

**CITY OF FRANKLIN, TENNESSEE
PROFESSIONAL SERVICES AGREEMENT
COF Contract No. 2019-0162**

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is by and between the City of Franklin, Tennessee, hereinafter referenced as City, and **NEEL-SCHAFFER** 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:

2019 Murfreesboro Rd Traffic Signal Timing Update

1. SCOPE OF SERVICES. Consultant shall provide engineering related technical services for the Project in accordance with the Scope of Services (Services) as found in Attachment A which shall be considered as an integral part hereof.
2. Consultant shall submit as a part of Attachment A an individual Fee Schedule and a Completion Schedule for the Project based on the detailed Scope of Services.
3. In event of a conflict between this Agreement and the attached document(s), this Agreement shall supersede conflicting terms and conditions.
4. Consultant shall be paid on a monthly basis for work performed based on the Fee Schedule as contained in Attachment A in the Amount of **One Hundred Sixteen Thousand Five Hundred Twenty-Three AND 00/100 Dollars (\$116,523.00)**.

The Board of Mayor and Aldermen Approved this Agreement on the _____ Day of _____ 201__.

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 Designate, in writing, the sole Project representative to coordinate with City the Services to be provided, including all contact information.
- 1.5 Unless provided for in the Project Scope of Services (Attachment A), Consultant shall perform all Services with his own forces (employees). Should sub-consultants be proposed to be used in the Project, a listing of said sub-consultants with Services to be performed shall be provided. After approval of this Agreement, no substitute for sub-consultants shall be allowed unless approved by City.
- 1.6 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.
- 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 Agreement 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 Before executing this Agreement, the Consultant shall have prepared and submitted for approval to the City a Completion Schedule for the Project with milestones for the various stages (tasks) of the Services as outlined in the Scope of Services. The Consultant shall submit and obtain the City's approval for any proposed changes to the logic, durations, sequences, or timing of tasks as approved in the Completion Schedule.

6.3 **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.

6.4 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 By execution of this Agreement, Consultant and his sub-consultant(s) grant the City a royalty-free, perpetual, irrevocable, and assignable license to use any and all intellectual property interest Consultant or his sub-consultant(s) possess to any drawings, details, specifications, documents, and other information created before each of their first involvement with the Project and subsequently incorporated into the Project's documents. 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 sixty (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 sub-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 (30) 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**
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, City and Consultant shall not discriminate

against any employee or applicant for employment because of race, color, sex, national origin, disability or marital status. City and Consultant will take affirmative action to ensure that the 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 Consultant shall insert the foregoing provision in all contracts relating to this Project.

- 10.2 **TITLE VI – CIVIL RIGHTS ACT OF 1964.** City and 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 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 City and Consultant.

- 10.4 **WARRANTIES/LIMITATION OF LIABILITY/WAIVER.** City reserves all rights afforded to local governments under law for all general and implied warranties. 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 this Agreement. No arbitration or mediation shall be binding.
- 12.2 BREACH. Upon deliberate breach of the Agreement by either party, the non-breaching party shall be entitled to terminate the Agreement 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 Agreement, contract 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.

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

BY: _____
Dr. Ken Moore
Mayor
Date: _____

Approved as to Form:

Tiffani M. Pope, Staff Attorney

February 5, 2019

Mr. Jonathan Marston, P.E.
Assistant Director of Engineering
City of Franklin
109 3rd Avenue South
Franklin, TN 37064

**Subject: Professional Services Work Order
2019 Murfreesboro Rd Traffic Signal Timing Update**

Dear Jonathan:

Per your request, please accept this submittal as a scope proposal for the referenced work order. This project represents the latest effort in the Engineering Department's continuing program to optimize traffic signal timings along the Murfreesboro Rd and Royal Oaks Blvd corridors. A complete list of the intersections included in the study area are provided in the scope documentation.

Services for the project will be provided as shown in the exhibits listed below and made a part of the overall professional services agreement. Fee terms will follow the hourly rate schedule included as Exhibit C. Marr Traffic Data Collection will act as a subconsultant by providing traffic volume collection services. Documentation for this work order is provided by the attached exhibits:

- Exhibit A – Project Scope
- Exhibit B – Estimated Fee Proposal
- Exhibit C – Hourly Rate Schedule
- Exhibit D – Marr Traffic Fee Proposal (Traffic Count Subconsultant)
- ~~• Exhibit E – General Terms and Conditions~~

Please let us know if you need anything else. We very much appreciate the opportunity to assist the city with this effort. We look forward to working with everyone on this important project.

Sincerely,
NEEL-SCHAFFER, INC.



Gregory D. Judy, P.E., PTOE
Engineer Manager – Vice President

c: file

EXHIBIT A – TASK DETAILS

Task 1 – Project Management

This task will consist of general project management, administrative, and accounting activities for the project. It will further comprise the following throughout the life of the project: a kickoff meeting, scheduling and holding project status / review meetings, and discussion of project issues.

Task 1.1 – Kick-off Meeting

Consultant will coordinate and facilitate a kick-off meeting with City of Franklin (COF) staff after the official notice-to-proceed has been issued. The purpose of this meeting will be to review and confirm traffic signal optimization study procedures, review project scope, discuss key issues, and identify other issues so they can be resolved early in the process. A tentative agenda for the kick-off meeting includes, but is not limited to, the following:

- Project schedule
- Review of desired study protocol (logistics)
- Points of contact
- Review signal timing philosophies (cycle lengths, phasing sequencing, lead-lag, etc.)
- Traffic signal equipment, pedestrian requirements, and physical limitations
- Citizen-perceived problems
- Agency-perceived problems
- Review format of timing plans
- Review process of submittals and outline of deliverables (technical appendices memo, coding sheets, electronic and/or hard copies)

Task 1.2 – Monthly Project Meetings, Invoices, and Status Reports

Consultant will coordinate and facilitate project review meetings. Review meetings will be scheduled at key milestones or review points, such as draft coordinated timing plans. Input and key direction may be obtained from COF staff via email or telephone communication to expedite work tasks. Examples include proposed time-of-day operating plan or traffic signal timing coding sheet template. The Consultant will prepare and distribute meeting agendas for each meeting.

Monthly status reports will be developed by the Consultant and accompany monthly submission of project invoices. The status report will provide general overview of tasks completed during the billing period.

Monthly invoices will be in a form that provides all information requested by the COF project manager. The exact format of the invoice shall be developed by the Consultant and submitted for approval. Documentation of sub-consultant expenses will be included with the respective invoice.

Task 1 Deliverables:

- Monthly status update and invoicing
- Meeting agendas
- Project coordination and administration

Task 2 – Data Collection

This task will involve the collection of traffic and field data needed to provide a comprehensive analysis of the signal timings along the project corridors. Data collection will include assembling existing signal timing data (provided by COF), existing geometric data, reviewing available existing traffic counts, collecting new traffic volume data, and conducting travel time and delay studies (see separate task). Traffic volume and travel time data will be collected at time when local schools are in session and not public holidays. Weekday traffic volume counts will be limited to collection on Tuesday thru Thursday.

EXHIBIT A – TASK DETAILS

Task 2.1 – Assemble Existing Data from City of Franklin and/or TDOT

The COF Project Manager will be responsible for coordinating delivery of hardcopy and/or electronic copies of all signal timing data to the Consultant. The timing data will include all existing basic timing data, time-of-day data, and coordination parameters. If available, the COF Project Manager will also provide existing phasing data for each intersection.

Consultant will be responsible for acquiring relevant ADT (average daily traffic) count data from TDOT. TDOT ADT data will supplement the daily traffic data collected as part of project. The Consultant will analyze ADT data to determine the logical subsystem breakpoints and time-of-day operating plan. This will involve reviewing ADT's and identifying those segments of each system where volumes and roadway characteristics change significantly enough to require system breaks. In addition, the Consultant will make recommendations regarding the number of timing plans that should be implemented. Appropriate cycle lengths shall be recommended for various times of the day based on these volumes. As a minimum, five basic timing plans will be developed (weekday AM, MD, and PM peaks; weekend peak; and off-peak).

Task 2.2 – Traffic Volume Data Collection

Consultant will acquire new traffic volume data as identified in the scope. The Consultant will review existing data available from COF and TDOT to determine its appropriateness for the project and, if so, use the data to supplement the new data collected. Turning movement counts (TMCs) will be collected and processed for the following peak periods (see attachment for list of TMC data):

- Weekday AM peak
- Weekday Mid-Day (MD) peak
- Weekday PM peak
- Weekend (Saturday) peak

Data will be recorded in two-hour increments for each time period. Exact hours for TMC data will be determined from ADT volume count data.

Task 2.3 – Field Inventory

Field inventory of existing traffic signal equipment and intersection conditions will be limited. Focus will be placed on utilizing existing data provided by the COF, using existing Synchro files and reviewing data provided by the COF from previous inventory efforts. The Consultant will not visit intersections to collect existing data (traffic signal phasing, geometric conditions and equipment). Limited site visits along the corridor will be made during peak periods to observe existing traffic operations. No formal documentation of existing conditions will be prepared or provided. Task includes the update of existing information within existing Synchro files to the extent needed to verify that the software model generally represents present conditions.

Task 2 COF Deliverables:

- GIS mapping and/or aerial photography as needed
- Historical ADT and TMC data as available
- Current signal timings and operational settings
- Existing Synchro software files
- Previous field inventory information

Task 2 Consultant Deliverables:

- TMC data (PDF)
- ADT tube count data (PDF)
- ADT volume time plot chart (PDF)

EXHIBIT A – TASK DETAILS

Task 3 – Evaluate Existing Conditions

This task includes configuring and running Synchro based on existing conditions and parameters. Consultant will update existing Synchro base models with current traffic signal timings provided the City.

Task 3.1 – Data Compilation/Validation

Using the data provided by COF and verified from external sources, the Consultant will review and update existing Synchro models. New traffic signal timing models will be developed for each proposed timing plan. The traffic volumes that are collected and developed during Task 2 will be entered into the Synchro models. Volume balancing along the corridors will be performed to validate the new TMC data that is collected for this project.

Task 3.2 –Operational Analysis

The Consultant will conduct an operational assessment for each of the intersections. Existing and proposed signal phasing/sequencing will be analyzed as well as identifying other possible short-term operational improvements (i.e. lane use changes, signal phasing, phase sequence, etc.) This information will be compiled and shared with COF staff.

Task 3 Deliverables:

- Technical appendix documenting methodology and conclusions used to assess existing conditions (electronic copy). Investigation into recommended modification to traffic signal operation or lane use assignments, if any, will be discussed.
- Synchro software models (electronic copy)

Task 4 – Timing Plan Development

Using the data collected in Task 2 and software files developed in Task 3, the Consultant will prepare five (5) timing plans for each operating subgroup as follows:

- Weekday AM Peak timing plan
- Weekday MD Peak timing plan
- Weekday PM Peak timing plan
- OFF Peak timing plan
- Weekend Peak timing plan

Task 4.1 – Update Basic Signal Timing Parameters

The Consultant will assist with development of updated basic signal timings:

- Initial (min) interval
- Passage (extension) interval
- Clearance (yellow + all-red) intervals
- Pedestrian (Walk and flashing don't walk clearance)
- Max, and Max2 settings where appropriate

For development of clearance timing intervals, the TDOT Traffic Signal Design manual (current edition) will be used for technical guidance. Final signal timing decisions will be subject to engineering judgement considerations and COF staff approval.

Task 4.2 – Determine System Boundaries

Consultant will evaluate and recommend preferred signal system boundaries for each project corridor. The signal system boundaries will be developed based on, but not limited to, the following factors:

- ADT and TMC count data
- Signal spacing
- Driver expectancy
- Cycle length requirements
- Roadway corridor operations

EXHIBIT A – TASK DETAILS

Task 4.3 – Cycle Length and TOD Clock Development

Using the electronic files modified in Task 3.1, Consultant will begin the re-timing process by performing peak hour cycle length evaluations in Synchro. Using evaluations from Synchro along with knowledge gained via observations in the field and local familiarity, a cycle length will be recommended for each timing plan. The cycle lengths that are evaluated will be compared with the current cycle lengths, and this comparison will assist in the determination of the cycle length recommendation. Next, the Consultant will develop Time-of-Day (TOD) clock settings for each traffic signal group that will determine the optimal timing plan for each typical weekday/weekend. The cycle length and TOD preliminary plan will be provided to COF staff for consideration and comment.

Task 4.4 – Split, Offset, and Phase Sequence Development

Once the cycle lengths have been finalized, each intersection will be evaluated to determine optimal phase splits for each vehicle movement. Phase split optimizations will occur even if the cycle length does not change from the existing cycle length. Finally, phase sequencing and offset manipulation will be performed in an effort to maximize arterial green bands and corridor operations. Both Synchro and SimTraffic will be used to analyze and observe coordination options. Consultant and COF staff will have opportunity to review and consider proposed traffic signal timing plans prior to field implementation.

Task 4.5 – Intersection Coding Sheets

Upon finalizing the proposed traffic signal timings and plans, the Consultant will document the initial proposed timings onto coding sheet templates that replicate basic data programmed into the traffic signal controllers.

Task 4 Deliverables:

- Clearance interval signal timing worksheets
- Preliminary Cycle length and Time-of-Day operation data (one (1) electronic copy)
- Proposed Synchro files developed for each timing plan
- Signal timing coding sheets (electronic copy)

Task 5 – Field Implementation

Consultant will field observe and fine-tune adjust new traffic signal timings during implementation. The Consultant will provide initial signal timing data to COF staff via signal timing coding sheets. COF and Consultant staff will have opportunity to bench test proposed signal timings at COF engineering office prior to deployment of new signal timings. COF staff will be responsible for programming and download of new timings into signal controllers. The Consultant will conduct field observations for each of the weekday and weekend peak timing plans. The coordinated timings will be verified as to their accuracy and effectiveness and fine-tuned. Consultant, with assistance from COF, will fine-tune operation by making desired adjustments to signal timings on field signal controllers. Consultant will record changes while in field and submit final, updated coding sheets electronically to COF staff after all adjustments have been made.

Task 5 Deliverables:

- Implemented Synchro files (one (1) electronic copy)
- Revised timing sheets reflecting fine tuning modifications (electronic copy)

EXHIBIT A – TASK DETAILS

Task 6 – Before and After Travel Time and Delay Studies

Consultant staff will collect and compile travel time and delay data along Murfreesboro Rd and Royal Oaks Blvd during the weekday AM, MD, and PM peak periods. Data will be collected prior to the implementation of the new timings (“before” conditions). Following implementation and fine-tuning of the new timings, “after” conditions will be collected for the corridors. The “after” travel time data will be collected once the system has had ample time to stabilize after the new timings and fine tuning have been implemented. Using the travel time data collected in the field, the Consultant will prepare “before” and “after” comparisons using the following parameters:

- Stopped time (delay)
- Total travel time
- Average speed
- Number of stops

A minimum of four (4) successful travel time runs for both “before” and “after” conditions will be completed for each corridor. Data from the travel time and delay studies will be compiled and utilized to prepare an evaluation of the traffic signal timing optimization.

Task 7 – Project Documentation and Reporting

Following the travel time studies, Consultant staff will prepare a summary report comprised of a compilation of technical appendices documenting the following:

- Field inventory and traffic volume data summary
- Clearance interval analysis
- Cycle length and Time-of-day analysis results
- Timing plan (coding sheet) summary
- Results of before and after travel time studies (stop/delay reductions)

Task 7 Deliverables:

- Technical Appendix Summary (PDF)
- Executive Summary “At A Glance” Memo (PDF electronic view and print view)

Task 8 – Additional Services

- Tasks 1 through 7 identify the Scope of Services to be performed as part of the 2019 Murfreesboro Rd Traffic Signal Coordination Update project. In addition to these tasks, the COF reserves the right to request additional services that are related in nature to those being performed as part of this project. Task 8 is set aside to accommodate such requests of the Consultant. Any request for additional services will be made in and agreed upon in writing. Compensation for additional services will be agreed to prior to their performance.

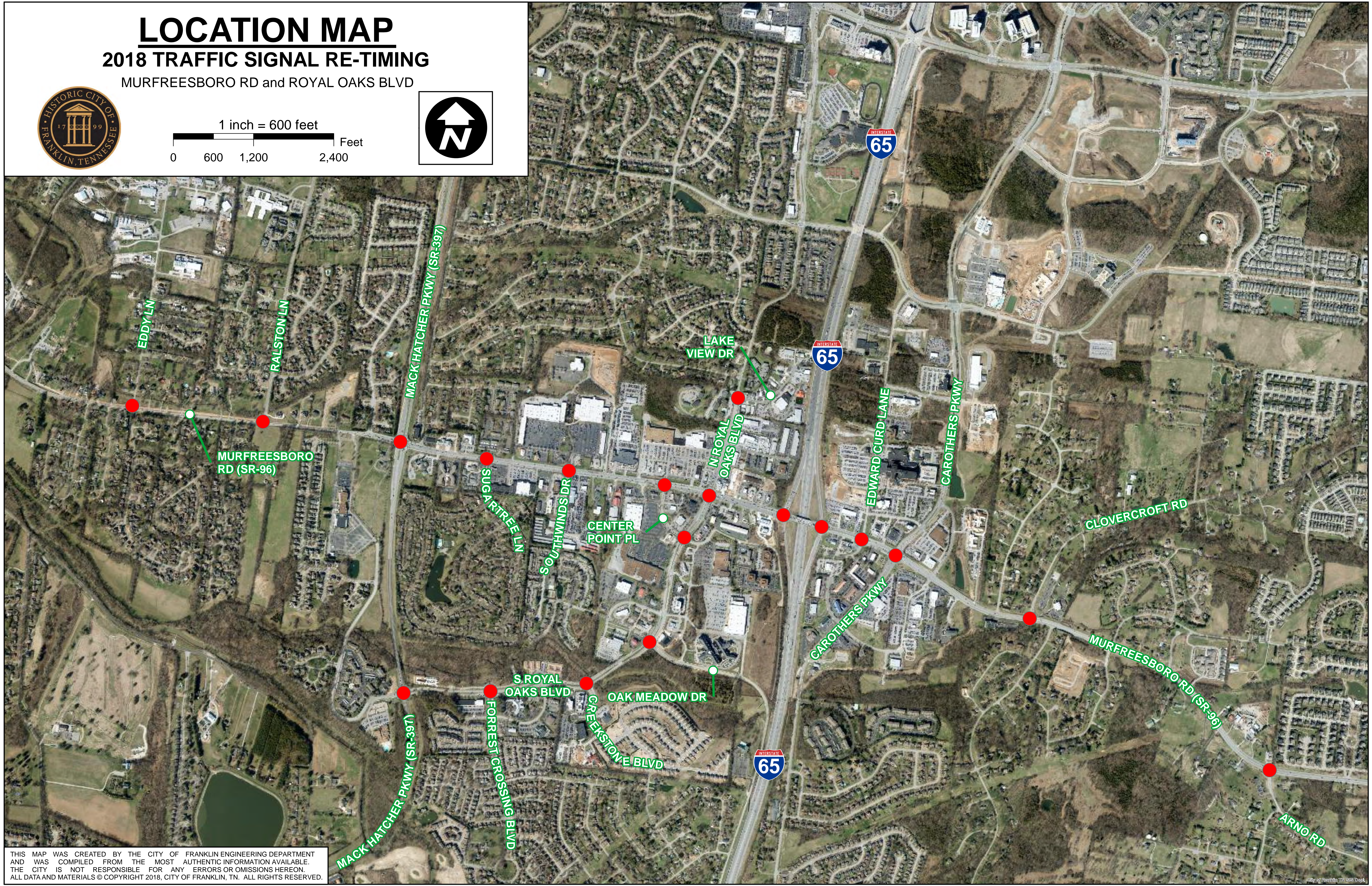
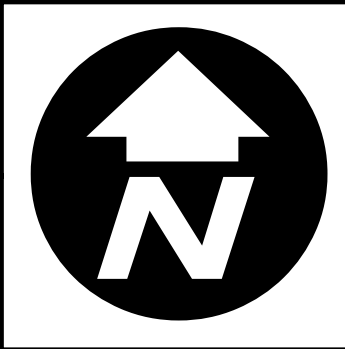
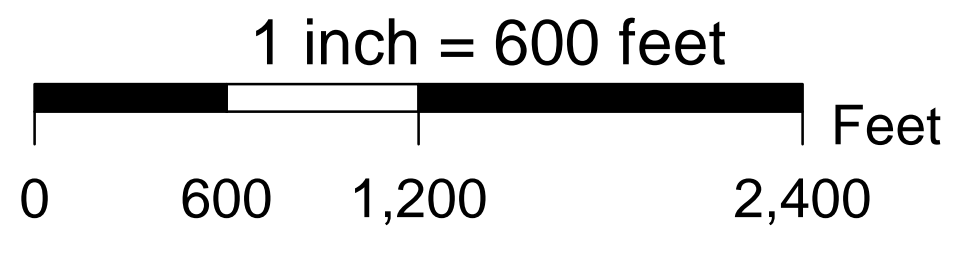
Project Schedule

- The City of Franklin desires and anticipates that implementation of updated traffic signal coordination will occur during spring of 2019 prior to summer dismissal of local schools. Substantial completion of work tasks is desired to occur on or before June 30, 2019. Final documentation and reporting may extend beyond this timeline allowing for project wrap-up, project summaries and administrative tasks.

LOCATION MAP

2018 TRAFFIC SIGNAL RE-TIMING

MURFREESBORO RD and ROYAL OAKS BLVD



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Turning Movement Count List - 2019 Murfreesboro Rd Signal Coordination Update

Number	Group #	Corridor	Name	TMC-2hr	TMC-4hr	TMC-6hr	TMC-8hr	Video-12hr	TMC Requested (2/4/6/8 hrs)	AM	MD	PM	SAT
1	1	Murfreesboro Road	Arno Rd				1			X	X	X	X
2	1		Clovercroft Rd				1			X	X	X	X
3	1		Carothers Pkwy				1			X	X	X	X
4	1		Edward Curd Ln				1			X	X	X	X
5	1		I-65 NB Ramp				1			X	X	X	X
6	1		I-65 SB Ramp				1			X	X	X	X
7	1		Royal Oaks Blvd				1			X	X	X	X
8	1		Center Point Pl			1					X	X	X
9	1		Southwinds Dr			1					X	X	X
10	1		Sugartree Ln			1					X	X	X
11	1		Mack Hatcher Pkwy				1			X	X	X	X
12	1		Ralston Ln				1			X	X	X	X
13	1		Eddy Ln				1			X	X	X	X
14	2	Royal Oaks Blvd	Lakeview Dr				1			X	X	X	X
15	2		Center Point Pl				1			X	X	X	X
16	2		Oak Meadow Dr				1			X	X	X	X
17	2		Creekstone Blvd		1							X	X
18	2		Forrest Crossing Blvd		1					X			X
19	2		Mack Hatcher Pkwy			1				X		X	X

ADT Count List - 2019 Murfreesboro Rd Signal Coordination Update

Number	Group #	Corridor / Limits	Count Location	Notes
1	1	Murfreesboro Rd -East	Between Carothers Pkwy and Clovercroft Rd	TDOT Site #40 - Chester Stephens Ct
2	1	Murfreesboro Rd -East	Between Edward Curd Ln and Carothers Pkwy	
3	1	Murfreesboro Rd -West	Between Royal Oaks Blvd and I-65 SB Ramp	TDOT Site #96 - Williamson Square
4	1	Murfreesboro Rd -West	Between Southwinds Dr and Sugartree Ln	
5	1	Murfreesboro Rd -West	Between Eddy Ln and Ralston Ln	
6	2	S Royal Oaks Blvd	Between Oak Meadows Dr and Rand Pl	TDOT Site #164 - Creekstone Blvd
7	2	N Royal Oaks Blvd	Between Williamson Square Driveway and Holiday Ct	

*** ADT counts to be Bi-Directional 24/7 continuous counts Monday - Sunday (7 day total)**

EXHIBIT B

Exhibit B
2019 Murfreesboro Rd Traffic Signal Timing Update
City of Franklin

Proposed Fee - Summary

Task Summary	NSI
Task 1 - Project Management	\$ 8,243
Task 2 - Data Collection (excluding counts)	\$ 9,050
Task 3 - Evaluate Existing Conditions	\$ 12,620
Task 4 - Timing Plan Development	\$ 30,465
Task 5 - Field Implementation	\$ 18,568
Task 6 - Before/After TT Studies	\$ 12,959
Task 7 - Project Documentation	\$ 10,559
Totals	\$ 102,463

Traffic Count Direct Cost (Subconsultant)	\$ 13,110
Direct Costs (Printing, Mileage, Etc.)	\$ 950
NSI Labor	\$ 102,463

Total Estimated Professional Services Fee \$ 116,523.00

EXHIBIT C

NEEL-SCHAFER RATE SCHEDULE
CITY OF FRANKLIN ON-CALL TRAFFIC ENGINEERING SERVICES
COF CONTRACT # 2015-0378

2019 Rate Schedule		
Employee Classification	Position Title	Hourly Rate
P-9	Principal	\$233.69
P-8	Senior Manager / Vice President	\$201.83
P-7	Engineer Manager & Professional IV	\$169.96
P-6	Senior Project Managers & Professional III	\$154.03
P-5	Project Managers & Professional II	\$132.78
P-4	Engineer & Professional I	\$116.85
P-3	Profession Intern III	\$95.60
P-2	Profession Intern II	\$79.67
P-1	Profession Intern I	\$63.73
T-5	Certified Engineering Technician/Supervisory Technician	\$106.22
T-4	Technician IV	\$95.60
T-3	Technician III/Inspector III	\$84.98
T-2	Technician II/Inspector II	\$63.73
T-1	Technician I/Inspector I	\$47.80
T-1	Student Intern	\$37.18
A-1 thru A-4	Administrative/Clerical	\$47.80

EXHIBIT D

Quote 17475 - Murfreesboro



Job Reference:

MurfreesboroRd_2019SignalTimingMap

COF 2019MurfRdSignalTiming_Count List_Final

4 Hour Turn Movement Count	315.00 x 2 630.00
6 Hour Turn Movement Count	395.00 x 4 1,580.00
8 Hour Turn Movement Count	475.00 x 13 6,175.00
ADT Counts ADT counts to be Bi-Directional 24/7 seven day counts	675.00 x 7 4,725.00
Total	\$13,110.00

*** Please Provide PO# or your order/reference number ***

If we do not have it already please provide PO# or your order/reference number for invoicing for this project when accepting cost estimate.

Thank you, we appreciate your business.

Ask a Question

Quote 17475 - Murfreesboro

Total \$13,110.00

Additional comments

Optional

Your order/reference number

Optional

☐ Yes, I Greg Judy agree to and accept this quote, on 7 February 2019 at 1:33pm.

Accept Quote

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FOR
Neel-Schaffer Nashville

TO
Greg Judy

EMAIL
greg.judy@neel-schaffer.com

COPY TO
Jonathan Marston

QUOTE NUMBER
17475

DATE
2 January 2019

VALID UNTIL
24 March 2019 at 9:41am

[Download PDF](#)