



MEMORANDUM

December 3, 2009

TO: Board of Mayor and Aldermen

FROM: Eric Stuckey, City Administrator - *ESS*
David Parker, City Engineer/CIP Executive

SUBJECT: **Professional Services Agreement with
Wilbur Smith Associates for
Goose Creek Area Sub Area Traffic Analysis
COF Contract No. 2009-0094**

Purpose

The purpose of this memorandum is to present information to the Board of Mayor and Aldermen (BOMA) to consider a professional services agreement with Wilbur Smith Associates for a traffic analysis of the Goose Creek area.

Background

As a part of the plans review for the proposed I-65 widening and the reconstruction of the I-65/Goose Creek Bypass Interchange it was discovered that there would potentially be some closures of the Interchange in order to complete the reconstruction. At this time it is not known the exact extent of any closures, but in order to be proactive staff has announced the possible required closures and need to investigate alternatives to provide some short and long term traffic mitigation for the anticipated problems that will result from any closures of this interchange. At the joint workshop of the Franklin Municipal Planning Commission (FMPC) and the Board of Mayor and Aldermen (BOMA) there was also mention of studying the area to seek some possible traffic mitigation during the reconstruction of the Interchange. Staff has, therefore, requested a proposal from Wilbur Smith Associates (WSA) for additional services to their Major Thoroughfare Plan Update Contract. The proposed work is as described in the attached letter (Scope of Services) from WSA. Staff is proposing to treat this work as a separate contract from the Major Thoroughfare Plan to facilitate better tracking of the two projects.

Should the I-65/Goose Creek Bypass Interchange be closed for even a short period of time to facilitate its reconstruction, there will be major traffic problems created in the southern portions of the City. The traffic that would normally use the Interchange would be diverted to the existing streets such as Lewisburg Pike (SR 106, US 431), Arno Road (County Road), and Columbia Avenue (SR 6, US 31) in order to travel north. This diversion will also affect several of the other streets, which is why the Scope of Services covers such a wide area. These streets are not adequate at the present time to handle this increase in traffic without major congestion. This inadequacy is evidenced during periods of traffic crashes on I-65 that create traffic backups and some of the traffic diverts to the other listed streets. In addition to creating traffic problems, the closure of the Interchange will create major obstacles of access to businesses, residences and event facilities (Ag Center) in the immediate area. The results of the analysis should provide some short term mitigation solutions for the times the Interchange would be closed as well as long term solutions for traffic mitigation in the general area.



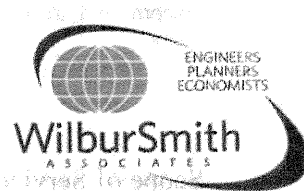
Financial Impact

The cost for the work as proposed is a lump sum fee of \$52,500. This cost covers the Scope of Services as outlined in the WSA letter and appears to be appropriate for the amount of work required. Presently this cost is not included in any budgeted item and discussion will be needed on how the cost will be funded. Options for funding are;

1. Add this cost to the bond issue recently approved;
2. Amend the FY 2010 Budget to include this cost;
3. Add this project to the Small Projects group that is to be funded as approved in the Capital Funding Plan;
4. Budget the cost of the project in FY 2011 Budget;
5. Not do the project.

Recommendation

Staff recommends that this project be approved and carried forward with an amendment to the FY 2010 Budget to fund the cost. The reason for this recommendation is that if the project is to be done, then work on determining what mitigation can and should be done needs to start as soon as possible to allow ample time to actually implement any future approved traffic mitigation measures.



December 1, 2009

Mr. David Parker
City of Franklin
109 3rd Avenue South
P.O. Box 305
Franklin, TN 37065

Subject: City of Franklin Major Thoroughfare Plan Additional Services

Dear David,

In response to your request for a proposed scope of services and associated fee for additional services related to the Major Thoroughfare Plan and analysis of the Interstate 65 and Goose Creek Interchange widening and reconstruction project, below is a scope for conducting a sub area analysis of the potential traffic pattern changes when the above mentioned construction project takes place.

Study Area Map



Scope of Services

Utilizing the travel demand model developed for the ongoing Major Thoroughfare Plan and supplementing it with additional data collection and traffic engineering analysis, WSA proposes to determine the anticipated impacts to Interstate 65, U.S. 431/Lewisburg Pike, U.S. 31, Goose Creek Bypass, Peytonsville Road, State Route 96 interchange, Mack Hatcher Parkway, and Arno Road from State Route 840 to State Route 96.

Task 1: Sub Area Travel Demand Model

- a) Review the Travel Demand Model to determine refinements necessary for the sub area analysis. This would include traffic analysis zone refinement and potentially adding roads to the model network.
- b) Perform minor validation adjustments to the model within the study area including adjusting demographic data, adjusting centroid connector placements, and roadway attributes to improve traffic loading within the study area.
- c) Adjust the model to capture intersection volumes.
- d) Run the model to identify origin and destination patterns and capture turning movements for both the base year (2008) and a determined future year (likely 2014).
- e) Run the model with an improved transportation network that includes the improvements to the supporting roadway network to determine impacts to the sub area network.

Task 2: Traffic Engineering

- a) Obtain all available traffic count data from TDOT on I-65 and U.S. 431 from Mack Hatcher Parkway to SR 840, Mack Hatcher Parkway from U.S. 31 to Cool Springs Boulevard, U.S. 31 from Goose Creek Bypass to Mack Hatcher Parkway, Arno Road from Peytonsville-Trinity Road to State Route 96, State Route 96 from Mack Hatcher Parkway to Arno Road, and Peytonsville Road/Goose Creek Bypass.
- b) Gather field data including intersection geometry and traffic signal splits and offsets.

c) Augment existing data with manual turning movement counts at the existing interchanges and key intersections within the primary study area. It is assumed that all AM and PM peak hour interchange ramp and freeway link volumes are available from TDOT. Furthermore, it is assumed that all 15 at-grade intersections will need updated counts, and that a 7:00 to 9:00 AM and 4:00 to 6:00 PM timeframe will be adequate.

d) Develop a Synchro traffic network of the 15 principal at-grade intersections in the primary study area.

e) Conduct an AM and PM peak hour capacity analysis at all 15 principal at-grade intersections. Using the Highway Capacity Manual methodology and HCS software, merge, diverge, and weave analysis will be conducted for the AM and PM peak hours at the following interchanges:

- I-65 at State Route 96 / Murfreesboro Road
- I-65 at State Route 248 / Peytonsville Road
- SR 840 at Peytonsville Trinity Road
- SR 840 at U.S. 431 / Lewisburg Pike
- SR 840 at I-65 (only the key impacted ramps will be analyzed)

f) Using the travel demand model results, project future AM and PM peak hour traffic volumes with the I-65 and Goose Creek Bypass interchange closed. The projected peak hour volumes will be determined based on the current peak hour percentage. The TDM will generate ADT traffic on the study area road network, so the ADT will be converted to peak hour at the intersections.

g) Re-run the Synchro and interchange analysis with the projected future volumes assuming the interchange is closed.

h) Based on the LOS and capacity results of the Synchro analysis, identify poorly functioning intersections and roadways.

Task 3: Study Documentation and Recommendations

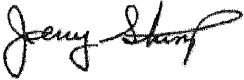
a) Develop short term mitigation for anticipated problems. This might include traffic signal timing and phasing, temporary turn lanes, or other temporary traffic control devices. We will also be mindful of potential permanent improvements that could mitigate short term traffic, but could also help with long term traffic needs.

b) Document the result of the study with a report that includes a summary of our results and recommendations.

c) Attend coordination meetings with the various agencies involved in the interchange reconstruction project (TDOT, Williamson County, City of Franklin, etc.) to discuss the findings and conclusions.

We propose to provide these additional services for a lump sum fee of \$52,500 through an amendment to our existing contract. If you have any questions or would like to discuss further, feel free to contact me.

Best regards,



Jerry Stump
Chief Operating Officer

c: Bob Polk, Brad Thompson