



MEMORANDUM

April 1, 2013

TO: Board of Mayor and Aldermen

FROM: Eric Stuckey, City Administrator
David Parker, City Engineer/CIP Executive
Mark Hilty, Director of Water Management
Paul Holzen, Director of Engineering

SUBJECT: **Professional Services Agreement with Hazen and Sawyer
South Prong Drainage Basin Sanitary Sewer Improvements
COF Contract No. 2013-0039**

Purpose

The purpose of this memo is to provide information to the Board of Mayor and Aldermen (BOMA) for the consideration of the Professional Services Agreement (PSA) with Hazen and Sawyer to evaluate and design the improvements to the existing sanitary sewer system.

Background

The South Prong Basin is located within the larger Spencer Creek Drainage Basin. Significant growth has occurred within this basin in the last several years which has precipitated the need for an upgrade of the existing sanitary sewer system. The base data used was from the 2008 update of the Spencer Creek Drainage Basin and then supplemented with current information within the South Prong Drainage Basin to produce expected sewer flows from within the area. As a result of this capacity study, several sections of the sewer lines were identified for upgrades. Hazen and Sawyer have been asked to provide a proposal that is broken down into the four (4) following major tasks: Preliminary Study, Final Design, Condition Assessment of a Section of 36" Sanitary Sewer and Permanent Flow Monitoring Station.

Hazen and Sawyer was selected from the RFQ associated with the IWRP. As part of the RFQ we required a five percent (5%) participation from DBEs. The City is requiring that Hazen and Sawyer utilized the services of Disadvantaged Business Enterprises (DBE) to satisfy this requirement.

Financial Impact

The cost as negotiated with Hazen and Sawyer for the design services is a total amount not to exceed \$337,095.00.

Based on the work involved with implementing the above tasks, the proposed cost appears to be appropriate.

Recommendation

Staff recommends approval of the Professional Services Agreement with Hazen and Sawyer (COF Contract No. 2013-0039) including all three (3) tasks for an amount not to exceed \$337,095.00.

CITY OF FRANKLIN, TENNESSEE
PROFESSIONAL SERVICES AGREEMENT
COF Contract No 2013-0039

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as City, and HAZEN AND SAWYER hereinafter referenced as Consultant, who mutually agrees 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:

South Prong Drainage Basin
Sanitary Sewer Improvements

1. **SCOPE OF SERVICES.** Consultant shall provide engineering and related technical services for the Project in accordance with the SCOPE OF SERVICES. The SCOPE OF SERVICES as found in Attachment A shall be considered as an integral part hereof.
2. Consultant shall be paid on an hourly basis for work performed based on the FEE SCHEDULE as contained in Attachment A in the Amount Not To Exceed **THREE HUNDRED THIRY-SEVEN THOUSAND NINETY-FIVE NO/100 DOLLARS (\$337,095.00)**. The FEE SCHEDULE shall be considered as an integral part hereof.
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 _____ Day of _____ 20____.

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 paragraph.

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 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.

ATTACHMENT A

SCOPE OF WORK, SCHEDULE, AND FEE

PROFESSIONAL ENGINEERING SERVICES BETWEEN CITY OF FRANKLIN, TENNESSEE AND HAZEN AND SAWYER, P.C. FOR SOUTH PRONG SEWER IMPROVMENTS

SCOPE OF SERVICES

I. PURPOSE/OBJECTIVE OF PROJECT

The purpose of the project is to provide sufficient sewer capacity for the South Prong Drainage Basin, provide permanent flow monitoring capability for the basin, and rehabilitate 650 linear feet of 36-inch ductile iron pipe (DIP). Hazen and Sawyer will perform the following services:

- Review of the South Prong Drainage Basin Sewer System Study prepared by others to revisit the flow projections and recommendations regarding capacity limited sewer reaches.
- Develop a basic uncalibrated sewer model of the subject basin and the Spencer Creek interceptor immediately downstream for approximately 3,500 L.F.
- Evaluate and compare the option to parallel the existing 24-inch interceptor in sub-basin 3 (approximately 5,500 L.F.) with another 24-inch interceptor versus the option to pipe burst the existing 24-inch interceptor to a 36-inch interceptor.
- Design approximately 5,500 LF of 24-inch diameter gravity sewer (36-inch if pipe bursted) from west of I-65 to the existing dual interceptor sewers located northwest of Cool Springs Blvd adjacent to the Aspen Grove Park. This new/upsized section of sewer will include crossing two (2) major roadways (Mallory Lane and Cool Springs Blvd) and approximately 8 creek crossings along with associated permitting for each crossing.
- Inspect approximately 650 LF. of 36-inch DIP sewer (located adjacent to McMahan Lane) suspected to have corrosion issues
- Design improvements for 650 L.F. of 36-inch DIP using cured-in-place pipe lining (CIPP) as necessary.
- Evaluate alternatives and design of a permanent flow metering station or recommend a method acceptable to the City to achieve permanent flow monitoring data for the subject basin.

II. TASK 1A: PRELIMINARY STUDY

The following tasks will be performed by Hazen and Sawyer to review options to supplement capacity of the existing 24-inch interceptor sewer in sub-basin 3 within the South Prong Drainage Basin.

Task 1A.1 – Preliminary Review/Evaluation – Conduct a review of the existing report on the South Prong Drainage Basin prepared by others and update the future flow projections to match anticipated future conditions per direction from the City of Franklin regarding density modifications. The revised report will include recommendations for future sewer sizing; however this evaluation will not include any additional routing information. It will be assumed that the routing currently shown is adequate. The evaluation will include the entire South Prong Drainage Basin (sub-basins 2B-8).

Hazen and Sawyer will develop and submit an abbreviated Technical Memorandum (TM) that includes tables, figures, and a description of the methodology used to update the flow projections. Two (2) meetings with the City are anticipated to discuss and evaluate the findings prior to submission of a final TM.

The abbreviated TM will include the development of an uncalibrated hydraulic sewer model (SWMM or Infoworks) of the subject sewer basin. The model will be loaded with the anticipated flows developed from the flow evaluation to predict how the sewer system operates and if and where surcharging and/or overflows occur. It should be noted that many assumptions will have to be made in the model and Infiltration/Inflow (I/I) will be included in a peaking factor and will not be based on actual flows as only limited flow monitoring data is not available. The model can be used in the future by others once additional flow monitoring data is available. The model will require calibration to match the actual flow monitoring data before any predictions can be made.

The abbreviated TM will include an evaluation regarding two (2) options to supplement the capacity of the existing 24-inch interceptor in sub-basin 3. The options will include pipe bursting with a larger line (36-inch preliminary size) and a relief sewer (24-inch preliminary size). The evaluation will review routing, materials, road crossings, creek crossings, and an opinion of probable construction cost for each alternative.

This scope of work does not include supplementing capacity of other sewers in the South Prong Drainage Basin unless a change in scope is authorized.

Task 1A.2 - Pipeline Routing Study – Conduct a preliminary pipeline routing study for the supplemental 24-inch gravity sewer. This study will include an analysis of various alternatives and assess the routes based on

number of parcels crossed, constructability, utility conflicts, access for operation and maintenance, public issues, environmental issues, and construction cost. Develop a preliminary plan drawing showing the supplemental sewer route.

Task 1A.3 – Pipe Bursting Study – Conduct a preliminary pipe bursting study to upsize the existing 24-inch interceptor gravity sewer to a 36-inch sewer. This study will include an analysis of various alternatives and assess the feasibility of this technology for this application. The study will include a constructability review including an analysis of how the work would be accomplished while keeping the existing sewer in-service which will most likely involve an extensive by-pass pumping plan. Also included will be a materials review, capacity review, lateral and service line reconnections, public issues, environmental issues, and construction cost.

Task 1A.4 - Hydraulic Capacity Verification – Hazen and Sawyer will verify the required capacity of the existing and the proposed 24-inch supplemental interceptor sewer based upon the data contained in the report entitled, “Sewer System Study - South Prong Drainage Basin” dated September 27, 2012, and the updated flow projects developed in Task 1A.1 above.

Task 1A.5 - Pipeline Material Study – Hazen and Sawyer will study and consider various pipeline materials and make recommendations for the supplemental 24-inch interceptor gravity sewer. Included in this analysis will be a study of design life, material and installation cost, susceptibility to corrosion such as is caused by hydrogen sulfide, and hydraulic capacity based on actual internal diameters and other factors deemed pertinent to the project by the City. Various pipeline manufacturers will also be discussed.

III. TASK 1B: FINAL DESIGN

The following tasks will be performed by Hazen and Sawyer and its subconsultants to prepare biddable contract documents including technical specifications and drawings for the supplemental 24-inch interceptor sewer in sub-basin 3 in the South Prong Drainage Basin:

Task 1B.1 - Ground Survey - A 100 foot strip topographic survey will be conducted with 1-foot contours for the supplemental gravity sewer.

Hazen and Sawyer’s surveyor shall also field locate site constraints such as easement/right-of-way limits and monuments, underground utility location (where marked by one-call), geotechnical boring locations, etc. Route staking is not included due to the adjacent commercial property. The pipeline to be designed and permitted shall be up to a maximum of 5,500 L.F. in accordance with the project description in Section 1.

Task 1B.2 - Easement Mapping – Gravity Sewer - All affected properties shall have easement maps prepared at an appropriate scale for presentation on 8-1/2 x 14 sheets for acquisition in accordance with the City's standards and suitable for recording. Ties to property corners and details of the easement and temporary construction easements shall be shown. Maps shall be generated from the same file as the construction documents. The total amount budgeted for this task is based on preparation of an estimated fourteen (14) standard easement maps at a budgeted cost of \$450 per map. Hazen and Sawyer shall receive additional compensation if the number of easements exceeds fourteen (14) or if additional work is required for condemnations.

Task 1B.3 – 50% Design - Gravity Sewer - Hazen and Sawyer shall provide 50 percent plan and profile sheets at an acceptable scale. The plan view will show proposed alignment with manholes, and relevant features impacting construction including right-of-way and property lines. The profile view will show the proposed pipelines and relevant utilities or features impacting construction. The plan and profile sheets will be of adequate detail to accurately finalize the pipeline alignments to prepare easement plats for easement acquisition. Included with this 50 Percent submittal will be an Engineer's Preliminary Construction Cost Estimate. One (1) review meeting is anticipated.

Task 1B.4 - Finalize Design Criteria – Gravity Sewer – Following the City's review and approval of the 50 percent plan and profile drawings, Hazen and Sawyer shall proceed with the final design of the project. This agreement scope of services includes preparation of one set of Contract Documents for construction of the supplemental 24-inch interceptor sewer. Hazen and Sawyer will work with the City to finalize all design criteria for the project.

The following is a partial listing of the design criteria to be addressed:

- Evaluate sizes of manholes and diversion structures as well as the type and standard design of these structures.
- Review applicability for appropriate sewer construction technique (sewer replacement, parallel sewer, pipe bursting, etc.) for various segments of the project.
- Evaluate construction access points for the work.

Task 1B.5 – Roads, Regulatory and Utilities Coordination – Hazen and Sawyer shall coordinate the final design with City of Franklin (Street Department, Stormwater Department), Mallory Valley Utility District, TDEC, and other applicable utility companies and governmental entities as required. Define the design modifications required to accommodate their requirements. Coordinate any road or utility modifications as

required and assist the City in making formal arrangements. Include appropriate requirements in the Contract Documents. Prepare jack-and-bore design packages for submission to City of Franklin for approval. Design shall be based on actual soil borings and rock cores (if applicable) and analysis at the specific sites as is practical.

Task 1B.6 - Geotechnical Investigations – Gravity Sewer – Hazen and Sawyer's geotechnical subconsultant shall conduct soil borings at major road crossings to assist with determining acceptable crossing locations. In general, borings will be made at both ends of the two (2) major road crossings.

Task 1B.7 - Prepare and Submit Permit Applications – Gravity Sewer – Hazen and Sawyer shall finalize the list of permits and approval requirements based on the information collected during the 50 Percent design phase. Where necessary, Hazen and Sawyer 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. Applications for the required permits and approvals shall be prepared for submittal to the respective agencies by Hazen and Sawyer.

All permitting and application fees/costs will be paid directly by the City.

Task 1B.8 - 90% Design - Gravity Sewer – Hazen and Sawyer shall 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. Specifications shall be prepared in general conformance with the sixteen-division format of the Construction Specifications Institute or as directed by the City of Franklin.

The following is a partial listing of work to be accomplished under this design task.

- Detailed plan and profile drawings at an acceptable scale.
- Plan view showing proposed pipelines and relevant features impacting construction including but not limited to existing utilities, easements and property lines.
- Profile view pipelines and relevant utilities or features impacting construction.
- Development of construction sequencing plan to be included in the project specifications.

- Dewatering and bypass pumping plan.
- Details for construction of bored crossings at Mallory Lane and Cool Springs Blvd.
- Sediment and erosion control requirements.
- Traffic control requirements.
- Details for pipe installation including sewer check dams, encasement, connections, restrained joints, and other pertinent details.
- Details for manholes and structure installation.
- Prepare construction bid documents to include general and special conditions, bid advertisement, measurement and payment descriptions, special requirements for construction, and technical specifications.
- Design revisions requested after the 90 percent design drawings and specifications submittal due to negotiations with property owners are not included under this scope of work.
- Provide a 90 percent construction cost estimate and schedule for the project to include a review of scheduling constraints with respect to time and project completion.

Task 1B.9 – 100% Design Contract Documents – Gravity Sewer – After receipt of the City’s 90 percent review comments and final comments from the permitting agencies, Hazen and Sawyer shall prepare 100 percent documents to the City for Contract review.

IV. Task 2: CONDITION ASSESSMENT AND DESIGN OF IMPROVEMENTS FOR 36-INCH SEWER ADJACENT TO MCMAHON LANE AND FRANKLIN ROAD

Task 2.1 – Condition Assessment – Conduct an internal inspection of the existing 36-inch DIP sewer from MH3 to MH A for about 650 L.F. as shown on plan sheet 8 of the Spencer Creek Interceptor Sewer dated 1985. The internal inspection shall utilize CCTV and/or sonar.

Task 2.2 – Design Improvements – After review of the condition assessment, a recommendation for improvement will be developed and presented to the City. The improvement is anticipated to include cured-in-place pipe lining (CIPP). Point repairs are included in the scope of work for CIPP. If it is determined that replacing the 36-inch line is warranted,

additional fee will be necessary. The design package for this work will be prepared as a separate bid package suitable for bidding. It is anticipated that one (1) city review will be conducted prior to completion of the bid package.

V. Task 3: PERMANENT FLOW MONITORING STATION

Task 3.1 – Evaluation of Options – Develop an evaluation of options for a permanent flow monitoring station to be located east of I-65 near the existing walking trail. Options may include third party operation of a typical area/velocity flow meter; magnetic flow meter in a vault; a flume with a depth gauge within a vault. For each option the advantages and disadvantages will be discussed. The results of the evaluation will be included in a Technical Memorandum.

Task 3.2 – Design Improvements – After review and approval of the TM by the City and agreement on the recommended option, Hazen and Sawyer will design the flow monitoring station. Necessary instrumentation design will be included to communicate with the City’s SCADA system as directed by others. Structural design for a new custom vault will be included as well as a site plan and site design. The flow monitoring station will be prepared as a separate bid package suitable for bidding. It is anticipated that one (1) city review will be conducted prior to completion of the bid package.

VI. ADDITIONAL WORK

All work related to bidding and construction services shall not be included in this scope of work. If requested by the City, Hazen and Sawyer shall execute a separate agreement or change order to this agreement for these and any additional services.

VII. SCHEDULE

		Duration
Task 1A	Preliminary Study TM	120 days after NTP
Task 1B	Design (supplemental 24-inch interceptor sewer)	180 days after approval of Preliminary Study TM
Task 2	Condition Assessment/Design 36-inch CIPP	180 days after NTP
Task 3	Permanent Flow Metering Station	180 days after NTP

VIII. COMPENSATION

The City of Franklin shall compensate the Engineer for providing services as described in this scope of work in accordance with the terms of the agreement on

a time and materials reimbursement basis. The upper limit cost for this Scope of Work shall not exceed \$337,000 without an amendment to this authorization. An estimated breakdown of hours by task is provided on the last page of this exhibit.

Hazen and Sawyer is committed to exceeding 5% participation by DBE partners as stated in our proposal. The DBE participation is 34% of the design task (Task 1B). Our subconsultants include Civic Engineering and IT (survey and easements) and Geotek Engineering (geotechnical exploration).

Hazen and Sawyer's hourly billing rates for the period of this scope of work shall not exceed:

Hazen and Sawyer Bill Rates 2013	
<u>Employee Category/</u>	<u>Rate</u>
VP/Project Principal/Quality Control	195
Senior Associate/PM	190
Associate	160
Sr. Principal Engineer	140
Principal Engineer	130
Engineer/Ass't Engineer	110
Sr.Principal Designer	130
Modeler/GIS Specialist	125
Designer/Technician	100
Drafter	85
Intern/Co-Op	60
Administrative II	75
Administrative I	45

Reimbursable charges and expenses:

Subconsultant invoices will be marked up 5.0% to cover the cost of administration.

Auto mileage:	IRS approved rate
Miscellaneous and travel expenses:	at actual cost
Reproduction costs:	at actual cost

Task	Task Description	Hours	Total
1A	Preliminary Study	450	\$52,700
	Expenses		\$1,000
1B	Design	1180	\$141,500
	Survey		\$34,500
	Easements (\$450/each)		\$6,300
	Geotechnical		\$14,000
	Expenses		\$10,000
	<i>Subtotal Task 1</i>		<i>\$260,000</i>
2	Condition Assessment and Design for 36-in CIPP	250	\$30,000
	Allowance for CCTV/Sonar		\$10,000
	Expenses		\$2,000
	<i>Subtotal Task 2</i>		<i>\$42,000</i>
3	Permanent Flow Monitoring Station	270	\$31,500
	Survey		\$2,000
	Expenses		\$1,500
	<i>Subtotal Task 3</i>		<i>\$35,000</i>
Total Not-to-Exceed			\$337,000

Franklin, Tennessee
Water Management Department
South Prong Sewer Improvements
February 2013

Task/Sub-Task	Total Hours	Estimated Labor Cost
Task 1A: Preliminary Review/Evaluation TM		
Collection of data/information	16	\$1,910
Review of capacity, projected flows, basic static model	138	\$17,720
Routing options for supplemental sewer	56	\$6,320
Options regarding pipe bursting	40	\$5,320
Evaluation of Road Crossings (Mallory and Cool Springs)	32	\$3,980
Evaluation of creek crossings	44	\$5,760
Opinion of probably construction cost	26	\$3,790
Abbreviated Technical Memorandum Preparation	71	\$7,715
Labor Sub-Total		\$52,515
Expenses		\$1,000
SUBTOTAL	423	\$53,515
Task 1B: Detailed Design		
Route Alignment	92	\$11,180
Materials Selection	40	\$5,160
Gravity Sewer Design	514	\$57,650
Permitting (SWPPP, TDOT, ARAP)	180	\$25,260
Manhole Design/Special Coatings	34	\$4,000
Opinion of probably construction cost	40	\$5,400
Review meetings and response to comments	64	\$8,680
Specification preparation	208	\$24,120
Labor Sub-Total		\$141,450
Expenses		\$10,000
SUBTOTAL	1,172	\$151,450
Task 1C:Easements		
Expenses 14 Parcels @ \$450 each		\$6,300
Task 1C:Survey		
Expenses		\$34,500
Task 1D:Geotechnical		
Expenses		\$14,000
Task 2: 36-inch Sewer Structural Repair		
Condition review and evaluation	14	\$2,080
Design of structural renewal options	84	\$9,940
TDOT/CSX Permitting	52	\$6,360
Preparation of Construction Documents	82	\$9,450
Opinion of probably construction cost	16	\$2,280
Labor Sub-Total		\$30,110
Expenses (CCTV/Sonar Insp \$10,000 allowance)		\$12,000
SUBTOTAL	248	\$42,110
Task 3: Permanent Flow Meter Design		
Evaluation of flow metering options	32	\$3,820
Design of Flow Meter Vault	80	\$10,260
Site Plan	40	\$4,120
Instrumentation/SCADA Design	44	\$5,160
Preparation of Construction Documents	70	\$8,360
Labor Sub-Total		\$31,720
Expenses (Survey \$2,000)		\$3,500
SUBTOTAL	266	\$35,220
Sub total labor		\$255,795
Sub total expenses		\$81,300
Total		\$337,095