

RESOLUTION NO. _____

A RESOLUTION AUTHORIZING THE ADMINISTRATOR FOR THE DEPARTMENT OF PUBLIC WORKS TO ENTER INTO AN AGREEMENT WITH CDM SMITH, INC., FOR PROFESSIONAL SERVICES, RELATIVE TO CONTRACT NO. W-15-009-101, MBWWTP CONTROL ROOM UPGRADES, FOR AN AMOUNT NOT TO EXCEED THREE HUNDRED NINE THOUSAND NINE HUNDRED DOLLARS (\$309,900.00).

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 enter into an agreement with CDM Smith, Inc., for professional services, relative to Contract No. W-15-009-101, MBWWTP Control Room Upgrades, for an amount not to exceed \$309,900.00.

ADOPTED: _____, 2015

/mem

City of Chattanooga



Resolution/Ordinance Request Form

Date Prepared: October 18, 2015

Preparer: Dennis Malone

Department: Public Works

Brief Description of Purpose for Resolution/Ordinance:

Res./Ord. # _____ Council District #

1

A Council Action is requested for the Administrator of the Department of Public Works to enter into an agreement with CDM Smith Inc., for professional services, relative to Contract No. W-15-009-101, MBWWTP Control Room Upgrades in an amount not to exceed \$309,900.00.

Name of Vendor/Contractor/Grant, etc.	<u>CDM Smith Inc.</u>	New Contract/Project? (Yes or No)	<u>Yes</u>
Total project cost \$	<u>309,900.00</u>	Funds Budgeted? (YES or NO)	<u>Yes</u>
Total City of Chattanooga Portion \$	<u>309,900.00</u>	Provide Fund	<u>6012</u>
City Amount Funded \$	<u>309,900.00</u>	Provide Cost Center	<u>K37148</u>
New City Funding Required \$	<u>0</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)

Funding in SRF Loan Package for 2015, number still to be assigned.

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



1100 Marion St., Suite 300
Knoxville, TN 37921
P 865-963-4300

Transmittal

To: Mr. Mike Marino

From: Bernie Maloy P.E., BCEE

Organization/ Address: Jacobs

Date: October 16, 2015

4510 Turntable Rd. Suite 110

Chattanooga, TN 37421

Re: Mark B. Whitaker WWTP Control Room Upgrade

Job #: NAUNB.40999

Via: Mail:

Overnight:

Courier:



Message:

Enclosed are six signed agreements for the referen

*Brent, Please deliver to
Dennis Malone. at*

Thanks

Bernard F. Maloy, P.E.



DFC

[Handwritten signature]
Signed _____



CITY OF CHATTANOOGA

STANDARD AGREEMENT FOR ENGINEERING SERVICES

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

CDM Smith Inc.,

Hereinafter called Engineer.

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

W-15-009-101: MBWWTP Control Room Upgrades,

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.



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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.
- d. Worker's Compensation Insurance and Employer's Liability Insurance, in accordance with statutory requirements, with a limit of \$500,000 for each accident.
- e. 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



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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



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(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;



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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: **CDM Smith Inc.**
Attn: Andrew Romanek
651 East 4th Street, Suite 100
Chattanooga, TN 37403
(423) 771-4495
romanekap@cdmsmith.com

Owner: City of Chattanooga
Department of Public Works
Engineering Division
Suite 2100, Development Resource Center



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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.



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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



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subcontractors so employed.

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 Engineer have executed this Agreement.


Bernie Maloy
Vice President
CDM Smith Inc.
Date

Administrator of Public Works Date


[Consultant Name & Title] Date

Director of Purchasing Date

Reviewed by City Attorney Office _____
Initial Date



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ATTACHMENT A

Owner: City of Chattanooga, Tennessee

Engineer: CDM Smith Inc.
Project Number & Name: W-15-009-101
MBWWTP Control Room Upgrades

SCOPE OF SERVICES

1. BASIC SERVICES

The project is specifically defined as:

Project Background and Project Understanding

Engineer understands that the Owner desires to upgrade the existing control room at the Moccasin Bend Wastewater Treatment Plant (MBWWTP). The Owner also desires to incorporate various upgrades to the existing control room for overall improvement to operational functionality, ergonomics, and efficiency.

The current control room is very large and much of the space is not used efficiently. There is a large wall-mount display which has been de-activated and it is no longer in use. The control console has also been mostly deactivated. The Owner would like to utilize the space more efficiently and install new consoles and screens for operations staff, as well as provide new office space. The Owner would also like to make some modifications to the Supervisory Control and Data Acquisition (SCADA) system during this project.

Engineer assumes that the following items will be included as part of the design for this project:

1. Demolition and removal of existing consoles in the middle of the room
2. Demolition and removal of the existing wall graphic
3. Demolition and removal of office cubicles in the current space
4. Development of a sequence of construction
5. Full control room upgrade, to include:
 - a. HVAC improvements, adjusting and balancing of system per the new room layout
 - b. Electrical lighting plan for control room, closet, and new office spaces
 - c. Two offices
 - d. One wall separator to obtain a smaller control room (dividing the current space in half)
 - e. Console(s) layout (up to two consoles) to accommodate two operators
 - f. Wall-mounted display layout
 - g. Network closet
 - h. Furniture for control room, network closet, and new offices
 - i. Modifications to space currently located behind the old wall graphic
 - j. Existing multi-bay control panel will remain in place, but will end up in the "Network Closet" out of sight. Demolition of this cabinet is not included.



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6. SCADA system upgrades to include:

- a. Upgrade the current Human Machine Interface (HMI) Wonderware software (version 9.5) to the latest version. Existing screens and system will be upgraded but not redesigned.
- b. Provide a redundancy pack from Wonderware for server software redundancy.
- c. Upgrade all computer hardware associated with the SCADA system using the Owner's contract with Dell. Servers will be towers, not rack-mounted.
- d. A single reporting package. This will require input from Owner staff to determine report contents. Reports will include Hach WIMS (Water Information Management Solution) system.
- e. Addition of a structured query language (SQL) server to store and manage existing data.
- f. Addition of remote view over hyper-text markup language (HTML) platform using existing SCADA system and virtual private network (VPN) connection. Owner to provide IT staff input.
- g. Combining the pump station system and the MBWWTP onto a single SCADA system. This will require the new upgraded HMI system to accommodate all components (screens, database tags, alarms, trends, etc.) of each existing system into one homogeneous system.
- h. Up to 10 new SCADA screens will be identified by the Owner and Engineer and incorporated into the design for a contractor to develop and install. The updated SCADA system will reside at the MBWWTP in the new control room.
- i. Addition of wall-mounted display(s) and console monitors.

Project Coordination

To the extent possible, Engineer will coordinate upgrades to the control room with other ongoing projects that will affect the SCADA system. However, the Engineer's scope for this project is specific to the upgrades noted. Engineer assumes that projects currently under construction, along with those that will be constructed prior to the control room upgrades, will tie into the existing SCADA system. The design for future projects (e.g., adding a new pump station and tying into SCADA) after the control room upgrades will need to account for modifications made as part of this project. This project will not include modifying or creating screens for potential future projects. However, as noted above, it will include creating screens to better monitor and control existing equipment, as desired by the Owner.

Engineer understands that a separate telemetry and SCADA upgrade project is about to be bid for construction. Based on a general description of that project, certain tasks, such as upgrading software / hardware in the operation center, developing reporting tools, and installing HMI improvements for SCADA, may overlap with this project. Pending an evaluation of final design documents for that project, Engineer assumes that the scope of work outlined in this contract will not require additional effort (e.g., additional design or design revision) based on the details of the separate telemetry and SCADA upgrade project.

Engineer will review up to 15 approved submittals from the telemetry and SCADA upgrade project to assist in project coordination.

The Engineer agrees to provide the following services:

Task 1 - Data Gathering and Project Management

As part of this task, Engineer will:



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1. Prepare and submit a project management plan.
2. Prepare a detailed baseline schedule. This schedule will be updated monthly and submitted in accordance with the latest City of Chattanooga Consent Decree Program Procedures.
3. Prepare invoices in accordance with the latest City of Chattanooga Consent Decree Program Procedures.
4. Request and gather relevant project information, including information on existing hardware and software.
5. Coordinate with the Owner and Program Manager regarding the project status and any issues.
6. Upload and maintain documents in the Chattanooga Consent Decree Program Management SharePoint system.

Task 1 Assumptions

A. The total project duration, from notice-to-proceed through closeout, including planning, design, bidding, construction, and final closeout documentation, is estimated at 16 months. Project Management as part of Task 1 is budgeted to last this duration.

Task 2 - Preliminary Engineering Report

Subtask 2.1 - Project Kickoff Meeting and Control Room Workshop

Following notice to proceed, the Engineer will lead a joint kickoff and control room workshop at the MBWWTP. All major stakeholders will be invited to attend this meeting. The half-day workshop will provide Owner staff with information on several options for control consoles and audio/visual hardware and software. Decisions will be made by the Owner during the workshop to provide direction for the preliminary and final design of the project. A discussion regarding room layout will also take place. Topics during the workshop will include typical room requirements, layout options, console options, screen/projector options, screen controller options, floor options, and discussion of SCADA options. The Engineer will develop a list of questions for the operations staff to prepare for the meeting. The list of questions will be included as part of the meeting agenda delivered at least one week before the meeting. The Owner staff should be prepared to answer the questions during this workshop.

Subtask 2.2 - Site Evaluation

Immediately following the kickoff meeting and Control Room workshop, a site evaluation will take place at the MBWWTP. During the site evaluation, the Engineer will review the existing equipment and layout of the control room taking measurements, pictures, notes, etc. Additional questions may be asked at this time based on the information collected at the site. Engineer will need the Owner to have staff on hand to answer any questions.

Subtask 2.3 - SCADA Workshop

Within a few days of the Control Room workshop, Engineer will conduct a second workshop, referred to as the SCADA workshop, as a data gathering and decision making workshop. The focus of this workshop will be on SCADA related items. Topics of discussion will include new workstation requirements, SCADA screen modification requirements, hardware upgrade requirements, software



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upgrades, combining SCADA systems, reporting, historical data requirements, remote viewing, and coordination of other projects. The Owner must have appropriate staff attend this workshop.

Subtask 2.4 - Preliminary Engineering Report

Engineer will provide to the Owner a Preliminary Engineering Report (PER) that summarizes data from the workshops, site visits, and evaluations performed. The PER will contain sections for automation, HVAC, and Electrical. The report will include existing condition assessments from each discipline and proposed modifications based on this scope of services. The PER will also contain a preliminary opinion of probably construction cost (OPCC) so that the Owner can confirm the requested upgrades are within their budgetary limitations.

One PER review meeting with the Owner and Program Manager is included in the budget for this task. The Engineer will address comments provided by the Owner and Program Manager prior to finalizing the document. The final PER will be uploaded to SharePoint and up to three hard copies will be delivered to the Owner.

Task 2 Assumptions

- Subtasks 2.1, 2.2, and 2.3 can be scheduled to occur during the same week.

Task 3 - Finalize Design Drawings and Specifications

The Engineer will prepare complete and coordinated sets of design drawings and technical specifications with an adequate level of detail to allow bidding and construction by a construction contractor. The drawings will be segregated by major engineering disciplines. A preliminary list of anticipated design drawings is provided in Table 1.

Technical specifications will be prepared in the 2011 Construction Specifications Institute (CSI) Spec-Text format. A preliminary list of anticipated technical specifications is provided in Table 2. Engineer will use utilize the Consent Decree Program standardized Front End Specifications (Divisions 0 and 1) and will revise as necessary to complete the contract documents.

The Engineer will prepare a 60% design submittal for Owner and Program Manager review. Engineer will then facilitate a review meeting workshop to present the 60% design and receive comments from the Owner and Program Manager. Engineer will also prepare a 90% submittal for Owner and Program Manager review and facilitate a final design review meeting workshop. Final comments and details will be provided in a final set of plans and specifications. The OPCC will be updated at the 90% submittal.

Task 3 Assumptions

A. The entire project will be delivered as a single, conventional design-bid-build project with one construction contract. Provision of an integrator will be part of the construction contract, and the Engineer's associated specification will identify up to three integrators that can be contracted with for this project.

B. Up to three hard copy sets of full-size drawings and specifications along with a downloadable link to PDF files will be delivered to the Owner for each submittal. Files will also be uploaded to the Consent Decree Program SharePoint site.



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- C. One round of review comments for both the 60% and 90% design submittals.

- D. Additional drawings and specifications not shown in Table 1 and Table 2 will be provided, as needed, for the contract documents at no additional cost to the Owner provided that the scope of the project has not changed.

- E. Permitting of this project with the Tennessee Department of Environment and Conservation will not be necessary. Any other permits (e.g., building permit) will be the responsibility of the construction contractor.

- F. Based on a preliminary evaluation by the Engineer, the control room building will not require a fire suppression system. This will be confirmed during the Site Evaluation. Design of fire suppression system is not included in the Engineer's costs.

- G. The Engineer will address any accessibility requirements for the control room space but will not be reviewing or modifying accessibility issues (e.g., Americans with Disabilities Act (ADA) compliance) outside of the control room space.

- H. Up to 10 new graphic screens, to be identified by the Owner, will be incorporated into the design.

- I. Up to three large screen monitors to be incorporated in the design, or a single wall console. This will be discussed and decided upon during the SCADA workshop.

Table 1 - Preliminary List of Anticipated Drawings

- A-1 Abbreviations, Symbols, General Notes, Building Code Key Determinations and Life Safety Plan
- A-2 Control Room Demolition and Construction Floor Plans
- A-3 Control Room Demolition and Construction Reflected Ceiling Plans
- A-4 Control Room Schedules and Details
- H-1 HVAC Symbols and Abbreviations
- H-2 Demo Control Room HVAC Plan
- H-3 Mod Control Room HVAC Plan
- HD-1 HVAC Schedules and Details
- E-1 Electrical Symbols and Abbreviations I
- E-2 Electrical Symbols and Abbreviations II
- E-3 Power and Data Riser Diagrams
- E-4 Control Room Power Plan
- E-5 Control Room Lighting Plan
- E-6 Lighting Fixture and Panelboard Schedules
- E-7 Electrical Details
- I-1 Instrumentation Symbols
- I-2 Instrumentation Legend
- I-3 System Architecture Drawing
- I-4 Details

Table 2 - Preliminary List of Anticipated Specifications

- 06100 Rough Carpentry
- 07900 Joint Sealants
- 08110 Hollow Metal Door and Window Frames
- 08710 Finish Hardware



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08800 Glazing
09250 Gypsum Wallboard Systems
09510 Acoustical Panel Ceiling
09680 Carpeting
09902 Painting
10270 Access Flooring
10520 Fire Protection Specialties
12565 Control Room System Furniture
13300 Process Instrumentation and Controls - General Provisions
13305 Application Engineering Services
15500 HVAC
15600 Testing, Balancing, and Adjusting
16020 General Electrical Materials and Requirements
16500 Lighting Fixtures and Systems

Task 4 - Bid Phase Services

The Engineer will assist the Owner and Program Manager in bidding the project and executing a contract with the selected contractor. Engineer's scope of services for this task includes:

1. Preparing an Advertisement for Bids
2. Providing bid documents electronically on up to 20 thumb drives
3. Answering contractor questions and preparing addenda as required
4. Participating in the Bid Opening
5. Preparing a certified Bid Tabulation
6. Evaluating bids and making a recommendation of award
7. Participating in the authority to award process
8. Preparing conformed design documents
9. Preparing contract documents for execution
10. Printing and delivering up to 11 sets of conformed documents

Task 4 Assumptions

- A. The City will maintain the Plan Holders List.
- B. The project will not be subject to the State Revolving Fund Loan Program.

Task 5 - Construction Phase Services

This task covers general construction administration, inclusive of monitoring construction progress, reviewing and processing contractor pay requests, and document management. Signed pay requests will be delivered to the Program Manager.

The Engineer will review and approve shop drawings, and will maintain a shop drawing log. The Engineer will also respond to contractor requests for information (RFIs). As necessary, the Engineer will prepare supplemental drawings, specifications, and/or instructions to interpret the contract plans and documents and to resolve changes brought about by actual field conditions observed. This task also includes reviewing contractor change orders and providing the Owner and Program Manager with recommendations regarding change orders.

As part of this task, the Engineer will also evaluate the contractor's proposed construction sequence and assist the Owner in coordinating any electrical, HVAC, or facility shutdowns needed during



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construction.

At least one representative from the Engineer will participate in the following:

1. Pre-construction kickoff meeting
2. Monthly progress meetings during construction

This task does not include construction inspections or testing oversight. These services are provided under supplemental services Task 6.

The Engineer will prepare and submit hard copy (up to three copies) and/or electronic record drawings in the format (e.g., CAD, pdf, etc.) requested by the Owner and Program Manager. The Engineer will also prepare project closeout documentation in accordance with Consent Decree Program Requirements.

Task 5 Assumptions

- Engineer's budget for this task is based on a construction duration of up to 6 months.

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:
Task 6 - Resident Project Representative (RPR)

As this project has some tasks that require specific and unique qualifications, the Engineer will provide the services of technical staff from different disciplines on a periodic basis during construction activities and for substantial completion certification. An RPR will not be on site full time. During construction, it is anticipated that technical staff will be on site for the following activities:

- Initial stage of control room demolition (anticipate 3 days on site)
- Initial stage of console installation (anticipate 2 days on site)
- Initial stage of wall installation(s) (anticipate 2 days on site)
- Computer upgrade activities, hardware and software (anticipate 3 days on site)
- Initial stage of power modifications (anticipate 2 days on site)
- Interim review during construction (3 visits, 1 day each)
- Functional field testing (anticipate 2 days on site)



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- Site acceptance testing (anticipated 2 days on site)
- Review of final installation for certification (anticipate two visits 1 day each)

Task 7 - Additional Services

This task has been established to cover additional services that may arise and are not otherwise covered by the scope of work detailed in Tasks 1 through 6. Examples of additional services include design for items later added to the scope of work, unexpected permit requirements, and extended construction durations. CDM Smith will not bill any costs against this task without first documenting the need for additional services, including scope and estimated costs, and obtaining approval from the Owner.

3. REIMBURSABLE EXPENSES:

Project specific reimbursable expenses and charges shall include the following:

Travel to / from non-local offices, supplies related to project execution, equipment rental, prints (including full-size hard copy drawings), and subcontractors. Auto mileage will be billed in accordance with current U.S. Internal Revenue Service rates.



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ATTACHMENT B

Owner: City of Chattanooga, Tennessee

Engineer: CDM Smith Inc.
Project Number & Name: W-15-009-101
MBWWTP Control Room Upgrades

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, for a cost not to exceed \$246,600, billed in accordance with the hourly rates shown in Attachment F. Payments shall be made monthly in amounts which are consistent with the amount of engineering services provided, as determined by the Engineer.

Task 1: Data Gathering and Project Management	\$19,000
Task 2: Preliminary Engineering Report	\$51,900
Task 3: Finalize Design Drawings and Specifications	\$91,800
Task 4: Bid Phase Services	\$14,800
Task 5: Construction Phase Services	\$69,100

Subtotal \$246,600

- 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.

Task 6: Resident Project Representative	\$38,300
Task 7: Additional Services	\$25,000

Subtotal \$63,300

Grand Total \$309,900

- 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% for subcontractors and 0% for all other reimbursable charges. 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



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expenses which records shall be available for inspection at all reasonable times.

7. Invoices shall be submitted using the Standard Invoice form, Attachment G.



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ATTACHMENT C

Owner: City of Chattanooga, Tennessee

Engineer: **CDM Smith Inc.**
Project Number & Name: **W-15-009-101**
MBWWTP Control Room Upgrades

OWNER'S RESPONSIBILITIES

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

1. The Owner will provide the Engineer copies of all current and necessary permits and approvals from all federal, state and local regulatory agencies. These include air quality, water quality, storm water quality, solid waste, special wastes, and other regulatory permits that may be required.
2. The Owner will provide Engineer access to all of available NPDES reports as required.
3. The Owner will coordinate and facilitate meetings or the exchange of information between any other interested parties that may also prospectively participate in the project as required.
4. The Owner will coordinate for the Engineer the acquisition of future population and employment figures from regional planning institutions as required for the project as required.
5. The Owner will provide the Engineer copies of all available sewer reports related to sewer facility planning as required.
6. The Owner will provide access to the system wide hydraulic model outputs as required.
7. The Owner will provide the Engineer the most up-to-date GIS data available for all sewer system components as required.
8. The Owner will provide the Engineer access to all its pump station and CSOTF sites as required.
9. The Owner will provide Engineer access to all available plans and specifications for the facilities as required.
10. The Owner will provide the Engineer with documentation of existing O&M procedures related to the operation of the treatment works that may be relative to the project as required.
11. The Owner will provide the Engineer with documentation of existing standards and procedures related to the sewer system development and expansion as required.
12. The Owner will provide the Engineer with documentation of existing standards and procedures related to the treatment works as required.
13. The Owner will arrange for facilities for the Engineer and attend public information meetings as



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required. The Owner will prepare and mail invitations for public information meetings as required. The Owner and the Engineer will conduct monthly project progress meetings as required.

14. The Owner will designate a project representative to be the liaison between the Engineer and the Owner on the project.
15. 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.



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ATTACHMENT D

Owner: Owner of Chattanooga, Tennessee

Engineer: CDM Smith Inc.
Project Number & Name: W-15-009-101
MBWWTP Control Room Upgrades

SUPPLEMENTAL AGREEMENTS

A. Engineers Responsibilities:

1. During Contract negotiation, the Engineer shall describe in detail its overall approach that will be used by its Engineer's Project Team to perform the scope of work described herein for the development of the project for the Owner.
2. The Engineer shall provide all labor, benefits, equipment, materials, fuel, utilities, insurance, out-of-pocket expenses, and other related services required in connection with development of the project.
3. The Engineer shall obtain all necessary permits and approvals from all federal, state, and local regulatory agencies related to development of the project as required. Furnish copies of all required permits and approvals to the Owner.
4. The Engineer shall provide and submit reports and certifications as required by all applicable EPA and/or State regulations of development of the project as required. Furnish a copy of all required reports to the Owner in a timely manner.
5. The Engineer shall coordinate its work with the operating schedule of the Owner as required.
6. The Engineer shall conduct the work for the development of the project in compliance with all applicable federal, state, and local laws, regulations, permits, and approvals.
7. The Engineer shall provide adequate supervision and technical and managerial oversight of the Engineer's employees, subcontractors, and agents
8. The Engineer shall support and utilize the Owner's Standard Operating Procedures developed for the Consent Decree (CD) Program. Specifically, the design of each project shall comply with CADD standards, standardized specifications, or approved design guidelines, cost estimating guidelines, and materials and functional layout and operation of equipment and systems as required.
9. The Engineer shall administer the project to comply with the scheduling goals established by the Program Manager (PM) to ensure that the CD milestones are being met. The Engineer shall timely report project information as prescribed by the PM.
10. The Engineer shall prepare an initial and minimum monthly update to its project schedule; updates can be more frequent or as significant activities change.



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11. The Engineer shall prepare, implement and execute a project quality management plan which complies with quality program guidelines and requirements and goals to be established by the PM, and the Engineer's own internal quality procedures/program requirements. The Engineer shall be fully responsible for the quality of their work products and associated quality assurance and quality control activities.
12. The Engineer shall prepare, implement and execute a written project safety management plan which following the Engineer's own internal safety procedures/program requirements and which will also reflect the goals of the safety program to be established by the PM for the CD program project.
13. The Engineer shall provide all documents in a timely manner and format prescribed by the PM to support a document management/imaging repository. All documents shall be maintained in this manner for general and financial record keeping, contract compliance, claims and litigation, warranty issues, and related purposes.
14. The Engineer may assist the PM in reviewing the preliminary project budget and provide recommendations relative to project updates for design, construction contract administration and inspection, contracting costs, and industry appropriate level of contingency as required. The Engineer shall assist the PM in coordinating the program budget with the plan schedule in order to ensure compliance with the CD needs and constraints regarding the overall budget as required. Engineer shall maintain and input pertinent information to account for all costs of the project in a form and manner prescribed by the PM as required.
15. The Engineer shall assist the PM with the preparation of project progress reports as required. Reports shall include, but not be limited to, all reports required to satisfy requirements of the CD.
16. The Engineer may be asked to provide technical support to the CD Public Relations Plan.
17. The Engineer shall utilize the Owner's standardized Division 00 and 01 specifications as in developing project specific specifications- In addition the PM will provide to the Engineer certain technical specifications, details and minimum design guidelines intended to provide consistency across the design deliverables from various Engineers on similar types of work as required.
18. The Engineer shall submit all Requests for Information (RFIs) and change order for their professional services agreement to the PM first for approval.
19. The Engineer shall submit all pay requests/invoices to PM first for approval.
20. Engineer shall identify any and all permits during the first month of project activity from Notice to Proceed (NTP). Likely easements and permanent real estate acquisitions shall be identified with special purpose survey exhibits depicting areas needed based on a schedule to be developed by the Engineer within the first month of project activity from NTP.
21. The PM may conduct monthly progress meetings, value engineering (VE) reviews and constructability review as required and include Owner and PM staff as needed.



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B. 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.

No supplemental terms



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ATTACHMENT E

Owner: Owner of Chattanooga, Tennessee

Engineer: CDM Smith Inc.
Project Number & Name: W-15-009-101
MBWWTP Control Room Upgrades

PROJECT SCHEDULE

Owner and Engineer recognize that time is of the essence of the Agreement and that Owner may suffer financial loss if the work is not completed within the times stipulated herein, plus any extensions thereof. Accordingly, Engineer will develop for this Agreement a preliminary schedule based on the schedule requirements specified in the Specific Scope of Work for this project and either provide it below or as Attachment E1.

A detailed schedule (project schedule) will be required as one of the Project Management deliverables as specified in the Specific Scope of Work for this project once the Agreement is executed. The Engineer will produce the project schedule using industry accepted scheduling software approved by the Owner.

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.

1: Data Gathering and Project Management

- Project Management Plan and Data Gathering within one month of notice-to-proceed (NTP)
- Project Management throughout the life of the project

2: Preliminary Engineering Report

- Subtasks 2.1, 2.2, and 2.3 will occur during the same week and within three weeks of NTP.
- Subtask 2.4 (Draft PER and OPCC) within five weeks of completion of the workshops
- Owner PER review, review meeting, and report revision within three weeks of draft PER submittal

3: Design Drawings and Specifications

- 60% design submittal within 10 weeks of finalization of the Preliminary Engineering Report
- Owner review and review meeting within three weeks of 60% design submittal
- 90% design submittal within five weeks after completion of the 60% design review meeting and receipt of comments from the Owner and Program Manager
- Owner review and review meeting within three weeks of 90% design submittal
- Final design documents within three weeks after completion of the final design review meeting and receipt of comments from the Owner and Program Manager

4: Bid Phase Services

- Bid documents and advertisement estimated to last two weeks
- Contractor bid preparation estimated to last four weeks
- Bid evaluation and contracting estimated to last three weeks

5: Construction Phase Services

- Submittals and procurement estimated to last 10 weeks



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- On site construction estimated to last 12 weeks
- Final closeout estimated to last three weeks

Total estimated duration is 69 weeks, or 16 months.

Notes and Assumptions:

A. Owner and Program Manager reviews and review meetings can be completed within three weeks of submittal of respective document by Engineer.



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ATTACHMENT F

Owner: Owner of Chattanooga, Tennessee

Engineer: CDM Smith Inc.
Project Number & Name: W-15-009-101
MBWWTP Control Room Upgrades

RATE SCHEDULE

Vice President or Technical Advisor (Grade 9, 10)	\$200
Associate	\$185
Principal	\$165
Senior Professional	
Grade 8	\$175
Grade 7	\$160
Grade 6	\$150
Grade 5	\$140
Grade 4	\$130
Junior Professional	
Grade 3	\$115
Grade 2	\$100
CAD	\$90
Clerical	\$75
Contract Administrator	\$80



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ATTACHMENT G

Consultant Header or Logo

STANDARD INVOICE

☐ Indicates MANDATORY Item

Company Name
 Company Street Address 1
 Company Street Address 2
 City, State Zip
 Ph: 000.000.0000 Fax: 000.000.0000

ATTN: City Project Manager

RE: Project Name

CODE: Consultant Project Number

CI: City Project Number (i.e. W-00-000-000)

City Project Manager
 City Project Manager Title
 City of Chattanooga
 C/O Jacobs Engineering
 4510 Turntable Road
 Suite 201
 Chattanooga, TN 37421

Provided by City

Invoice must show Billing Period.

Invoice Date: 00-AAA-00

Invoice No:

Must be Sequential Number

Remit to:
 Company Name
 Company Street Address 1
 Company Street Address 2
 City, State Zip

For Professional Services from _____ through _____

This breakdown must list each item of the Contract.

Task no.	Description	Fee	Fee Basis	% Complete To Date	Amount Billed To Date	Previously Billed	This Invoice Amount
Task 1	Data Gathering and Project Management	\$ 1,000.00	CPM	00.00%	\$ 600.00	\$ 500.00	\$ 100.00
Task 2	Design		CPM	#DIV/0!	\$ -		
Task 3	Bid		CPM	#DIV/0!	\$ -		
Task 4	Construction Administration		CPM	#DIV/0!	\$ -		
Task 5	Survey		CPM	#DIV/0!	\$ -		
Task 6	Permitting/Easement		CPM	#DIV/0!	\$ -		
Task 7	RPR		CPM	#DIV/0!	\$ -		
Task 8	Additional Services		CPM	#DIV/0!	\$ -		
Total Contract Amount		\$ 1,000.00		00.00%	\$ 600.00	\$ 500.00	
TOTAL THIS INVOICE							\$ 100.00

Must Match Contract Amount

Prior Invoices	\$ 500.00
This Invoice	\$ 100.00
Payments	\$ -
Balance on Account	\$ 600.00

NOTE:

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

Project Manager, Your Company

Date

Mike Marino P.E., Program Manager, Jacobs

Date

City Project Manager, City Project Manager Title

Date



SOP 2003-9
Date of Issue 10-16-03
Rev. 11-13-12

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