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April 24, 2015

Fort Bend County Toll Road Authority  
c/o Mr. Bill Jameson  
WJ Interests, LLC  
2333 Town Center Drive, Suite 100  
Sugar Land, TX 77478

**Subject: Fort Bend County Toll Road Authority  
Systemwide Investment Grade (Comprehensive) T&R Study 2015**

Dear Mr. Jameson:

CDM Smith is pleased to submit this proposal at your request to perform an Investment Grade (Comprehensive) Traffic and Revenue (T&R) Study for the Fort Bend County Toll Road System, consisting of the Fort Bend Parkway and the Westpark Tollway, including the proposed extension of Westpark. CDM Smith has performed previous analyses of these facilities including a Level 2 T&R study completed in 2013. A new forecast for Segment D of the SH 99 Grand Parkway will not be prepared as part of this study. This Comprehensive Study would be conducted in sufficient detail to support project financing.

#### **STUDY OBJECTIVE AND SCOPE**

The objective of the study is to develop long-range revenue forecasts for the existing Fort Bend Parkway and the Westpark Tollway, including the proposed extension. These forecasts will need to utilize the most recent H-GAC travel demand model, be consistent with the current 2040 Regional Transportation Plan, including the latest planned transportation improvements for the region and particularly the Westpark extension. It will also need to reflect the latest socioeconomic growth assumptions and any modifications suggested by our independent economist, CDS Market Research, the most recent traffic levels at all FBCTRA toll plazas and the recently adopted toll policy, which will determine future rate increases on the FBCTRA System. It is common practice for Comprehensive studies to include a Stated Preference (SP) Survey to estimate the value of time for motorists in a particular travel market. However, given that these toll roads have been in operation for some time and that we have conducted previous SP surveys in the Houston region, CDM Smith does not believe a new SP survey is needed for this particular study.

A number of sensitivity tests will be undertaken to further aid in understanding the potential risk around the forecast. In this case, these tests are focused toward the rating agencies and their review



of the projects' revenue sensitivity to changes in assumptions. Potential changes in basic study assumptions regarding economic growth, both higher and lower, drivers' perceived values of time, gas prices, and the potential impacts of future competing or complimentary new toll facilities or other highway improvements would be tested.

The study work program would be comprised of six overall tasks, including:

- Task 1: Mobilization, Data Collection and Data Analysis
- Task 2: Economic Growth Analysis
- Task 3: Model Refinement and Calibration
- Task 4: Traffic and Revenue Analysis
- Task 5: Sensitivity Tests
- Task 6: Documentation and Meetings

A brief description of work elements and deliverable products associated with each of these tasks is provided below.

#### **TASK 1: MOBILIZATION, DATA COLLECTION AND DATA ANALYSIS**

Shortly following receipt of notice-to-proceed, the study would be initiated with a kick-off meeting in Houston, with representatives of FBCTRA, others from Fort Bend County, and any others you may designate. In addition to establishing lines of communication and refining deliverables and project schedules, various assumptions regarding the study and particularly the geometric layout and tolling configuration of the proposed Westpark extension would be discussed and confirmed. It is our understanding that the extension is currently being designed by Dannenbaum under contract with Fort Bend County. Other important assumptions would relate to future toll rates, presuming that the study would include the future impacts of the previously agreed upon rate setting policy for FBCTRA.

This task would also include development of a complete updated traffic profile for all parts of the Fort Bend Parkway and the Westpark Tollway. CDM Smith would need to update our files to get a monthly profile by toll plaza as well as samples of hourly traffic variations at all mainline toll plaza locations. CDM Smith would develop FY 14 and eventually FY 15 traffic and revenue profiles, including a breakdown of traffic by vehicle classification, hourly variations and directional splits at all mainline and ramp locations.

Any other recent traffic count data since our last study will be inventoried and summarized for use in model calibration and review of past growth in the study area. Additional traffic counts, particularly along roadways in the Westpark corridor may be needed to supplement existing traffic count data. A direct cost budget for traffic count data collection has been assumed in the study cost proposal. A traffic count program of the exact locations will be developed once notice to proceed

has been granted. Traffic counts will be subcontracted out to a traffic counting firm. In addition to traffic counts, travel time data will be obtained by purchasing available data. Where needed, this data will be supplemented with data collected by local Houston CDM Smith staff by driving the study area network to measure travel speeds on key competitive and complimentary roadways to the Fort Bend Parkway and Westpark Tollway. Understanding any potential congestion during the AM and PM peaks on the existing Westpark Tollway in Harris County will also be important in accurately calibrating our travel demand model. Updated information regarding the regional transportation plan would also be obtained, including the proposed timing of facility expansions and new facilities, whether these are toll or toll-free.

## **TASK 2: ECONOMIC GROWTH ANALYSIS**

For this study, an independent economic forecast will be developed as input into the traffic and revenue forecast. CDM Smith will retain the services of CDS Market Research (CDS), a local economic forecaster for the greater Houston region, to provide a review, comment, and adjustment (as necessary) of the most recently developed forecast prepared by H-GAC. CDS will develop updated population and employment estimates for the Westpark and Fort Bend Parkway travel corridors. CDM Smith has been working exclusively with CDS on numerous T&R studies in Houston and the surrounding counties.

CDS would focus their review of planned developments to the Westpark Tollway project corridor. This would include the location of anticipated residential and non-residential activity, and the impact of the completion of the proposed extension on development timing. In addition, development forecasts available through the county in this immediate corridor would be compared with the latest H-GAC estimates. If necessary, changes would be made in trip tables in the local vicinity of the project to reflect any changes in the socioeconomic outlook.

The analysis would focus on critical socioeconomic variables including population, households and employment. Rating agencies will be putting increased scrutiny on this part of the work given the correlation between employment growth in Houston and oil prices and the perceived risk of a major slowdown in job growth in the area and the effects this might have on other economic sectors in the greater Houston area. CDM Smith would also obtain information regarding income trends in the study area.

## **TASK 3: MODEL REFINEMENT AND CALIBRATION**

CDM Smith would utilize the latest H-GAC travel demand model and generate updated trip tables reflecting any refinements to the underlying population and employment forecasts made by CDS in Task 2. Trip tables will be developed representing fiscal years 2015, 2020, 2030, and 2040 utilizing the latest H-GAC model, networks, and revised economics from CDS.

Development of investment grade forecasts for the existing system and the Westpark extension will begin with the calibration of the model to existing traffic on each section of the Fort Bend County Tollway System. This calibration effort would target the updated systemwide traffic profile for both the Fort Bend Parkway and the Westpark Tollway developed in Task 1 and other new or existing traffic volume data on competing and complimentary roadways. Modeled travel speeds for the study area would also be verified against measured speeds collected during Task 1. The model networks would need to be verified in terms of assumed lanes, speeds, and capacities. Future year networks will need to be reviewed and adjusted to reflect the latest transportation improvement plans for region and particularly within the study area.

CDM Smith has worked extensively in the Houston region and has data regarding motorists' willingness to pay tolls from past stated preference surveys. In addition, for this study, CDM Smith will review Census, BLS, and independent forecasters' data regarding the median and distribution of income in the study area. These will be used to verify the value of time estimates used for this study.

#### **TASK 4: TRAFFIC AND REVENUE ANALYSIS**

Unless advised otherwise, the future forecasts would assume annual rate increases provided by the FBCTRA Rate Setting Policy. That policy anticipates that rates will be adjusted at the beginning of each new fiscal year to reflect the change in the consumer price index (CPI) over the past 12 months. Rates will be adjusted when computed rates reach appropriate thresholds based on rounding criteria for each individual payment category and each type of toll plaza. This will be one of the discussion items at the kick off meeting.

The latest travel demand model provided by H-GAC and refined in Task 3 will be used in developing the long-range forecasts, specifically to estimate traffic growth in each of the corridors and to model impacts of anticipated future toll rate adjustments and more importantly the Westpark Tollway extension. A series of future traffic assignments would be made to the existing system. Model runs would be made separately for AM peak, PM peak and off-peak conditions. Assignments would be run for future years 2020, 2025, 2030 and 2040. Toll rate assumptions for each of these future years would be computed based on an assumed 2.5 percent per year rate of inflation, unless advised otherwise at the kick-off meeting.

Traffic and revenue impacts of the proposed extension would be based both on revenue estimates for the new toll plaza on the extension itself, as well as the impacts at other existing tolling locations along Westpark. Annual revenue estimates would be prepared and summarized.

An important aspect of the base case existing system traffic and revenue forecast would be a detailed capacity analysis of all mainline sections, including downstream in Harris County. While

the model will be sensitive to capacity constraints, in some cases post model capacity adjustments may be needed to specifically recognize limitations in certain locations during certain hours.

The ultimate product from Task 4 would be a 40-year forecast of annual transactions and toll revenue for the Fort Bend Parkway and the Westpark Tollway, including the Westpark extension.

#### **TASK 5: SENSITIVITY TESTS**

A number of sensitivity tests would be performed to test the potential impacts on base case revenue forecasts associated with possible changes in certain basic assumptions. Sensitivity tests may include the impact of higher and/or lower economic growth assumptions and higher and/or lower values of time compared to the baseline traffic and revenue forecast. It would also be important to include the sensitivity test of significant increases in gasoline prices over the long term. In total, up to eight sensitivity tests have been budgeted, with each scenario tested in a single analysis year being considered one test.

#### **TASK 6: DOCUMENTATION AND MEETINGS**

This task would include all study documentation. The draft and final reports would be submitted as an electronic version. After final comments are received, twenty (20) copies of the final report in compact disk form would be provided. This task would also include a kick-off meeting and a second meeting to present study findings. Webinars or conference calls can also be utilized to present interim information as needed. Additional meetings will be scheduled, as needed, to discuss progress, confirm additional assumptions and to obtain clarification on items, as appropriate. It is assumed these would be mostly conference calls, but additional in-person meetings can be accommodated as well.

#### **STUDY SCHEDULE**

CDM Smith is prepared to initiate the study immediately upon receipt of notice-to-proceed. A period of four months would be required to complete all aspects of the study up to and including submittal of the draft final study report. Assuming notice-to-proceed would be received by May 1, 2015, this would result in delivery of the full draft report by approximately September 4, 2015. The final report would be delivered within two weeks of receipt of final comments. *\* Final report to be completed not later than September 15, 2015.*

#### **STUDY BUDGET**

The lump-sum, fixed-fee for conduct of the study in accordance with the scope and schedule defined above is \$497,884. A detailed breakdown of this cost is provided in Exhibit 1.



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The lump-sum fixed-fee would be payable monthly based on the estimated percentage of work on each task completed during each month. This would be documented in a written progress report to be submitted within two weeks following the completion of each month.

\* \* \*

We sincerely appreciate the opportunity to be of continued service to the Fort Bend County Toll Road Authority. We hope this proposal meets your requirements. If not, we would be most pleased to discuss with you ways in which it could be made more responsive.

Sincerely,

Michael W. Copeland, AICP  
Principal  
CDM Smith Inc.

ACCEPTED BY CONTENT AND TERMS:

James D. Conroy, DDS  
NAME

Chairman  
TITLE

Fort Bend County Toll Road Authority  
ORGANIZATION

[Handwritten Signature]  
SIGNATURE

May 20, 2015  
DATE



Proposal - FBCTRA 2015 Systemwide Investment Grade T&R Study

Personnel Category	Work Task / Person Hours						Total Hours	Average Rate	Salary Cost
	1	2	3	4	5	6			
Principal	8	8	32	40	10	72	170	\$90.00	\$15,300
Project Manager	32	18	40	100	40	120	350	\$75.00	\$26,250
Associate	32	32	80	100	16	80	340	\$65.00	\$22,100
Senior Engineer/Planner	40	40	160	160	40	0	440	\$55.00	\$24,200
Engineer / Planner	0	0	40	40	40	80	200	\$45.00	\$9,000
Assistant Engineer / Planner	120	40	160	160	40	40	560	\$35.00	\$19,600
Technician	120	0	100	100	20	80	420	\$30.00	\$12,600
Other Support Staff	8	14	8	16	4	40	90	\$30.00	\$2,700
<b>Total Hours</b>	<b>360</b>	<b>152</b>	<b>620</b>	<b>716</b>	<b>210</b>	<b>512</b>	<b>2,570</b>		
<b>Total Salary</b>	<b>\$15,440</b>	<b>\$8,170</b>	<b>\$30,520</b>	<b>\$37,280</b>	<b>\$11,060</b>	<b>\$29,280</b>			<b>\$131,750</b>
Overhead (175.89% of Salary)	\$27,157	\$14,370	\$53,682	\$65,572	\$19,453	\$51,501			\$231,735
Profit (10%)	\$4,260	\$2,254	\$8,420	\$10,285	\$3,051	\$8,078			\$36,349
<b>Subtotal</b>	<b>\$46,857</b>	<b>\$24,794</b>	<b>\$92,622</b>	<b>\$113,137</b>	<b>\$33,565</b>	<b>\$88,859</b>			<b>\$399,834</b>
<b>Direct Expenses</b>									
Travel	-	-	-	-	-	\$4,000			\$4,000
Subsistence	-	-	-	-	-	\$1,000			\$800
Report Production (CDs)	-	-	-	-	-	\$250			\$250
Field (travel time data)	\$8,000	-	-	-	-	-			\$8,000
Traffic Counts	\$40,000	-	-	-	-	-			\$40,000
CDS	-	\$45,000	-	-	-	-			\$45,000
<b>Total Direct Expenses</b>	<b>\$48,000</b>	<b>\$45,000</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$5,250</b>			<b>\$98,050</b>
<b>Total Cost</b>	<b>\$94,857</b>	<b>\$69,794</b>	<b>\$92,622</b>	<b>\$113,137</b>	<b>\$33,565</b>	<b>\$94,109</b>			<b>\$497,884</b>

**Work Tasks**

- Task 1: Mobilization, Data Collection and Data Analysis
- Task 2: Economic Growth Analysis
- Task 3: Model Refinement and Calibration
- Task 4: Traffic and Revenue Analysis
- Task 5: Sensitivity Tests; and
- Task 6: Documentation and Meetings

**ESTIMATED STUDY FEE**

EXHIBIT 1