



# President George Bush Turnpike Western Extension (formerly SH 161) Semi-Annual Progress Report No. 1 August 2011



Prepared by

Issued September 21, 2011

**HNTB**



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**NORTH TEXAS TOLLWAY AUTHORITY  
CONSTRUCTION FUND  
PRESIDENT GEORGE BUSH TURNPIKE  
WESTERN EXTENSION (formerly SH 161)**

**AUGUST 2011  
PROGRESS REPORT SUMMARY**

As described in the requirements as set forth in the Trust Agreement securing the President George Bush Turnpike Western Extension Project (“The Project”), Section 402 (j), the Consulting Engineers are to prepare a progress report at least once every six months during the design and construction of a project financed by public bonds. The President George Bush Turnpike Western Extension Project is being financed by public bonds and as such is the subject of this report. The report is to include the date the Project will be open to traffic, the date on which the construction of the Project will be completed, the cost of the Project excluding any bond discount and interest during construction and for one year after completion of construction, and the amount of funds required each six months during the remaining estimated period of construction.

The President George Bush Turnpike Western Extension Project, formerly State Highway 161 (SH 161) extends the existing SH 161 approximately 11.5 additional miles south from SH 183 to I-20, growing the loop around the City of Dallas and its suburbs. The Project, which is located predominantly in Dallas County, begins at I-20 and then extends to the north, crossing I-30 and tying into the existing SH 183 interchange. It is a joint effort between NTTA, the Texas Department of Transportation (TxDOT) and the Regional Transportation Council (RTC) of the North Central Texas Executive Summary Council of Governments (NCTCOG).

The Project was divided into four phases for purposes of managing and expediting the design and construction. All design and construction contracts for Phases 1, 2 and 3 have been procured and managed by the TxDOT, with the exception of the delivery of the toll gantries and toll collection equipment. NTTA is responsible for design and construction

of all ramp gantries and associated ITS equipment for Phases 2 and 3 and will apply the official System Design Guidelines to the landscaping aspect of the Project upon handover from TxDOT. Phase 4 of the Project will be delivered by NTTA using Design-Build methods to expedite the delivery of the Project in whole by the timeframe established for the region in late 2012.

The current total estimated cost for all NTTA deliverables for the Project, exclusive of interest, financing and an upfront acquisition payment, but including a contingency allocation, is \$546,598,381. Table 3 on page 11 shows all expenditures through August 2011 for the Project. Note: Throughout the report, the cutoff date for financial information is August 31, 2011, while information found in the narrative portions may include details as current as the report release date, September 21, 2011.

The remaining estimated funds required for the project are presented in semi-annual increments, including funds allocated for project contingencies, in Table 4, on page 12 of the report.

Respectfully submitted,  
HNTB CORPORATION



Stephanie L. Halliday, P.E.  
GEC Project Director

# NORTH TEXAS TOLLWAY AUTHORITY PRESIDENT GEORGE BUSH TURNPIKE WESTERN EXTENSION CONSTRUCTION FUND

## AUGUST 2011 PROGRESS REPORT

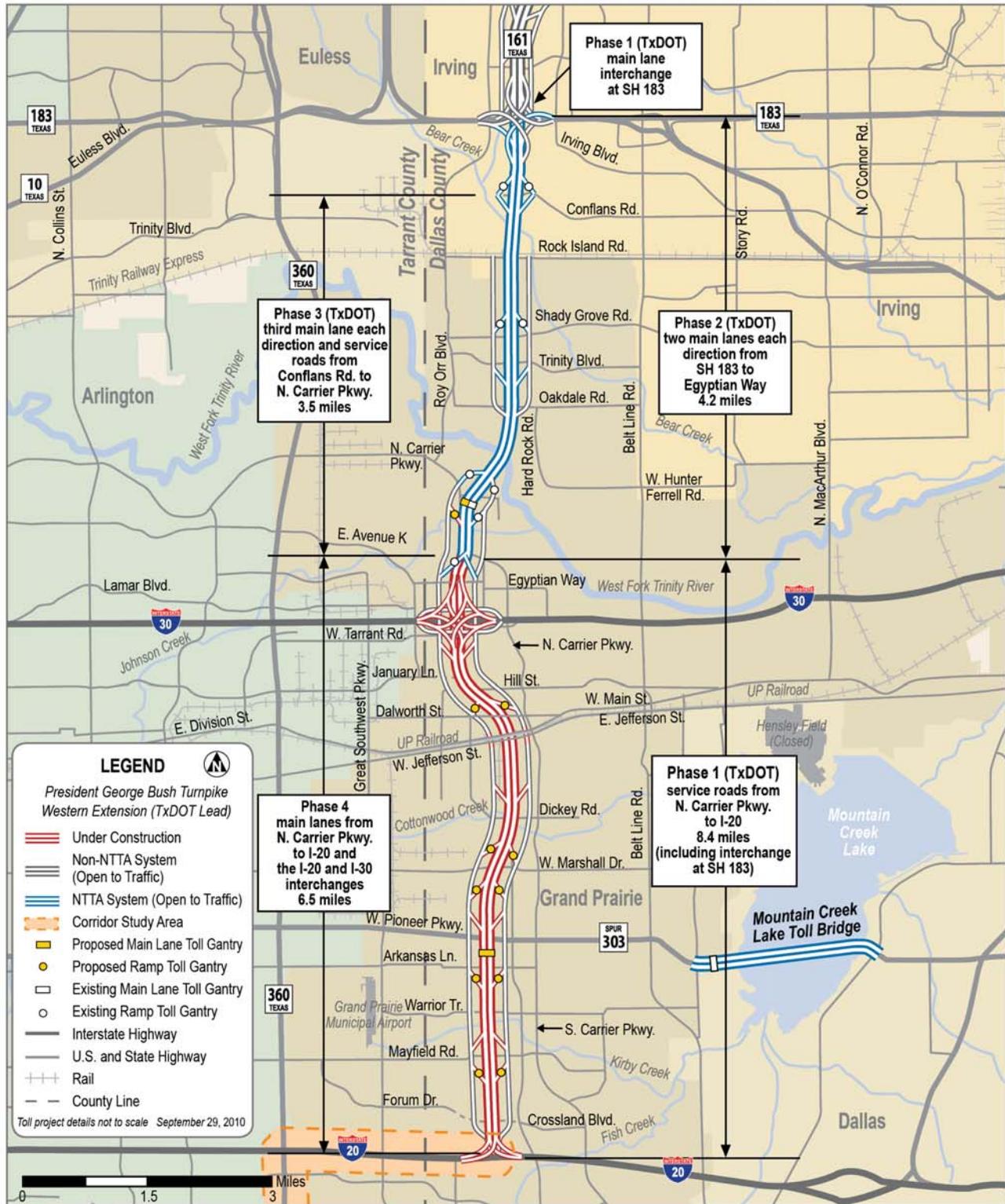
This report describes the location, engineering design features, schedule and construction cost estimates for the President George Bush Turnpike Western Extension (PGBT WE), previously referred to as State Highway (SH) 161 Toll Project (“Project”) in Dallas County from Interstate Highway (IH) 20, crossing IH-30 and terminating at SH 183, a distance of approximately 11.5 miles.

### GENERAL

The Project extends the existing SH 161 approximately 11.5 miles south from SH 183 to IH-20, growing the loop around the City of Dallas and its suburbs. The Project, located mostly in Dallas County, begins at IH-20 and then extends to the north, crossing IH-30 and tying into the existing SH 183 interchange. The Project is a joint effort between NTTA, the Texas Department of Transportation (TxDOT) and the Regional Transportation Council (RTC) of the North Central Texas Council of Governments (NCTCOG). The Project was divided into four phases for purposes of managing and expediting the design and construction (refer to Figure 1 on page 2).

The proposed ultimate typical section along the Project generally consists of three-lane frontage roads in each direction, eight main lanes (four lanes in each direction), and one- or two-lane slip ramps. The initial main lane construction from IH-20 to IH-30 will consist of four main lanes (two lanes in each direction). The initial main lane configuration from IH-30 to SH 183 will consist of six main lanes (three lanes in each direction).

Figure 1: PGBT Western Extension Project Corridor Location and Sections



## DESIGN AND CONSTRUCTION STATUS

### ***PGBT WE Phase 1 (0.89 miles)***

*Frontage Roads from IH-20 to North of IH-30 (at Carrier Pkwy), SH 183/SH 161 Interchange*

- ◆ Design consultant: TxDOT
- ◆ Right of way: Acquisition by TxDOT - Complete
- ◆ Prime contractor: Constructed by TxDOT
- ◆ Open-to-traffic date: 2007-2009
- ◆ Construction status: 100% Complete

Phase 1 of the Project begins at IH-20 and extends to north of IH-30 (at Carrier Parkway), which is comprised of improvements designed and constructed by TxDOT including frontage roads and cross-streets. The frontage road improvements consist of three lanes in each direction. The cross-street improvements consist of four- to six-lane thoroughfares with U-turns. The frontage roads and cross-streets constructed in Phase 1 have been completed and opened to traffic in various stages between 2007 and 2009. Phase 1 also includes the fully-directional SH 183/SH 161 interchange improvements south to Conflans Road, which is also complete and open to traffic.

### ***PGBT WE Phase 2 (4.21 miles)***

*From north of IH-30 (at Carrier Pkwy) to SH 183 Interchange (NB lanes)*

- ◆ Design consultant: TxDOT
- ◆ Right of way: Acquisition by TxDOT - Complete
- ◆ Prime contractor: Constructed by TxDOT (Williams Brothers Construction Co., Inc.)
- ◆ Open-to-traffic date: August 2, 2009
- ◆ Construction status: Under construction – 100% Complete

Phase 2 of the Project begins north of IH-30 (at Carrier Parkway) and extends to SH 183 (at Conflans Road). The improvements designed and constructed by TxDOT consist of frontage roads, cross streets, slip ramps and main lanes. The frontage road improvements consist of three lanes in each direction. The cross-street improvements consist of four- to six-lane thoroughfares with U-turns. In the northbound direction, one permanent slip ramp entrance and one temporary

slip ramp exit were constructed. In the southbound direction, one permanent and one temporary exit slip ramp were constructed until Phase 3 (southbound half of main lane construction) was completed. The temporary slip ramps will remain open until Phase 4 is opened to traffic. Main lane improvements will consist of the northbound half of construction for the entire length of Phase 2.

Once Phase 2 was completed, and until Phase 3 was completed in April of 2010, two lanes in each direction were open to traffic. The northbound main lane bridges consisted of the structures over the Trinity River, Rock Island Road, Dallas Area Rapid Transit Trinity Railway Express (DART TRE) rail line, Bear Creek and Conflans Road. All of the main lane bridges were constructed to a sufficient width to accommodate 10 lanes. However, the initial condition is six lanes (three lanes in each direction) after Phase 3 opened to traffic. In the ultimate configuration, eight main lanes will be striped (four in each direction). On August 2, 2009, two lanes in each direction opened to traffic in a temporary configuration while work continued on the remaining elements of Phases 2 and 3 of the Project. To collect tolls when Phase 2 was opened to traffic, NTTA designed and constructed the additional signing, pavement markings, and all-ETC and ITS equipment required to implement the three ETC ramp gantries and one main lane gantry between Carrier Parkway and Sunnyvale Road/Lower Tarrant Road in Phase 2.

### ***PGBT WE Phase 3 (4.21 miles)***

*From north of IH-30 (at Carrier Pkwy) to SH 183 Interchange (SB lanes)*

- ◆ Design consultant: TxDOT
- ◆ Right of way: Acquisition by TxDOT - Complete
- ◆ Prime contractor: Constructed by TxDOT (Williams Brothers Construction Co., Inc.)
- ◆ Open-to-traffic date: April 10, 2010
- ◆ Construction status: Under construction – 100% Complete

Phase 3 of the Project begins immediately north of IH-30 (south of Carrier Parkway) and extends to SH 183 (at Conflans Road). The improvements designed and constructed by TxDOT consist of permanent slip ramps, a temporary slip ramp and main lanes. In the southbound direction, four

permanent slip ramp entrances and two permanent slip ramp exits were constructed. The southernmost permanent slip ramp entrance will remain closed to traffic until Phase 4 is completed and the temporary exit ramp is removed. In the northbound direction, two permanent slip ramp entrances and four permanent slip ramp exits were constructed as part of Phase 2 of the Project. Main lane improvements consist of the southbound half of construction for the entire length of Phase 3. The remaining southbound half of the main lane bridges consists of the structures over the Trinity River, Rock Island Road, DART TRE rail line, Bear Creek and Conflans Road. All of the main lane bridges were constructed by TxDOT to a width that will accommodate 10 lanes, but are only planned to be striped to eight lanes (four lanes in each direction) in the ultimate configuration. Currently, and since Phase 3 opened to traffic in April of 2010, the roadway is striped for six lanes (three lanes in each direction). To collect tolls, NTTA designed and constructed the additional signing, pavement markings, and all-ETC and ITS equipment required to implement the six ETC ramp gantries and one main lane gantry between Carrier Parkway and Sunnyvale Road/Lower Tarrant Road in Phase 3.

#### ***PGBT WE Phase 4 (6.63 miles)***

*From IH-20 to just north of IH-30 (at Carrier Parkway)*

- ◆ Design consultant: Prairie Link Constructors (PLC)
- ◆ Right of way: Acquisition by TxDOT - Complete
- ◆ Prime contractor: Prairie Link Constructors (PLC)
- ◆ Open-to-traffic date: Anticipated late 2012
- ◆ Design/Build status – 55% Complete

Phase 4 of the Project begins at IH-20 and extends to north of IH-30 (south of Carrier Parkway). The improvements to be designed and constructed by NTTA consist of direct connection ramps, slip ramps, main lanes, frontage roads, and ETC and ITS equipment. At the IH-20 interchange, the improvements consist of a four-level interchange with four direct connection ramps. All of the direct connection ramps are proposed as two lanes. Also in this phase of construction are main lane bridges for Forum Road/Crossland Road, Mayfield Road, Kirby Creek, future Warrior Trail Road, Arkansas Lane, Pioneer Parkway, Marshall Drive, Cottonwood Creek, SE 14th

Street/Dickey Road and January Lane/Hill Street. Cross-street bridges for Jefferson Street, Main Street, Dalworth Street, and Tarrant Road are included in this phase of construction. All of the main lane bridges will be constructed to an ultimate configuration of eight lanes (four lanes in each direction), but will open striped to accommodate four lanes (two lanes in each direction). Main lane pavement will be constructed as four lanes (two lanes in each direction). Eighteen slip ramps will also be constructed in this phase of construction. Ten of the slip ramps will require the implementation of ETC ramp gantries. In addition, a main lane gantry is located between Arkansas Lane and Pioneer Parkway which will require ETC equipment.

At the IH-30 interchange, the proposed improvements consist of a fully-directional, five-level interchange with eight direct connection ramps. All of the direct connection ramps are proposed as two lanes but may be initially striped as one lane. Three of the direct connection ramps are depressed underneath the frontage road intersection box. Frontage road bridges will be constructed to accommodate the depressed direct connection ramps as well as the main lanes of PGBT WE. Phase 4 is anticipated to be substantially complete in October 2012. Based on the Project Agreement, the NTTA and TxDOT have agreed to allow for the option of a phased opening of the direct connection ramps at IH-30. The two high-volume direct connection ramps at IH-30—the East-to-North and the South-to-West direct connectors—will be substantially complete in October 2012. The remaining six direct connection ramps have lower traffic volumes. If the NTTA and TxDOT determine that it would be beneficial to delay the opening of the lower volume direct connection ramps in order to reduce construction delays along IH-30, the NTTA can exercise the option to complete the remaining lower volume direct connection ramps up to six months later, in April 2013.

Within the limits of Phase 4, there is a separate portion of construction consisting of a railroad bridge over the future PGBT WE main lanes and two new at-grade crossings of the PGBT WE frontage roads and the UPRR work (Main Street and Jefferson Boulevard). TxDOT is responsible for the development of the plans for the UPRR work, per the Project Agreement, and NTTA has obtained an agreement with UPRR, TxDOT, and the City of Grand Prairie for development and

construction. Phase 4 and the UPRR work is anticipated to be substantially complete in October 2012.

In addition to the design firms identified in the previous section, Table 1 below lists the contracts that have been awarded for engineering services related to the Project. On the following page, Table 2 summarizes the design and construction status of the Project.

<b>TABLE 1 – ADDITIONAL ENGINEERING SERVICES</b>		
<b>Contract Number</b>	<b>Firm</b>	<b>Description</b>
02016-NTT-00-PS-IT (WA07, 08)	Aero-Metric	Aerial Photography
02056-NTT-00-PS-EN (WA63, 65)	KBR, Inc.	Phase 2 Steel Inspection
02056-NTT-00-PS-EN (WA64)	KBR, Inc.	Phase 2 & 3 Toll Gantry Construction Management
02058-NTT-00-PS-EN (WA04, 08-10)	Atkins North America, Inc.	Construction Management
02359-SH161-00-PS-PM (WA01-04)	HDR Engineering, Inc.	Phase 4 Corridor Management
02418-NTT-00-PS-PM (WA02, 03, 04)	HDR Engineering, Inc.	Phase 4 Construction Management
02443-SH161-00-PS-PM (WA01)	Cobb, Fendley & Associates, Inc.	Phase 2,3 Toll Gantry Design
02444-SH161-01-PS-PM (WA01, 02)	Kleinfelder Central, Inc.	Phase 2,3,4 Geotechnical Design
02622-SH161-00-DB-PM	Prairie Link Constructors	Phase 4 D-B Construction
02623-SH161-00-CN-PM	AUI Contractors, LP	Phase 2 Ramp Gantries – Steel Procurement
02644-NTT-00-PS-PM (WA02, 04)	Raba-Kistner Infrastructure, Inc.	Phase 4 Construction Management Support
02664-SH161-01-CN-PM	Austin Bridge & Road	Phase 2 Toll Gantry Construction
DNT-520 (WA07)	Atkins North America, Inc.	Phase 2,3,4 Utility Coordination, Inspection
02671-NTT-00-PS-PM (WA01)	US ROW Company	ROW Acquisition and Utility Coordination Services

**TABLE 2 – DESIGN AND CONSTRUCTION STATUS**

	Phase 1	Phase 2	Phase 3	Phase 4	UPRR Bridge
Limits	Frontage Roads IH-20 to IH30, SH 183 Interchange	Northbound Side IH-30 to SH 183 Mainlanes and Frontage Roads	Southbound Side IH-30 to SH 183 Mainlanes and Frontage Roads	IH-20 to IH-30 Mainlanes, Interchanges at IH-20 and IH-30	Union Pacific Railroad Bridge over PGBT WE and At-Grade Crossings
Design Consultant	TxDOT	TxDOT	TxDOT	Prairie Link Constructors	TxDOT
Design Notice to Proceed	Unknown	Unknown	Unknown	November 10, 2009 (NTP 1)	Unknown
Current Status of PS&E	Complete	Complete	Complete	100%	100%
Letting Dates	Unknown	Unknown	Unknown	November 06, 2008	November 06, 2008

Construction Contract	TxDOT Contract	TxDOT Contract	TxDOT Contract	02622-SH161-00-DB-PM	02622-SH161-00-DB-PM
Contractor	TxDOT	TxDOT	TxDOT	Prairie Link Constructors	Prairie Link Constructors
Construction Notice to Proceed	Unknown	Unknown	Unknown	February 26, 2010	February 26, 2010
End Construction Date	Unknown	September 2010	September 2010	February 2013	February 2013
Current Status of Construction	100% Complete	100% Complete	100% Complete	Under construction – 48% Complete	Under construction – 48% Complete
Open-to-Traffic Date	2007-2009	August 2008	April 2009	October 2012	October 2012

## ESTIMATE OF PROJECT FUNDS

Phase 1 actual construction, ROW, and pre-development costs totaled \$279,567,561 (information provided by TxDOT). Phase 2 and 3 costs for the Project were negotiated through the SH 161 Market Valuation process. Per the Project Agreement between NTTA and TxDOT dated July 30, 2009, the agreed-upon total Project costs for Phase 2 and 3 were \$231,614,424 and \$90,265,397, respectively (in nominal 2007 dollars). The agreed-upon negotiated value for Phases 1 through 3, in terms of the payment to TxDOT, was \$458M. This payment to TxDOT is in addition to the costs shown in Table 3, on page 11.

Per the Project Agreement, TxDOT is responsible for the development of the plans for the UPRR work. For the development and construction of this part of the Project, NTTA has obtained an agreement with UPRR, TxDOT and the City of Grand Prairie. NTTA is responsible for all construction costs for the UPRR work, up to \$22,622,544. Any costs in excess of \$22,622,544 will be the responsibility of TxDOT. As part of the Project Agreement, TxDOT has agreed to reimburse the NTTA an amount not to exceed \$12,000,000 for the construction of the UPRR related work. The cost estimate for the NTTA portion of the Project (including Phase 4, the ETC/ITS project equipment in Phase 2 and 3, the UPRR work and landscaping) is a combination of actual bids received and estimates that include the following major cost assumptions:

On the following page, Table 3 shows a summary of the estimated NTTA Project cost. The total Project cost includes engineering, legal and administrative, materials testing and utility relocation costs that are NTTA's responsibility. The current estimated total Project cost for Phase 4, as well as the ETC/ITS equipment in Phases 2 and 3, not including any future expansion lane widening or interest earned before or after construction, is \$546,598,381.

Several factors, including unforeseen escalation of prices and wages, labor or material shortages, or changes in economic conditions, can significantly influence (escalate or reduce) construction costs. Appropriate contingencies are added to the cost of the Project to mitigate the impact of unforeseen escalations. The estimated Project cost reflects the most current bids, approved change orders, and our professional judgment of the construction industry; and it is our belief that the Project can be constructed within the limits described for the estimated cost given herein. However, due to the nature of the construction industry, we cannot and will not guarantee that the actual Project cost will not vary from the estimated cost.

<b>TABLE 3 - COST SUMMARY</b>				
<b>No.</b>	<b>Description</b>	<b>Engineering Report Estimate, April 2011</b>	<b>Estimated Cost, August 2011</b>	<b>Actual Expenditures, August 2011</b>
1	Administration (incl. Corridor Management, Legal)	\$ 22,100,000	\$ 22,426,325	\$ 15,401,321
2	Planning	\$ 8,500,000	\$ 8,496,956	\$ 5,941,659
3	Design	\$ 5,000,000	\$ 4,233,901	\$ 2,772,753
4	Construction, Construction Management, Miscellaneous Construction <sup>1</sup>	\$ 461,904,130	\$ 462,352,628	\$ 214,496,913
5	ITS and Toll Gantry Equipment	\$ 12,146,440	\$ 10,509,028	\$ 1,472,542
6	ROW, Utilities	\$ 1,989,145	\$ 1,752,525	\$ 1,752,525
7	Project Contingencies	\$ 34,958,666	\$ 36,827,018	\$ -
<b>Project Total (1-7)<sup>2, 3, 4</sup></b>		<b>\$ 546,598,381</b>	<b>\$ 546,598,381</b>	<b>\$ 241,837,713</b>

**NOTES:**

<sup>1</sup>The cost of toll gantry and ITS infrastructure construction is included within the construction cost of each Phase.

<sup>2</sup>Under the Project Agreement, TxDOT is responsible for the design, construction, and construction management of Phases 1, 2 and 3, except for toll gantries and lane equipment.

<sup>3</sup>The amount shown above does not include bond discounts, interest during and after construction, and other financing costs.

<sup>4</sup>An Advance Funding Agreement with TxDOT provides for the release of an amount not to exceed \$12M from the SH 121 Subaccount to NTTA for construction related to the UPRR bridge over the main lanes, the frontage road at-grade highway-railroad crossings, and the frontage road intersections with Main and Jefferson Streets.

The current cost estimate represents the best good-faith judgment from design professionals familiar with the highway construction industry. Neither the NTTA nor its consulting engineers have control over the labor, material or equipment costs, contractors' methods of determining bid prices, competitive bidding, market or negotiating conditions. The estimate of construction costs given in progress reports will be monitored as work progresses on the Project.

The estimated semi-annual amount of funds required for the projected period of construction to meet the cost of the PGBT Western Extension Project, including funds allocated for project contingencies, is shown below in Table 4.

<b>TABLE 4 - DRAW SCHEDULE</b>						
<b>Period Ending<sup>1</sup></b>	<b>Original Semi-Annual Estimate, August 2011</b>	<b>Original Cumulative Estimate, August 2011</b>	<b>Semi-Annual Actual, August 2011</b>	<b>Cumulative Actual, August 2011</b>	<b>Semi-Annual Estimate, August 2011<sup>2</sup></b>	<b>Cumulative Estimate, August 2011</b>
8/31/2009	\$14,339,716	\$14,339,716	\$14,339,716	\$14,339,716		
2/28/2010	\$20,280,411	\$ 34,620,127	\$20,280,411	\$34,620,127		
8/31/2010	\$52,114,142	\$ 86,734,270	\$52,114,142	\$86,734,270		
2/28/2011	\$65,489,269	\$152,223,538	\$65,489,269	\$152,223,538		
8/31/2011	\$ 89,614,175	\$241,837,714	\$89,614,175	\$241,837,714		
2/29/2012	\$101,223,329	\$343,061,043			\$101,223,329	\$343,061,043
8/31/2012	\$97,238,659	\$440,299,702			\$97,238,659	\$440,299,702
2/28/2013	\$46,740,001	\$487,039,703			\$46,740,001	\$487,039,703
8/31/2013	\$14,966,117	\$502,005,820			\$14,966,117	\$502,005,820
2/28/2014	\$11,187,306	\$513,193,126			\$11,187,306	\$513,193,126
8/31/2014	\$245,700	\$513,438,826			\$245,700	\$513,438,826
2/28/2015	\$33,159,556	\$546,598,381			\$33,159,556	\$546,598,381

Note:

<sup>1</sup>By Project Agreement with TxDOT, expenses are reported and forecasted in TxDOT fiscal year periods.

<sup>2</sup>The estimate above includes contingency that may or may not be expended.

## SCHEDULE

The major milestones for the Project are as follows:

Phase 1: Opened in stages between 2007 and 2009.

Phase 2: Opened to traffic on August 2, 2009.

Phase 3: Opened to traffic on April 10, 2010.

Phase 4: Expected to open to traffic in October 2012.

UPRR Crossings: Expected completion during second quarter of 2012.