Interstate 75 Corridor Feasibility Study

GENERAL WORK ITEMS:

This document describes the Scope of Work for consultant services to be performed in the assessment of deficiencies along Interstate 75, a study corridor of 161 miles, from the Georgia State Line to the Kentucky State Line. The Tennessee Department of Transportation has recently completed a statewide Long Range Transportation Plan that considered all modes of transportation and how they can best work together as the needs of the state change. I-75 was identified as a strategic corridor in the Long Range Transportation Plan. The intent of this study is to identify multi-modal solutions for identified deficiencies along Interstate 75 with emphasis on corridor capacity and freight diversion.

As a precursor to this corridor feasibility study, a systems inventory and data collection effort is being completed for this study corridor for two areas of deficiencies: Highway and Rail. An Assessment of Deficiencies associated with Capacity/Congestion and Freight movement/diversion is also being completed. The study corridor for the previous efforts was defined as the interstate mainline for highways and as the parallel Class 1 railroads and its junctions with short line railroads that could provide feeder service to the Class 1 railroads.

The work performed will identify locations/segments of the interstate where freight movement impacts the general, overall operations/safety of the system (percent of trucks, volume of trucks and delay), include terrain issues, incident response time and overnight storage issues. The study will also assess the feasibility of freight diversion to rail along the study corridor as it pertains to the benefit of improvements proposed by Norfork Southern in the Crescent Corridor. The study will review recommendations from TDOT's Statewide Rail Plan and the Evaluation of the Rail Plan prepared by the University of Tennessee. The study will also review TDOT's analysis of short-line railroads which could serve as feeders to Class I railroad and identify gaps in the rail feeder network. The study will not include an evaluation of potential diversion to waterway.

The work completed to date for the highway component is available and will be used in the development of multi-modal solutions for the I-75 corridor for the areas of deficiencies listed below. The analysis for potential rail solutions is available at this time. It has been performed as a part of the I-40/I-81 Corridor Feasibility Study which includes the analysis of the Norfork Southern proposed improvements in the Crescent Corridor. Results from the analysis will be provided to the selected consultant for use in the development of multi-modal solutions of the study corridor.

A CD (Compact Disk) containing the technical memorandum entitled, I-75 Lane Widening and Truck Lane Analysis dated July 19, 2007, is available to all interested parties by request to Teresa Estes, 615-253-7689 or email at Teresa.Estes@state.tn.us and will be provided during the Pre-proposal meeting.

1. Systems Inventory and Data Collection

Selected consultant will be asked to use the information collected during the prior study efforts as a starting point in the analysis of capacity issues as it pertains to the impact truck movement has on the operation of the network. The following provides a list of the sources of information used:

TDOT's Statewide Model
Evaluation of Roadway Efficiency System (EVE)
TDOT's Long Range Transportation Plan
MPO's Long Range Transportation Plan (Knoxville, Chattanooga and Cleveland)
Rural Planning Organizations
TDOT's Previous Planning Reports and Transportation Planning Reports (TPR)
TDOT's Interchange Justification/Modification Studies
TRIMS
TDOT's Statewide Rail Plan

Work to be performed: Review available information for the purpose of establishing a working knowledge of the study corridor.

2. Assessment of Deficiencies associated with:

a. Capacity/Congestion
b. Operations and Maintenance
c. Safety and Security
d. Freight movement/diversion (truck, rail and waterway)
e. Economic access
f. Inter-modal facilities

Task objective: The objective of this task is to develop a corridor wide needs assessment that identifies deficiencies within the study corridor based upon the items listed above. The study corridor is defined as follows for the various transportation modes:

Highways – Interstate mainline and existing and proposed interchanges, including proposed I-75 bypass corridors; also includes parallel arterials that could be used for local travel and alternates routes for incident management

Rail – parallel Class I railroad and its junctions with short-line railroads that could provide feeder service

Freight – major inter-modal hubs, TVA mega-sites, barge connections, etc. that result in truck, rail and waterway traffic in corridor

Transit/TDM – transit routes and park and ride facilities within a five-mile radius of existing interchanges

Work to be performed:

Evaluate the existing capacity of the interstate and determine its ability to meet current (2007), five-year (2012), ten-year (2017) and 2032 planning horizons travel demands and the No Action Alternative.
Identify congested corridor segments and determine LOS/travel delays and mode mix; determine 24 hour performance versus peak hour performance levels using LOS/travel delay;

- Look at the existing interstate facility and determine locations where the geometric design does not meet current design standards and assess the impact geometric deficiencies have on the operations of the system;
- Determine locations along study corridor with a high incident rate;
- Review the prior study results that identified locations/segments of the interstate where freight movement impacts the operations/safety of the system (percent of trucks, volume of trucks and delay), include terrain issues, incident response time and overnight storage issues; Consultant is to provide opinions regarding the deficiencies identified and the need for the improvements. Consultant will be responsible for the development and incorporation of solutions to address the identified improvements.
- Determine the modal mix within the planning areas (including Growth Boundary areas) of each of the metropolitan areas along the study corridor by type and use (ridership); define the limits and effectiveness/deficiencies of existing HOV lanes; locate existing park and ride facilities adjacent to or within a five mile radius of existing interchanges, their current ridership and their inter-modal connectivity;
- The consultant will be responsible for the incorporation of the benefits of truck to rail diversion findings as a part of the I-40/I-81 Corridor Feasibility Study. The consultant will review the findings and incorporate the results in the evaluation of potential solutions within the interstate corridor study area and along the CSX Railroad corridor. The feasibility of freight diversion to rail along the study corridor will be provided to the consultant. The consultant will review TDOT's analysis of short-line railroads which could serve as feeders to Class I railroad and identify gaps in rail feeder network and make recommendations accordingly. The consultant is also responsible for the analysis and inclusion of freight diversion to waterways;
- Determine the need for additional interstate access based upon future economic demands using current Long Range Transportation Plans from the MPO's and stakeholder interviews with RPO's; and
- The Consultant will evaluate the impact the potential closure of the Chickamaga Lock will have on the movement of goods within the study area.; Consultant will make recommendations regarding timed improvements to the transportation network resulting from a potential closure of the lock on the I-75 corridor; This task will require coordination with the Tennessee Valley Authority to determine the probability of such action by the agency.

Deliverables: Technical Memorandum, with a separate Executive Summary, documenting findings with maps of deficiencies (10 copies draft and 25 copies final) and a matrix of deficiencies for the next five years, next ten years, and for 2030 planning horizon.

3. Development and refinement of Feasible Multi-modal solutions that address:

a. Capacity
b. Operations and Management
c. Safety and Security
d. Freight movement/diversion (rail and waterway)
e. Economic access
f. Commuter patterns
g. Inter-modal facilities

Task objective: The purpose of this task is to develop multi-modal solutions that address the capacity, operation & management, safety & security, including movement of freight, commuter patterns and economic access along the study corridor. Initial step is to identify an array of solutions that could be implemented that would address the identified deficiencies. Solutions would include but not be limited to traditional capacity solutions along interstate mainline, interchanges, and parallel arterials. Alternatives should also include solutions that include Intelligent Transportation System, HOV lanes or High Occupancy Toll (HOT) lanes, expansion of park and ride lots with inter-modal connectivity and the expansion of transit service. This study will need to address the feasibility of freight diversion as a potential solution to the movement of goods and services along the study corridor. This study will need to consider the impact that the potential closure of Chickamaga Lock will have on freight diversion and movement of goods in the study corridor. This study will need to address the feasibility of providing intercity passenger connectivity through the use of rail or improved bus services, including the identification of intercity passenger performance parameters (service frequency, travel speeds, etc.).

Work to be performed: This will be a phased process with the initial development of solutions that address the deficiencies identified in Task 2. Performance criteria developed as a part of the I-40/I-81 Corridor Feasibility Study will be used as a part of this task and applied to the identified solutions. The effectiveness of the initial array of solutions will be evaluated and recommendations will be made. At this point, the array of solutions will be carried forward based upon the Public Involvement Plan's recommendations for the purpose of obtaining stakeholder input. This task will also include the development of a framework to evaluate corridor projects/programs for the purpose of establishing priorities.

Following the stakeholder involvement phase, alternatives will be further refined based upon new information or direction resulting from stakeholder or agency input. Modifications will be made, performance criteria applied and a second round of recommendations (Phase 2) will be made. Phase 2 recommendations will be subject to an environmental review based upon current available literature, incorporating any provisions that address SAFETEA-LU environmental requirements. This is a "Red Flag" review level effort for the purpose of determining the environmental feasibility of the Phase 2 solutions.

During the course of this study, data gaps may be identified or additional planning tools needed to be developed to facilitate the evaluation process. Recommendations are to be made and strategies developed to complete the data gaps or expand existing planning tools, as needed.

Deliverables: Technical Memorandum, a separate Executive Summary and maps (10 draft copies and 25 final copies).

4. Prioritize Projects

Task objective: The final array of solutions will be organized and presented in a planning tool format and will include constructible segments, cost to implement and recommended priorities. Cost will include preliminary engineering, design, right of way, construction and annual maintenance cost per construction segment for each multi-modal solution. The project prioritization will be provided in a format/planning tool that can be updated by TDOT.

Work to be performed: Prioritize the identified multi-modal solutions based upon the Project Evaluation System (PES) Report, dated December 2005, a product of the TDOT's Long Range Transportation Plan. This report documents an analytical methodology to aid programming efforts and prioritization of multi-modal investments. The project prioritization and evaluation system as outlined in the December 2005 report will be used initially to prioritize projects. Other prioritization approaches will be identified and presented to TDOT for use in project ranking. Refinement of projects will be completed following input based on the Public Involvement Program. The spreadsheet or matrix will include a timeline for implementation and constructible project segments.

Deliverables: Technical Memorandum, a separate Executive Summary, with a matrix of projects. (10 draft copies and 25 final copies)

5. Public Involvement

Task objective: Public involvement will be a part of this study effort. Input from stakeholders will be solicited and will be used to better understand identified deficiencies within their respective jurisdictions. Stakeholders input will be used to guide the development of multi-modal solutions for the study corridor.

Work to be performed: A Public Involvement Plan will be developed as a part of this study using the same general outline developed as a part of the I-40/I-81 Corridor Feasibility Study. It will outline items to be accomplished, identify stakeholders, frequency of interaction with the stakeholders and contain methods to report back to the stakeholders regarding the findings of the study. It is anticipated that stakeholder's involvement will occur:

- In interviews to help in the assessment of deficiencies;
- After an initial array of multi-modal solutions have been identified;
- After the prioritization of projects.

The Plan will identify opportunities and tools that could be used to convey the recommendations of the study upon study conclusion.

A CD (Compact Disk) containing the Public Involvement Plan will be provided during the Pre-proposal meeting.

Deliverables: Public Involvement Plan (5 draft copies and 12 final copies)

6. Project Management

Task objective: This task relates to managing and guiding the progress of work on behalf of TDOT. Activities include scheduling, document control, progress reporting, sub consultant administration, cost tracking and reporting, quality control and cost estimating.

Work to be performed: The following items are to be included in this task assignment:
Development of a Project Work Plan – prepare and maintain a project work plan that identifies key staff members and their responsibilities, prepare and update as needed a project organizational and staffing plan; prepare a final work breakdown structure and assigned budget cost for each work group and task; prepare and submit monthly progress reports covering work performed and cost. The TDOT Project Manager must be notified of and approve any changes to the consultant team's Project Manager, Deputy Project Manager, or Task Leader.

Development and updating of a project schedule – Prepare, maintain and publish a project schedule in Gantt or similar format illustrating linked tasks, critical path items, milestones and dates for all task assignments;

Develop a Quality Control Plan - Establish an internal quality control process that will produce work of acceptable quality for all task assignments. QC will include review, and monitoring of work performed on each task, and provide a list identifying deliverables that will be subject to review prior to submittal to TDOT. QC reviewers are to be external to the study team with senior level expertise.

Monthly meetings and/or conference calls with TDOT management staff – Monthly meetings or conference calls are to be scheduled and conducted with TDOT management staff. The purpose of the meeting/conference call is to demonstrate study progress, identify study issues and develop an action plan to resolve issues. Meeting/conference call minutes will be prepared and circulated for approval. Each meeting/conference call will be conducted by the PM with a pre-approved agenda. The TDOT Project Manager can cancel a monthly meeting or conference call as warranted. Weekly or semi-monthly communications also will occur with the TDOT management staff throughout the study.

Deliverables: Work Plan, Project Schedule and quality control plan.