# ATTACHMENT A

# SCOPE OF SERVICES

CDM Smith (ENGINEER) will provide preliminary and detailed design, permitting and bidding assistance for the **Franklin Wastewater Reclamation Facility Expansion Project.** The ENGINEER will provide the Basic Scope of Services defined herein for the PROJECT.

## PROJECT DESCRIPTION

On May 8, 2012, the Board of Mayor and Aldermen (BOMA) approved Resolution 2012-18 adopting the Integrated Water Resources Plan (IWRP) priority projects and associated funding plan for the City's water and wastewater systems. As a result of this IWRP approval, the City of Franklin (OWNER) has selected and requested CDM Smith prepare this scope of services to expand the existing 12-mgd annual average daily flow (AADF) wastewater reclamation facility (WRF) to a treatment capacity of 16-mgd AADF with an influent hydraulic peak flow of 48-mgd. Based on the IWRP final report dated July 2012, the recommended plan to accomplish this expansion includes addition of flow equalization, modifications to the existing headworks, addition of a fermentation tank/unit process for biological treatment improvements, addition/modifications to the denitrification filters, modifications and/or replacement of the UV disinfection system, multiple hydraulic improvements throughout the plant (pipe upsizing/replacement, raising of structure walls, raising of weirs), Supervisory Control and Data Acquisition (SCADA) system improvements and other associated operational changes.

In addition to the biological and hydraulic improvements to the liquid process at the WRF, this project also includes the preliminary and final design of the associated upgrades to the biosolids treatment processes (thickening, stabilization, dewatering) at the facility; as well as preliminary evaluation and design of improved biosolids handling processes (drying, disposal) for potential modifications. Currently, the biosolids process includes the thickening, dewatering, and hauling of solids with the new process options to be evaluated including recommended layouts for the potential of upgrading to the production of class B or class A biosolids. These options will be evaluated and compared via performance and cost factors and presented to staff and BOMA for ultimate decisions on final design preferences. The final design of the solids handling process selection would be added as a potential amendment to this scope of services once the final biosolids decision is made by staff and BOMA.

## ACRONYMS

For your reference, a listing of acronyms used in this scope of services is provided below:

| | |
|---|---|
| AADF | Annual Average Daily Flow |
| BOMA | Board of Mayor and Aldermen |
| CA | Construction Administration |
| CMAR | Construction Management at Risk |
| DAF | Dissolved Air Flotation |

| | |
|---|---|
| DO | Dissolved Oxygen |
| GIS | Geographic Information Systems |
| HMI | Human Machine Interface |
| HVAC | Heating, Ventilation and Air Conditioning |
| I&C | Instrumentation and Controls |
| IWRP | Integrated Water Resource Plan |
| O&M | Operations and Maintenance |
| OPCC | Opinion of Probable Construction Cost |
| P&ID | Process and Instrumentation Diagrams/Drawings |
| QC | Quality Control |
| QMS | Quality Management System |
| RAS | Return Activated Sludge |
| RDII | Rainfall Derived Infiltration and Inflow |
| RPR | Resident Project Representative |
| RTU | Remote Terminal Unit |
| SCADA | Supervisory Control and Data Acquisition |
| SRF | State Revolving Fund |
| SSR | Smith Seckman Reid, Inc. |
| TDEC | Tennessee Department of Environment and Conservatio1 |
| TRC | Technical Review Committee |
| UV | Ultraviolet Light |
| WAS | Waste Activated Sludge |
| WRF | Wastewater Reclamation Facility |

**BASIC SERVICES**

Basic Services to be provided by the ENGINEER under this Agreement shall include the following:

- Task 100 - Project Initiation, Implementation and Quality Control
- Task 200 - Sewer System Modeling and Hydraulic Analysis
- Task 300 - Preliminary Design
- Task 400 - Final Design
- Task 500 - Evaluation of Existing Structures and Demolition Design
- Task 600 - SCADA Development and Design
- Task 700 - Permitting
- Task 800 - Bidding and Award

The detailed scope of services for this project, as included under this Agreement (Tasks 100 through 800), follows herein. Construction phase services such as Construction Administration (CA), Construction Inspection/Resident Project Representative (RPR), and project close-out, including staff training and record drawing preparation are not included in this scope. CDM Smith can provide these services at the City's request as an amendment to this scope of services. Other services desired by the City and not covered by this scope of services can also be added based on request of the OWNER.

The City of Franklin has also expressed an interest in considering alternative forms of delivery, specifically Construction Management at Risk (CMAR) as a way to manage the construction phase of the project. CMAR delivery has potential advantages including schedule and project costs savings, a single point of responsibility, reduced change order potential, transfer of risk away from the City and maximizing opportunities for local construction work forces. During the preliminary design (Task 300), the scope of the project will be evaluated against these criteria, and if it is determined that the CMAR method of delivery is advantageous to the City, the City will direct the ENGINEER to proceed with development of the appropriate contract documents and restructuring of the remaining scope into this CMAR approach.

## TASK 100 PROJECT INITIATION, IMPLEMENTATION AND QUALITY CONTROL

Activities performed under this task consist of those general management and administrative functions required to maintain the design project on schedule, within budget, and in order that the quality of the work products defined within this scope is consistent with the ENGINEER's standards and OWNER's expectations. Specific activities included are identified below:

### Subtask 101 Project Kick-Off and Progress Meetings

A PROJECT kick-off meeting will be held with the OWNER to discuss project schedule, administrative procedures, respective responsibilities, communications, contacts, expectations and goals, progress reporting, data collection, and other project matters as appropriate. As part of CDM Smith's Quality Management Plan, the project kick-off meeting will be a facilitated project quality management workshop to set critical success factors and determine the process, activities, and tasks necessary to satisfy these success factors throughout the design and bidding phases.

The ENGINEER will meet with the OWNER's representative(s)/project team on a monthly basis during preliminary and final design to keep the OWNER apprised of project progress and all significant design issues. These meetings will review project progress and allow for appropriate review of interim deliverables. The project duration (Tasks 100 through 600) is anticipated to take 15 months; and therefore, 15 meetings have been budgeted for this duration. Should additional progress meetings and/or other project related meetings be required, the additional meetings can be included at a cost per meeting of $1,500 which includes the attendance of the Project Manager, Senior Technical Specialist, Technical Specialist, two Senior Engineers, and the required Administration support. This cost includes all pre and post meeting activities including meeting and agenda preparation and minute preparation and distribution to all meeting attendees.

CDM Smith will implement a Quality Control (QC) program for this project. As mentioned previously, the internal project quality management planning session will be conducted at the inception of the project in conjunction with the kick-off meeting. In addition to the quality kick-off meeting, CDM Smith utilizes Technical Review Committee (TRC) meetings at specific phases of the project which are budgeted and will be performed to review various project deliverables as discussed within the additional tasks. OWNER's representatives are invited to attend and participate at these TRC meetings. TRC meetings will occur at the 30 percent

(preliminary design), 60 percent, and 90 percent design completion milestones. Detailed agendas and summary meeting minutes will be prepared for all TRC meetings.

In addition to monthly status meetings, the ENGINEER's project manager will prepare and submit monthly written status reports along with each monthly invoice to keep the OWNER apprised of project status and progress throughout the extents of the design and bidding process. These project status reports will be completed on a monthly basis for the anticipated design period of 15 months.

In addition to these defined management functions and responsibilities, the remaining tasks for this project scope of service include all required project management tasks for the successful completion of the project. This includes the day-to-day general management of the project and project team and administrative functions required to maintain the design project within scope, on schedule, within budget, and in compliance with the quality of the work defined within this scope consistent with our standards and your expectations.

## TASK 200 SEWER SYSTEM MODELING AND HYDRAULIC ANALYSIS

### Subtask 201 Building of model infrastructure

CDM Smith will meet with City of Franklin staff to discuss available hydraulic modeling software platforms, discuss the City's hydraulic modeling software needs, and with the City's input, select the appropriate software platform. Costs associated with the purchase of software license(s) and installation of the software for the City is not included in this scope.

Once a model software platform is selected, CDM Smith will build a hydraulic model that represents the collection system's infrastructure. The modeled infrastructure will include all gravity pipes of 12-inch diameter and larger or approximately 800 pipe segments and their associated manholes based on CDM Smith's review of the existing system GIS. In addition, the model will include the system's key lift stations and their associated forcemains which is estimated to include Fieldstone Farms 1, Hillsboro Road, Founder's Pointe and Westhaven, as well as the WRF influent pump station, at a minimum. The City's GIS will provide the spatial locations of gravity pipe segments, manholes, forcemains, lift stations, and the WRF to be included in the modeled system. The majority of pipe diameters are assumed to be provided through the City's GIS data. Based on CDM Smith's review of the data, approximately half of the required invert elevations are included in the City's GIS data. The remaining infrastructure data will be obtained from as-builts supplied by the City. An allowance for surveying costs is included in Task 300 for all survey work to be completed for both this task and the WRF design and will be utilized as necessary to supplement the existing GIS and as-built data. Assumptions about slope and ground and/or invert elevations may be required for areas of incomplete data. Where pump station information has not been previously provided to CDM Smith, additional information describing the configuration and operating parameters of pump stations, such as wet well dimensions, pump on/off settings, and pump curves will be provided by the City or assumed by CDM Smith. Pump station capacity through drawdown tests may be requested by CDM Smith to aid in the development and calibration of the model; and if needed, these tests will require coordination and assistance by City staff, so that routine operations are not disrupted.

### Subtask 202 Model Loading and Calibration

Once the model infrastructure is built, the model will be loaded with flow parameters developed under the IWRP project and will be calibrated against this flow monitoring data to establish dry weather flow and hydrologic parameters. This data includes 31 flow monitors and radar rainfall data supported by 11 rain gauges installed throughout the collection system in 2010. Supplemental data at the City's pump stations and WRF will also be used during calibration, as available. The flow monitoring analysis performed in 2010 developed dry weather flow patterns and the rainfall derived infiltration and inflow (RDII) response parameters for each monitor. The calibration process will apply these parameters and adjust as necessary to properly replicate the responses observed. The wet weather response will be calibrated to the 2010 flow monitoring period with a focus on the largest storms observed. The sewersheds developed in 2010 will be utilized as the sewered area for the collection system hydraulic model.

### Subtask 203 Evaluate Existing and Future System

Utilizing the calibrated model, CDM Smith will evaluate the existing sewer system under both existing and future flow conditions to establish flow rates and volumes to the WRF and determine predicted capacity limitations within the system.

A series of up to three design storms will be applied to the model in order to determine the flow rates and volumes at the WRF. Design storms will be developed using precipitation data from the City's existing permanent rain gauges and supplemented with regional data which has been previously analyzed by CDM Smith. In order to utilize the data, CDM Smith will review and perform the analysis on applicable City of Franklin rain gauge data. Future dry weather flow projections previously completed by SSR will also be evaluated and utilized in the model. The projected future dry weather flow combined with the future land area will be modeled to determine future wet weather flows at the WRF under the same series of three design storms. The results of this analysis will be a range of peak flow rates reaching the WRF under the defined design storm scenarios.

### Subtask 204 Alternatives Definition and Analysis

The hydraulic sewer model will establish a tool which can be used to evaluate planning level improvement alternatives needed to meet the existing and anticipated future sewer requirements. Within a typical collection system, improvement alternatives can consist of a mixture of relief sewers to provide additional sewer capacity, system rehabilitation, pump station and force main upgrades, and wastewater storage facilities. Our specific use of the tool will be for the evaluation and analysis focused on flows at the plant based on the model predictions and will be used to size the flow equalization tank and pump station for the proposed plant upgrades. Additionally, a long-term period of record of rainfall will be used to confirm the systems are sized over a range of precipitation events.

A section of the Preliminary Design Report (Task 300) will summarize the results of the modeling and hydraulic analysis study and will recommend options for equalization at the WRF and any additional improvement options for the City's facilities.

## TASK 300 PRELIMINARY DESIGN

### Subtask 301 Field Survey

All available survey and site as-built information will be supplemented with field survey to obtain additional information pertinent to the design including existing structure(s), pipe(s), manhole(s), weir/overflow elevations and other relevant visual or physical features required to complete the design. All field survey information will be added to the existing base files and maps for production of final plans. A minimum of one permanent bench mark will be established at the wastewater reclamation site for future use during construction. For the purpose of scoping the WRF improvements, an allowance of $50,000 has been allocated for the project surveying for completion of the improvements at the WRF.

In addition to the survey work at the WRF, a $10,000 survey allocation has been made for the collection system hydraulic model development as previously discussed in Task 200, bringing the total survey allocation to $60,000 for the project.

### Subtask 302 Design Definition and Conceptual Design

CDM Smith will prepare the Contract Documents for this project showing the scope, extent and character of the work to be performed and furnished and completed by the Contractor. The duties and responsibilities of the ENGINEER during the Design Phase will be undertaken in general conformance with the following approach described in Tasks 300 through 600. The initial phase of that design is the definition of the design work and development of the conceptual design of the facilities. The work associated with the design definition includes the following:

1. The ENGINEER will work with the OWNER to establish protocol and format for electronic data management, including formats for drawings and survey to be provided to the ENGINEER, and formats for interim and final deliverables to be provided to the OWNER.

2. Identify specific design responsibilities of all Sub-Consultants. Contracts shall be available, upon request, by the City of Franklin and shall include all requirements associated with the appropriate sections of the Prime Contract, particularly in regards to equal employment opportunity and Title 6.

3. Collect and review existing information pertinent to the project.

4. Define basic design criteria for the project

5. Prepare initial schematic designs including preliminary site plans, process flow diagram(s), and initial process and instrumentation diagrams (P&IDs).

6. Prepare a technical memorandum that summarizes the proposed key alternatives for analysis and presents basic design criteria, P&IDs, and other schematic documents. This would be followed by a meeting with the City to verify concurrence with the proposed direction.

Once the design parameters are defined, we will move forward with Conceptual Design which includes the following:

1. Identify the applicable codes, ordinances, regulations, and standards to be used in the design.

2. Develop the scope for additional design information required to complete the design, such as geotechnical information, topographic and utility surveys, and environmental investigations.

3. Complete refined process modeling and plant hydraulic modeling, and establish a preliminary hydraulic grade line.

4. Complete preliminary sizing of all major process units and pumping facilities and prepare equipment data sheets for major equipment.

5. Define site, civil and environmental conditions and constraints.

6. Refine the process flow diagrams and process and instrumentation diagrams and further develop the schematic designs.

**Subtask 303 Operational Assessment**

CDM Smith will conduct an operational analysis and evaluation of plant (anticipated to be two weeks of process, instrumentation and controls (I&C) and O&M staff personnel) to understand current operations and maintenance activities at the WRF to ensure design is coordinated with existing plant operations and takes into account operator preferences. This work will assist with the development of an overall plant processes and operations assessment and potential identification of optimization of the process in conjunction with final design. This analysis and recommendations will be incorporated into the Preliminary Design Report.

**Subtask 304 Preliminary Design**

The scope of services for both the preliminary and final design will be based on the IWRP Existing WWTP Technical Memorandum #2 which evaluated and recommended a modified WRF that can biologically treat 16 mgd AADF and pass or attenuate a peak hour flow of 48 mgd as modified and clarified by the alternatives analysis performed herein. The plant will be designed to pass a peak flow of 48 mgd through the headworks and a peak flow of 33 mgd through the remainder of the plant with the associated additional peak hour flow being attenuated via an equalization basin/tank and associated pump station for storage at the plant.

As a kickoff for the preliminary design phase, CDM Smith will conduct a preliminary design workshop in order to gather project team members together to discuss the project overview,

objectives, brainstorm on project options and implementation, summarize specific design concepts and develop a plan for the preliminary design report. We anticipate that the attendees for this workshop will include City of Franklin management and operations staff, up to eight key members of the CDM Smith design team, including our constructability and cost estimating staff, and other staff as appropriate. The interactive meeting will lay the foundation for the final design decisions.

The preliminary design technical scope is assumed to include:

a. Evaluation of existing Influent Pump Station (No upgrades are scoped as a part of the final design for the pump station, but work will be completed to confirm appropriate hydraulic capacity exists at the existing pump station) and confirmation of the assumed flows to the WRF. CDM Smith will complete the skeletonized collection system modeling identified in Task 200 of this scope of services to allow for the estimation of applicable flows to the WRF during dry and wet weather conditions and allow for more accurate analysis of average and peak flow capacities.

b. Recommendations for WRF wet weather equalization tank/basin, including the NetStorm and hydraulic analysis completed in Task 200, for proper sizing and verification of wet weather treatment capacity, flow equalization pump station and storage tank sizing and sizing of all hydraulic elements.

c. Evaluation and recommendations for modifications to the existing headworks facility. Modifications are anticipated to include the addition of a new screen in the available channel and replacement of one of the grit facilities, as well as other minor improvements for a working system to ensure the hydraulics of the system can accommodate a peak flow rate of 48 mgd.

d. Analysis of new pump station for pumping of wet weather flow either into or out of the new equalization facility. Operations will be analyzed to define the proper layout and operations of the pump station. The pump station is preliminarily sized for a 15 mgd capacity and will be verified through the hydraulic modeling and NetStorm analysis as to the final required capacity.

e. Evaluation of existing oxidation ditches to address and/or confirm the following criteria for a biological treatment capacity of 16 mgd and hydraulic flow through the treatment process of 33 mgd:

    i. Biological treatment capacity of the existing oxidation ditch (3 existing ditches) system including additional sampling of the existing influent to help establish proper design criteria. The additional sampling will assist with further confirmation and refining of the BioWins model. As part of this task, a budget allowance of $25,000 is included as part of this Agreement for additional sampling and lab costs associated with this testing.

ii. Confirmation of biological process sizing and capacity, including confirmation of previous air requirement calculations, to ensure proper air supply and treatment in each of the three existing oxidation ditches

iii. Confirm potential layout of fermentation basins, specifically the potential for converting existing anoxic zone volume to fermentation volume. This evaluation will define if the new fermentation volume can be retrofitted into the existing basins or if a new separate fermentation basin must be constructed.

f. Evaluation of return activated sludge (RAS) pumping and hydraulic capacity and operations of the RAS and waste activated sludge (WAS) systems.

g. Evaluation and sizing of additional denitrification filter(s) and the associated hydraulics through the system. Process to be sized to biologically treat 16 mgd (AADF) and hydraulically pass 33 mgd.

h. Evaluation and sizing of the modifications to the UV disinfection system and structures to ensure a hydraulic treatment capacity of 33 mgd.

i. Evaluation and confirmation of capacity of the existing cascade aeration and post aeration systems for DO control leaving the plant. There is no current scope of work anticipated for final design modifications to the existing post aeration and outfall structures as part of final design; however, the evaluation is essential to ensure the proposed modifications do not affect the DO process control.

j. Evaluation of chemical feed system modifications; specifically addressing of potential alum system for chemical phosphorus removal. Recommendations for future chemical system needs will be identified as necessary for all process improvements.

k. Miscellaneous structural modifications and improvements as required to improve the overall hydraulic performance of the WRF. In addition, all process piping and conveyance structures will be evaluated and modified as necessary to ensure hydraulic capacity of 48 mgd through the headworks facility and 33 mgd through the remainder of the plant.

l. Biosolids analysis of the following three potential improvements and expansions resulting from the IWRP. The three options will be presented along with estimated construction costs to allow for a decision to be made by staff and BOMA on the preferred biosolids modifications and improvements to move forward with during final design:

i. Expansion of the existing facilities to continue to operate with DAF thickening, belt filter press dewatering, and hauling.

ii. Improvements and modifications to the system to produce Class B solids.

iii. Improvements and modifications to the system to produce Class A solids.

m. Review of process equipment that is nearing the end of its useful life based on the Existing WWTP TM1 plant assessment completed during the IWRP. CDM Smith will evaluate the most critical items listed as part of TM1 and make recommendations for replacements as part of the preliminary design report. No equipment outside of the items included in this scope is currently anticipated to be replaced.

**Subtask 305 Preliminary Design Report**

The ENGINEER shall prepare a preliminary design report for the project addressing the items discussed above and shall include the following specific items. CDM Smith will deliver one hard copy and one electronic Word version of the final preliminary design report to the City for review and will schedule a review workshop to finalize the decisions to be made regarding the preliminary design prior to moving into final design.

a. Summary of data collection, evaluations, and preliminary design with supporting calculations incorporating the results for each of the process modifications discussed herein.

b. Preliminary design drawings/sketches including layout and sizes of recommended facilities.

c. Recommended construction schedule and preliminary cost estimate of the proposed facilities.

d. Any special design and/or construction issues and recommended measures to address them.

e. Recommended design and construction techniques to minimize impacts to plant operations.

f. Local, state, and federal project permitting requirements and recommended permitting strategy.

g. Preliminary electrical single-line diagrams and process and instrumentation diagrams (P&ID).

The ENGINEER shall provide the OWNER with one hard copy and one electronic Word version of the draft Preliminary Design Report. After the OWNER reviews the preliminary design report, the OWNER and ENGINEER shall meet to make final decisions on the recommendations and design issues. The ENGINEER will provide one electronic pdf version of the final updated Preliminary Design Report for the record after all changes are made.

**Subtask 306 Preliminary Design Technical and Constructability Reviews**

During the course of preliminary design, the ENGINEER will conduct one technical and constructability review. This review shall be attended by a Technical Review Committee (TRC)

of senior experienced engineers and construction specialists. The OWNER will be invited to participate in this review session.

The following specific tasks shall be completed during preliminary design phase and include:

1. Evaluation of geotechnical, survey, environmental, and other findings collected during design process to date.

2. Finalize all design criteria requirements as part of the Preliminary Design Report.

3. Evaluate OWNER-supplied front-end documents, as applicable, (Division 0/Series 0) for construction contracts and procurement and develop a preliminary table of contents for the technical specifications (Divisions 1-16).

4. Prepare a preliminary opinion of probable construction cost (OPCC), which will be delivered to the City within one week of delivery of the 30 percent design package.

5. As discussed, prepare a preliminary design report, plus applicable drawings, that present the work and represent a 30% design completion deliverable.

As part of the preliminary design phase, CDM Smith will also work with the City of Franklin to evaluate the potential for the consideration and benefits of alternative forms of delivery, specifically Construction Management at Risk (CMAR) as a way to manage the construction phase of the project. During the preliminary design, the scope of the project will be evaluated against these criteria, and if it is determined that the CMAR method of delivery is advantageous to the City, the City will have the option to direct the ENGINEER to proceed with development of the appropriate contract documents and restructuring of the remaining scope into this CMAR approach. CDM Smith will work with the City of Franklin staff and BOMA to discuss the potential alternate delivery methods and conduct presentations on the methods and their advantages and disadvantages as they pertain to this project.

## TASK 400 FINAL DESIGN

### Subtask 401 Geotechnical Investigations

Once the preliminary design is completed, CDM Smith will conduct detailed geotechnical investigations at the locations of the new proposed structures and other appropriate locations including the equalization basin, fermentation basins, denitrification filters, expanded or new UV disinfection structure and extensive yard piping upgrades, as necessary, and prepare a final geotechnical report to be referenced in the Contract Documents and utilized for design of the new facilities. The collected data will be used for the design of the structure foundations and to define rock excavation and subsurface conditions. Data will be used to estimate rock quantities in the bid documents. The scope of work includes an allowance for 15 soil borings at locations selected by the ENGINEER.

A total allowance of $40,000 has been allocated to the contract fee for the geotechnical investigation. If additional investigations/borings are required above and beyond the

anticipated 15 soil borings included within the fee, additional borings may be completed at a cost of $2,500 per boring.

**Subtask 402 Design Drawings and Specifications**

CDM Smith will prepare Contract Documents to include final drawings and specifications showing the scope, extent, and character of the work to be performed and furnished by Contractor. One set of Contract Documents shall be developed for bidding of all scoped improvements. Packaging of contract documents will be different and adjusted if the City elects to proceed with final design and construction utilizing the CMAR delivery approach. If that decision is made, a workshop on the scope moving forward and the appropriate packaging for the construction documents to maximize local contractor participation will be conducted with the City.

Drawings shall include civil/site work requirements, including erosion control, structural requirements, architectural requirements, mechanical requirements, instrumentation (including plant SCADA), electrical requirements, HVAC and plumbing requirements.

In addition, this task includes associated costs for site visits to multiple facilities operating process equipment and technologies of interest for key members of the project team to visit and evaluate potential systems under consideration. Staff assigned to make these visits will be determined on a case-by-case basis based on the technology(s) to be visited. These reviews are key to understand the operations and maintenance associated with each potential piece of equipment and how it may fit into the overall plan for the City of Franklin WRF.

The ENGINEER shall develop the final design of the following facilities:

a. Modified headworks facility to accommodate a new influent screen and replacement of one of the existing grit units. The process shall have a 48-mgd firm capacity following modifications. A new headworks structure is not scoped for this design.

b. New flow equalization basin/tank to be located on the existing WRF site at a location to optimize operations for pumping to or from the facility. The exact sizing for the structure will be developed during preliminary design as previously discussed.

c. New flow equalization pump station to be sized to hydraulically pump the required wet weather flow during peak flow conditions.

d. New fermentation tank for the biological capacity of 16 mgd with a hydraulic capacity of 33 mgd. The unit will be evaluated for both incorporation into the existing oxidation ditches with appropriate modifications or as a new structure adjacent to the basins during the preliminary design phase.

e. Modifications and/or new denitrification filter necessary for biological treatment of 16 mgd (AADF) with a hydraulic capacity of 33 mgd.

f. Modifications to existing UV system to ensure proper disinfection of a hydraulic capacity of 33 mgd. This design includes the replacement of UV equipment and minor modifications to the structure for a full working system.

g. Flow control structures, splitter box and hydraulic control facility modifications and plant piping sizing and routing for the appropriate hydraulic capacity based on location throughout the plant. The plant will be designed to pass 48 mgd through the headworks and 33 mgd through the remainder of the plant with the associated equalization basin/tank. The anticipated structures for hydraulic modifications include:

    i. Settled Water Junction Box

    ii. Weirs in the clarifier distribution box

    iii. Weirs in the oxidation ditch distribution box

    iv. Walls in the oxidation ditch distribution box

h. Design of the preferred biosolids alternative resulting from the evaluation during preliminary design. This scope of services includes the final design of the biosolids treatment processes (thickening, stabilization, dewatering) with the biosolids handling processes (drying, disposal) to be defined during the preliminary design and added by amendment as necessary following the final biosolids discussions and decisions.

**Subtask 403 Construction Cost Estimate and Schedule**

The ENGINEER will update the opinion of probable construction cost (OPCC) at the 60 percent and 90 percent milestones. The ENGINEER will also review scheduling constraints with respect to time, funding availability, and PROJECT completion. Each OPCC update will be submitted within one week after submittal of the corresponding drawing and specifications submittal. The 90 percent OPCC will be the final OPCC prepared for the project.

**Subtask 404 Design Technical and Constructability Review (60% and 90% Design Reviews)**

At the 60 percent completion stage of the drawings and specifications, CDM Smith will perform an internal Technical and Constructability Review and submit and review the Contract Documents with the City of Franklin staff. Upon receipt of comments from the OWNER, CDM Smith will make the required changes and updates to produce a complete design for submittal of 90% contract documents. As part of the document reviews, CDM Smith will discuss OWNER's comments and identify elements of the design that will be "frozen" and elements that are still under review by the OWNER.

In addition, as part of the 60% design, CDM Smith will:

a. Update and complete all equipment data sheets.

b. Compile preliminary versions of all technical specifications and update the table of contents for the Project Manual (Divisions 0-16) and technical specifications.

c. Advance the process mechanical design to 80% completion.

d. Hold design collaboration sessions with all internal design disciplines and advance all other design disciplines to 50-60% completion.

e. Perform reviews for biddability and constructability.

f. Prepare an updated contract documents package that present the work and represent a 60% design completion deliverable.

At the 90 percent completion stage, CDM Smith will perform a final review of drawings and specifications with the OWNER. At this stage, all Contract Documents shall be complete for the OWNER's review. After receipt of final comments from the City, the Engineer shall bring the documents to completion for bidding.

As part of the process for completion of the 90% design process, CDM Smith shall:

a. Update and bring all process mechanical design to 99% completion and all other design disciplines to a 90% or higher completion for delivery to the OWNER of the 90% contract drawings.

b. Finalize equipment data sheets.

c. Prepare a pre-final project manual with complete technical specifications and bid forms.

d. Perform internal back-checking and cross-checking between design disciplines for all drawings and specifications.

e. Prepare and deliver 90% or higher drawings "signed and sealed" for permitting submittals and applications.

f. Perform final biddability and constructability reviews.

## TASK 500 EVALUATION OF EXISTING STRUCTURES AND DEMOLITON DESIGN

In conjunction with and parallel with the preliminary and final design, CDM Smith will evaluate and perform structural, mechanical and electrical evaluations of the out-of-service structures and piping at the existing plant. Any potentially reusable structures will be evaluated for potential reuse as part of the design process. All structures deemed to be unusable or not cost effective for rehabilitation based on needed modifications will be included as part of a demolition set of plans for the contract documents. We anticipate 10 drawings will be created for the purpose of demolition of existing unusable structures at the WRF.

## TASK 600 SCADA DEVELOPMENT AND REPLACMENT DESIGN

SCADA design services will be included under this task to include all work required to modify and upgrade the City's existing control systems associated both with the plant expansion project, as well as all services required to replace the SCADA components (Computers and HMI Software) and make modifications to the existing collection system controls and expand it as necessary for the development of a fully functioning wastewater treatment and collection SCADA system.

CDM Smith will prepare Contract Documents to include final drawings and specifications showing the scope, extent, and character of the work to be performed and furnished by the Contractor, and in the case of this task, the System Integrator. The scope of services for this task will be in conjunction with the WRF plant upgrades and will be incorporated into the bid package for the improvements.

CDM Smith will work with SSR in order to help the City staff identify and coordinate a common platform and control strategy that they would prefer for the entire water and wastewater systems. Although the water and wastewater systems are independent of one another, it is our understanding that the City would prefer for both systems to be compatible, have common hardware and software components, and have a similar look and feel from a management, operations, and maintenance perspective.

CDM Smith will work with SSR to plan and co-facilitate up to three workshops with client stakeholders to discuss HMI software options and new system requirements based on management and operations staff preferences. Tentative workshops to be held include:

a. HMI Software packages and PLC hardware platforms - discuss options for standard hardware platforms and software packages
b. HMI graphical requirements and new control requirements
c. Computer hardware requirements and reporting

The workshops are intended to be a forum where all stakeholders will provide input into the design and development of the new SCADA system. Our joint teams will facilitate the workshops, providing current information on the latest technology options and advantages and disadvantages of each. Workshop meeting minutes will be provided 1 week following each workshop to identify decisions made and the direction of the final design. All design decisions will be incorporated in the expansion design package.

Following the workshops, vendor presentations will be coordinated with SSR and the City of Franklin staff to provide the OWNER with an opportunity to view the latest options in technology from different vendor packages. Presentations will be conducted by 3 preselected vendors over a single day. Each vendor presentation will be 1 hour in length followed by 30 minutes of questions and answers. CDM Smith and SSR will facilitate scheduling of vendors. After all vendors have presented, CDM Smith and SSR will conduct a workshop, on the same day as the presentations, to discuss the different packages and assist the Owner in developing a consensus among stakeholders. Minutes from the discussions and workshops will be provided within 1 week following the final workshop/vendor presentations.

In addition to the coordination with the City of Franklin and SSR on the selection of the preferred technology and platform for the upgraded system, CDM Smith will also provide the following additional services:

1) RTU System Architecture diagram - A single telemetry system overview drawing depicting all existing RTUs and the upgrades and/or modifications to the existing RTU telemetry system. This will include work at the plant and within the collection system.
2) RTU P&ID - A single drawing depicting all typical upgrades and/or modifications required to existing RTU components, as well as all new components and layout.
3) Process P&ID - Single drawings depicting all modifications and upgrades to each process and their monitoring and controls at the upgraded WRF.
4) Specifications to identify all new computer hardware and software required to replace the existing SCADA HMI and telemetry RTUs, as well as all technical specifications on the required modifications to the system and the responsibilities of the system integrator.

A complete design package will be provided for all SCADA hardware and software components. The drawings and specifications required for these upgrades will be included in the overall project package for bidding and construction.

## TASK 700 PERMIT APPLICATIONS

### Subtask 701 Regulatory Agency Coordination

The ENGINEER shall maintain contact with TDEC and any other regulatory agency having review and approval authority over the design of the PROJECT and submit preliminary design drawings and associated design information as may be required as early in the project as possible to move the permitting process forward to reduce potential delays.

This task shall also include all required coordination with TDEC regarding the State Revolving Fund (SRF) monies that may be utilized for the project. Civil Infrastructure Associates (CIA) will be a subcontractor to CDM Smith handling all required coordination, applications and documentation required for any portion of the project.

### Subtask 702 Regulatory Review

The ENGINEER shall finalize the list of permit and approval requirements based on the information collected during the preliminary design phase. Where necessary, the ENGINEER shall discuss the proposed PROJECT with the applicable regulatory agencies to fully define the permit requirements and to identify the major permitting issues that must be resolved. A permitting strategy shall be developed to address the major issues identified and to facilitate the permit acquisition process.

### Subtask 703 Prepare and Submit Permit Applications

Applications for the required permits and approvals shall be prepared for submittal to the respective agencies according to the strategy developed during the Regulatory Review. Where

acceptable, the Engineer will make applications directly. This scope of work assumes that the following permits and approvals will be required at the Franklin WRF:

a. Tennessee Department of Environment and Conservation (TDEC) Construction Permit

b. Tennessee Department of Environment and Conservation (TDEC) NPDES Permit Modification

c. Tennessee Department of Environment and Conservation (TDEC) Erosion and Sediment Control COI

The Engineer will coordinate with the regulatory agencies as necessary throughout the permit application and review process. As part of this subtask, once the permit applications are submitted, the Engineer shall maintain contact with the regulatory agencies to monitor and, where possible, facilitate the review process. All permit fees shall be paid by CDM Smith and the associated costs are included in our attached engineering fee estimate.

**Subtask 704 Agency Meetings and Coordination**

The ENGINEER will coordinate with the regulatory agencies as necessary throughout the permit application and review process. As part of this subtask, once the permit applications are submitted, the ENGINEER shall maintain contact with the regulatory agencies to monitor; and where possible, facilitate the review process. We will coordinate meetings with the appropriate agencies and arrange and conduct meetings where beneficial.

## TASK 800 BIDDING AND AWARD

Following receipt of authorization from OWNER, ENGINEER shall perform the following services related to Bidding and Award. One bidding phase for one construction contract is included as part of this scope of services.

- Assist OWNER in the development, review, and recommendations for prequalification of contractors for the construction project. This process will be prior to the actual bidding of the project and will allow the City of Franklin to ensure only qualified bidders are allowed to submit and ultimate be procured for the work.

- Assist OWNER in advertising the project bid for construction, materials, equipment, and services; and maintain a record of prospective bidders to whom Contract Documents have been issued, attend and conduct one pre-bid conference, and receive and process deposits for the purchase of Contract Documents.

- Prepare addenda during bidding to interpret, clarify, respond to inquiries and/or further define the Contract Documents. Addenda will be issued by ENGINEER. We assume that up to three addenda will be prepared.

- Consult with and advise OWNER to determine the acceptability of substitute materials and equipment proposed by Contractor(s) when substitution prior to the award of contracts is allowed by the Contract Documents.

- Attend and conduct the bid opening and prepare a certified bid tabulation sheet. The ENGINEER shall evaluate bids or proposals and assemble contracts for construction, materials, equipment, and services.

- Prepare recommendation for project award to the OWNER.

## DATA AND ASSISTANCE TO BE PROVIDED BY OWNER

Furnish to ENGINEER, as requested by ENGINEER for performance of Services, the following as appropriate:

- Any known data prepared by or services of others; including without limitation, explorations and tests of subsurface conditions at or contiguous to the site, drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site, or hydrographic surveys;
- Any known past environmental assessments, audits, investigations and impact statements, and other relevant environmental or cultural studies as to any past projects, the site and adjacent areas;
- Any known past field surveys for design purposes and property, boundary, easement, right-of-way, topographic and utility surveys or data, including relevant reference points;
- Zoning, deed and other land use restrictions; and
- Other special data or consultations not covered in the scope of work.

OWNER shall be responsible for, and ENGINEER may rely upon, the accuracy and completeness of all reports, data and other information furnished pursuant to this paragraph. ENGINEER may use such reports, past construction documents, data and information in performing or furnishing services under this Agreement.

Provide access to and make all provisions for ENGINEER to enter upon public and private property as required for ENGINEER to perform services under this Agreement.

Provide labor and safety equipment to open and protect manholes and/or to operate valves and hydrants as required by the ENGINEER.

## ADDITIONAL ASSUMPTIONS REGARDING SCOPE OF SERVICES

In addition to the scope assumptions and clarifications made throughout this document, the following additional assumptions are included in our explanation of the services to be provided in regards to this project.

- No architectural scope has been included for the existing Influent Pump Station or RAS pump station.

- No plumbing work is included except in the new Digester Building and modified Denitrification Pipe Gallery. In addition, no new bathroom facilities are being provided in any new or existing building.
- No deep or special foundations are anticipated or included in the design costs.
- As part of the preliminary design phase, a NFPA 820 analysis and electrical code review will be completed by our mechanical and electrical engineers for the existing facilities as appropriate. Although no additional upgrades are anticipated, we will discuss the results with the staff; particularly focusing on the facilities which are not currently anticipated to be upgraded. For any of these facilities that may require work by codes based on these evaluations, CDM Smith will present the work that may need to be included for these facilities as part of the contract. Any required upgrades will be discussed with the City staff once determined and may require a scope modification.

## TIME OF COMPLETION/SCHEDULE

The ENGINEER will initiate work within two weeks after written Notice to Proceed. The ENGINEER will deliver final design documents ready for bidding of the construction project within 455 calendar days (65 weeks) from the Notice to Proceed. ENGINEER's services under the Design Phase will be considered complete at the earlier of (1) the date when the submittals have been accepted by OWNER or (2) thirty days after the date when such submittals are delivered to OWNER for final acceptance, plus in each case such additional time as may be considered reasonable for obtaining approval of governmental authorities having jurisdiction to approve the portions of the PROJECT designed or specified by the ENGINEER. The permitting duration is not within the control of the ENGINEER.

Bidding services will commence upon advertisement of the project by OWNER and will run until the OWNER's recommendation of award. The time of completion of the bidding phase is dependent upon the OWNER's procurement process and schedule and not within the control of the ENGINEER.

## COMPENSATION AND PAYMENT

The not-to-exceed upper limit fee for the proposed work (Tasks 100 through 800) is $ 2,967,150. A breakdown of project values by tasks is presented in Table 1, with the associated billing rate schedule for the project included in Table 2. All project related expenses shall be billed at CDM Smith's cost with no mark-up.

Invoicing shall be completed monthly on a billing rate basis based on the work completed within the dates of the invoice per the approved Task and Labor Categories and the corresponding billing rate for the individual(s) completing the work. A project status report will accompany each progress billing to update the OWNER of the work and project progress.

The City agrees to pay the ENGINEER at the hourly billing rate for the category of the individual performing the work, for all time directly chargeable to the project plus actual out-of-pocket expense costs. Actual out-of-pocket expense costs are all costs other than ENGINEER's labor cost that are incurred during the progress of the work. The actual out-of-pocket expense costs include; but are not limited to: airfare, automobile rental, mileage charges,

parking, taxis, meals, lodging, printing and reproduction costs, and other miscellaneous costs incurred specifically for this project.

**Table 1: Value by Task**

| Task No. | Description | Task Value |
|---|---|---|
| 100 | Project Initiation, Implementation and Quality Control | $ 113,500 |
| 200 | Model and Hydraulic Analysis | $ 131,700 |
| 300 | Preliminary Design | $ 651,340 |
| 400 | Final Design | $ 1,625,610 |
| 500 | Evaluation of Existing Structures and Demolition Design | $ 45,080 |
| 600 | SCADA Development and Replacement Design | $ 151,020 |
| 700 | Permitting | $ 152,700 |
| 800 | Bidding and Award | $ 90,800 |
| TOTAL TASK AUTHORIZATION | | $ 2,967,150 |

**Table 2: CDM Smith Labor Billing Rates**

| Labor Category | Billing Rate ($/hour) |
|---|---|
| Officer | $ 215 |
| Project Manager | $170 |
| Senior Technical Specialist | $190 |
| Technical Specialist | $ 170 |
| CIA Technical Specialist | $ 170 |
| Senior Engineer/Scientist | $ 150 |
| CIA Senior Engineer | $ 150 |
| Engineer/Scientist | $ 120 |
| CIA Engineer | $ 120 |
| Junior Engineer/Scientist | $ 100 |
| Senior Designer | $ 115 |
| CIA Senior Designer | $ 115 |
| Senior Construction Specialist | $ 150 |
| Construction Estimator | $ 110 |
| Designer/Drafter/Technician | $ 95 |
| Administration | $ 75 |

CITY OF FRANKLIN, TENNESSEE
PROFESSIONAL SERVICES AGREEMENT
COF Contract No 2013-0001

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as City, and **CDM Smith** hereinafter referenced as Consultant, who mutually agree as follows:

**DECLARATIONS.** City desires to retain Consultant to provide engineering, related technical, and other services in connection with City's project hereinafter referenced as Project. The Project is described as follows:

**Franklin Wastewater Reclamation Facility**
**Modifications and Expansion Project**

1. SCOPE OF SERVICES. Consultant shall provide engineering and related technical services for the Project in accordance with the Scope of Services for Tasks 100 through 800. The Scope of Services as found in **Attachment A** shall be considered as an integral part hereof.

2. Consultant shall be paid monthly based on work completed within the invoice dates per approved Task and Labor Category and corresponding Billing Rate used to accomplish completed work (see Scope of Services, Table 1, Project Task Values, Page A1-18). The not-to-exceed upper limit for this Agreement is **Two Million Nine Hundred Sixty-Seven Thousand One Hundred Fifty and No/100 Dollars ($2,967,150.00).**

3. In event of a conflict between this Agreement and the attached document(s), this Agreement shall supersede conflicting terms and conditions.

**The Board of Mayor and Aldermen Approved this Agreement on the 12th Day of February 2013.**

BY: _____
Consultant's Signature
TITLE: _____
Date: _____

BY: _____
Dr. Ken Moore
Mayor
Date: _____

## TERMS AND CONDITIONS FOR PROFESSIONAL SERVICES

ARTICLE 1. SERVICES. Consultant will:

1.1 Act for City in a professional manner, using that degree of care and skill ordinarily exercised by and consistent with standards of competent consultants using the standards in the industry;

1.2 Consider all reports to be confidential and distribute copies of the same only to those persons specifically designated by the City.

1.3 Perform all services under the general direction of a senior professional employee, licensed and/or registered in the State of Tennessee, when appropriate.

1.4 Retain pertinent records relating to the services performed for a period of seven (7) years following the completion of the work; during this period the records shall be available for review by City at all reasonable times.

ARTICLE 2. CITY'S RESPONSIBILITIES. City, or its authorized representative, will:

2.1 Provide Consultant with all information regarding the Project, which is available to, or reasonably obtainable by, the City.

2.2 Furnish right-of-entry onto the Project site for Consultant's necessary field studies and surveys. Consultant will endeavor to restore the site to its original condition and shall remain solely liable for all damages, costs and expenses, including reasonable attorneys' fees, for failure to make such restoration.

2.3 Designate, in writing, the sole Project representative to coordinate with and direct the Consultant, including all contact information.

2.4 Guarantee to Consultant that it has the legal capacity to enter into this contract and that sufficient monies are available to fund Consultant's compensation.

ARTICLE 3. GENERAL CONDITIONS.

3.1 Consultant, by the performance of services covered hereunder, does not in any way assume, abridge or abrogate any of those duties, responsibilities or authorities customarily vested in other professionals or agencies participating in the Project.

3.2 Consultant shall be responsible for the acts or omissions of any party involved in concurrent or subsequent phases of the PROJECT acting upon written instruction issued by the Consultant.

3.3 Neither City nor Consultant may assign or transfer its duties or interest in this Agreement without written consent of the other party. However, nothing in this Article shall prevent Consultant from

engaging independent consultants, associates, and subcontractors to assist in the performance of the Services at Consultant's cost.

3.4 ALLOCATION OF RISK AND LIABILITY; GENERAL. Considering the potential liabilities that may exist during the performance of the services of this Agreement, the relative benefits and risks of the Project, and the Consultant's fee for the services rendered, and in consideration of the promises contained in this Agreement, the City and the Consultant agree to allocate and limit such liabilities in accordance with this Article.

3.5 INDEMNIFICATION. Consultant agrees to indemnify and hold City harmless from and against legal liability for all judgments, losses, damages, and expenses to the extent such judgments, losses, damages, or expenses are caused by Consultant's negligent act, error or omission in the performance of the services of this Agreement. In the event judgments, losses, damages, or expenses are caused by the joint or concurrent negligence of Consultant and City, they shall be borne by each party in proportion to its own negligence.

3.5.1 SURVIVAL. The terms and conditions of this paragraph shall survive completion of this services agreement.

3.6 LIMITATIONS OF RESPONSIBILITY. Consultant shall not be responsible for (a) construction means, methods, techniques, sequences, procedures, or safety precautions and programs in connection with the Project unless specifically undertaken in Attachment A, SCOPE OF SERVICES; (b) the failure of any contractor, subcontractor, Consultant, or other Project participant, not under contract to Consultant, to fulfill contractual responsibilities to City or to comply with federal, state, or local laws, regulations, and codes; or (c) procuring permits, certificates, and licenses required for any construction unless such procurement responsibilities are specifically assigned to Consultant in Attachment A, SCOPE OF SERVICES.

ARTICLE 4. TERMINATION BY THE CITY. The City may terminate this Agreement in accordance with the following terms and conditions:

4.1 Termination for Convenience. The City may, when in the interests of the City, terminate performance under this Agreement with the Consultant, in whole or in part, for the convenience of the City. The City shall give written notice of such termination to the Consultant specifying when termination becomes effective. The Consultant shall incur no further obligations in connection with the work so terminated, other than warranties and guarantees for completed work and installed equipment, and the Consultant shall stop work when such termination becomes effective. The Consultant shall also terminate

outstanding orders and subcontracts for the affected work. The Consultant shall settle the liabilities and claims arising out of the termination of subcontracts and orders. The City may direct the Consultant to assign the Consultant's right, title and interest under termination orders or subcontracts to the City or its designee. The Consultant shall transfer title and deliver to the City such completed or partially completed work and materials, equipment, parts, fixtures, information and Contract rights as the Consultant has in its possession or control. When terminated for convenience, the Consultant shall be compensated as follows:

(1) The Consultant shall submit a termination claim to the City specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the City. If the Consultant fails to file a termination claim within one (1) year from the effective date of termination, the City shall pay the Consultant the amount the City deems the Consultant is due.

(2) The City and the Consultant may agree to the compensation, if any, due to the Consultant hereunder.

(3) Absent agreement to the amount due to the Consultant, the City shall pay the Consultant the following amounts:

(a) Contract costs for labor, materials, equipment and other services accepted under this Agreement;

(b) Reasonable costs incurred in preparing to perform and in performing the terminated portion of the work, and in terminating the Consultant's performance, plus a fair and reasonable allowance for direct job site overhead and earned profit thereon (such profit shall not include anticipated profit or consequential damages); provided however, that if it reasonably appears that the Consultant would have not profited or would have sustained a loss if the entire Agreement would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;

The total sum to be paid the Consultant under this Section shall not exceed the total Agreement Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

4.2 Termination for Cause. If the Consultant does not perform the work, or any part thereof, in a timely manner, supply adequate labor, supervisory personnel or proper equipment or materials, or if it fails to timely discharge its obligations for labor, equipment and materials, or proceeds to disobey applicable law, or otherwise commits a violation of a material provision of this Agreement, then the City, in addition to any other rights it may have against the Consultant or others, may terminate the performance of the Consultant, in whole or in part at the City's sole option, and assume possession of the Project Plans and materials and may complete the work.

In such case, the Consultant shall not be paid further until the work is complete. After Completion has been achieved, if any portion of the Contract Price, as it may be modified hereunder, remains after the cost to the City of completing the work, including all costs and expenses of every nature incurred, has been deducted by the City, such remainder shall belong to the Consultant. Otherwise, the Consultant shall pay and make whole the City for such cost. This obligation for payment shall survive the termination of the Agreement.

In the event the employment of the Consultant is terminated by the City for cause pursuant to this Section and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under this Section and the provisions of Section 4.1 shall apply.

4.3 Termination for Non-Appropriation. The City may also terminate this Agreement, in whole or in part, for non-appropriation of sufficient funds to complete or partially complete the Project, regardless of the source of such funds, and such termination shall be on the terms of Section 4.1.

4.4 The City's rights under this Section shall be in addition to those contained elsewhere herein or provided by law.

ARTICLE 5. SCOPE OF SERVICES. Consultant shall provide the Services as described in Attachment A, SCOPE OF SERVICES.

5.1 By mutual agreement, this contract and scope can be amended by the parties. The scope and fee for any additional tasks or services under such amendment shall be mutually negotiated and agreed to in writing prior to beginning such additional tasks or services.

5.2 ENVIRONMENTAL RESPONSIBILITY.
Where drilling/sampling services are involved, the samples obtained from the Project site are the property of the City. Should any of these samples be recognized by the Consultant to be contaminated, the City shall remove them from the Consultant's custody and transport them to a disposal site, all in accordance with applicable government statutes, ordinances, and regulations. For all other samples, the Consultant shall retain them for a sixty (60)-day period following the submission of the drilling/sampling report unless the City directs otherwise; thereafter, the Consultant shall discard the samples in accordance with all federal, state and local laws.

ARTICLE 6. SCHEDULE.

6.1 TIME OF THE ESSENCE. The parties agree that TIME IS OF THE ESSENCE with respect to the parties' performance of all provisions of the Agreement.

6.2 FORCE MAJEURE. Neither party will be liable to the other for any delay or failure to perform any of the services or obligations set forth in this Agreement due to causes beyond its reasonable control, and performance times will be considered extended for a period of time equivalent to the time lost because of such delay plus a reasonable period of time to allow the parties to recommence performance of their respective obligations hereunder. Should a circumstance of force majeure last more than ninety (90) days, either party may by written notice to the other terminate this Agreement. The term "force majeure" as used herein shall mean the following: acts of God; strikes, lockouts or other industrial disturbances; acts of public enemies; orders or restraints of any kind of the government of the United States or of the State or any of their departments, agencies or officials, or any civil or military authority; insurrections, riots, landslides, earthquakes, fires, storms, tornadoes, droughts, floods, explosions, breakage or accident to machinery, transmission pipes or canals; or any other cause or event not reasonably within the control of either party.

6.3 Should City request changes in the scope, extent, or character of the Project, the fee and the time of performance of Consultant's services as indicated in Attachment A shall be adjusted equitably.

ARTICLE 7. USE OF DOCUMENTS, DATA.

7.1 All Documents, including, but not limited to, reports, drawings, specifications, and computer software prepared by Consultant pursuant to this Agreement are instruments of service in respect to the Project. Consultant shall retain an ownership and property interest therein (including the right of reuse at the discretion of the Consultant) whether or not the Project is completed.

7.1.1 USE OF DATA SYSTEMS: Ownership, property interests and proprietary rights in data systems used by Consultant do not extend to the data created by or supplied to Consultant by the City; all rights to that data (including derivative or hidden data such as metadata) shall vest solely in City at the moment of creation.

7.1.2 DISCLOSURE OF DOCUMENTS/DATA. City may be required to disclose documents or data under state or federal law. City shall notify Consultant if a request for data or documents has been made and shall give Consultant a reasonable opportunity under the circumstances to respond to the request by redacting proprietary or other confidential information. Consultant waives any right to confidentiality of any document, e-mail or file it fails to clearly mark on each page as confidential or proprietary. In exchange, Consultant agrees to indemnify, defend, and hold harmless City for any claims by third parties relating thereto or arising out of (i) the City's failure to disclose such documents or information required to be disclosed by law, or (ii) the City's release of documents as a result of City's reliance upon Consultant representation that materials supplied by Consultant (in full or redacted form) do not contain trade secrets or proprietary information, provided that the City impleads Consultant and Consultant assumes control over that claim.

7.2 City-furnished data that may be relied upon by Consultant is limited to the printed copies that are delivered to the Consultant pursuant to Article 2 of this Agreement. Any copyrighted electronic files furnished by City shall be used by Consultant only for the Project as described herein. City's posting or publication of such documents created by Consultant for City shall constitute fair use and shall not constitute an infringement of Consultant's copyright, if any.

7.3 Documents that may be relied upon by City are limited to the printed copies (also known as hard copies) that are signed or sealed by the Consultant. Files in electronic media format of text, data, graphics, or

of other types that are furnished by Consultant to City are only for convenience of City, unless the delivery of the Project in electronic media format has been dictated in Attachment A, SCOPE OF SERVICES. Any conclusion or information obtained or derived from electronic files provided for convenience will be at the user's sole risk.

7.4 Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. Unless stated otherwise herein, Consultant shall not be responsible to maintain documents stored in electronic media format after acceptance by City.

7.5 When transferring documents in electronic media format, Consultant makes no representations as to long term compatibility, usability, or readability, of documents resulting from the use of software application packages, operating systems, or computer hardware differing from that as required of, and used by, Consultant at the beginning of this Project.

7.6 City may make and retain copies of Documents for information and reference in connection with use on the Project by the City, or his authorized representative. Such Documents are not intended or represented to be suitable for reuse by City or others on extensions of the Project or on any other project. Any such reuse or modifications without written verification or adaptation by Consultant, as appropriate for the specific purpose intended, will be at City's sole risk and without liability or legal exposure to the Consultant or to Consultant's Consultants.

7.7 If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

7.8 Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle Consultant to further compensation at rates to be agreed upon by City and Consultant.

## ARTICLE 8. INSURANCE.

8.1 During the performance of the Services under this Agreement, Consultant shall maintain the following minimum insurance:

a) General Liability Insurance with a combined single limit of $1,000,000 per occurrence and $2,000,000 annual aggregate.

b) Automobile Liability Insurance with a combined single limit of $1,000,000 for each person and $1,000,000 for each accident.

c) Workers' Compensation Insurance Coverage A in accordance with statutory requirements and Coverage B, Employer's Liability Insurance, with a limit of $500,000 for each occurrence.

d) Professional Liability Insurance with a limit of $1,000,000 annual aggregate.

8.2 Consultant shall add the City an additional insured on all policies unless otherwise prohibited.

8.3 Consultant shall, upon execution of this Agreement, furnish City certificates of insurance, which shall include a provision that such insurance shall not be canceled without at least thirty days' written notice to City.

8.4 No insurance, of whatever kind or type is to be considered as in any way limiting other parties' responsibility for damages resulting from their activities in the execution of the Project. City agrees to include, or cause to be included, in the Project's construction contract, such requirements for insurance coverage and performance bonds by the Project's construction contractor as City deems adequate to indemnify City, Consultant, and other concerned parties against claims for damages and to insure compliance of work performance and materials with Project requirements.

## ARTICLE 9. PAYMENT.

9.1 City will pay Consultant for services and expenses in accordance with the Fee Schedule proposal submitted for the Project as part of the Scope Of Services. Consultant's invoices will be presented at the completion of the work or monthly and will be payable upon receipt. Payment is due upon presentation of invoice and is past due thirty (30) days from invoice date. City shall give prompt written notice of any disputed amount and shall pay the remaining amount.

9.2 Consultant shall be paid in full for all services under this Agreement, including City-authorized overruns of the Project budget or unforeseen need for Consultant's services exceeding the original Scope Of Services.

9.3 TRAVEL; EXPENSES

The City shall reimburse reasonable expenses, including travel and meals, when specified in the Scope Of Services, but only in accordance with the City's Travel and Expense Policy and Procedures Manual. The maximum amount will be applied as of the date of travel and as listed in the per diem reimbursement rates on the "CONUS" website developed by the United States General Services Administration, located at www.gsa.gov [click on 'per diem rates' under the 'etools' category].

ARTICLE 10. MISCELLANEOUS PROVISIONS

10.1 EQUAL EMPLOYMENT OPPORTUNITY. In connection with this Agreement and the Project, the City and the Consultant shall not discriminate against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. The City and Consultant will take affirmative action to ensure that contractor used for the Project does not discriminate against any employee and employees are treated during employment without regard to their race, age, religion, color, gender, national origin, disability or marital status. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation; and selection for training, including apprenticeship.

10.1.1 The Consultant shall insert the foregoing provision in all contracts relating to this Project.

10.2 TITLE VI – CIVIL RIGHTS ACT OF 1964. The City and the Consultant shall comply with all the requirements imposed by Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), 49 C.F.R., Part 21, and related statutes and regulations.

10.2.1 The Consultant shall insert the foregoing provision in all contracts relating to this Project.

10.3 NO THIRD PARTY RIGHTS CREATED. City and Consultant each binds itself and its successors, executors, administrators, permitted assigns, legal representatives and, in the case of a partnership, its partners, to the other party to this Agreement and to their successors, executors, administrators, permitted assigns, legal representatives and partners of such other party in respect to all provisions of this Agreement. The Services provided for in this Agreement are for the sole use and benefit of City and Consultant. Nothing in this Agreement shall be construed to give any rights or benefits to anyone other than the City and the Consultant.

10.4 WARRANTIES/LIMITATION OF LIABILITY/WAIVER. The City reserves all rights afforded to local governments under law for all general and implied warranties. The City does not waive any rights it may have to all remedies provided by law and therefore any attempt by Consultant to limit its liability shall be void and unenforceable.

ARTICLE 11. EXTENT OF AGREEMENT:

11.1 APPLICABLE LAW/CHOICE OF FORUM AND VENUE. This Agreement is made under and will be construed in accordance with the laws of the State of Tennessee without giving effect to that state's choice of law rules. The parties' choice of forum and venue shall be

exclusively in the courts of Williamson County, Tennessee. Any provision of this Agreement held to violate a law or regulation shall be deemed void, and all remaining provisions shall continue in force.

11.2 ENTIRE AGREEMENT. This Agreement, including these terms and conditions, represent the entire Agreement between City and Consultant for this Project and supersedes all prior negotiations, representations or agreements, written or oral. This Agreement may be amended only by written instrument signed by City and Consultant.

## ARTICLE 12. DISPUTE RESOLUTION, BREACH.

12.1 If a dispute should arise relating to the performance of or payment for the services under this Agreement, the aggrieved party shall notify the other party of the dispute within a reasonable time after such dispute arises. During the pendency of any dispute, the parties shall continue diligently to fulfill their respective obligations hereunder. No arbitration or mediation shall be required as a condition precedent to filing any legal claim arising out of or relating to the Contract. No arbitration or mediation shall be binding.

12.2 BREACH. Upon deliberate breach of the Contract by either party, the non-breaching party shall be entitled to terminate the Contract with notice, with all of the remedies it would have in the event of termination, and may also have such other remedies as it may be entitled to in law or in equity.

## ARTICLE 13. SURVIVAL.

The provisions contained in this Professional Services Agreement shall survive the completion of or any termination of the Contract, agreement or other document to which it may accompany or incorporate by reference or which subsequently may be modified, unless expressly excepted from this Article upon consent of both parties.

HISTORIC
FRANKLIN
TENNESSEE

ITEM #17
WRKS 01/22/13

MEMORANDUM

January 11, 2013

TO: Board of Mayor and Aldermen

FROM: Eric Stuckey, City Administrator
David Parker, CIP Executive
Mark Hilty, Water Management Director

SUBJECT: **City of Franklin Water Reclamation Facility Modifications and Expansion**
**COF Contract No. 2013-0001**

**Purpose**

The purpose of this memorandum is to present to the Board of Mayor and Aldermen (BOMA) a professional services agreement (PSA) with CDM Smith, Inc. for design services associated with modifications to the City of Franklin Water Reclamation Facility (Wastewater Treatment Plant).

**Background**

The City, through an integrated planning process, has developed various projects associated with the City's water system needed to provide for near and long term operations, maintenance, and capital investments. On May 8, 2012 the BOMA Board of Mayor and Aldermen (BOMA) approved Resolution 2012-18 adopting the IWRP priority projects and associated funding plan for both the water and wastewater systems, including modifications and expansion of the Water Reclamation Facility.

City staff, having gone through a qualifications-based selection process has negotiated with CDM Smith, the recommended firm as approved through Resolution 2012-58, to develop a scope of services and associated fee schedule as presented in the Professional Services Agreement (PSA) and in Attachment A of the PSA for design services associated with modifications and expansion of the City of Franklin Water Reclamation Facility. The improvements include the design of the expansion of the wastewater treatment plant increasing capacity from 12 million gallons per day (MGD) to 16 MGD, wastewater collection system modeling, upgrades to the plant control/monitoring system, and enhancements to the biosolids treatment process.

**Financial Impact**

The financial impact to the City is a total not to exceed amount of $2,967,150 based on the proposed Scope of Services as negotiated with CDM Smith by City staff. Consistent with the IWRP, the anticipated construction costs for this project are as follows:

| Description | Estimated Construction Cost |
|---|---|
| Wastewater Reclamation Facility Liquids Improvements: | $18.9 M |
| Wastewater SCADA Improvements: | $4.9 M |
| Biosolids Improvements (dependent on the ability to reuse existing equipment and facilities): | $17 M - $22 M |
| **Total Construction Cost Estimate:** | **$40.8 M - $45.8 M** |

Using this range for construction cost, the total fee is in the range of 6.5% to 7.3% of the total construction costs for design and bidding services.

**Recommendation**

Approval of the Professional Services Agreement with CDM Smith for the design Scope of Services associated with Franklin's Water Reclamation Facility Modifications and Expansion project in an amount not to exceed $2,967,150.00 is recommended.