

RESOLUTION NO. _____

A RESOLUTION AUTHORIZING THE ADMINISTRATOR OF THE DEPARTMENT OF PUBLIC WORKS TO ENTER INTO AN AGREEMENT WITH ADVANCED ENERGY ENGINEERING AND DESIGN, INC. (AEED) FOR PROFESSIONAL ENGINEERING SERVICES FOR MOCCASIN BEND WASTEWATER TREATMENT PLANT STRATEGIC ENERGY MANAGEMENT PROGRAM IMPLEMENTATION, FOR AN AMOUNT NOT TO EXCEED ONE HUNDRED FIFTY THOUSAND DOLLARS (\$150,000.00).

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHATTANOOGA, it is hereby authorizing the Administrator of the Department of Public Works to enter into an agreement with the Advanced Energy Engineering and Design, Inc. (AEED) for professional engineering services for Moccasin Bend Wastewater Treatment Plant Strategic Energy Management Program Implementation, for an amount not to exceed \$150,000.00.

ADOPTED: _____, 2012.

/meb

City of Chattanooga



Resolution/Ordinance Request Form

Date Prepared: 8-24-2012

Preparer: Jerry W. Stewart, P.E.

Department: Public Works

Brief Description of Purpose for Resolution/Ordinance:

Res./Ord. # _____ Council District # _____

A City Council resolution is requested authorizing the Administrator of Public Works to enter into an agreement with the Advanced Energy Engineering and Design, Inc. (AEED) for professional engineering services for MBWWTP Strategic Energy Management Program Implementation. This agreement will not exceed the maximum sum of one hundred fifty thousand dollars (\$150,000.00).

Name of Vendor/Contractor/Grant, etc.	<u>AEED</u>	New Contract/Project? (Yes or No)	<u>Yes</u>
Total project cost	\$ <u>\$150,000.00</u>	Funds Budgeted? (YES or NO)	<u>Yes</u>
Total City of Chattanooga Portion	\$ _____	Provide Fund	<u>6010</u>
City Amount Funded	\$ _____	Provide Cost Center	<u>K30106</u>
New City Funding Required	\$ <u>\$150,000.00</u>	Proposed Funding Source if not budgeted	_____
City's Match Percentage %	_____	Grant Period (if applicable)	_____

List all other funding sources and amount for each contributor.

Amount(s)	Grantor(s)
\$ _____	_____
_____	_____
_____	_____

Agency Grant Number _____

CFDA Number if known _____

Other comments: (Include contingency amount, contractor, and other information useful in preparing resolution)

by Jerry W. Stewart 8/27/12

M. H. [Signature] 8/27/2012

Approved by: _____

DESIGNATED OFFICIAL/ADMINISTRATOR

Reviewed by: FINANCE OFFICE

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

Revised: 1/26/09



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

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

Advanced Energy Engineering and Design, Inc.

hereinafter called Engineer.

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

**Moccasin Bend Waste Water Treatment Plant
Strategic Energy Management Program Implementation**

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.

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.

Page 1 of 18



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

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 alleged or 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



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7

Date of Issue 10-16-03

Rev. 12-15-09

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.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7

Date of Issue 10-16-03

Rev. 12-15-09

- 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 a



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

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: **William P. Pickett, PE**
AEED Inc. (Advanced Energy Engineering and Design)
PO Box 4934
Chattanooga, TN 37402

Owner: **City of Chattanooga**
Department of Public Works
Engineering Division
Suite 2100, Development Resource Center
1250 Market Street
Chattanooga, TN 37402
(423) 643- 6033

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.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

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.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

28. THIRD PARTY RIGHTS

Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than Owner and Engineer.

29. RELATIONSHIP OF PARTIES

Nothing contained herein shall be construed to hold or to make the Owner a partner, joint venturer, or associate of Engineer, nor shall either party be deemed the agent of the other, it being expressly understood and agreed that the relationship between the parties is and shall at all times remain contractual as provided by the terms and conditions of this Agreement.

30. NON-DISCLOSURE

Engineer agrees not to disclose or to permit disclosure of any information designated by the Owner as confidential, except to the engineer's employees and subcontractors who require such information to perform the services specified in this agreement.

31. NON-DISCRIMINATION

Engineer agrees to comply with all federal, state, and local non-discrimination laws and regulations. Engineer agrees not to discriminate against any participant in this Agreement on the basis of race, color, religion, sex, age or national origin. Engineer further agrees to comply with all federal, state and local laws regarding treatment and accommodations for individuals with disabilities.

32. DRUG FREE WORKFORCE

Engineer certifies that it will provide a drug-free workplace and agrees to comply with the applicable requirements of the Drug-Free Workplace Act of 1988.

33. FEDERAL OR STATE FUNDING

In the event that the Project is funded in whole or in part by Federal or State grants, Engineer agrees to abide by all applicable Federal and State laws, regulations, grant conditions and procedures.

IN WITNESS WHEREOF, Owner and the Engineer have executed this Agreement.

Date Administrator of Public Works Date

Date Director of Purchasing Date

Reviewed by City Attorney Office Initial Date

ATTACHMENT A



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

ATTACHMENT A

Owner: City of Chattanooga, Tennessee

Engineer:

Project Number & Name:

**Moccasin Bend Waste Water Treatment Plant
Strategic Energy Management Program Implementation**

SCOPE OF SERVICES

1. BASIC SERVICES

The project is specifically defined below:
In accordance with the City of Chattanooga RFQ 52125.

The Engineer agrees to provide the following services:

**2012 Strategic Energy Management Program
Implementation Proposal**

In 2010 / 2011 AEED Inc. conducted and completed an Energy Audit on the Moccasin Bend Waste Water Treatment Plant (MBWWTP). In this audit, AEED Inc. identified numerous energy savings opportunities (ESO's) that would, if implemented, reduce annual energy costs by an estimated \$670,000.00/year. To take advantage of these energy savings that would eventually pass through to Chattanooga's customers, it was recommended that MBWWTP develop a Strategic Energy Management Program (SEMP) to assist management with the implementation of the ESO's identified in the energy audit.

The implementation of SEMP requires considerable human and capital resources. One of the initial objectives of a SEMP is to assist management with the development of an implementation timeline and plan. This will require the following steps.

Phase One – Project Planning

Project Development Session(s)

- *Introduce AEED Project Manager and technical team.*
- *Identify MBWWTP management and primary personnel.*
- *Review Energy Audit and Energy Saving Opportunities (ESO's).*
- *Setup goals and objectives related to audit recommendations and ESO's.*
- *Discuss benefits of a benchmark of utility costs at MBWWTP versus other utilities.*
- *Develop process for selecting & prioritizing ESO recommendations as shown in Table 1.0 attached.*
- *Discuss Capital Budget Forecast.*
- *Develop Project Implementation Plan*
 - *Develop a timeline for implementation of ESO's based on payback & capital requirements.*
 - *Identify project reporting requirements.*
 - *Develop a schedule for project review sessions.*
 - *Identify task order format and approval process.*
 - *Discuss invoicing process and approvals.*



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7

Date of Issue 10-16-03

Rev. 12-15-09

Phase Two – Implementation

Non Capital ESO Projects

- *Start Implementing Non Capital Intensive ESO Recommendations (as defined by Phase One activities).*
- *Initial projects might include:*
 - *Coordinate rate review activities.*
 - *Review electric rate structures to optimize savings from EPB rate overlays.*
 - *Implement ESO's that involve non capital behavior/scheduling changes.*
 - *Meet with EPB on pump station electric rates.*
 - *Meet with generator designers to investigate peak shaving and interruptible rate options.*

Capital Intensive ESO Projects

Develop Plan for Capital Intensive ESO Recommendations

- *Prioritize Capital Intensive ESO's based on payback and capital requirements.*
- *Prepare timeline for implementation of ESO's based on budget and other factors.*
- *Discuss Sub-metering requirements and recommendations.*
- *Implement Capital Intensive ESOs.*
 - *Apply for energy grant programs.*
 - *Apply for TVA energy efficiency incentives.*
 - *Assist with bid documents.*
 - *Commissioning/Confirmation*
 - *Review Sub-metering data to verify savings and performance.*

To effectively implement the ESO's recommended by AEED and authorized by the MBWWTP management, each ESO will require certain steps. This process will assure that the opportunity has been validated and the appropriate technical details have been reviewed, addressed and completed. Listed below is a summary of steps necessary applied to every ESO:

- *Review ESO Recommendation*
- *Perform site visit and data verification.*
- *Review ESO process and timeline with MBWWTP personnel.*
- *Recalculate and validate ESO payback as stated in energy audit.*
- *Review current design and operating conditions and determine if new design is necessary.*
- *Meet with Vendor and/or Manufacturer Representatives and serve as customer interface.*
- *Provide support to MBWWTP personnel during construction activities as requested for: Submittal Review, RFI's, Site Obs's etc.*
- *Perform a metering and validation process at the completion of each ESO to confirm and record results accomplished by each ESO.*

Note: The cost for engineering may not be sufficient to cover the man-hour requirements necessary to implement the engineering, design, and drafting for the entire list of ESO's. Detailed design will be addressed as supplemental services and any additional design requirements that exceed the initial contract amount will be re-negotiated.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
 Date of Issue 10-16-03
 Rev. 12-15-09

2012 Strategic Energy Management Program				
Estimate of Hours				
Phase One – Kick-Off / Planning / Follow-up				
Work Description	Basic Services Hours	Supplemental Services Hours	Hourly Rate	Project Cost
Prepare Materials for Project Kickoff Sessions(s)				
Meeting(s) with MBWWTP Personnel				
Review Energy Audit and ESO's				
Discuss Capital Budget Forecast				
Develop Project Implementation Plan with Timeline				
Phase Two - ESO Implementation				
Work Description				
Non Capital Intensive ESO's				
Review Rate Structures to Optimize Savings.				
Review Waste Water Electric Accounts.				
Coordinate with EPB on rate adjustments.				
Coordinate generator design and application.				
Apply for Energy Grants/TVA incentives.				
Manage rate changes-contract with EPB.				
Capital Intensive ESO's				
Perform ESO Review and prioritization.				
Site visits for field verification and personnel meetings.				
Review process operations & coordinate installations.				
Review vendor drawings and specifications.				
Assist with Commissioning/Verifying savings				
Record and review Sub-metering and Documentation				
Phase One & Two - Estimated Hours	1,250		Avg Rate of \$80/hr	\$100,000
Supplemental Services				
Engineering/design for capital intensive projects.				
Perform detailed engineering costs estimates of ESO implementation.				
Perform engineering design and drawings as required.				
Prepare project specifications and/or guidelines for ESO implementation.				
Develop bid documents and assist in vendor selections as requested.				
Supplemental Services - Estimated Hours		625	Avg Rate of \$80/hr	\$50,000
Total Project Estimate				\$150,000



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

Table 1.0

Moccasin Bend Waste Water Treatment Plant						
Lighting Recommendations						
ESD #	Location	Recommendation Description	Annual Savings	Cost of Project	Simple Payback	Comments
L1	Sewer Maintenance Bld.	Turn lights off during off shift	\$4,299	\$0	Immediate	
L2	Front Warehouse	Reduce fixtures by approx. 50%	\$575	\$0	Immediate	
L3	Blower Bld.	Replace 300 watt incandescent with fluorescent	\$7,121	\$3,194	0.45	Eligible for TVA custom incentive payment
L4	Clisco pump station	Reduce fixtures by approx. 50% wiring modification	\$3,305	\$2,000	0.61	
L5	Wet Weather Chemical Bld.	Install motion sensors	\$551	\$677	1.23	
L6	Influent Pump Station	Replace HPS with T8 and motion sensors	\$7,545	\$13,260	1.76	Eligible for TVA custom incentive payment
L7	Wet Weather Bldg.	Replace HPS with T8 and motion sensors	\$1,231	\$3,691	3.00	Eligible for TVA custom incentive payment
L8	EQ Basin Pump Station	Install motion sensors	\$217	\$677	3.12	
L9	Filter Press Bldg.	Replace HPS with 6F54T5HO	\$6,574	\$22,500	3.42	Eligible for TVA custom incentive payment
L10	Primary sludge stations	Replace HPS with T8 and motion sensors	\$2,022	\$6,939	3.43	Eligible for TVA custom incentive payment
L11	Sludge thickener #2	Replace HPS with T8 and motion sensors	\$944	\$3,361	3.56	Eligible for TVA custom incentive payment
L12	Return/Waste Sludge Pump Station	Install motion sensors	\$166	\$677	4.08	
L13	Sludge Thickener #1	Replace HPS with T8	\$1,410	\$6,939	4.92	
L14	Main Plant	Replace HPS with 2 bulb T5	\$3,156	\$24,205	7.67	Eligible for TVA custom incentive payment
L15	O ₂ Control Bldg.	Install motion sensors	\$1,191	\$9,313	7.82	Eligible for TVA custom incentive payment
HVAC Recommendations						
ESD #	Location	Recommendation Description	Annual Savings	Cost of Project	Simple Payback	Comments
H1	Admin. Bldg.	Install Programmable Thermostats	\$1,663	\$1,000	0.60	Currently No Method to Set Back Temp. During Unoccupied Times.
H2	Indus. Pre-Treatment	Install Programmable Thermostats	\$3,885	\$2,500	0.64	
H3	Sewer Maint. Bldg.	Install Programmable Thermostats	\$8,437	\$2,500	0.30	
H4	Plant Maint. Bldg.	Install Programmable Thermostats	\$3,978	\$2,500	0.63	
H5	Front Warehouse	Install Programmable Thermostats	\$1,224	\$5,500	4.5	Currently No Method to Set Back Temp. During Unoccupied Times.
H6	Sewer Maint. Bldg.	Install Heat Pump Units and Convert Heaters to Natural Gas.	\$5,581	\$18,000	3.23	Currently Electric Heaters are Used.
H7	Plant Maint. Bldg.	Install Heat Pump Units and Convert Heaters to Natural Gas.	\$6,006	\$48,000	7.99	Currently Electric Heaters are Used.
Utility Recommendations						
ESD #	Location	Recommendation Description	Annual Savings	Cost of Project	Simple Payback	Comments
U1	Main Plant	Backup Generator for Demand Response and Peak Shaving	\$224,733	\$1,500,000	6.67	Assumes 1000 kW generator peak shaving and 1000 kW demand
U2	Pump Stations	Drainage Pump Station Rate	\$692,062	\$0	Immediate	Upper limit on potential savings.
U3	Spring Creek Pump Station	Power Factor Correction Capacitors	\$3,170	\$12,000	3.79	
U4	Main Liquids Plant	Power Factor Correction Capacitors	\$24,341	\$120,000	4.93	
Process Recommendations						
ESD #	Location	Recommendation Description	Annual Savings	Cost of Project	Simple Payback	Comments
P1	Filter press Bldg.	Install Compressor air intakes to outside air	\$2,150	\$1,200	0.56	
P2	EQ Basin Pump Station Bldg	Rebuild all 4 pumps	\$69,379	\$80,000	1.15	
P3	UNOX Oxygenation tank #3 and #4	Install VFD's on tanks #3 and #4 reduce rpm on motors 50%	\$183,224	\$267,500	1.46	Eligible for TVA custom incentive payment
P4	UNOX Oxygenation tank #1 and #2	Install VFD's on tanks #1 and #2 reduce rpm on motors 20%	\$142,385	\$267,000	1.88	Eligible for TVA custom incentive payment
P5	Mixed Liquor channel	Large bubble channel mixing	\$93,175	\$359,000	3.85	
P6	Blower Building	Install one new 1250 HP high efficiency blower	\$149,819	\$805,000	5.37	Eligible for TVA custom incentive payment



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

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:

Detailed design will be addressed as supplemental services. Additional design requirements that exceed the initial contract will be re-negotiated.

3. REIMBURSABLE EXPENSES:

Project specific reimbursable expenses and charges shall include the following:

All travel related expenses.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

ATTACHMENT B

Owner: City of Chattanooga, Tennessee

Engineer:

Project Number & Name:

**Moccasin Bend Waste Water Treatment Plant
Strategic Energy Management Program Implementation**

COMPENSATION

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

1. For the Basic Services described in Attachment A, **\$100,000.00**. Payments shall be made monthly in amounts which are consistent with the amount of engineering services provided, as determined by the Engineer.
2. 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.

\$50,000.00 for supplemental services defined as detailed engineering design and related activities as described in Attachment A, Supplemental Services.

3. 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).
4. Reimbursable charges will be considered the amount of actual costs of project related expenses or charges times a markup of 5%. 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.
5. The entire amount of each statement shall be due and payable 30 days after receipt by the Owner.
6. 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.
7. Invoices shall be submitted using the Standard Invoice form, Attachment G.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

ATTACHMENT C

Owner: City of Chattanooga, Tennessee

Engineer:

Project Number & Name:

**Moccasin Bend Waste Water Treatment Plant
Strategic Energy Management Program Implementation**

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.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

ATTACHMENT D

Owner: City of Chattanooga, Tennessee

Engineer:

Project Number & Name:

**Moccasin Bend Waste Water Treatment Plant
Strategic Energy Management Program Implementation**

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.

The strategic plan implementation may consist of collecting electrical monitoring data from some of the large energy consuming equipment. The Owner is responsible for physically connecting and disconnecting the data monitoring equipment to the Owner's equipment, pumps, motors, & etc. AEED assumes no liability to damage that may occur to the equipment that is being monitored or for any liability to process interruptions, downtime or adverse situations which may develop as a result of this monitoring this equipment. This monitoring equipment is industry standard equipment specifically used to collect electrical data on equipment such as voltage, amps, start and stop times, & etc. Any costs associated with connecting and disconnecting this monitoring equipment is the owner's responsibility.

The working condition and the security of these monitoring devices while in the owners possession is the responsibility of the owner. These monitors are the property of AEED Inc. and will be returned to AEED Inc. at the conclusion of the monitoring process.



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

ATTACHMENT E

Owner: City of Chattanooga, Tennessee

Engineer:

Project Number & Name:

**Moccasin Bend Waste Water Treatment Plant
Strategic Energy Management Program Implementation**

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 make plan submittals to Owner based on the following schedule:

1. Concept Drawings - Engineer will submit concept drawings within NA calendar days after Notice to Proceed by Owner.
2. Field Check - Engineer will submit field check drawings within NA calendar days after Notice to Proceed by Owner.
3. Right-of-Way Drawings - Engineer will submit right-of-way drawings within NA calendar days after the Notice to Resume Work is given by Owner following Field Check.
4. Office Check - Engineer will submit office check drawings and specifications within NA calendar days after the Notice to Resume Work is given by Owner following Field Check.
5. Bid Documents - Engineer will submit bid documents within NA calendar days after the Notice to Resume Work is given by Owner following Office Check.
6. Bid / Award Services – 60 calendar days.
7. Construction Administration Services and/or CEI – NA calendar days.
8. 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 2003-7
Date of Issue 10-16-03
Rev. 12-15-09

ATTACHMENT F

Owner: City of Chattanooga, Tennessee

Engineer:

Project Number & Name:

**Moccasin Bend Waste Water Treatment Plant
Strategic Energy Management Program Implementation**

RATE SCHEDULE

Basic Services will not exceed \$100,000 based on the scope outlined in Attachment A.

Supplemental Services Rate Schedule
2012 Billing Rate Detail for AEED Inc
Client: Moccasin Bend WWTP

PROFESSIONAL OR LABOR CLASSIFICATION BILLING RATE

Principal Engineer - PR - \$142.36 / hr
Project Management - PM - \$109.39 / hr
Project Engineer - PE - \$98.58 /hr
Senior Engineer II - SE2 - \$88.74/hr
Senior Engineer I - SE1 - \$75.47 /hr
Staff Engineer II - EN2 - \$67.60 / hr
Staff Engineer I - EN1 - \$50.03 /hr
Staff Designer II - SD2 - \$54.27 / hr
Staff Designer I - SD1 - \$43.01 / hr
CAD Operator II - CO2 - \$39.07 / hr
CAD Operator I - CO1 - \$26.50 / hr
Field Technician III - FT3 - \$31.80 / hr
Field Technician II - FT2 - \$25.44 / hr
Field Technician I - FT1 - \$15.67 / hr
Administration III - AD3 - \$39.22 / hr
Administration II- AD2 - \$25.44 / hr
Administration I - AD1 - \$19.08 / hr



CITY OF CHATTANOOGA
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-7
 Date of Issue 10-16-03
 Rev. 12-15-09

ATTACHMENT G

STANDARD INVOICE

Indicates MANDATORY item

CONSULTANT LETTERHEAD

ATTN: City Project Manager
 REF:
 CODE:
 PO:

Provided by City

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

 INVOICE

Must be Sequential Number

Invoice Must show Billing Period.

This Breakdown must list each item of the Contract.

Consultant Project No.	Description	Fee	Basis	Percent		Amount Billed	Previous Billed	This Invoice Billed
				Work to Date	Amount			
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 detail's should be attached as backup



City of Chattanooga

Public Works – Waste Resources Division

Jerry W. Stewart, P.E.
Director, Waste Resources

Ron Littlefield
Mayor

MEMORANDUM

TO: Steve Leach

From: Jerry W. Stewart, P.E. 

Date: August 27, 2012

Subject: **Approval of Professional Services Contract
Strategic Energy Management Program (SEMP) Implementation
Advanced Energy Engineering and Design, Inc. (AEED)**

This contract was approved by the CAPS committee on March 21, 2012 unanimously selecting AEED. Arcadis was identified as minor sub-consultant on the project by AEED. The contract was negotiated for a fee of \$150,000.

Prior to moving the contract to City Council for approval, the Mayor requested that the contract be placed on hold until after the Consent Decree (CD) negotiations for the sewer system were completed. The CD negotiations were completed on July 17, 2012 and work is moving forward to implement the CD.

The Mayor issued his executive order Energy Policy on August 4, 2012. The SEMP implementation for the Waste Resources Division goes hand in hand with the energy policy.

Additionally, it will help address part of the plant optimization requirements of the CMOM issues in the Consent Decree.

It is recommended that this contract be placed on the Agenda for Council approval.

CAPS REVIEW COMMITTEE
WEDNESDAY, MARCH 21, 2012

A meeting of the CAPS Review Committee was held on Wednesday, March 21, 2012 at 1:30 p.m. In attendance were the following Committee members:

Dan Johnson, Chief of Staff
Dan L. Thornton, Director of General Services
Artie Prichard, Purchasing Agent
Ron Swafford, Administrator of Human Services

Also present were:

Jerry Stewart, Director of Waste Resources (Voting Member of the Committee)
Jidong Yang, Traffic Signal Systems Engineer
Tommy Trotter, Traffic Signal Designer
Dennis Malone, Assistant City Engineer (Voting Member of the Committee)
Gail Hart, Administrative Support Duties
Cary Bohannon, Staff Support

Jerry Stewart came to the CAPS Committee on the responses to the RFQ for the Strategic Energy Management Program. Mr. Stewart stated that these expenses should be approximately \$150,000. On a motion by Artie Prichard and a second by Jerry Stewart, the CAPS Committee gave their unanimous approval to Advanced Energy Engineering & Design, Inc./Arcadis.

Jidong Yang, Dennis Malone and Tommy Trotter came to the CAPS Committee for the discussion of the contract with Atkins North American, Inc. for the Construction Engineering Inspection (CEI) on Chattanooga Regional ITS System Phase I; this contract is for a total project cost of \$707,100.53. On a motion by Dan Johnson and a second by Ron Swafford, subject to resolving the discussed contract issues, unanimous approval was given by the CAPS Committee.

On a motion by Dan Johnson and a second by Ron Swafford, the CAPS Minutes of 02-15-12 received the unanimous approval of the CAPS Committee.