

Toll System Feasibility Study Mississippi River Bridge – Memphis Region Scope of Work

This document describes the Scope of Work to be provided in evaluating the feasibility of tolling a proposed bridge location within the State of Tennessee. The bridge to be evaluated is the proposed Mississippi River Bridge – Memphis Region as described in the June 2006 Mississippi River Crossing Feasibility and Location Study. The consultant will conduct an evaluation at a corridor planning level study to determine if the project travel demand is suitable for tolling at the proposed location.

1.0 Evaluation of a potential toll facility

The objective of this task is to determine the suitability of a toll facility at a specific location within the State of Tennessee. The Mississippi River Bridge has been nominated by local representatives and selected by Tennessee Department of Transportation (TDOT) for study as a potential pilot toll project as a result of the recent Tennessee Tollway Act, dated June 11, 2007.

The Consultant will conduct a planning level feasibility study for the Mississippi River Bridge study location as outlined below. The Consultant will produce a financial feasibility assessment comparing expected capital needs, operational and on-going maintenance cost with the expected revenue stream that could potentially be generated from tolling the users of the proposed facility. Users for the Mississippi River Bridge are assumed to include both highway and rail.

The following tasks are to be completed.

1.1 Project Definition

Information regarding the general location of the proposed toll and rail facilities will be provided to the consultant. Information regarding the general alignments, number of alignments to be evaluated and termini will be provided by TDOT. This will also include current and projected traffic flows (non-tolled) in the area based upon the current travel demand model for the Memphis Metropolitan Planning Organization, West Memphis MPO, Arkansas State Highway and Transportation Department and the Mississippi Department of Transportation. The consultant should consider options for locating the toll and rail elements in the same location and in separate locations and be prepared to outline the pros and cons of various scenarios.

1.2 Planning Level Opinion of Probable Construction Costs

The probable construction costs for the study corridors will be provided to the consultant by TDOT as a starting point in developing the estimated capital expenditures. The consultant will be responsible for providing escalated capital costs for the

implementation of tolling option. This will include but not be limited to the cost to add tolling plazas and associated equipment to operate a toll facility.

1.3 Level 1 Traffic and Revenue Study

A Level 1 Traffic and Revenue study will be conducted for the project to estimate the potential toll and rail revenue that could be generated by the project. This sketch level analysis will not be conducted to a level of detail necessary for an investment grade study nor to support actual project financing but may be used as the basis for making a preliminary policy level decision as to whether or not to proceed with additional analysis for the project.

The Level 1 Traffic and Revenue Study will include existing traffic conditions that will include a speed and delay study, historical Average Annual Daily Traffic (AADT) trends, hourly traffic variation and vehicle classification. The consultant will conduct a review of the historical growth trends and review forecasted growth plus socioeconomic trends and conclusions for the study corridors. The consultant will use the existing 2007 certified Travel Demand Model (TDM) for the Memphis Metropolitan Planning Organization as the starting point for the Level 1 Traffic and Revenue study. The consultant will review additional travel demand data available from the West Memphis MPO, Arkansas State Highway and Transportation Department and the Mississippi Department of Transportation. The consultant will provide traffic and revenue projections, document basic assumptions, describe the Existing plus Committed (E + C) network used in the TDM for the planning year horizon, develop toll rates and configurations, estimate weekday and annual traffic volumes for opening and future year, transactions and revenue projections and include a discussion of the estimated revenues net of operations and maintenance expenditures for each study corridor.

1.4 Investment Grade Feasibility Study

If a decision is made to utilize tolling on this project, a more detailed study (investment grade study) may be completed as an additional service of this contract subject to separate fees

1.5 Corridor Growth Assessment

Consistent with the planning level of this study, a general corridor growth and economic assessment will be completed. This will be based on readily available information such as socio-economic forecasts used in the MPO's Long Range Transportation Plan, the latest available information from the Census Bureau, and similar available sources (such as Woods & Poole).

1.6 Travel Demand Model

Based on the provided travel demand model from the MPOs and TDOT, an evaluation of traffic within the defined corridors will be completed to consider current and future traffic levels for improvement scenarios including general growth and economic condition assessment. The Consultant will utilize a toll diversion model to determine estimates of market share of users on toll and non-toll facilities based on factors such as values of

time, operating and toll costs, trip purpose and congestion levels. This toll diversion model will utilize the travel demand model provided by the MPO or TDOT.

1.7 Toll Sensitivity Analysis

This analysis will be undertaken at opening-year levels to determine optimum toll rates. A series of alternative traffic assignments will be made at progressively higher toll rates to determine levels of traffic diversion and revenue optimization. Toll sensitive curves will be prepared to determine the toll rates for use in developing traffic and revenue estimates. This analysis will also consider current toll rates being charged on similar facilities in the states that border Tennessee and nationwide. Future year traffic assignments will be made at selected toll levels only. Also, “no-build” and “toll free” traffic assignments will be made in each of the analysis years.

1.8 Operations and Maintenance Expense

The Consultant will estimate toll collection and operational expenses based on a cash and electronic toll collection system. The estimates will be based on industry norms and not on a specific toll collections system.

1.9 Net Toll Revenue Estimates

As part of the planning level feasibility assessment, annual gross toll revenue estimates will be developed for a forty-year period starting from the assumed opening year for the project. Net toll revenues will be determined by deducting estimated maintenance and operating costs from the projected gross toll revenues.

2.0 Conceptual Level Financial Feasibility Analysis

A conceptual level financial feasibility analysis will be conducted to determine the bonding capacity of the proposed project. This analysis will be based on prevailing financial market conditions and typical financial structures being utilized on similar toll based financings by public entities utilizing tax-exempt municipal debt. This analysis will also help identify potential shortfalls in funding supported solely by toll revenues for TDOT. The analysis will include a discussion of how the industry’s current privatization trends (Public / Private Partnerships) could impact the ability to finance the proposed project. The consultant will work with the State of Tennessee’s financial advisor to develop assumptions concerning tax exempt municipal debt and Public/Private Partnerships industry trends.

2.0 Project to be Evaluated

The following bridge project is to be evaluated as a part of this study. Tasks outlined in Section 1.0 of this Scope of Work are to be performed for the respective corridor study area.

Mississippi River Bridge – Shelby County

In June 2006, the Tennessee Department of Transportation completed the Mississippi River Crossing Feasibility and Location Study (<http://www.tdot.state.tn.us/publications.htm>). This study determined the feasibility of providing a new Mississippi River Bridge Crossing in the Memphis metropolitan area. The study identified and evaluated possible transportation solutions to help TDOT reach a decision on a preferred corridor alternative to improve cross-river mobility over the Mississippi River. The primary purpose of the proposed Mississippi River Crossing project would be to improve cross-river mobility for people and freight in and around the Memphis area and thereby stimulate economic development.

An array of initial corridor alternatives was developed and then a screening process was conducted to arrive at a conclusion regarding feasible alternatives both for highway improvements and providing a new rail crossing within the Memphis area. The study concluded with a recommendation to proceed to the next phase of project development for four highway corridors. They are Bridge A, B, C and D corridor alternatives. For the purpose of the study, Bridge B is to be analyzed using corridor segment 8A. Bridges corridor segments 1 and 2 are to be analyzed for both Bridges C and D.

This study will evaluate the feasibility of tolling for each of the bridge corridor alternatives recommended for further study in the Mississippi River Crossing Feasibility and Location Study dated June 2006. (Study is located at: <http://www.tdot.state.tn.us/publications.htm>) The analysis will include providing rail service as a part of the tolling analysis based upon the recommendations from the feasibility and location study for Bridges B, C and D.

The consultant may be asked to consider the benefits that result from an additional study corridor as an alternative to or in addition to the corridors recommended in the Mississippi River Crossing Feasibility and Location Study. Specifically, the Great River Economic Development Foundation in Blytheville, Arkansas has received funding sources to conduct the Osceola, Arkansas - Millington, Tennessee Toll Turnpike Feasibility Study which began in June 2007. This feasibility study will consider a new Mississippi River crossing to connect Osceola, Arkansas with Millington, Tennessee. The assessment of benefits and the required coordination with this study will be considered as additional services. The instrument to be used to authorize additional services will be a Work Order based upon a negotiated scope of work and fee proposal specific to the degree of services to be provided.

Deliverables: A Level 1 Traffic and Revenue Study for the project (10 copies draft and 40 copies final)

3.0 Reports and Presentations

It is anticipated that the consultant will participate in meetings with the Arkansas State Highway and Transportation Department, Mississippi Department of Transportation, West Memphis MPO and the Memphis MPO during the course of this study. Meetings with these agencies will occur at the conclusion of the development of the traffic projections and when draft conclusions have been identified. The TDOT Project Manager will make a determination when the meetings are to occur.

In addition, the consultant will be responsible for the development of summary materials suitable for use with agency executives, technical committees and elected officials. Materials may take the form of PowerPoint presentations with fact sheets, brochures and/or letters.

4.0 Project Management

This task relates to managing and guiding the progress of work. Activities include scheduling, progress reporting, sub consultant administration, cost tracking and reporting, quality control and cost estimating.

The consultant will prepare and maintain **a project work plan** that identifies key staff members and their responsibilities, prepare and update as needed a project organization and staffing plan; prepare a final work breakdown structure; prepare and submit monthly progress reports covering work performed and cost. The TDOT Project Manager must be notified of and approve of any changes to the consultant teams' Project Manager, Deputy Project Manager, or Task Leaders during the course of the contract.

The consultant will 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;

The consultant will 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 are to be scheduled and conducted with TDOT management staff. The purpose of the meeting is to demonstrate study progress, identify study issues and develop an action plan to resolve issues. Meeting minutes will be prepared by the consultant and circulated for approval. Each meeting will be conducted by the PM with a pre-approved agenda for the meeting. **Conference calls may be used in lieu of monthly meetings only if approved by the TDOT's Project Manager.** The TDOT Project Manager may cancel a monthly meeting or conference call as warranted. Weekly or semi-monthly

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communications will also occur with the TDOT management staff throughout the study schedule.

Deliverables: Work Plan, Project Schedule and Quality Control Plan.

6.0 Public Hearing(s)

The Department in accordance with the "Tennessee Toll Act", June 11, 2007 will conduct one (1) or more public hearings for the specific purpose of receiving public comments concerning tolling as an alternative means of funding or financing bridges or highways within the state. These services may be completed as additional services of this contract and subject to separate fees.