life cycle costs and payback periods (cost factors)
 - i. Account for costs associated with capital and operation and maintenance costs over a period of time using present worth comparison
- D. Evaluate non-cost factors
 - i. Score alternatives utilizing the non-cost factors
- E. Rank alternatives based on cost and non-cost evaluations using the pair-wise comparison method
- F. Alternative Evaluation Workshop
 - i. Present summary of results of alternatives comparison
 - ii. Discuss and identify most advantageous alternative(s) for implementation

Task 4 - Improvement Phasing / Implementation Plan

- A. Develop draft phasing plan for most advantageous alternative(s) based on financial constraints and process needs.
- B. Improvement Phasing Plan Workshop
 - i. Present draft phasing plan
 - ii. Discuss phasing plan and identify changes for incorporation

Task 5 - Final Report

- A. Develop draft report summarizing the evaluations, recommendations and phasing plan for implementation. Report will include measures for measuring the success of the implementation of selected alternatives.
- B. Draft report will be submitted to the City for comment.
- C. Final report will include incorporation of City comments. Ten printed copies and one electronic copy of the final report will be provided.

2. SUPPLEMENTAL SERVICES

Any work requested by the Owner that is not included in the Basic Services will be classified as Supplemental Services. Supplemental Services shall include, but are not limited to the following: Additional unforeseen tasks associated with evaluation of the solids handling processes not identified in the scope of work as described in Attachment A. Such tasks would rise out of the performance of the project that could not be understood prior to performance of the project tasks defined above. No supplemental services will be performed without prior authorization by the City.

3. REIMBURSABLE EXPENSES:

Project specific reimbursable expenses and charges shall include the following:
Miscellaneous travel and direct expenses at cost and sub-consultants at cost plus 10%.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-9
 Date of Issue 10-16-03
 Rev. 03-03-11

ATTACHMENT B

Owner: City of Chattanooga, Tennessee

Engineer: Hazen and Sawyer, P.C.
 Project Number & Name: W-14-003
 Economic Analysis and Planning of Solids Operations for Moccasin Bend Wastewater Treatment Plant

COMPENSATION

For the services covered by this Agreement, the Owner agrees to pay the Engineer as follows:

- For the Basic Services described in Attachment A, a Not-to-Exceed fee of \$185,000. Payments shall be made monthly in amounts which are consistent with the amount of engineering services provided, as determined by the Engineer.

Task 1 - Review and Characterization of Existing Solids Operations	\$68,500
Task 2 - Alternatives Identification	\$25,000
Task 3 - Alternatives Evaluation	\$58,000
Task 4 - Improvement Phasing / Implementation Plan	\$12,000
Task 5 - Final Report	\$21,500

Subtotal \$185,000

- Compensation for Supplemental Services shall be made as defined below, when authorized in writing by the Owner. The maximum limit for each item of additional service shall be established individually and specifically agreed to by the Owner as stated below, unless the service is included in a subsequent agreement.

Unforeseen solids handling evaluation tasks (only as-needed)

Subtotal \$10,000

Grand Total \$195,000

- Hourly rates for each classification as defined by the Engineer's rate schedule, see Attachment F. Overtime, when authorized by the Owner, will be billed at 1.5 times the rates listed (non-engineer time only).
- Reimbursable charges will be considered the amount of actual costs of project related expenses or charges times a markup of 0% for direct expenses and 10% for sub-consultants. Charges for use of computer equipment or software, local travel, local telephone, project photographs, miscellaneous supplies, and reproduction are not considered reimbursable charges. Allowable project-specific reimbursable expenses shall be outlined in Attachment A.
- The entire amount of each statement shall be due and payable 30 days after receipt by the Owner.
- The Engineer shall keep records on the basis of generally accepted accounting practice of costs and expenses which records shall be available for inspection at all reasonable times.
- Invoices shall be submitted using the Standard Invoice form, Attachment G.



ATTACHMENT C

Owner: City of Chattanooga, Tennessee

Engineer: Hazen and Sawyer, P.C.

Project Number & Name: W-14-003

Economic Analysis and Planning of Solids Operations for Moccasin Bend Wastewater Treatment Plant

OWNER'S RESPONSIBILITIES

The Owner will furnish, as required by the work and not at the expense of the Engineer, the following:

1. Make available to the Engineer the current City of Chattanooga Design and Construction Standards, all records, reports, maps, and other data pertinent to provision of the services required under this contract.
2. Examine all plans, specifications and other documents submitted by the Engineer and render decisions promptly to prevent delay to the Engineer.
3. Designate one City of Chattanooga employee as the Owner representative with respect to all services to be rendered under this agreement. This individual shall have the authority to transmit instructions, receive information and to interpret and define the Owner's policies and decisions pertinent to the Engineer's services.
4. Issue Notice(s) to Proceed to the Engineer for each phase of the design services.
5. Owner will grant or obtain free access to the project site for all equipment and personnel necessary for the Engineer to perform the work set forth in this Agreement. Owner will notify any and all possessors of the project site that Engineer has been granted free access to the site. Engineer will take reasonable precautions to minimize damage to the site.
6. Owner will acquire all lands, rights-of-way, and easements necessary for the construction of the project.
7. Owner will make a reasonable effort to evaluate if hazardous materials are on or near the project site, and will inform Engineer of findings relative to the possible presence of such materials.



ATTACHMENT D

Owner: City of Chattanooga, Tennessee

Engineer: Hazen and Sawyer, P.C.

Project Number & Name: W-14-003

Economic Analysis and Planning of Solids Operations for Moccasin
Bend Wastewater Treatment Plant

SUPPLEMENTAL AGREEMENTS

Owner and Engineer agree that the following communications, representations, and agreements by Engineer relating to the subject matter of the Agreement are hereby incorporated into and shall become a part of the Agreement.

[All necessary items as Supplemental]



ATTACHMENT E

Owner: City of Chattanooga, Tennessee

Engineer: Hazen and Sawyer, P.C.
 Project Number & Name: W-14-003
 Economic Analysis and Planning of Solids Operations for Moccasin Bend Wastewater Treatment Plant

PROJECT SCHEDULE

Owner and Engineer recognize that time is of the essence of the Agreement and that Owner will suffer financial loss if the work is not completed within the times stipulated herein, plus any extensions thereof. Accordingly, Engineer has established time intervals, in calendar days, for submittals at various stages of the project as detailed below. As each actual submittal date occurs, Engineer shall meet with Owner to discuss the progress of the work and the actual submittal date shall be documented. If project is behind schedule, the reason shall be recorded. Engineer shall not be responsible for the time required by Owner's representative to review Engineer's submittal. When review is complete, Owner shall, in writing, authorize Engineer to proceed to the next submittal date. After final submittal date, Engineer and Owner shall meet to evaluate Engineer's performance with regard to design schedule. An Engineer's Project Performance Evaluation form shall be completed and acknowledged by both Owner and Engineer. Completed form shall be retained by Owner for a period of seven years and reviewed prior to consultant selection for City projects. Past performance shall be accounted for on the evaluation sheet used to rank consultants during the interview process.

Schedule: Engineer will perform the project based on the following schedule from the date of Notice to Proceed (NTP):

<u>Task</u>	<u>Days following NTP</u>
Task 1 - Review and Characterization of Existing Solids Operations	75
Task 2 - Alternatives Identification	105
Task 3 - Alternatives Evaluation	165
Task 4 - Improvement Phasing / Implementation Plan	195
Task 5 - Final Report	240

It is understood and agreed that the Engineer shall start the performance of Services within 10 days of receipt of a written Notice to Proceed and shall complete the work in accordance with the contract times set forth herein.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-9
Date of Issue 10-16-03
Rev. 03-03-11

1. ATTACHMENT F

Owner: City of Chattanooga, Tennessee

Engineer: Hazen and Sawyer, P.C.

Project Number & Name: W-14-003

Economic Analysis and Planning of Solids Operations for Moccasin
Bend Wastewater Treatment Plant

RATE SCHEDULE

VP/Project Principal/Quality Control	205
Senior Associate	200
Associate	170
Sr. Principal Engineer	145
Sr. Principal Scientist	130
Sr. Principal Architect	140
Principal Engineer	130
Principal Scientist/MIS	120
Principal Architect	120
Engineer/Assistant Engineer	110
Scientist/MIS Specialist	90
Architect/Assistant Architect	100
Sr. Modeler	140
Sr. Principal Designer	135
Principal Designer	125
Designer/Technician	105
Drafter	85
Intern/Co-Op	50
Administrative	60



ATTACHMENT G

STANDARD INVOICE

Indicates MANDATORY Item

CONSULTANT LETTERHEAD

INVOICE

ATTN: City Project Manager
REF: Project Name
CODE: Consultant Project Number
PO: City Project Number in format 5-02-001-101

Provided by City

TERMS: Net 25 days
DUE: 08/01/03

Must be Sequential Number

City Project Manager
 City Project Manager Title
City of Chattanooga
Engineering Division/DRC
1250 Market Street, Suite 2100
Chattanooga TN 37402

Invoice Number 5
Dated 07/07/03

Invoice Must show Billing Period.

For Professional Services from May 31 to June 27, 2003

This Breakdown must list each item of the Contract.

Consultant Project No.	Description	Fee	Fee Basis	Work to Date	Percent	Amount Billed	Previous Billed	This Invoice Billed
C03009-01	01 - Design	\$51,500.00	LS	55%		\$28,325.00	\$18,540.00	\$9,785.00
	02 - Survey	\$15,700.00	LS	0%		\$0.00	\$0.00	\$0.00
C03009-02	Barton Avenue and Brown Acres Golf Course Design	\$20,000.00	CP	12%		\$2,391.02	\$2,033.00	\$358.02
C03009-03	Permitting/Easement Assistance	\$5,000.00	CP	6%		\$291.08	\$0.00	\$291.08
C03009-04	Bidding/Construction Assistance	\$10,000.00	CP	0%		\$0.00	\$0.00	\$0.00
C03009-05	Misc. As-Requested Services	\$5,000.00	CP	7%		\$363.85	\$0.00	\$363.85
Total Contract Amount						\$107,200.00	\$31,370.95	\$20,573.00
TOTAL THIS INVOICE:								\$10,797.95

Must Match Contract Amount

Prior invoices	\$20,573.00
This invoice	\$10,797.95
Payments	-\$20,573.00
Balance on Account	\$10,797.95

NOTE

- There shall be only one invoice per contract per billing period
- Any necessary details should be attached as backup