



March 16, 2017

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

RE: Columbia Avenue Signal Timing Scope and Compensation for Professional Services

Dear Mr. Marston,

BWSC is pleased to provide this scope of work and fee estimate for the design and implementation of updated signal timing plans on Columbia Avenue between Downs Boulevard and Mack Hatcher Parkway. This scope of work represents our understanding of the project based on our discussions and involvement in the current Columbia Avenue Widening project.

We appreciate the opportunity to serve the City on this project. If you have any questions or need additional information, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink that reads "Jonathan W. Smith". The signature is written in a cursive, flowing style.

Jonathan W. Smith, P.E.
Traffic Engineer

Copy to: Daniel Spann, P.E., PTOE



I. PROJECT DESCRIPTION

Barge Waggoner Sumner & Cannon, Inc. (BWSC) is proposing to provide professional services for the preparation and implementation of four (4) coordinated, time-of-day plans at six (6) signalized intersections in Franklin TN.

A scoping meeting was held at the City of Franklin office with City of Franklin staff on March 1, 2017 to discuss the scope. Based on discussions with City staff, the study area for this project is defined as Columbia Avenue between Downs Boulevard and Mack Hatcher Parkway.

II. SCOPE OF SERVICES

BWSC agrees to perform the following Basic Services under this contract:

Task 1 – Traffic Analysis and Modeling

BWSC will conduct an analysis of the Study Area and develop new coordinated timing plans for Columbia Avenue.

- The City of Franklin will provide background information for use in the analysis, including, but not limited to:
 - Existing detector reports and operational assessments.
- BWSC will review previously collected data from the Columbia Avenue design project including, but not limited to:
 - Existing intersection turning movement counts;
 - Existing signal timing information;
 - Existing signal plans;
 - Roadway volume data (tube counts);
 - Signal operations assessment (before study).
- BWSC will analyze all available City and BWSC data. This will include:
 - An analysis of traffic flow of the corridor including traffic capacity analyses for the existing conditions and proposed scenarios;
- BWSC will conduct a baseline assessment of each signalized location to verify the signal phasing and detector operation. If detection is found to be not functional, BWSC will notify the City of Franklin. Faulty detection will need to be repaired/replaced prior to implementation of new timing plans.
- BWSC will design improvements to the study area based on the collected data, including:
 - Preparing clearance interval and pedestrian timing plans in accordance with TDOT and ITE recommended practices

- Four (4) coordinated time-of-day plans (AM, MD, PM, Off-Peak)

Task 2 – Timing Plan Testing

BWSC will conduct bench testing of the plans for each intersection and finalize field data sheets that will be utilized in Task 3.

Task 3 – Timing Plan Implementation

BWSC, with assistance from City of Franklin staff, will implement each coordinated plan for the corridor and provide limited fine tuning to ensure optimal performance. BWSC anticipates the field implementation will include:

- Uploading the new signal timing plans for the intersections in the study area to the City of Franklin Traffic Operations Center (TOC) server;
- The TOC server will download the timing plans to the local controllers. If the TOC is unable to communicate with the local controller City of Franklin staff will be utilized to upload the proposed timing plans to the controllers prior to BWSC and City Staff implementing and adjusting the signal timing plans;
- BWSC, with City of Franklin staff assistance, will monitor and adjust each of the timing plans as needed over the course of three (3) days;
- Following the adjustment of the timing plans, City of Franklin staff will collect any citizen concerns regarding the new timing plans for a period of not more than two (2) weeks. Following a review of the concerns, BWSC will adjust the timing plans to address the specific concerns, if needed. BWSC will provide copies of the implemented timing plan sheets to the City following the final adjustments.

Task 4 – After Study

BWSC will provide a report documenting the changes to the operation and signal efficiency of the corridor following the implementation of the new timing plans.

III. PROJECT UNDERSTANDINGS, ASSUMPTIONS, AND EXCLUSIONS

- A. BWSC will provide the above-noted services based upon a given set of assumptions. These assumptions are as follows:
 - 1. BWSC will have access to the traffic signal cabinets and City of Franklin Traffic Operations Center (TOC), as required.
- B. The following excluded services can be provided as an additional service with an appropriate adjustment in fees:
 - 1. Services resulting from significant changes in general scope or character of the project or its design, particularly those resulting from differing field conditions discovered during construction (such as, but not limited to, soil conditions, environmental issues, etc.);
 - 2. Design revisions requested by those outside the project team and stakeholders beyond a mutually agreed timeframe;
 - 3. Extending the study limits beyond the limits noted herein;
 - 4. Surveys.

TIME OF PERFORMANCE

BWSC is prepared to begin work immediately upon receipt of a signed professional services agreement or written authorization to proceed. We anticipate requiring approximately seven (7) weeks to complete and submit this study following the receipt of the existing data described in Task 1. BWSC intends to complete all field work prior to May 23rd which is the last day of the school year for public schools in Williamson County. BWSC anticipates that Tasks 1 and 2, Data Collection and Timing Plan Modeling and Testing, will require at least a week to review the data and prepare the timing plans for implementation. BWSC anticipates the City requiring a week of review time of the proposed signal timing plans and clearance intervals. Task 3, Timing Plan Implementation, will require a week of time to implement and fine tune the timing plans with a two week timeframe for the City to collect all citizen concerns and provide them to BWSC. Following the receipt of this data, BWSC will review and respond to the concerns as appropriate. The total time for Task 3 to be completed is 4 weeks. Task 4, After Study Report, will require two weeks to compile the travel time data, complete the analysis, and submit the report to the City. It is anticipated that the City will require at least one week to review the after study report.

IV. CLIENT'S RESPONSIBILITIES

BWSC strives to work closely with our clients. In order for the project team to function efficiently, certain information is needed to be provided by the Client and other interested stakeholders in a timely manner. These items and responsibilities are noted below:

- A. Provide information as required to support development of BWSC's scope, as required in the project agreement for services;
- B. Provide review comments in a timely manner;
- C. Provide single point of contact for project coordination purposes.
- D. Provide access to the Traffic Operations Center (TOC), traffic signal cabinets, and assist in the download of timing plans as described in section II.

V. COMPENSATION

The compensation to be paid to BWSC for providing requested services is described as follows:

Task	Description	Fee Type	Fee
1	Traffic Analysis and Modeling		\$5,850.00
2	Timing Plan Testing		\$10,200.00
3	Timing Plan Implementation		\$12,000.00
4	After Study		\$8,250.00
Total		Not to Exceed	\$36,300.00

The individual task fees shown above are for estimating purposes only and may be allocated among other tasks as needed. The fees provided above are valid up to three (3) months from the date of this proposal. The fees provided above are based upon the following hourly rates:

Team Member	Hourly Rate
Principal	\$247
Project Manager	\$156
Traffic Engineer 1	\$158
Traffic Engineer 2	\$130
Designer	\$88
Administrative	\$80