

RESOLUTION NO. 28907

A RESOLUTION AUTHORIZING THE ADMINISTRATOR FOR THE DEPARTMENT OF PUBLIC WORKS TO ENTER INTO AN AGREEMENT WITH HDR ENGINEERING, INC. FOR PROFESSIONAL SERVICES RELATIVE TO CONTRACT NO. W-16-017-101, MBWWTP SOLIDS PROCESS OPTIMIZATION IMPLEMENTATION – PHASE 2 THICKNER UPGRADES, A NON-CONSENT DECREE PROJECT, FOR AN AMOUNT NOT TO EXCEED SIX HUNDRED EIGHT THOUSAND EIGHT HUNDRED FORTY-SEVEN DOLLARS (\$608,847.00).

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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 HDR Engineering, Inc. for professional services relative to Contract No. W-16-017-101, MBWWTP Solids Process Optimization Implementation – Phase 2 Thickner Upgrades, a Non-Consent Decree Project, for an amount not to exceed \$608,847.00.

ADOPTED: January 24, 2017

/mem



**CITY OF CHATTANOOGA**  
STANDARD AGREEMENT FOR ENGINEERING SERVICES

SOP 2003-9  
Date of Issue 10-16-03  
Rev. 12-07-16

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

HDR Engineering, Inc.,

Hereinafter called Engineer.

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

W-16-017-101 MBWWTP Solids Process Optimization Implementation - Phase 2 Thickener 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 \_\_\_\_\_.
2. **GOVERNING LAW**  
This Agreement shall be governed by the laws of the State of Tennessee and the codes of the City of Chattanooga.
3. **SERVICES TO BE PERFORMED BY ENGINEER**  
Engineer shall perform the Services described in Attachment A, Scope of Services, in accordance with applicable sections of the City of Chattanooga Design and Construction Standards in effect on the date of this agreement.
4. **COMPENSATION**  
Owner shall pay Engineer in accordance with the Attachment B, Compensation.
5. **OWNER'S RESPONSIBILITIES**  
Owner shall be responsible for all matters described in Attachment C, Owner's Responsibilities.
6. **SUPPLEMENTAL AGREEMENTS**  
The provisions set forth in Attachment D, Supplemental Agreements, shall be incorporated into this Agreement
7. **PROJECT SCHEDULE**  
The provisions set forth in the Attachment E, Project Schedule, shall be incorporated into this Agreement.
8. **RATE SCHEDULE**  
The Engineer shall provide a schedule of standard hourly rates for all employees to be used in the performance of all contracts with a cost-not-to-exceed basis. This schedule shall be incorporated into the agreement as Attachment F.
9. **INVOICING**  
The Engineer will use the format established in Attachment G, Standard Invoice, for all invoices submitted for services on the Project.



10. STANDARD OF CARE

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

11. INDEMNIFICATION

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

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

12. INSURANCE

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

- a. Commercial General Liability Insurance, with a limit of \$1,000,000 for each occurrence and \$2,000,000 in the general aggregate.
- b. Automobile Liability Insurance, with a limit of \$1,000,000 for each accident, combined single limit for bodily injury and property damage.
- c.
- 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

Engineer shall not be responsible for: (1) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project, (2) the failure of



any contractor, subcontractor, vendor, or other Project participant, not under contract to Engineer, to fulfill contractual responsibilities to the Owner or to comply with federal, state or local laws, regulations, and codes; or (3) procuring permits, certificates, and licenses required for any construction unless such responsibilities are specifically assigned to Engineer in Attachment A, Scope of Services.

14. OPINIONS OF COST AND SCHEDULE

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

15. REUSE OF DOCUMENTS

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

16. OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY

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

17. RECORDS RETENTION AND AUDIT PROVISION

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

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



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- 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



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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:** HDR Engineering, Inc., Justin Bolender, P.E.  
1201 Market Street, Suite C, Chattanooga, TN  
Office: (423) 414-3559, Fax: (423) 414-3555, justin.bolender@hdrinc.com

**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.



**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.



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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.

*B. R. El* 1/9/17  
HDR Engineering, Inc. Date

\_\_\_\_\_  
Administrator of Public Works Date

*Justin B. Cole* 1/9/17  
HDR Engineering, Inc. Date

\_\_\_\_\_  
Director of Purchasing Date

Reviewed by City Attorney Office \_\_\_\_\_  
Initial Date





**ATTACHMENT A**

Owner: City of Chattanooga, Tennessee

Engineer: HDR Engineering, Inc.  
Project Number & Name: W-16-017-101  
MBWWTP Solids Process Optimization Implementation -  
Phase 2 Thickener Upgrades

**SCOPE OF SERVICES**

**1. BASIC SERVICES**

The project is specifically defined as:

The City of Chattanooga (City) is implementing a multi-phase project to improve the solids processing capabilities at its Moccasin Bend Wastewater Treatment Plant (MBWWTP). The project addresses proposed improvements to the Gravity Thickener facility, as originally presented in the City's RFQ dated September 20, 2016 and confirmed in the Scope and Fee packet provided to HDR in December 2016.

The Engineer agrees to provide the following services:

**Task 1 – Data Gathering and Project Management**

A. Project Management Planning Documents: HDR will prepare project management planning documents in accordance with City and HDR requirements. The following plans will be prepared:

- a. Project Management Plan: This plan will describe procedures and standards for execution of the project.
- b. Project Quality Management Plan: This plan will define procedures for quality control reviews and execution.
- c. Project Safety Plan: The plan will include a complete safety plan for all HDR employees working on this project in HDR's offices and on-site at Moccasin Bend. The City's safety procedures will be incorporated into the plan.

Plans will be discussed at the kickoff meeting and submitted to the City for their review. HDR will incorporate City's comments, finalize, and resubmit to the City for its records.

B. Project Schedule: HDR has prepared a project schedule that meets the goals of the Program Manager's Capital Improvement Program (CIP) schedule for the project, see Attachment E1. The schedule follows the tasks and subtasks as described in the Scope of Services and is prepared in MicroSoft Excel digital format. The schedule will be updated monthly and submitted with each invoice. Meeting the required State Revolving Fund (SRF) Submittal date of April 30, 2017 is of paramount importance and HDR is committed to meeting this schedule. It is understood the City is dually committed to this schedule and will meet the deadlines for review comments and attend required meetings.

C. Meetings: HDR will administer project meetings throughout the course of the project to



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communicate project information, report on project status, receive City comments, and provide opportunities for communication between all project participants. Other than the Kickoff Meeting, all meetings are identified under the design and construction tasks.

D. Kickoff Meeting/Teleconference: HDR will administer the project kickoff meeting/teleconference. This meeting will include all project participants and will serve as the project introduction. This meeting will be held at a mutually agreeable time and place established by the parties. Meeting minutes will be prepared and distributed.

E. Monthly Invoices and Progress Reports: HDR will submit monthly invoices, with progress reports and schedule updates, to the Program Manager (PM).

- a. Invoices: Invoices will be submitted in the City's format.
- b. Progress Reports will provide the following:
  - i. Activities completed in the time period
  - ii. Activities planned for next period
  - iii. Budget Status
  - iv. Schedule Status
  - v. Project Issues/Action Items

F. Data Gathering: HDR will coordinate with the PM and the City to obtain all relevant existing plant information. This data will include, but may not be limited to, the following:

- a. Existing Plans and Specifications – Record Copies in PDF or AutoCAD format as available.
- b. Operations and Maintenance Data on equipment
- c. Sludge composition data
- d. Existing flow data
- e. Planning data; specifically, projected flow rates into and out of the thickeners and data on projected future projects that may impact the thickener work areas.
- f. History of Grit/Rags/Floatables in the Primary Thickeners
- g. Current plant permits applicable to the thickeners

**Task 2 – Preliminary Engineering Report (PER)**

**A. PER Report Preparation:**

a. Initial Site Visit, Post Site Visit Meeting and Additional Data Requests: The HDR team, in cooperation with plant staff, will inspect the site on a one-day site visit. During this site visit, one primary sludge thickener and one secondary sludge thickener will be out of service to allow for inspection of the tank interior. After the inspection, the team will meet with plant staff to discuss questions generated by the inspection and request additional data as needed.

B. Develop Design Criteria for all Improvements: The team will generate a list of design criteria for the project and submit to the City for review as a separate deliverable. The list will be updated based on City comments and will be incorporated into the draft PER.

C. Analyze Alternatives and Develop Report: Once the design criteria are set, alternatives will be analyzed and the report will be written. The alternatives will be reviewed based on the design criteria per each discipline. Factors to be considered include, but are not limited to, the following:

- a. Maintenance of Plant Operations (MOPO) / transition during construction
- b. Future needs through the length of the planning period.



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- c. Operational and maintenance requirements, including operating schedules
- d. Coordination with other projects, either ongoing during construction or future projects

D. As part of the PER, the recommended alternatives, selected improvements, replacements in-kind, and other work of the job will be designed to a 30% level of design. Elements of the submittal will include:

- a. Plan and critical section views of equipment and structures
- b. Process flow schematics
- c. Process and instrumentation diagrams
- d. Electrical one-line diagrams
- e. Key construction details
- f. Specification Table of Contents
- g. The City's Division 0 and Division 1 Specifications, annotated to make them project-specific
- h. Preliminary Opinion of Construction Cost.

E. Draft PER Submission, City Review, and Final PER: The draft PER / 30% design package will be submitted to the City for review. A PER review meeting will be held one week after submission. The purpose of the review meeting is to discuss comments generated by the City, with a focus on comments that may affect the project direction, scope or schedule. HDR will collate review comments and any comments generated by red-line review or at the review meeting, provide formal responses to those comments and update the design documents to reflect the comment responses.

F. Scope of Study for the Thickener System: Per the RFQ and the Scope and Fee Packet, the limits of the study items for this project are as follows:

- a. Thickener Pump Stations 1 and 2: Each station will be reviewed by the HDR design team during the initial site visit. This includes the PM, deputy PM, and the process, structural, architectural, HVAC and electrical/controls team leads. The PER will include a report of findings based on this inspection.
  - i. No. 1 Thickener PS minimum expected improvements include structural, pumps and controls, and grinders.
  - ii. No. 2 Thickener PS minimum expected improvements include structural, pumps, roof repair, electrical and controls.
- b. Solids transmission system to digesters: HDR will review the solids transmission system with the intent of finding ways to improve the efficiency of moving the solids to the digesters or the solids holding tank. A report of findings will be prepared. Elements of the system that could improve efficiency include the following:
  - i. Pump efficiency
  - ii. Valve type and impact on pumping head
  - iii. Pipe routing and impact on pumping head
  - iv. Pipe internal linings and impact on pumping head
  - v. Digester distribution piping and discharge point and impact on pumping head
- c. Thickener tank inspection, for structural integrity: HDR will review all visible portions of the thickener tanks for the current condition of the concrete structure and any structural support elements of the tank walkways, piping and equipment. Due to the compressed project schedule and the need to maintain plant operations, it is assumed that only two (2) tanks – one of the two primary thickeners and one of the three secondary thickeners – will be taken out of service, drained, and made available for inspection. A report of findings will be



provided, which will include an assumed repair plan for the thickeners that could not be inspected, based on the condition of the tanks that were inspected.

- d. Thickener equipment inspection, for rehabilitation or replacement: HDR will review all visible portions of the in-tank thickener equipment, and will discuss operating history with plant staff, to make a determination of the equipment's current condition. Due to the compressed project schedule and the need to maintain plant operations, it is assumed that only two (2) tanks – one of the two primary thickeners and one of the three secondary thickeners – will be taken out of service, drained, and made available for inspection, so submerged equipment in three of the tanks will not be inspected. A report of findings will be provided, which will include an assumed repair plan for the submerged thickener equipment, based on the condition of the equipment that was inspected. Minimum expected improvements include:
  - i. Replacement of scum collection equipment (brushes and cleaning mechanisms) on all thickeners.
  - ii. Replacement of rake motors and gearboxes on thickeners 3, 4 and 5.
- e. Thickener inlet piping modifications: The inlet piping from the clarifiers is currently separated – primary sludge can only go into thickeners 1 and 2 and secondary sludge can only go into thickeners 3, 4 and 5. This piping/valving shall be modified to allow for primary and secondary sludge to be routed to any of the thickeners. The existing piping/valving arrangement will be evaluated and discussed with plant staff, and a proposed modification plan will be prepared, as part of the PER.
- f. Thickener Tank Covers for Odor Control: HDR will study the concept of covering the thickeners for the purpose of odor control. Cover alternatives for existing circular tanks will be reviewed, and a recommendation will be made as to what cover is the best alternative for the City. The odor control alternatives of (1) providing no initial odor control system (but providing connections in the covers for future equipment) until the impact of covering the tanks can be assessed, (2) providing HVAC equipment to evacuate the air from under the cover and providing an odor treatment system (chemical scrubber, biofilter, or other) will be evaluated.

### Task 3 – Finalize Design Documents

Due to the SRF Loan application schedule driver, HDR's detailed design work will begin immediately upon submission of the draft PER.

A. Use of City-Provided Information: Drawings will conform to the City's AutoCAD standards (2009 or later), will be referenced to Tennessee State Plane coordinates, and will use AIA standard pen tables for line widths. Concerning specifications, the City's Division 0 and Division 1 standards will be used for the project, as modified to make them project-specific. While annotated specifications will be delivered to the City as part of the draft PER submittal, it is recognized that these specifications are living documents and that the City may modify them during the detailed design phase. HDR will confirm that the Division 0 and 1 specifications provided with this package reflect the standards as they are prior to bidding the project; this confirmation will be made between the time the package is submitted to Tennessee Department of Environment and Conservation (TDEC) for approval and the time the project is released for bidding purposes.

B. 60% Design Workshop: To maintain the project schedule, HDR will administer a 60% design workshop in lieu of a formal 60% submittal. The design workshop will include a presentation that walks the City through design drawings and specifications for each discipline. Outstanding issues



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will be discussed, including any unresolved issues with City Division 0 and 1 documents. HDR QA/QC efforts to date will be discussed. A project schedule update will be presented. HDR will receive any City comments at the workshop, but will also leave hard copies of drawings and specifications with the City for their review. The City will provide comments to HDR one week after the workshop, and HDR will address all comments. HDR will continue with design while the City reviews the 60% package.

C. 90% Design and SRF Submittal: HDR will submit a 90% complete document package to the City for review and for submittal to SRF by April 30, 2017. The intent of this submittal is to have the design work substantially complete, including the following:

- a. All plan and section views drawn, with minor detailing required to reach completion
- b. 90% of details will be completed and the remainder of the details will be identified
- c. Each set of discipline drawings – Process, structural, electrical, instrumentation, HVAC and architectural – will be coordinated and QA/QC'd to identify where remaining interdisciplinary coordination is required.
- d. Full Specification Manual
- e. 60% comments and internal QA/QC will be addressed.
- f. Opinion of Construction Cost: Costs will be based on quantity takeoffs from the drawings, equipment quotes from vendors, and unit costs from HDR's construction estimating group. Contingency will be reduced to a minimal percentage.
- g. The required number of stamped (front cover only) full size hard copy sets will be provided for submittal to SRF.

D. 90% Review Meeting: The 90% review meeting will be held after SRF review and approval. If requested by the City, HDR will discuss the results of HDR's internal QA/QC review. HDR will provide meeting minutes.

E. Bid Document Submittal: HDR will incorporate all 90% comments and provide final design documents ready for bidding. This package will incorporate comments generated from the HDR internal 90% QA/QC review, comments received from the City and SRF. The full specifications manual and a bid schedule will be included. The final cost opinion will be refined from the the 90% estimate.

- a. Bid documents will be submitted to City Purchasing in digital PDF on up to 15 USB drives. No hard copy sets are included.

F. Permitting: On behalf of the City, HDR will apply for permits to TDEC and the City's Building Department. HDR will complete the application forms, submit the applications (along with any supporting information such as the PER, the contract documents or permit-specific drawings), respond to comments generated by the reviewing agencies, and update the contract documents such that permit approval can be achieved. Permit fees will be the responsibility of the City.

G. Scope of Design for the Thickener System: The Scope of HDR's design for the thickener system includes the following work:

- a. Improvements to Thickener Pump Station 1 as approved in the PER: HDR will perform the following design work associated with improvements in Thickener Pump Station 1:
  - i. Process Mechanical – Pump rehabilitation, grinder replacement
  - ii. Mechanical/HVAC – Airflow equipment to meet the requirements of the space (heating, cooling, exhaust fans as necessary to meet Code requirements of the space)



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- iii. Structural – wall and floor repair (crack sealing), equipment pads for grinders and new electrical equipment, pipe supports
  - iv. Architectural – No work in this building
  - v. Electrical system upgrades as required to meet the needs of the new or rehabilitated equipment (process mechanical and HVAC).
  - vi. Instrumentation upgrades to meet the needs of the new equipment and the current plant SCADA inputs.
- b. Improvements to thickener pump stations 2 as approved in the PER: HDR will perform the following design work associated with improvements in Thickener Pump Station 2:
- i. Process Mechanical – Pump replacement, grinder installation, piping and valve replacement to meet the needs of the new pumps and grinders
  - ii. Mechanical/HVAC – Airflow equipment to meet the requirements of the space (heating, cooling, exhaust fans as necessary to meet Code requirements of the space)
  - iii. Structural – wall and floor repair (crack sealing), equipment pads for pumps, grinders and new electrical equipment, pipe supports, sump repairs, wall penetration details.
  - iv. Architectural – new roof, windows, doors
  - v. Electrical system upgrades as required to meet the needs of the new or rehabilitated equipment (process mechanical and HVAC). New lighting.
  - vi. Instrumentation upgrades to meet the needs of the new equipment and the current plant Supervisory Control and Data Acquisition (SCADA) inputs.
- c. Yard Piping Improvements: HDR will design the yard piping improvements as noted in the PER for the following pipe locations:
- i. Pipe between thickeners and digesters: To improve efficiency of pumping sludge from the thickeners to the digesters or the sludge holding tank, pipe reconfiguration and valve replacement as approved in the PER.
  - ii. Thickener feed piping will be reconfigured to allow sludge from primary clarifier pump station and secondary clarifier pump station to be transported to any of the thickeners. Add valves, piping, vaults, etc. to accommodate this action.
- d. Structural repair for the thickener tanks: HDR will design structural improvements for the thickener tanks. The work described herein is based on inspection of two tanks – one primary thickener and one secondary thickener. The level of effort for all five tanks will be based on the assumption that the condition of the inspected tanks is typical of all tanks. If one of the uninspected tanks is drained and it is found that major repair is required, this would be additional work during construction and handled appropriately. Also, if rake arm repair is required, this is not included under this work item; it is under the “thickener equipment repair and upgrade” item because the repair detail will be provided by the equipment manufacturer.
- i. Concrete crack repair. A performance specification will be created to provide direction to the contractor defining the size of crack that requires repair and how to fix cracks of varying size that exceed the minimum crack size for repair.
  - ii. Floor resurfacing. Drawings and specifications will be provided to define how the thickener floor will be resurfaced, if it is needed.
  - iii. Repair of structural connections in the tank: Details and specifications will be included to define how to repair structural connections. This includes any type of structural connection that is damaged including steel to steel, aluminum to steel, aluminum to concrete, steel to concrete, etc. For bidding purposes, the percentage of connections of each type that require repair in the two inspected basins will be assumed for all 5 basins. If the uninspected basin connections require a greater percentage of repair, this would be additional work for the contractor, so a unit price line item for each repair type will be included in the Bid Form to hold the contractor to a firm cost for additional work.
  - iv. Sealing of Tank Penetrations. Details would be provided to define how to seal pipe



- penetrations through the tank wall.
- e. Thickener Equipment Repair and Upgrade: HDR will design the following improvements to the gravity thickeners. Details and specifications will be provided to define the work.
  - i. New rake motors and gearboxes for thickeners 3, 4 and 5: If new electrical conduit is required, design this as well. The intent would be to match as closely as possible to the equipment in thickeners 1 and 2 to maintain commonality of equipment.
  - ii. Replace scum collection equipment for all thickeners: At a minimum, scum trough cleaning systems will be replaced. Design includes replacement of skimmer arms and spray water system to direct surface skimmings to the perimeter trough, but during the inspection these items will be reviewed and it will be determined if rehabilitation is possible.
  - iii. Replace sludge collector scraper blades.
  - iv. Repair scraper arms, as required: Repair details will be provided by the equipment manufacturer. For bidding purposes, the percentage of scraper arm connections that require repair in the two inspected basins will be assumed for all 5 basins. If the uninspected basin connections require a greater percentage of repair, this would be additional work for the contractor, so a unit price line item will be included in the Bid Form to hold the contractor to a firm cost for additional work.

#### Task 4 - Bid Phase Services

- A. Prepare Bid Advertisement: HDR will prepare the Bid Advertisement for the City, using the City's forms and standards.
- B. Administer Pre-Bid Conference: In conjunction with the City, HDR will administer the project Pre-Bid conference.
  - a. A meeting agenda will be prepared and made available at the meeting.
  - b. A sign in sheet will be provided.
  - c. HDR will lead the meeting.
  - d. Meeting notes will be prepared and issued as part of a bid addendum.
- C. Answer Contractor Questions and issue Addenda if Required: HDR will respond to questions asked during the bid period. If bid addenda are required, HDR will prepare the addenda paperwork for issuance by the City.
- D. Participate in Bid Opening and prepare certified Bid Tabulation Form: HDR will be present during the bid opening and will prepare a certified Bid Tabulation.
- E. Evaluate bids and provide Recommendation of Award: HDR will evaluate the low bid to determine if the bid is responsive and responsible. If the low bid meets this criteria, a Recommendation of Award will be made. If the low bid is determined to not be responsive and responsible, HDR will proceed to the next low bid and evaluate it against the responsive and responsible criteria. This cycle will continue until HDR can make a recommendation of Award to the lowest-cost responsive and responsible bid. HDR will document the analysis in the Bid recommendation letter.
- F. Prepare Contract Documents for execution: HDR will prepare the following documents as part of this task:
  - a. Conformed Documents whereby all addenda are incorporated.



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G. Authority to Award Package to SRF: HDR will assist the City in preparing the Authority to Award (ATA) package for submittal and approval by SRF.

H. Assist the City with document preparation for City Council Approval

I. Prepare Notice of Award: HDR will prepare the documentation for the contractor Notice of Award, per the City's requirements.

**Task 5 – Construction Services**

For this project, it is assumed that the Resident Project Representative (RPR) is the primary point of contact to handle day-to-day on-site construction activity. For day-to-day offsite or administrative functions, HDR will act as the primary point of contact during construction.

A. Administration and Coordination: The following tasks are included in this work.

- a. Primary Point of Contact for Contractor (non-RPR issues): For any issue that does not involve day-to-day construction issues that the RPR is the first point of contact, or if the RPR is not available, the contractor will contact HDR's Construction Administrator (CA).
- b. Maintain Communications with the City and the PM: HDR will maintain regular communications with the City and the PM during construction. This could be in the form of meetings, phone calls, written communication (e-mail, letters, reports), or a combination thereof.
- c. Administer Pre-Construction meeting and monthly progress meetings: In conjunction with the City, HDR will administer the Pre-Construction meeting and the monthly progress meetings.
  - i. Pre-Construction Meeting
    1. HDR will prepare the presentation and lead the meeting.
    2. A meeting agenda will be prepared and made available at the meeting.
    3. A sign in sheet will be provided.
    4. Meeting notes will be prepared and issued as part of a bid addendum.

B. Monthly Project Meetings:

- a. HDRs CA will attend each meeting. Additional HDR staff will attend (in person, via teleconference or video conference) if the need arises to discuss discipline-specific issues (Structural, HVAC, etc.).
- b. A meeting agenda will be prepared and distributed prior to the meeting.
- c. A sign in sheet will be provided.
- d. HDR will lead the meeting. Action item status will be the first item discussed at each meeting.
- e. Meeting notes will be prepared and issued.

C. Shop Drawing Review and Processing: HDR will receive, review, respond to, and track shop drawings. For Project Scope purposes, HDR assumes that up to 80 shop drawings will be submitted, with up to 40 shop drawings requiring resubmission that requires review ("approved as noted" shop drawings that are corrected and resubmitted do not go against this count, as they will not be reviewed, but "approved as noted – resubmit" shop drawings will go against this count).

D. Request of Information (RFI) Review and Processing: HDR will receive, review, respond to, and track RFIs. For Project Scope purposes, HDR assumes that up to 40 RFIs will be submitted.





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E. Change Request Review and Processing: HDR will receive, review, respond to, and track Change Requests. These can take the form of cost change requests (add or deduct) or no-cost change requests. For Project Scope purposes, HDR assumes that up to 12 individual change requests will be submitted.

F. Contractor Pay Request Review and Processing: HDR will receive, review, and track contractor pay requests. If HDR approves the pay request, it will be forwarded to the City for review and signature. If HDR does not approve the pay request, it will be returned to the Contractor directly. For project Scope purposes, HDR assumes that 13 pay requests will be received and that up to 2 will be returned for revision.

G. Site visits: HDR's CA and/or discipline leads will visit the site to review project progress and to provide engineering interpretations and clarifications. These site visits may be initiated by the City, the Contractor, or the RPR. Site review will occur as part of monthly project meetings; this work item only addresses visits separate from the monthly meeting times.

- a. CA – up to 4 visits
- b. Process Mechanical – up to 4 visits
- c. Electrical & Instrumentation – up to 2 visits
- d. Structural – up to 2 visits
- e. HVAC – up to 2 visits
- f. Architect – 1 visit

H. Startup, Commissioning and Operations and Maintenance (O&M) Manual Services: HDR will provide the following startup and commissioning services as part of the project:

- a. Review and comment on all contractor-provided startup and commissioning plans. These plans will be submitted as project submittals, and are in addition to the submittal review quantities listed under Task 5, Item C.
- b. As necessary to support the RPR, the CA will attend startup and commissioning of equipment as it is placed into service.
- c. Compile paper copies of equipment and system O&Ms into a single, unified set. Three ring binders of appropriate size (2" max) will be used for ease of use. Multiple volumes will be provided in the event that the amount of paperwork is too much to fit into one 2" binder. One copy of a draft manual will be provided for review and up to three (3) final copies will be provided.

I. Substantial Completion Inspection: When the contractor requests a Certificate of Substantial Completion, a substantial completion inspection will occur. The City, PM, RPR, CA, and the following Discipline leads (Process Mechanical, Structural, Electrical & Instrumentation and HVAC) will attend the inspection). One half day will be allocated for the inspection. A punch list will be generated from this inspection and a determination of whether or not the project is substantially complete will be made. If the project is determined to be substantially complete, HDR will prepare the paperwork for City signature. If the project is determined to NOT be substantially complete, HDR will prepare a letter defining what the contractor must complete to obtain substantial completion.

- a. Upon issuance of substantial completion, the CA will assist the RPR as necessary to confirm that all punch list items have been addressed.

J. Project closeout documentation: HDR will prepare, or collect and process, the following project closeout documents:



- a. Record drawings: HDR will use contractor and RPR redline construction drawings to create an AutoCAD record drawing set. Additional inspection is not a part of this task; this task only adds the construction redlines to the conformed drawing set.
- b. Lien releases: HDR will confirm that all required lien releases have been obtained by the contractor.
- c. Letter of final completion: HDR will prepare the Letter of Final Completion for the City's signature.
- d. Transfer of documents to City, as requested: HDR will transfer final project documents to the City, as the City requests. Hard copy and electronic data transmissions are included.

## 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

A. This task includes RPR services for pre-start date activity, services during construction, services for Post-construction including substantial completion follow through, post-contract, follow-up inspections, or any combination thereof. HDR will provide RPR services for half-time twenty hours per week, if requested by the City, for the 360 day construction contract.

### Task 7 - Structural Design of Tank Cover

A. Drawings, details and specifications will be provided for design of the tank covers. If structural reinforcing of the wall is required, this will be detailed and specified as well. Tank covers will include connections for air movement (fans and louvers) and odor control duct; any structural design would include the impacts of connecting these systems to the covers.

### Task 8 - Design of the Odor Control System

A. If the covers are installed on the tanks, the air volume underneath the covers will likely have to be treated. Odor control system design will include the duct connections to the covers, duct and duct supports to the treatment unit, fans to pull the air from the tanks to the treatment unit, the treatment unit, and the discharge from the treatment unit. The recommended treatment type from the PER will be designed. Electrical and instrumentation design will include appropriate power supply to the odor control unit and the input/output requirements of the unit back to the plant SCADA system. Design includes a new equipment pad for the system, but the existing concrete pad north of PS 2 will be reviewed to determine if it can be reused.

#### Assumptions:

A. Task 7 and 8 design work includes preparation of bidding documents including Contract Drawings and Specifications.

B. Task 7 and 8 do not include professional services for bidding, construction services or resident project representative.



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3. REIMBURSABLE EXPENSES:

Project specific reimbursable expenses and charges shall include the following:

- A. Out of town travel expenses including airline, rental car, rental car fuel, mileage, lodging and meals.
- B. Office expenses including shipping and postage.
- C. Printing and USB thumb drives for deliverables including submittals to City, SRF and Permits.

HDR understands and agrees that it must comply with the City's policy governing reimburseable expenses before such expenses will be reimbursed.



**ATTACHMENT B**

Owner: City of Chattanooga, Tennessee

Engineer: HDR Engineering, Inc.  
Project Number & Name: W-16-017-101  
MBWWTP Solids Process Optimization Implementation -  
Phase 2 Thickener 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, A cost based on billing rates and expenses with a not to exceed limit of \$608,847.00 using the Rate Table 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	\$40,976.00
Task 2 - Preliminary Engineering Report	\$73,481.00
Task 3 - Finalize Design Documents	\$143,546.00
Task 4 - Bidding Phase Services	\$32,904.00
Task 5 - Construction Phase Services	\$143,762.00
<b>Subtotal</b>	<b><u>\$434,669.00</u></b>
  
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	\$89,440.00
Task 7 - Design of Thickener Cover for all 5 Thickeners	\$15,234.00
Task 8 - Design of Thickener Odor Control System	\$69,504.00
<b>Subtotal</b>	<b><u>\$174,178.00</u></b>
<b>Grand Total</b>	<b><u>\$608,847.00</u></b>
  
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 10%. 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.



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



## ATTACHMENT C

Owner: City of Chattanooga, Tennessee

Engineer: HDR Engineering, Inc.  
Project Number & Name: W-16-017-101  
MBWWTP Solids Process Optimization Implementation -  
Phase 2 Thickener 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 required. The Owner will prepare and mail invitations for public information meetings as required.



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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.



**ATTACHMENT D**

Owner: Owner of Chattanooga, Tennessee

Engineer: HDR Engineering, Inc.  
Project Number & Name: W-16-017-101  
MBWWTP Solids Process Optimization Implementation -  
Phase 2 Thickener 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. This project is part of the WRDs Capital Improvement Program (CIP). The City will designate a Program Manager (PM) to support the implementation of the CIP program including, engineering and construction coordination, quality control and oversight. The Consultant shall work in a cooperative and coordinated manner with the PM to accomplish the requirements of the project and as outlined herein.
6. The Engineer shall coordinate its work with the operating schedule of the Owner as required.
7. 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.
8. The Engineer shall provide adequate supervision and technical and managerial oversight of the Engineer's employees, subcontractors, and agents
9. The Engineer shall support and utilize the Owner's Standard Operating Procedures developed for the CIP 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.





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10. The Engineer shall administer the project to comply with the scheduling goals established by the Program Manager (PM) to ensure that the CIP milestones are being met. The Engineer shall timely report project information as prescribed by the PM.
11. The Engineer shall prepare an initial and minimum monthly update to its project schedule; updates can be more frequent or as significant activities change.
12. 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.
13. 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 CIP program project.
14. 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.
15. 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 CIP 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.
16. The Engineer shall assist the PM with the preparation of project progress reports as required. .
17. The Engineer may be asked to provide technical support to the CIP Public Relations Plan.
18. 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.
19. The Consultant shall create and provide CADD .dwg files in AutoCAD 2009 or later format. Files shall be referenced to Tennessee State Planes Coordinates. Full-size plans shall be 22-inch by 34-inch sheets and half-size plans shall be 11-inch by 17-inch sheets. Any new plan sheets are to conform to the format established at the beginning of the design. Typical AutoCAD border template will be provided by the City and PM. Plotting shall occur utilizing the AIA standard pen tables which can be provided upon request.
20. The Engineer shall submit all Requests for Information (RFIs) and change order for their



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professional services agreement to the PM first for approval.

21. The Engineer shall submit all pay requests/invoices to PM first for approval.
22. 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.
23. The PM may conduct monthly progress meetings, value engineering (VE) reviews and constructability review as required and include Owner and PM staff as needed.

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.

None.



**ATTACHMENT E**

Owner: Owner of Chattanooga, Tennessee

Engineer: HDR Engineering, Inc.  
Project Number & Name: W-16-017-101  
MBWWTP Solids Process Optimization Implementation -  
Phase 2 Thickener 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.

Schedule provided in Attachment E1

HDR assumes the City and PM will be responsive in accordance with the schedule in regards to turnaround time for submittal reviews and reasonable in regards to supplying requested information in order to meet the SRF submittal date of April 30, 2017.



**ATTACHMENT F**

Owner: Owner of Chattanooga, Tennessee

Engineer: HDR Engineering, Inc.  
Project Number & Name: W-16-017-101  
MBWWTP Solids Process Optimization Implementation -  
Phase 2 Thickener Upgrades

**RATE SCHEDULE**

Please see the following rate schedule:

Rate ranges supplied are hourly rates for calendar year 2017. Rates may be increased annually upon mutual agreement of the parties. However, such adjustment shall not exceed a three percent (3%) annual adjustment

Labor Category	2017 Hourly Rate Range (\$/hour)	
	Minimum	Maximum
• Principal Engineer	\$215.00	\$275.00
• QA/QC	\$180.00	\$315.00
• Project Manager	\$150.00	\$210.00
• Deputy Project Manager	\$125.00	\$150.00
• Process Lead Engineer	\$150.00	\$210.00
• Process Engineer	\$115.00	\$170.00
• Structural Lead Engineer	\$215.00	\$250.00
• Structural Engineer	\$120.00	\$220.00
• Architectural Lead	\$145.00	\$175.00
• Project Architect	\$120.00	\$150.00
• Electrical Lead Engineer	\$225.00	\$260.00
• Electrical Engineer	\$120.00	\$180.00
• HVAC Lead Engineer	\$160.00	\$210.00
• HVAC Engineer	\$115.00	\$150.00
• Design Technician	\$80.00	\$145.00
• Administrative	\$65.00	\$90.00
• Resident Project Representative	\$85.00	\$115.00



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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  
CN: City Project Number (ie. 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

For Professional Services from \_\_\_\_\_ through \_\_\_\_\_

Invoice Date: 00-AAA-00  
Invoice No: \_\_\_\_\_  
**Must be Sequential Number**

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

  

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	80.00%	\$ 800.00	\$ 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	\$ -		
<b>Total Contract Amount</b>		<b>\$ 1,000.00</b>		<b>80.00%</b>	<b>\$ 800.00</b>	<b>\$ 500.00</b>	
<b>TOTAL THIS INVOICE</b>							<b>\$ 100.00</b>

  

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

1/9/17

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Public Works Department • Engineering Division • Suite 2100 • Development Resource Center • 1250 Market Street 37402 • (423) 643-6033

Attachment E1  
Phase 2 Thickener Upgrade - Detailed Project Schedule

Task	Activity Description	Start	Finish	Duration (Cal. Days)
<b>1</b>	<b>DATA GATHERING AND PROJECT MANAGEMENT</b>			1
	PROJECT MANAGEMENT PLANS	1/9/2017	1/23/2017	15
	KICK-OFF MEETING / TELECONFERENCE	1/23/2017	1/23/2017	1
	DATA GATHERING	1/9/2017	2/3/2017	26
	PROJECT MANAGEMENT TASKS (ON-GOING)	1/9/2017	12/14/2018	705
<b>2</b>	<b>PRELIMINARY ENGINEERING REPORT</b>			
	PREPARE PER	1/24/2017	2/28/2017	36
	SITE INVESTIGATION W/ PRE-MEETING - ALL DISCIPLINES -	1/26/2017	1/26/2017	1
	SUBMIT PER	2/28/2017	2/28/2017	1
	CITY REVIEW OF PER	2/28/2017	3/6/2017	7
	PER REVIEW MEETING	3/6/2017	3/6/2017	1
<b>3</b>	<b>FINALIZE DESIGN DOCUMENTS</b>			
<b>3a</b>	<b>60% DESIGN</b>			
	PREPARE 60% DESIGN	2/28/2017	3/31/2017	32
	SUBMIT 60% DESIGN DOCUMENTS/CONDUCT WORKSHOP	3/31/2017	3/31/2017	1
	CITY REVIEW OF 60% DESIGN	3/31/2017	4/6/2017	7
	RECEIVE 60% DESIGN REVIEW COMMENTS	4/6/2017	4/6/2017	1
<b>3b</b>	<b>90% DESIGN &amp; SRF SUBMITTAL</b>			
	PREPARE 90% DESIGN & SRF SUBMITTAL	3/31/2017	4/28/2017	29
	ACQUIRE CITY PAYMENT (CHECK) FOR SRF SUBMITTAL	4/27/2017	4/27/2017	1
	SUBMIT 90% DESIGN DOCUMENTS TO CITY (SRF SUBMITTAL			
	WITH ENGINEERS STAMP ON COVER)	4/28/2017	4/28/2017	1
	CITY SUBMITS LOAN PACKAGE TO SRF	4/28/2017	5/1/2017	4
	SRF APPROVAL OF CONTRACT DOCUMENTS			
	(30 CALENDAR DAYS)	5/1/2017	5/30/2017	30
	CITY REVIEW OF FINAL DESIGN	5/1/2017	5/30/2017	30
	FINAL DESIGN REVIEW MEETING	5/31/2017	5/31/2017	1
<b>3c</b>	<b>BID DOCUMENT SUBMITTAL</b>			
	INCORPORATE FINAL COMMENTS, PREPARE BID PACKAGE	5/31/2017	6/30/2017	31
	ACQUIRE CITY SIGNATURES FOR BID SUBMITTAL	6/30/2017	7/6/2017	7
	BID DOCUMENTS SUBMITTAL	7/6/2017	7/7/2017	2
<b>4</b>	<b>BID PHASE SERVICES</b>			
	ADVERTISE	7/17/2017	8/25/2017	40
	PREBID CONFERENCE	8/8/2017	8/8/2017	1
	BID OPENING	8/28/2017	8/28/2017	1
	BID EVALUATION AND RECOMMENDATION TO CITY	8/28/2017	9/6/2017	10
	CITY COUNCIL APPROVAL	9/7/2017	9/26/2017	20
	SUBMIT APPROVED BID DOCUMENTS TO SRF	9/27/2017	9/27/2017	1
	SRF ADMINISTRATIVE PERIOD			
	(30 CALENDAR DAYS)	9/28/2017	10/27/2017	30
	NOTICE OF AWARD	10/30/2017	11/3/2017	5
<b>5</b>	<b>CONSTRUCTION</b>			
	PRE-CONSTRUCTION SERVICES	11/6/2017	11/25/2017	20
	NTP	11/20/2017	11/20/2017	1
	PRE-CONSTRUCTION CONFERENCE	11/28/2017	11/28/2017	1
	SUBSTANTIAL COMPLETION (330 Calendar Days)	11/21/2017	10/16/2018	330
	FINAL COMPLETION (30 Calendar Days)	10/17/2018	11/15/2018	30
	CLOSE-OUT DOCUMENTS, INCLUDING RECORD DRAWINGS	11/16/2018	12/14/2018	29