



*NORTH TEXAS TOLLWAY AUTHORITY*

# **NORTH TEXAS TOLLWAY AUTHORITY SEMI-ANNUAL PROGRESS REPORT**

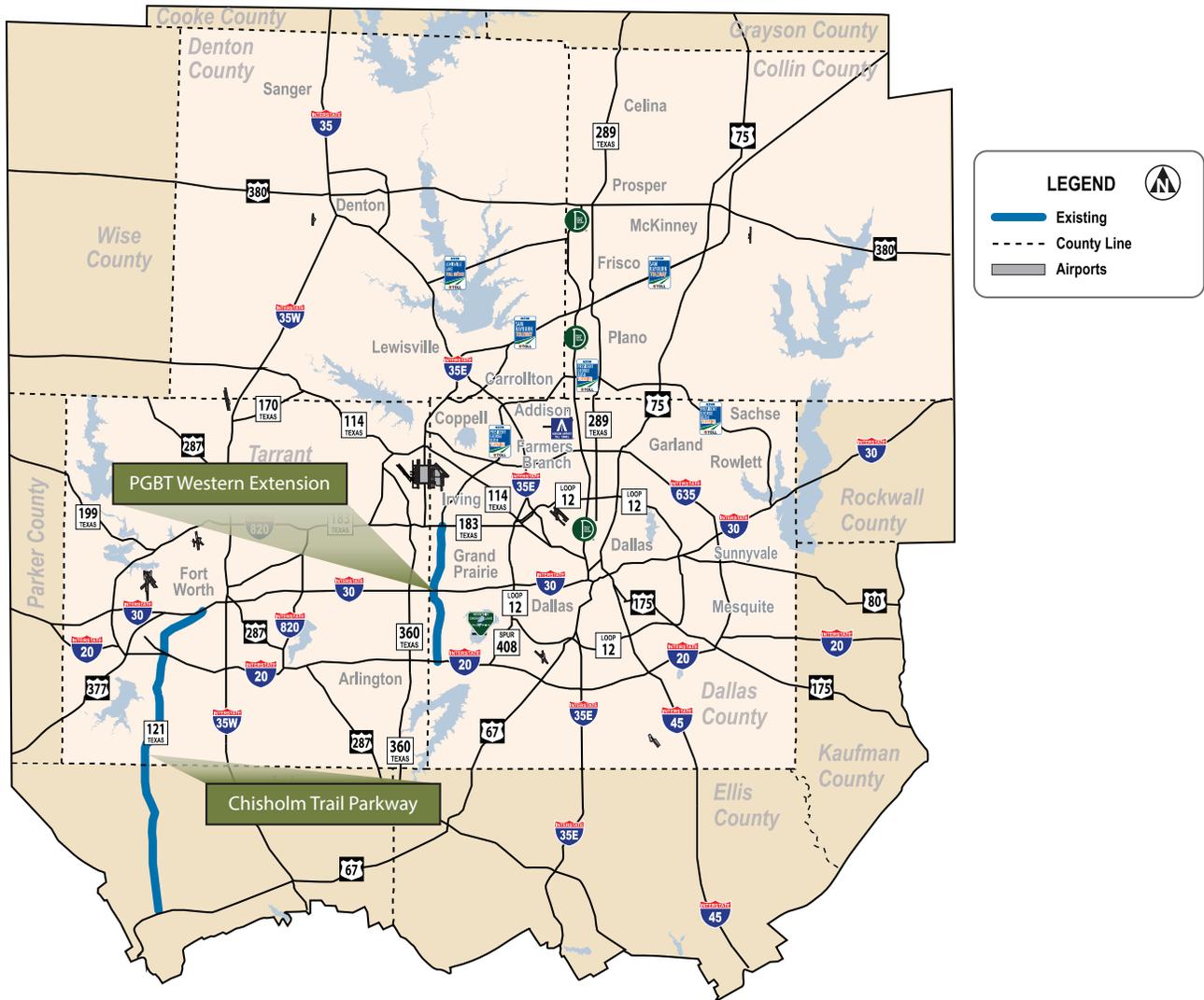
## **SPECIAL PROJECTS SYSTEM**

August 2016

### **PGBT WESTERN EXTENSION CHISHOLM TRAIL PARKWAY**

Issued October 14, 2016

**ATKINS**



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October 14, 2016

Gerald Carrigan  
Executive Director  
North Texas Tollway Authority  
5900 W. Plano Parkway  
Plano, Texas 75093

Dear Mr. Carrigan:

As described in the requirements set forth in the Special Projects System (SPS) Trust Agreement Section 402 (j), the Consulting Engineers prepare a progress report at least once every 6 months during the construction of a project financed by public bonds. As defined in the SPS Trust Agreement Section 704, Atkins North America, Inc. (Atkins) was selected as the North Texas Tollway Authority's (NTTA) Consulting Engineer at the December 2012 board meeting. Projects included in the Authority's SPS that are subject to this requirement include the President George Bush Turnpike Western Extension (PGBT WE) and the Chisholm Trail Parkway (CTP) toll projects.

The NTTA adheres to the requirements outlined in a comprehensive Trust Agreement which governs the affairs of the projects financed with public bonds. As specified in the agreement, this report includes:

- (i) The date each project will be open to traffic
- (ii) The expected date that construction of each project will be completed
- (iii) The cost of each project, excluding any bond obligation discounts and interest during construction and for one year after completion of construction
- (iv) The amount of funds required each 6 months during the remaining estimated period of construction, including comparisons between the actual time elapsed and the actual costs, and the original estimates (budget) of such times and costs.

This information, as well as other items relevant to each corridor, is presented in greater detail within this report.

Respectfully submitted,



R. Keith Jackson, PE  
General Engineering Consultant  
Project Director

# Contents

<b>1.0</b>	<b>President George Bush Turnpike, Western Extension, 11th Progress Update .....</b>	<b>1</b>
1.1	Description .....	1
1.2	Financial.....	3
1.3	Summary .....	5
<b>2.0</b>	<b>Chisholm Trail Parkway, 10th Progress Update.....</b>	<b>8</b>
2.1	Description .....	8
2.2	Financial.....	10
2.3	Summary .....	13

# 1.0 President George Bush Turnpike, Western Extension, 11th Progress Update

## 1.1 Description



The President George Bush Turnpike Western Extension (PGBT WE) extended the existing State Highway 161 (SH 161) approximately 11.5 miles south from State Highway 183 (SH 183) interchange, crossing

Interstate Highway 30 (I-30), and terminating at Interstate Highway 20 (I-20). PGBT WE extends the loop around the City of Dallas and its suburbs. The project is a joint effort between the Authority, the Texas Department of Transportation (TxDOT) and the Regional Transportation Council (RTC) of the North Central Texas Council of Governments (NCTCOG).

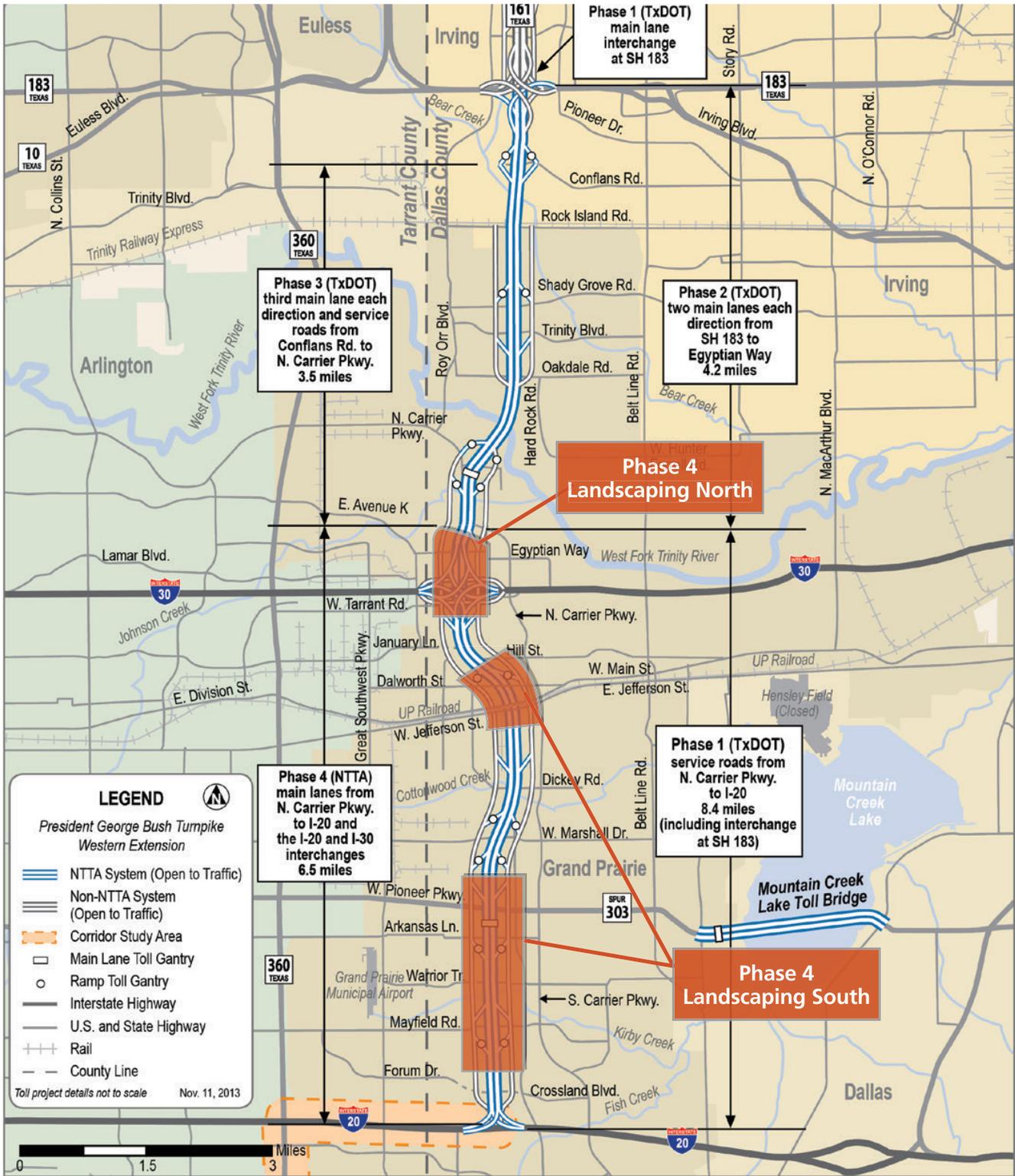
The typical section along the PGBT WE generally consists of three-lane frontage roads in each direction, six or eight main lanes (two or three lanes in each direction), and one- or two-lane slip ramps. The main lane construction from I-20 to

I-30 consists of four main lanes (two lanes in each direction). The main lane configuration from I-30 to SH 183 consists of six main lanes (three lanes in each direction).

PGBT WE was divided into four phases for purposes of managing and expediting the design and construction (Figure 1). TxDOT was responsible for the design and construction contracts for Phases 1, 2, and 3, except the toll gantries and toll collection equipment. The Authority was responsible for design and construction of all toll gantries and toll collection equipment for Phases 2 and 3. Responsible for design and construction of Phase 4, the Authority used a design-build procurement. The Authority is also responsible for the landscaping for all phases of the project.

The remaining projects to be funded by the project's bond proceeds include two landscaping projects—Phase 4 South and Phase 4 North.

**Figure 1: PGBT Western Extension Project Location and Phases**



## 1.2 Financial

As required by Trust Agreement, this section provides the cost of the project and draw schedule by 6-month increments. The current total estimated cost for all Authority deliverables for PGBT WE, exclusive of interest and financing costs, but including a contingency allocation, is \$546,598,381. Table 1 shows all expenditures through August 2016. For purposes of preparing this report, the cutoff

date for all financial information is August 31, 2016, while information in the narrative may include details as current as the report release date of October 14, 2016.

Table 1 also shows a summary of the engineer's estimate as of April 21, 2011, as well as the current estimated cost at completion. The total project cost includes engineering, legal and administrative,

**Table 1: PGBT Western Extension Estimate of Project Costs at Completion**

No.	Description	Engineering Report Estimate, April 2011	Estimate at Completion Cost, as of August 2016	Actual Expenditures, as of August 2016
1	Administration (incl. Corridor Management, Legal)	\$22,100,000	\$20,936,184	\$20,882,579
2	Planning	\$8,500,000	\$6,368,636	\$6,368,636
3	Design	\$5,000,000	\$3,705,356	\$3,705,356
4	Construction, Construction Management, Miscellaneous Construction <sup>1</sup>	\$461,904,130	\$460,713,614	\$460,412,715
5	ITS and Toll Gantry Equipment	\$12,146,440	\$5,581,219	\$5,581,219
6	Right-of-way and Utilities	\$1,989,145	\$1,752,526	\$1,752,526
7	Project Contingency	\$34,958,666	\$47,540,846	--
Original Project Total (1-7) <sup>2,3,4</sup>		\$546,598,381	\$546,598,381	\$498,703,031

### 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 was 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 provided for a reimbursement to the Authority not to exceed \$12 million 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.

Source: NTTA Project Delivery

materials testing, and utility relocation costs that are the Authority's responsibility. The current estimate at completion cost for Phase 4 remains unchanged from the engineer's estimate at \$546,598,381. This estimate also includes the electronic toll collection/intelligent transportation systems (ETC/ITS) equipment in Phases 2 and 3, not including any future expansion lane widening or interest earned before or after construction.

Several factors, including unforeseen escalation of prices and wages, labor or material shortages, or changes in economic conditions, can significantly affect (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 Atkins' professional judgment of the construction industry, and it is our belief that PGBT WE including the active projects can be constructed within the limits described for the estimated cost given herein. However, due to the nature of the construction

industry, Atkins cannot guarantee that the actual project cost will not vary from the estimated cost.

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

Per the Project Agreement between the Authority and TxDOT dated July 30, 2009, the agreed-upon negotiated value for Phases 1 through 3 (in terms of the payment to TxDOT) was \$458,000,000 plus interest. This payment to TxDOT is in addition to the costs shown in Table 1.

Also per the Project Agreement, TxDOT was responsible for the development of the plans for UPRR work. For the development and construction



of this part of the project, the Authority obtained an agreement with UPRR, TxDOT, and the City of Grand Prairie. Pursuant to the agreement with TxDOT, the Authority is responsible for all construction costs for 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 agreed to reimburse the Authority an amount not to exceed \$12,000,000 for the construction of the UPRR-related work.

The estimated semi-annual amount of funds (Draw Schedule) required for the projected period of construction necessary to meet the cost of the PGBT WE Project, including funds allocated for project contingencies, is shown on Table 2.

## 1.3 Summary

The PGBT WE project opened in phases between 2007 and 2012. There are two post-open-to-traffic projects to be funded with this project's bond proceeds and planned to be complete in 2016 as shown in Figure 2. These projects have an estimated cost of \$3,600,000.



**Table 2: PGBT Western Extension Draw Schedule**

Period Ending <sup>1</sup>	Original Semi-Annual Estimate, Aug 2011	Original Cumulative Estimate, Aug 2011	Semi-Annual Actual, Aug 2016	Cumulative Actual, Aug 2016	Semi-Annual Estimate, Aug 2016 <sup>2</sup>	Cumulative Estimate, Aug 2016 <sup>2</sup>
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	\$86,734,269		
2/28/2011	\$65,489,269	\$152,223,538	\$65,489,268	\$152,223,537		
8/31/2011	\$ 89,614,175	\$241,837,714	\$89,614,175	\$241,837,712		
2/29/2012	\$101,223,329	\$343,061,043	\$68,273,861	\$310,111,573		
8/31/2012	\$97,238,659	\$440,299,702	\$94,751,562	\$404,863,135		
2/28/2013	\$46,740,001	\$487,039,703	\$71,909,332	\$476,772,467		
8/31/2013	\$14,966,117	\$502,005,820	\$5,312,312	\$482,084,779		
2/28/2014	\$11,187,306	\$513,193,126	\$11,442,053	\$493,526,832		
8/31/2014	\$245,700	\$513,438,826	\$1,766,337	\$495,293,169		
2/28/2015	\$33,159,556	\$546,598,381	\$1,389,606	\$496,682,775		
8/31/2015			\$1,585,598	\$498,268,373		
2/29/2016			\$135,416	\$498,403,519		
8/31/2016			\$299,242	\$498,702,761		
2/28/2017					\$74,921	\$498,777,682
8/31/2017					\$73,998	\$498,851,680
2/28/2018 <sup>2</sup>					\$47,783,701	\$546,635,381

Notes:

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

<sup>2</sup> Includes contingency that may or may not be expended.

Source: NTTA Project Delivery

**Figure 2: PGBT Western Extension Post-Open-to-Traffic Project Schedules**

Project	Cost	2013				2014				2015				2016			
		Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Phase 4 South Landscaping	\$1.8m	Design	Design	Design	Bidding/Construction	Bidding/Construction	Bidding/Construction	Bidding/Construction	Establishment/Upkeep								
Phase 4 North Landscaping	\$1.8m	Design	Design	Design	Bidding/Construction	Bidding/Construction	Bidding/Construction	Bidding/Construction	Establishment/Upkeep								

	Design		Bidding/Construction		Establishment/Upkeep
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# 2.0 Chisholm Trail Parkway, 10th Progress Update

## 2.1 Description



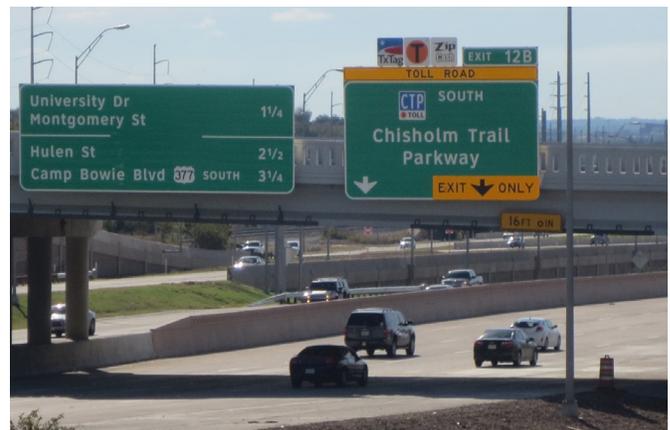
The Chisholm Trail Parkway project (CTP), extends 27.6 miles from Interstate Highway 30 (I-30) to Farm-to-Market Road 1187 (FM 1187) in Tarrant County, and extends further south from FM 1187 to United States Highway 67

(US 67) in Johnson County. CTP is a joint effort of the Authority, TxDOT, the Federal Highway Administration (FHWA), the RTC of NCTCOG, UPRR, Fort Worth and Western Railroad (FWWR), the city of Fort Worth, the city of Burleson, the city of Joshua, and the city of Cleburne. Efforts for this project are also coordinated with Tarrant County and Johnson County.

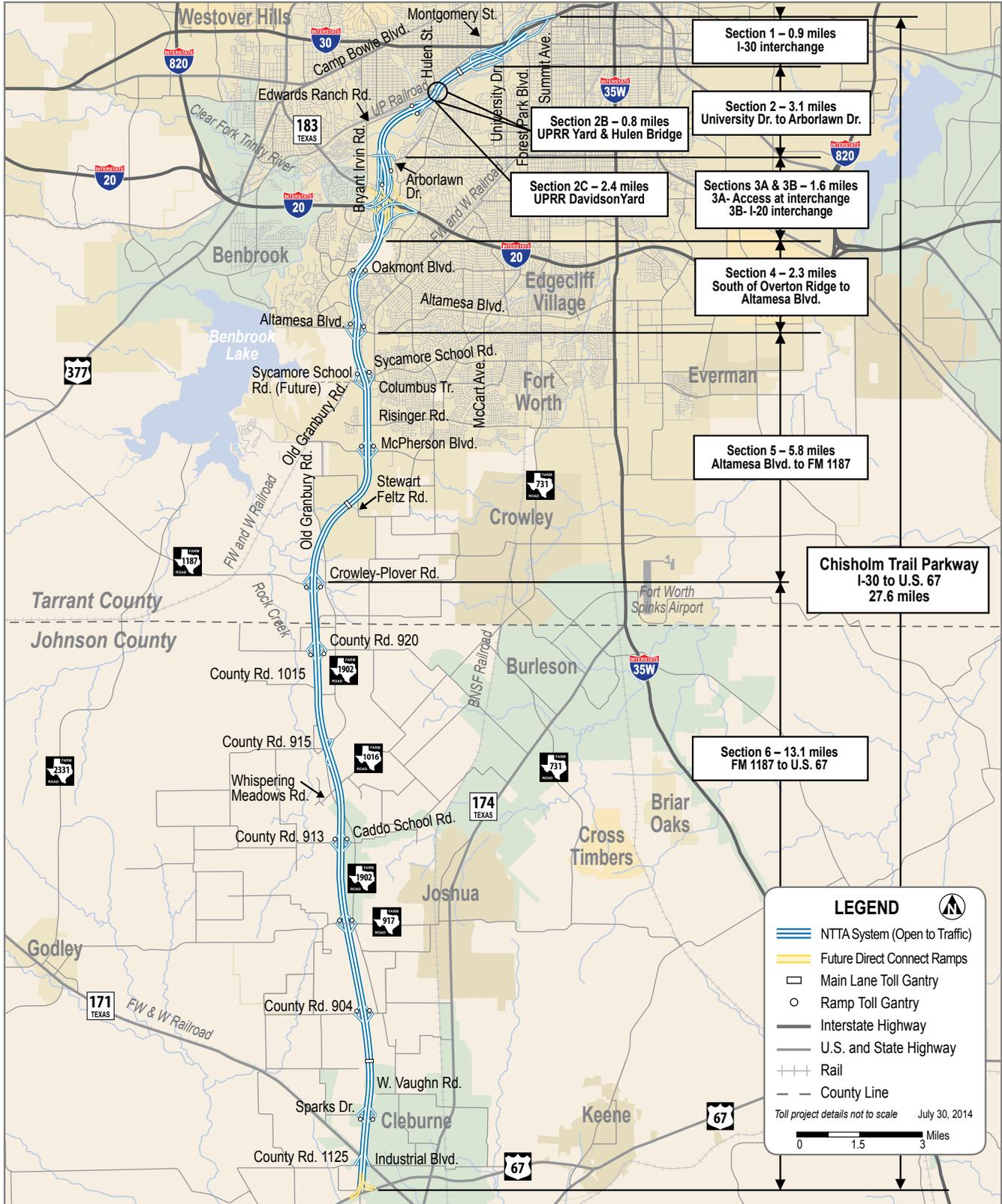
CTP is an all-ETC facility consisting of two- to six-lane controlled-access main lanes with discontinuous two-lane frontage roads. The project will be six lanes from the I-30 northern terminus to Altamesa Boulevard in south Fort Worth, four lanes from Altamesa Boulevard to FM 1187, and two main lanes with intermittent passing lanes from FM 1187 to the US 67 southern terminus.

CTP was divided into nine sections for purposes of phasing, managing, and expediting the design and construction (refer to Figure 3). The Authority was responsible for design and construction of

Sections 1, 2, 2B, 2C, 3B, and 4. The Authority was responsible for the construction of Section 5, with TxDOT responsible for the design of this section. The Authority used design-build procurement for Section 6. The Authority performed the Section 3A design and TxDOT was responsible for the construction of this section.



**Figure 3: Chisholm Trail Parkway Project Location and Sections**



## 2.2 Financial

As required by Trust Agreement, this section provides the cost of the project and the draw schedule by 6-month increments. The current total estimated cost for all Authority deliverables for CTP, exclusive of interest, financing, and an upfront acquisition payment, but including a contingency allocation, is \$859,792,883. Table 3 shows all expenditures through August 2016.

For purposes of assembling this report, the cutoff date for all financial information is August 31, 2016, while information in the narrative may include details as current as the report release date, October 14, 2016.

Table 3 also shows a summary of the engineer's estimate as of October 2011 as well as the current estimated cost at completion. The total project

**Table 3: Chisholm Trail Parkway Estimate of Project Costs at Completion**

No.	Description	Engineer's Estimate, October 2011	Estimate at Completion Cost, as of August 2016	Actual Expenditures, as of August 2016
1	Administration (incl. Corridor Management, Legal)	\$38,681,458	\$48,296,485	\$48,036,853
2	Planning	\$15,765,360	\$14,713,239	\$14,713,239
3	Design	\$42,090,620	\$42,664,873	\$42,620,998
4	Construction, Construction Management, Miscellaneous Construction <sup>1</sup>	\$621,446,685	\$633,087,922	\$619,474,965
5	ITS and Toll Gantry Equipment	\$11,144,870	\$7,714,845	\$7,714,845
6	Right-of-way and Utilities	\$82,713,883	\$74,410,675	\$74,410,675
7	Project Contingency	\$47,950,007	\$38,904,844	See footnote <sup>3</sup>
NTTA Project Total (1-7) <sup>1,2</sup>		\$859,792,883	\$859,792,883	\$806,971,575
8	Work Performed by Others	\$537,350,973		
Total Project		\$1,397,143,856		

### Notes:

<sup>1</sup> Under the Project Agreement, TxDOT is responsible for the design, construction, and construction management of Section 3A.

<sup>2</sup> The amount shown above does not include bond discounts, interest during and after construction, and other financing costs.

<sup>3</sup> Project Contingency used above in Items No. 1-6.

Source: NTTA Project Delivery

cost includes engineering, legal and administrative, materials testing, and utility relocation costs that are the Authority's responsibility.

The cost estimate for CTP is based upon the following: 100 percent complete designs prepared by the Authority for Sections 1 through 4 and by TxDOT for Section 5, the best value design-build proposal accepted by the Authority for Section 6, and actual construction bids for all sections. The estimate does not include four I-20 and SH 183 direct connectors and two additional main lanes south of FM 1187, which were removed from the project to reduce cost.

Several factors, including unforeseen escalation of prices and wages, labor or material shortages, or changes in economic conditions, can significantly affect (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 Atkins' professional judgment of the construction

industry; 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, Atkins cannot guarantee that the actual project cost will not vary from the estimated cost.

The current cost estimate represents the best good-faith judgment from design professionals familiar with the highway construction industry. Neither the Authority 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 this progress report will be monitored as work progresses.

The estimated semi-annual amount of funds (Draw Schedule) required for the projected period of construction necessary to meet the cost of the CTP Project, including funds allocated for project contingencies, is shown in Table 4.



**Table 4: Chisholm Trail Parkway Draw Schedule**

Period Ending <sup>1</sup>	Original Semi-Annual Estimate, Feb 2012	Original Cumulative Estimate, Feb 2012	Semi-Annual Actual, Aug 2016	Cumulative Actual, Aug 2016	Semi-Annual Estimate, Aug 2016 <sup>2</sup>	Cumulative Estimate, Aug 2016 <sup>2</sup>
8/31/2009	\$61,262,179	\$61,262,179	\$61,262,179	\$61,262,179		
2/28/2010	\$10,006,785	\$71,268,964	\$10,006,785	\$71,268,964		
8/31/2010	\$19,441,284	\$90,710,248	\$19,441,284	\$90,710,248		
2/28/2011	\$8,449,770	\$99,160,019	\$8,449,770	\$99,160,019		
8/31/2011	\$20,126,666	\$119,286,685	\$20,126,666	\$119,286,685		
2/29/2012	\$67,073,504	\$186,360,189	\$67,073,504	\$186,360,189		
8/31/2012	\$150,990,986	\$337,351,174	\$133,788,677	\$320,148,866		
2/28/2013	\$179,605,524	\$516,956,698	\$88,218,062	\$408,366,928		
8/31/2013	\$153,279,076	\$670,235,774	\$108,058,651	\$516,425,579		
2/28/2014	\$113,386,498	\$783,622,272	\$113,943,047	\$630,368,626		
8/31/2014	\$45,092,827	\$828,715,099	\$114,414,096	\$744,782,722		
2/28/2015	\$11,611,553	\$840,326,652	\$37,775,479	\$782,558,201		
8/31/2015	\$2,781,742	\$843,108,394	\$15,337,688	\$797,895,889		
2/29/2016	\$16,684,489	\$859,792,883	\$8,905,452	\$806,801,341		
8/31/2016 <sup>3</sup>			\$170,234	\$806,971,575		
2/28/2017					\$1,628,409	\$808,599,983
8/31/2017					\$767,571	\$809,367,554
2/28/2018					\$50,425,329	\$859,792,883

Notes:

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

<sup>2</sup> Includes contingency that may or may not be expended.

<sup>3</sup> Includes reimbursement from City of Fort Worth.

Source: NTTA Project Delivery

## 2.3 Summary

CTP was opened to traffic from I-30 south to US 67 with local connections at I-30 and I-20 in May 2014.

In July 2014, the direct connector ramps for westbound I-20 to southbound CTP and northbound

CTP to eastbound I-20 opened. The remaining direct connectors at I-30 and I-20 opened to traffic in October 2014. The schedule of the construction is shown in Figure 4.

**Figure 4: Chisholm Trail Parkway Sections Construction Schedule**

