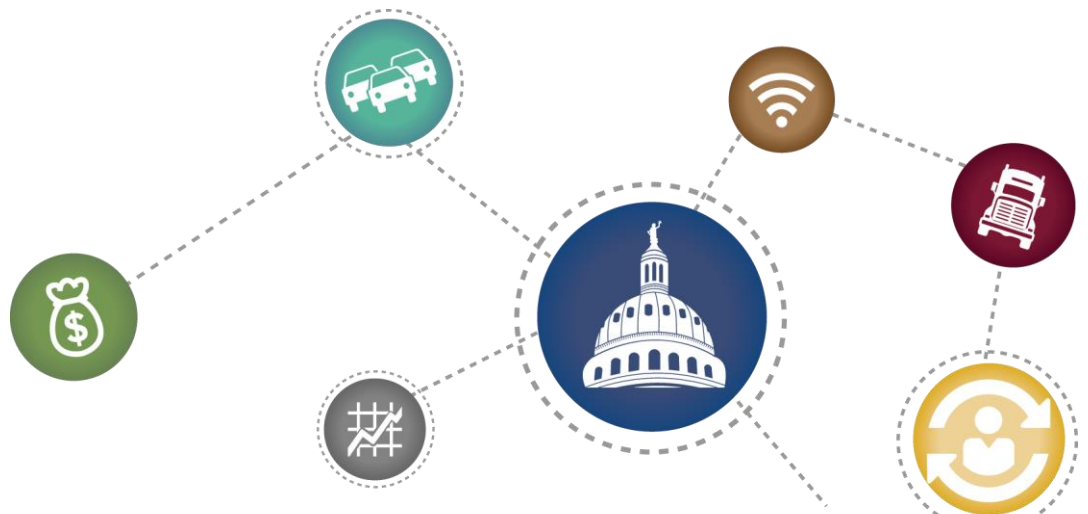


Summary and Status of Concession Agreements (CDA/DB) in Texas

Final report

PRC 16-54 F



Summary and Status of Concession Agreements (CDA/DB) in Texas

Texas A&M Transportation Institute

PRC 16-54 F

June 2016

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Introduction

Concession agreements have been utilized across the United States as a way for state departments of transportation and local governments to deliver roadway projects in a fiscal and budgetary environment that has seen less public investment in infrastructure due to revenue shortfalls. The Federal Highway Administration (FHWA) has laid out several reasons that these agencies have increasingly looked to concession agreements as a mechanism for completing roadway projects. These include:

- The ability to share risk with the private sector.
- An increase in available upfront financing through funding from a private firm.
- An increase in the debt that can be taken on with private-sector involvement.
- Incentives to better manage a project so time and money are saved in the long run (1).

FHWA describes a variety of compensation methods that concession agreements can employ to compensate the private sector for delivery of the project. These include tolls collected by the private-sector partner, availability payments made by the public sector to the private partner, and shadow (pass-through) toll payments made by the public sector based on vehicle traffic on the roadway. Additionally, where a toll-based concession arises on an existing facility that is producing more revenue than needed to repay debt, payments have been made by the private partner up front based on the future revenues that the private partner anticipates receiving (1). The Transportation Policy Research Center report *Public-Private Investment Models for Roadway Infrastructure* (2) provides a more detailed description of these compensation methods.

Purpose of the Study

The purpose of this research was to provide policy makers with a comprehensive summary of concession agreements in the state of Texas. This report synthesizes past concession projects in Texas from a financial and operational perspective.

Concession Agreements in Texas

In Texas, concession agreements and design-build agreements are referred to as comprehensive development agreements (CDAs). CDAs were first authorized in 2003 with the passage of House Bill 3588, which defines a CDA as “an agreement with a private entity that, at a minimum, provides for the design and construction of a transportation project and may also provide for the financing, acquisition, maintenance, or operation of a transportation project” (3). This authorization was part of a large transportation bill passed during the 78th Legislature. According to the Texas Department of Transportation (TxDOT), “A concession agreement makes a private-sector developer responsible for performing some or all of the development, financing, operation and maintenance of a facility for a specific time period up to 52 years. In exchange, the developer receives some type of ongoing revenue stream, usually from tolls collected from facility users” (4).

As Table 1 shows, there are two major differences between a design-build and concession CDA. The first is the financing of the project. Under a design-build CDA, there is no private-sector financial contribution, as opposed to a concession agreement, which is primarily privately funded. The second major difference is the timing of the facility’s transfer back to TxDOT and the duration and scope of any maintenance obligations.

Table 1. Overview of Comprehensive Development Agreements.

Agreement Type	Financing Provided By	Timing of Transfer Back to Public-Sector Partner
Concession	Private concessionaire	At the conclusion of the concession term
Design-Build	Public sector	At the completion of construction

CDA guidelines, which must be adhered to, are laid out in Chapters 223 and 371 of the Texas Transportation Code Section 223.201, which states that CDAs, including concession agreements, can be entered into for a:

- Toll project.
- State highway improvement project that includes both tolled and nontolled lanes and may include nontolled appurtenant facilities.
- State highway improvement project in which the private entity has an interest in the project.
- State highway improvement project financed wholly or partly with the proceeds of private activity bonds.
- Nontolled state highway improvement project authorized by the legislature (5).

Chapter 223 also mandates that CDAs, including concession agreements, must be arrived at through a competitive bidding process. Chapter 371 pertains specifically to CDAs for toll projects. It includes provisions that, among other things, outline financial disclosure requirements and require a toll project entity to have the ability to terminate the agreement for convenience and to purchase the private entity’s stake in the project, including any part of the roadway that has been constructed up to the point of termination (6).

As of the 84th Legislature, TxDOT may enter into concession agreements for a designated list of projects put forth in Senate Bill 1420 (82nd Legislature) and Senate Bill 1730 (83rd Legislature). There is currently a deadline of August 31, 2017, for entering into an agreement for the projects that have been approved by the legislature. These projects include:

- SH 99 (Grand Parkway) in Harris County.
- I-35E from I-635 to US 380 in Dallas and Denton Counties.
- I-35W from I-30 to SH 114 in Tarrant and Dallas Counties: North Tarrant Express Segments 2E, 3A, 3B, 3C, and 4.
- SH 183 from SH 121 to I-35E in Tarrant and Dallas Counties.
- I-35E/US 67 Southern Gateway in Dallas County.
- SH 288 from US 59 to south of SH 6 in Brazoria and Harris Counties.
- US 290 from I-610 to SH 99 in Harris County.
- Loop 1 (MoPac) from FM 734 to Cesar Chavez Street in Travis County.
- US 183 (Bergstrom Expressway) from Springdale Road to Patton Avenue in Travis County.
- Outer Parkway from US 77/83 to FM 1847 and South Padre Island Second Access Causeway from SH 100 to Park Road 100 in Cameron County.

Prior to the legislatively directed list of projects, three TxDOT projects were awarded as concession projects. Two projects from the list above were also awarded as concession projects: North Tarrant Express Segments 3A and 3B and SH 288. Table 2 lists the concession projects awarded to date.

Table 2. Concessions Awarded to Date.

Date Signed	Project	Developer
September 2009	LBJ 635	LBJ Infrastructure Group
June 2009	North Tarrant Express	NTE Mobility Partners
March 2013	North Tarrant Express 3A and 3B	NTE Mobility Partners
March 2007	SH 130 (Segments 5 and 6)	Cintra Zachry
March 2016	SH 288	Blueridge Transportation Group

Benefits and Risks

A review of the existing literature revealed several potential benefits and risks associated with concession agreements. Since concession agreements and design-build agreements are both a type of CDA, the two agreements share many of the same potential advantages and disadvantages. Primarily, the advantages are thought to include access to additional funding options, cost and time savings compared to traditional project implementation, and more-efficient lifecycle costs. Some potential risks include default by the private partner and public concern over private control of public assets.

Benefits

An often-cited benefit of concession agreements is their ability to allow agencies to implement projects faster and more efficiently. The financial incentive to keep a toll project open to traffic in order to maximize revenue can at times call for the use of greater innovation. Additionally, the private partner may have a management structure suited for faster implementation and access to technical expertise not available to the public partner, thus allowing the private partner to bring more specialized management to the project. Additionally, the private partner can bring knowledge of new technological innovations or methods that the public partner is unaware of or inexperienced in. These factors can lead to a more financially feasible project, which may generate additional revenue for the public partner (7).

Efficiencies over the life of the project can result in significant cost savings as well. Because a single partner is responsible for design, build, finance, operation, and maintenance, that partner has a very strong incentive to reduce costs throughout the life of the project. According to the National Conference of State Legislators, this incentive should result in a higher-quality project that requires less maintenance, improvements, or rebuilds, thus saving money throughout the life of the project (8).

Another benefit of concession agreements is the ability to tap into private financing options that would otherwise be unavailable. Because limited public funds are available, private financing can accelerate projects that lack funding and allow for additional projects that may not receive funding otherwise (8).

Risks

Along with these benefits, concession agreements also present unique risks. According to the literature, these risks include default by the private partner and public concern over private control of public assets. Taking steps to mitigate these risks should be an important part of any concession project.

One major risk associated with concession agreements is the possibility of default or bankruptcy by the private partner. This can especially be a concern if the agreement has been written in a way that puts the public partner at some financial risk or liable for the concessionaire's debt in the case of bankruptcy. Examples could include the private partner defaulting on loans guaranteed by the public or declaring bankruptcy while still owing money to the public. This

problem is addressed by writing the contract in a way that transfers financial risk to the private partner and adequately defining what will happen to the asset in the case of bankruptcy (8). Transferring financial risk to the private partner gives that partner a better incentive to manage the risk and avoid expensive cost overruns. Therefore, the private partner should have significant capital at stake in the project (9).

Another downside to concession projects can be the public's concern that public assets are under private control. This apprehension includes both the concern that a private company is making profits at the public's expense and the concern that the public may lose control over the future of the project. Some critics fear that control of a roadway by a company motivated by profits will lead to the private partner skimping on maintenance and repairs or raising tolls to excessive levels. This concern is mitigated by including adequate performance standards in the contract, which can incentivize the private partner to maintain the roadway, or through capping toll rates and revenue sharing agreements, which will give the public a share of the profits (8).

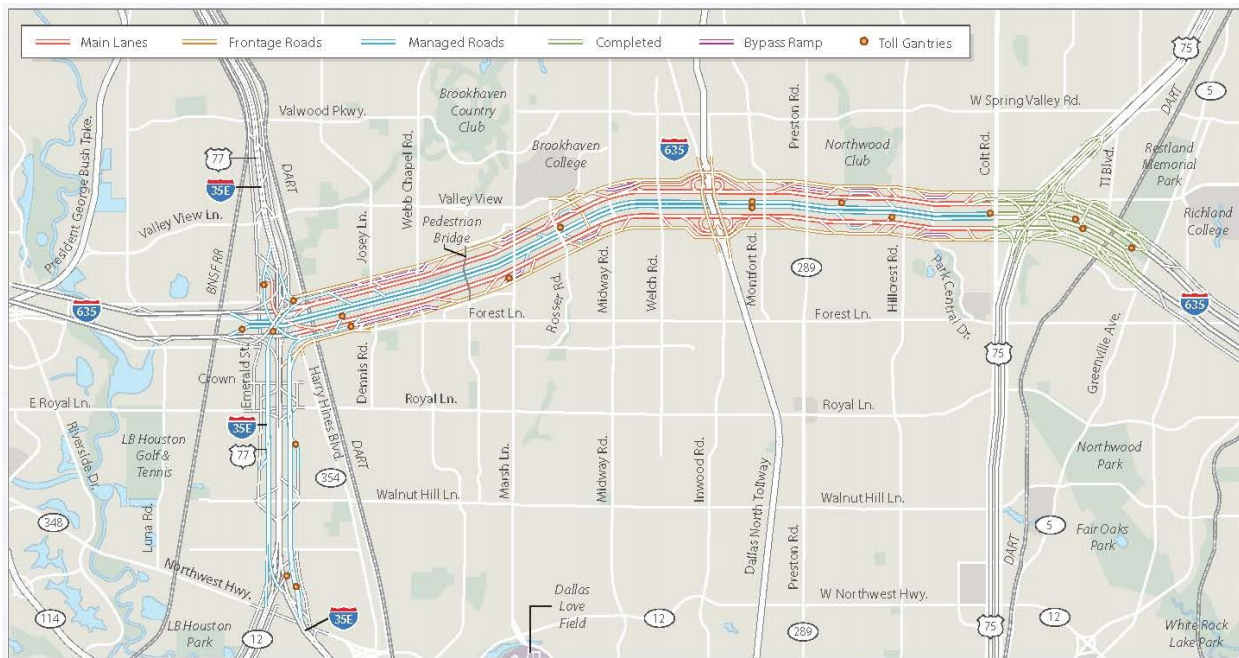
Related to this fear is public concern over losing control of the future of a roadway, or of the transportation plan for that region. One way this loss of control can manifest is through non-compete clauses that prevent state or municipal governments from adding capacity to a roadway that is within a certain distance of the private facility (10). Texas has already addressed this issue by prohibiting the inclusion of non-compete clauses. Additionally, the length of the contract has the potential to limit flexibility for the public partner. Critics argue that no contract can be written well enough to foresee public needs far in the future. In order to address this issue, several states have passed laws restricting the length of contracts (8).

Summary of Concession Projects in Texas

Texas has documented five CDAs that contain concession agreements. These agreements were entered into from 2007 to 2016. Three of the projects are located in the Dallas–Fort Worth (DFW) area, one is located southeast of Austin, and the newest is located in Houston.

LBJ 635

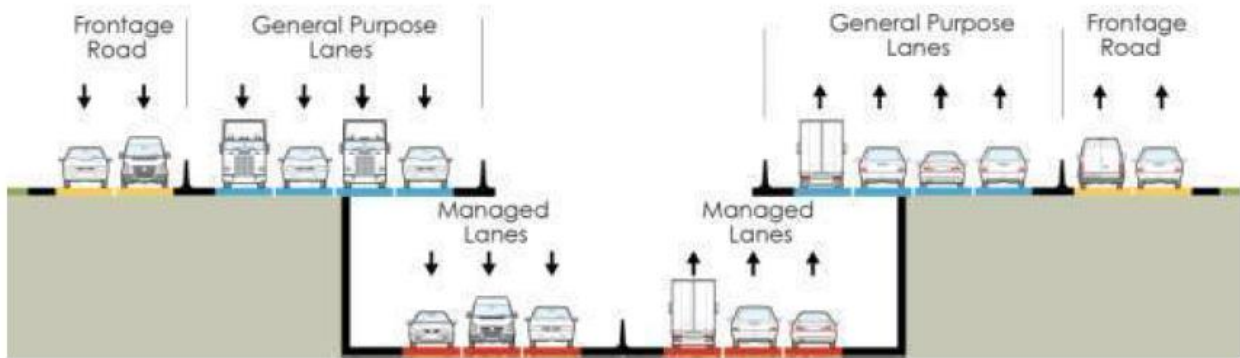
The LBJ managed lanes project is the second CDA signed in North Texas and the first signed in Dallas County. It consists of 10.7 miles along I-635 from east of Luna Road to Greenville Avenue and 5.8 miles on I-35E from south of the Loop 12/I-35E split to south of Valwood Parkway. Figure 1 shows a map of the project limits. The project includes the reconstruction of the existing four main lanes in each direction; construction of continuous frontage roads, bypass lanes, and several intersections; and addition of 13.3 miles of TEXpress Lanes. The TEXpress Lanes are tolled managed lanes and include 9.7 miles of two to three subsurface lanes in each direction along the center of I-635, as well as 3.6 miles of elevated two-lane roadway above I-35E. Figure 2 illustrates the TEXpress Lane cross section. Additionally, the project includes the reconstruction of the Joe Ratcliff pedestrian bridge, along with improved cross-street bridges and sound walls (11).



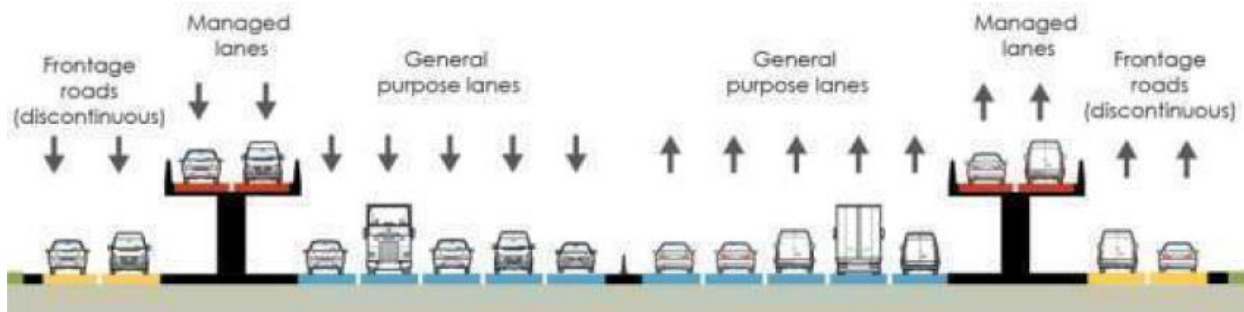
Source: (11)

Figure 1. LBJ Project Map.

IH 635



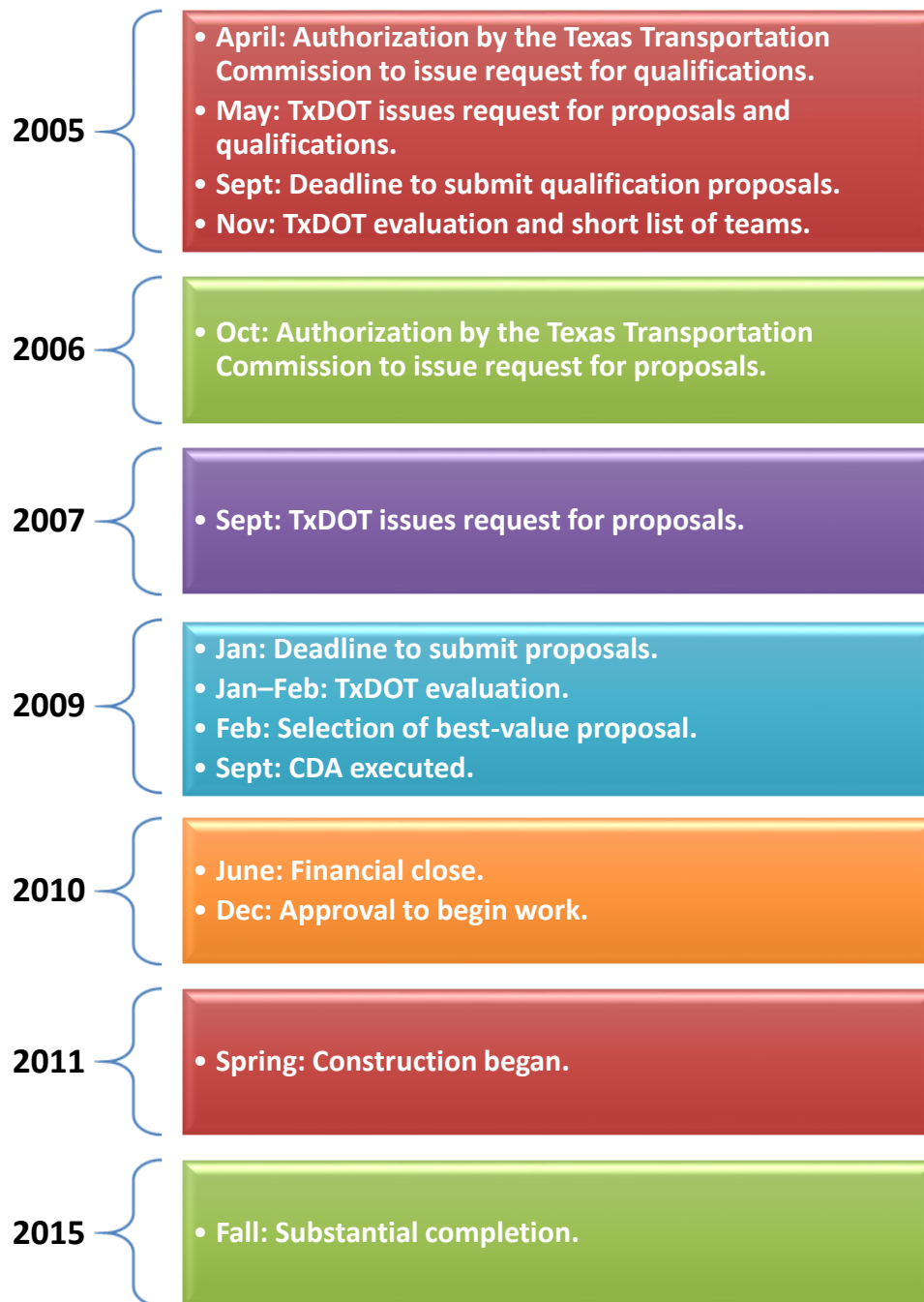
IH 35E: Loop 12 to North of IH 635



Source: (12)

Figure 2. LBJ TEXpress Lane Cross Section.

TxDOT requested proposals for the design, build, finance, operation, and maintenance of the project (13). Figure 3 lists the significant dates in the contracting process.



Source: (14)

Figure 3. LBJ Project Timeline.

Terms of the CDA

The LBJ Infrastructure Group (LBJIG), formerly LBJ Development Partners, was awarded the CDA, as developer/concessionaire, for having the best-value proposal. To fulfill the terms of the CDA, LBJIG was created by two international companies: Cintra Concesiones de Infraestructuras de Transporte S.A. from Spain and Meridiam Infrastructure from France. Additional project partners include the Dallas Police and Fire Pension System (DPFPS) and

Trinity Infrastructure Group. Trinity Infrastructure is an organization created by Ferrovial Agroman, a subsidiary of Cintra, and Webber, a Houston company.

The CDA covers a period of 52 years, inclusive of the construction and operation period. TxDOT retains ownership of the project, and LBJIG is granted a lease of the facilities. The CDA calls for an independent engineer to provide oversight, inspection, testing, and auditing of the design and construction work being performed. The independent engineer provides regular reports to TxDOT, the developer, and the lenders. Additionally, TxDOT has the right to reasonably monitor and oversee the work to ensure compliance with the CDA (15).

The managed lanes will be tolled for the life of the CDA, and the revenue will be retained by LBJIG. The CDA gives the developer the exclusive rights and obligation during the term to finance, manage, use, operate, maintain and repair, and toll the managed lanes. After payment to TxDOT, the toll revenues must be used to pay for operations and maintenance costs before being applied to other purposes (15). Figure 4 illustrates the toll revenue distribution.



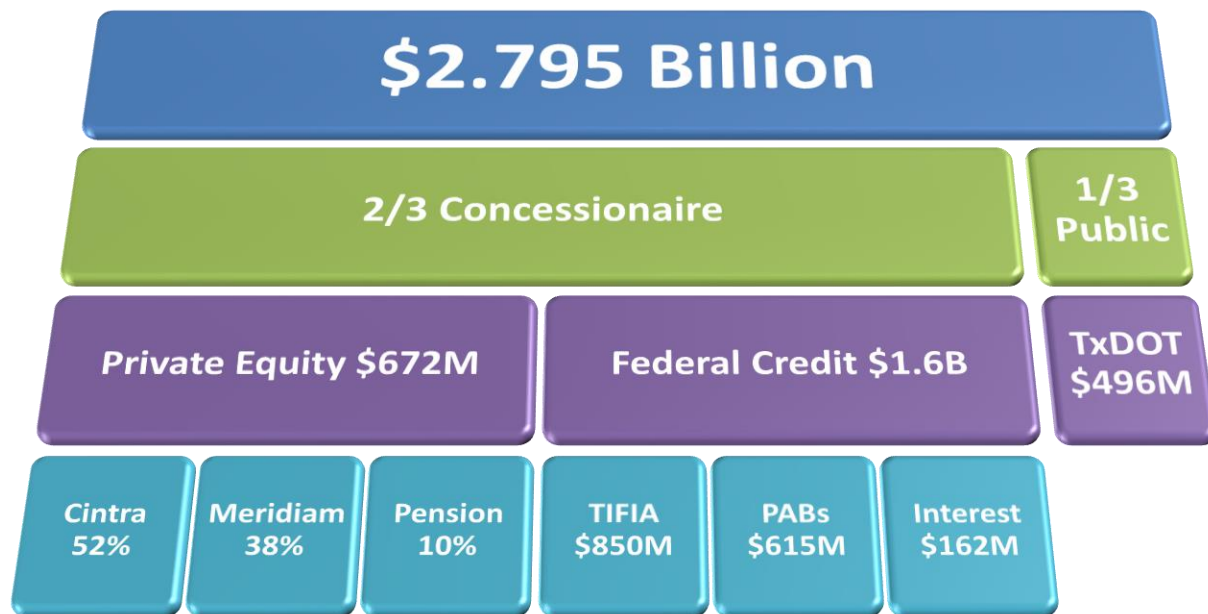
Figure 4. Toll Revenue Distribution.

There were no incentives included in the CDA for early construction completion; however, the sooner the project was finished, the sooner LBJIG could begin collecting toll revenue. The project was completed in fall 2015, before the original completion date of 2016. Project partner Trinity Infrastructure Group is the design-build contractor (16).

Finance

Public monies were used to fund one-third of the project, while the concessionaire provided the remaining two-thirds of funding. As Figure 5 illustrates, the \$2.8 billion project cost consisted of \$496 million in public funds provided by TxDOT; \$672 million equity from LBJIG provided by Cintra, Meridiam, and DPFPS (17);¹ \$615 million in private activity bonds (PABs); and \$850 million from a federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loan. Operations and maintenance costs are an additional \$500 million (2008 dollars). The estimated annual developer maintenance costs are \$1.9 million (\$1.7 in 2009 dollars) (11).

¹ The pension system had the option for up to 10 percent equity contribution. It committed \$50 million of the \$672 million, or 7.4 percent, of the private equity.



Source: (16, 18)

Figure 5. LBJ Project Funding Sources.

The project plan of finance requires the debt to be repaid through managed lane toll revenues. The project will continue toll operations after the debt is paid (13). The interest on the debt is projected to be an additional \$861 million (2009 dollars). Table 3 lists the project fund uses planned in the original CDA (2009 dollars).

Table 3. LBJ Use of Funds.

Use of Funds	Millions
Design-Build Agreement Price	\$2,091
ITS and TCS Budget	\$128
Operating Costs and Maintenance	\$28
Transaction Costs	\$62
Interest	\$372
Debt Fees	\$33
Debt Service Reserve Account	\$62
Major Maintenance Reserve Account	\$20
Total	\$2,795

Note: Amounts reported in 2009 dollars. ITS = intelligent transportation system; TCS = toll collection system.

Source: (18).

Revenue payments to TxDOT are calculated at the end of each year and are based on five bands, each with escalating revenue percentages (see Table 4).

Table 4. Revenue Payments to TxDOT.

Band	Revenue Payment Percentage
1	0%
2	12.5%
3	25.0%
4	50.0%
5	75.0%

Additionally, the project plan of finance calls for TIFIA revenue sharing (15):

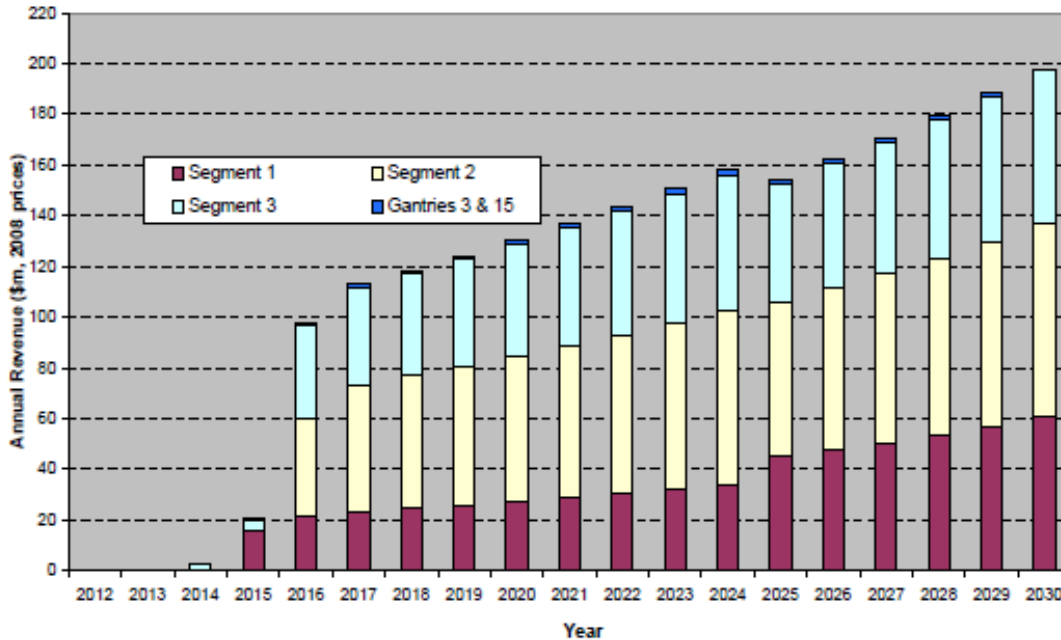
Following the first five years from the substantial completion date and subject to any requirements of senior lenders, 50% of toll revenues in any period which exceeds the toll revenues forecast for that period in the investment grade traffic and revenue study... shall be used to prepay the TIFIA loan to the extent the TIFIA Revenue Sharing Amount is available at the level immediately above Restricted Payments in the flow of funds outlined in the TIFIA Conditional Term Sheet. As a result of its position in the flow of funds, TIFIA Revenue Sharing will only occur to the extent the funds are available after any revenue sharing payments to TxDOT and many other cash flow priorities.

Tolling

The North Central Texas Council of Governments (NCTCOG) Regional Transportation Council has a managed lane policy that determines the maximum toll rate to be set during the first six months of operation. The initial toll rate cannot exceed \$0.75 per mile. After the initial six months of operation, the developer can set toll rates that allow for congestion management pricing. The LBJ concession agreement permits the developer to set tolls using a scheduled mode or a dynamic mode in order to achieve a 50-mph minimum speed of traffic requirement through the project. The developer is utilizing the dynamic mode to set toll rates. In the dynamic mode, the toll rates may be recalculated as often as every five minutes, 24 hours a day, to allow the managed lane traffic to maintain a minimum average speed of 50 mph (13). While the rate may change as a driver is using the TEXpress lane, the driver only pays the rate displayed when he or she entered the toll segment. This project consists of three toll segments. During off-peak travel, the toll rates have an average range of \$0.10 to \$0.25 per mile, while during heavy, peak travel, the toll rates have an average range of \$0.45 to \$0.75 per mile. Additionally, weekday peak-hour toll rates are reduced 50 percent if the driver is carpooling (19).

Forecasts

In 2010, a traffic and revenue forecast was prepared for the equity partners. The forecasts are based on an existing model originally created by NCTCOG. The revenues, shown in Figure 6, are estimated in real 2008 dollars.



Note: Revenue is quoted in real values, 2008 US dollars, inclusive of ramp-up

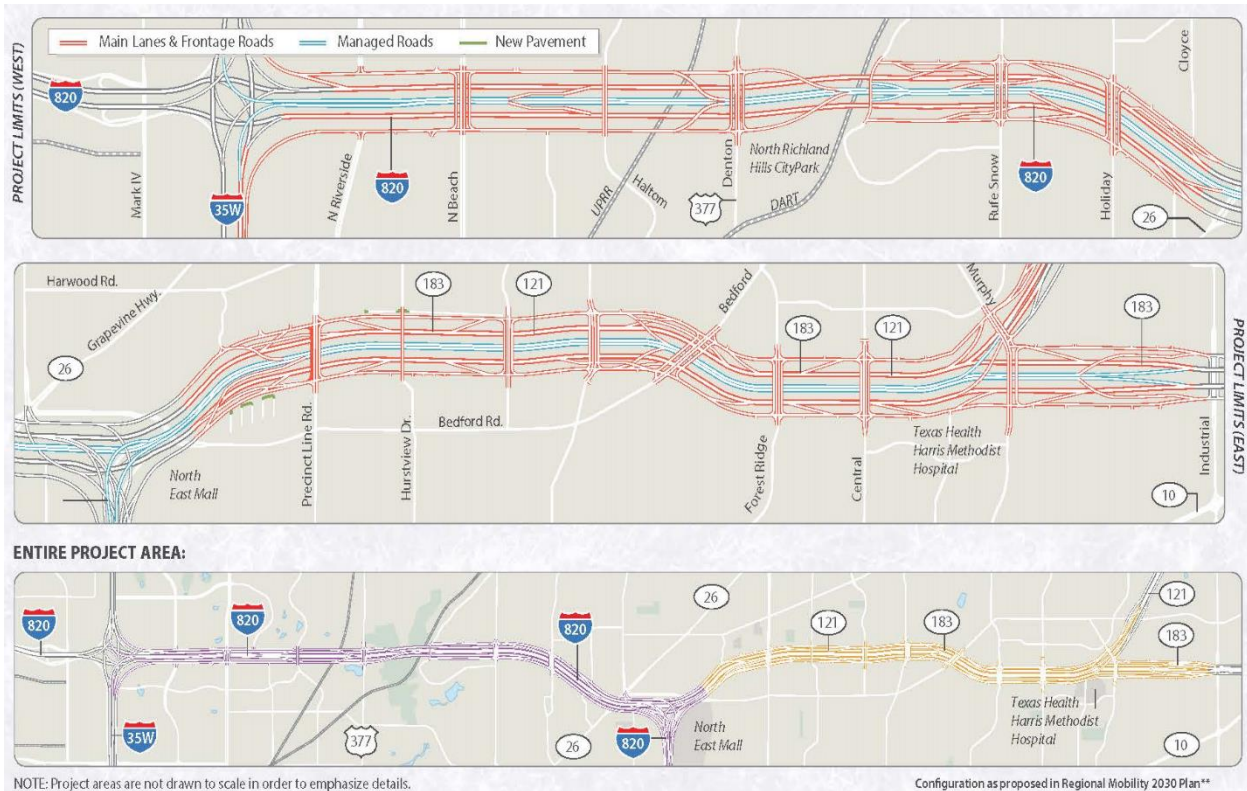
Source: (18)

Figure 6. Revenue Forecast by Segment.

North Tarrant Express

The North Tarrant Express (NTE) was the first CDA signed in North Texas. Two concession agreements were issued: one agreement for Phase 1 (Segments 1 and 2W) and a separate agreement for Phase 2 (Segments 2 through 4). NTE refers to highway segments along north I-35W, northeast I-820, and SH 121/183 Airport Freeway. The completed project will consist of 36 miles of TEXpress managed lanes.

Phase 1 represents the NTE (I-820 and SH 121/183) project, consisting of 6.4 miles on I-820 from I-35W to the Northeast Interchange (Segment 1), and 6.9 miles on I-820 from the Northeast Interchange to Industrial Boulevard (Segment 2W). Figure 7 is a map of the project limits. Segment 1 includes two managed lanes in the median with an additional main lane being added by 2030, and Segment 2 includes two managed lanes with a third managed lane being added by 2030 (20). The completed cross section provides 8 to 10 lanes of roadway capacity. The concession agreement for Phase 1 includes the design, development, construction, finance, maintenance, and operation of Segments 1 and 2W.



Source: (20)

Figure 7. NTE Project Map.

The CDA covering Segments 2–4 involved developing master plans for the remaining segments and surrounding facilities for connectivity, safety, and financing. Out of these master plans evolved a facility agreement to construct, finance, operate, and maintain Segment 3A, and to operate and maintain TxDOT-constructed Segment 3B (21). These three segments comprise 18 miles of construction along I-35W. Segment 3A consists of 6.5 miles from north of I-30 to north of I-820 and includes the I-35W/I-820 interchange, while Segment 3B is 3.6 miles from north of I-820 to north of US 81/287. Segment 3C consists of 8 miles from north of US 81/287 to Eagle Parkway, and Segment 4 is 3.7 miles along I-820 from the interchange with SH 121N/SH 183 south to the Randol Mill Road interchange (22, 23). The delivery method and phasing for Segments 3C and 4 had yet to be finalized at the time of this report. Table 5 lists the Phase 2 segments, and Figure 8 shows the project map for Segments 3A to 3C.

Additionally, Segment 2E (further expansion of SH 183 east of Industrial to DFW International Airport) is currently being developed in conjunction with a separate design-build contract and is no longer part of the NTE master CDA contract.

Table 5. NTE Phase 2 Segments.

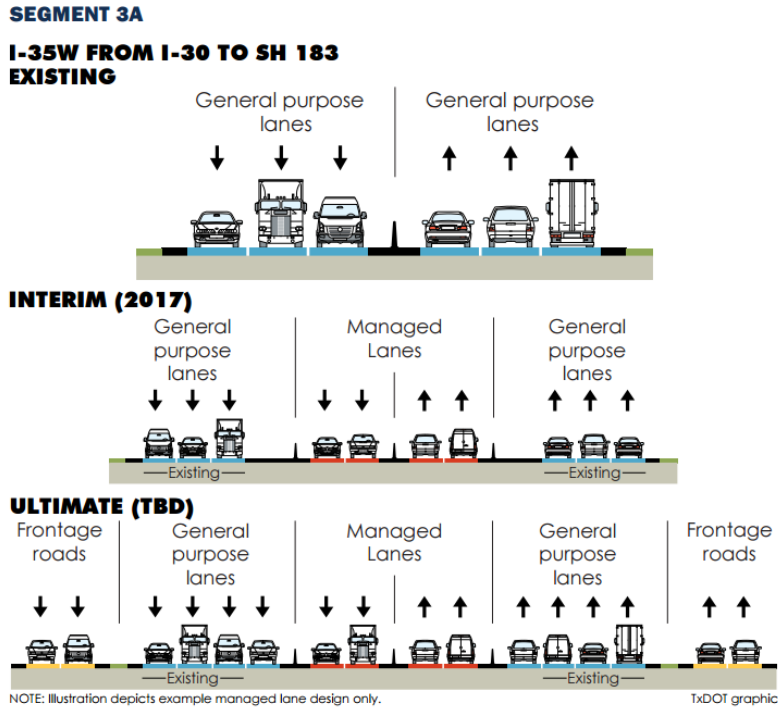
Segment	Highway	Distance	Limits
3A	I-35W and I-35W/I-820 Interchange	6.5 Miles	North of I-30 to North of I-820
3B	I-35W	3.6 Miles	North of I-820 to North of US 81/287
3C	I-35W	8.0 Miles	North of US 81/287 to Eagle Parkway
4	I-820	3.7 Miles	Randol Mill Road to I-820/SH 121 Interchange



Source: (24)

Figure 8. NTE Segments 3A to 3C Project Map.

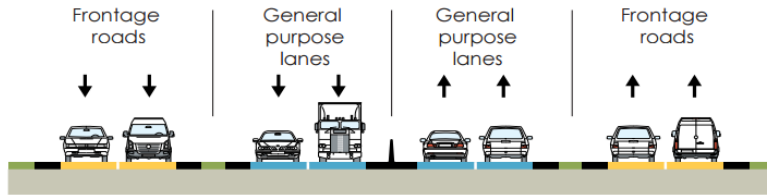
Both Segment 3A and 3B will include two managed lanes in each direction (see Figure 9 through Figure 11), while Segment 3C will include one managed lane in each direction.



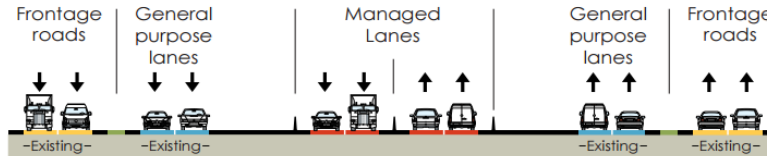
Source: (24)

Figure 9. NTE Lane Cross Section—Segment 3A from I-30 to SH 183.

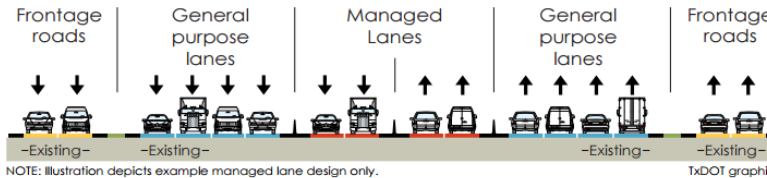
SEGMENT 3A
I-35W FROM SH 183 TO I-820
EXISTING



INTERIM (2017)



ULTIMATE (TDB)



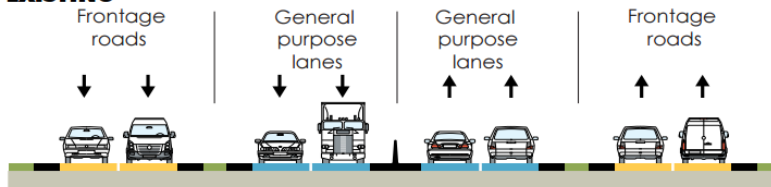
NOTE: Illustration depicts example managed lane design only.

TxDOT graphic

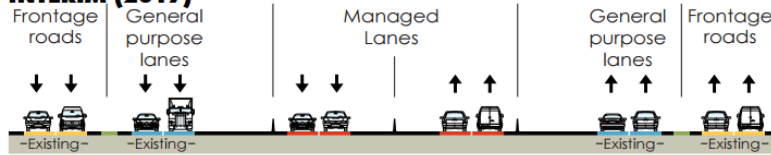
Source: (24)

Figure 10. NTE Lane Cross Section—Segment 3A from SH 183 to I-820.

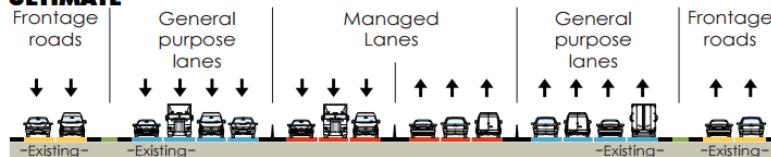
SEGMENT 3B
I-35W FROM I-820 TO BASSWOOD
EXISTING



INTERIM (2017)



ULTIMATE



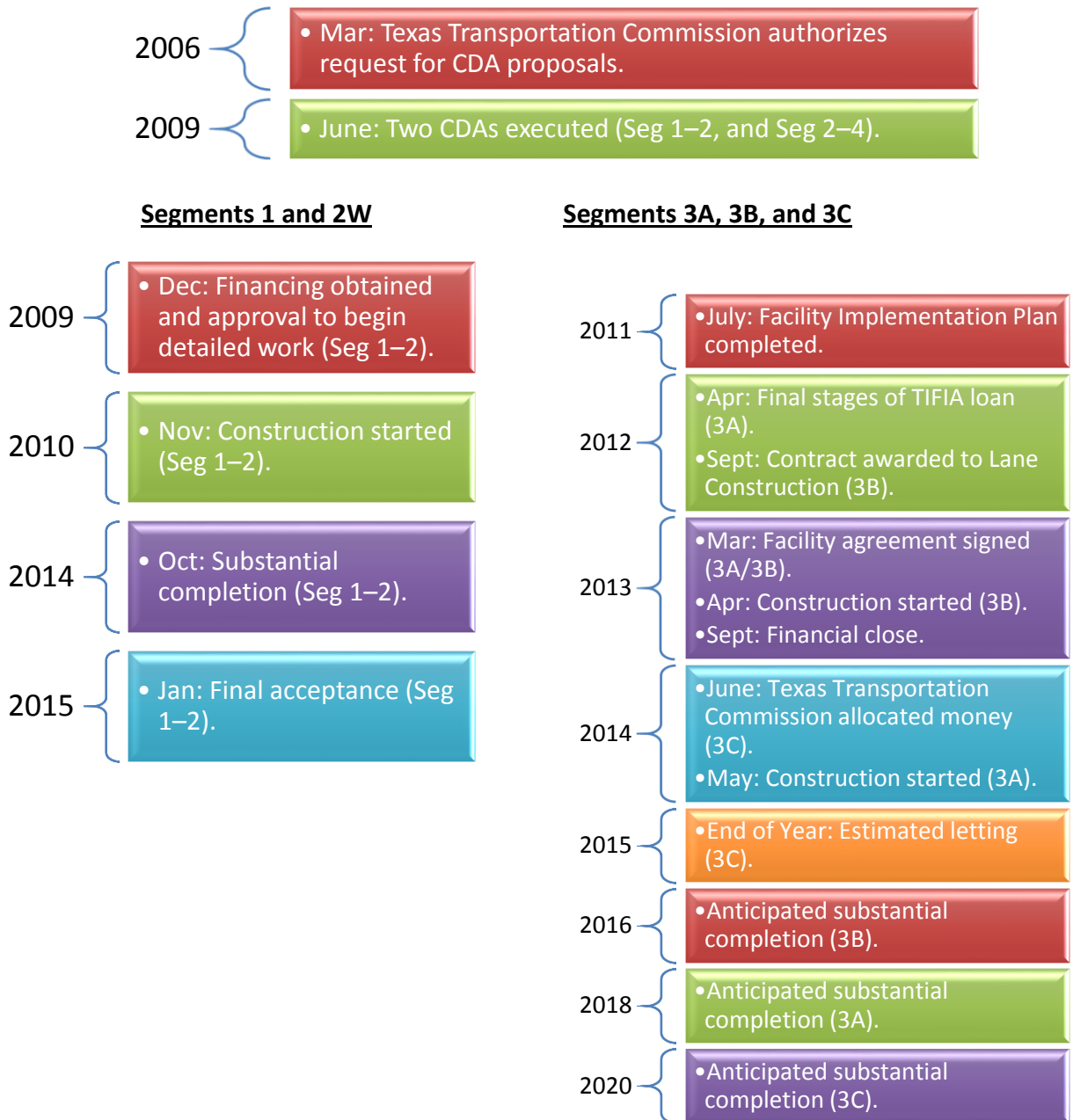
NOTE: Illustration depicts example managed lane design only.

TxDOT graphic

Source: (24)

Figure 11. NTE Lane Cross Section—Segment 3B.

Figure 12 lists the significant dates in the NTE contracting process. Separate agreements were entered into for the various segments.



Source: (20, 25)

Figure 12. NTE Project Timeline.

Terms of the CDA

CDA No. 1 (21)

NTE Mobility Partners LLC (NTEMP) was awarded, as concessionaire, the CDA for Segments 1 and 2. NTEMP was created by Cintra Concesiones de Infraestructuras de Transporte S.A., Meridiam Infrastructure, and DPFPS. Additional private partners include Ferrovia Agroman S.A., W.W. Webber LLC, Earth Tech Inc., Maunsell Australia Proprietary Limited, Aguirre & Fields LP, Ross Communications, and CSJ Engineering Associates. The CDA covers a period of 52 years from the date it was executed in 2009. TxDOT retains ownership of the project, and NTEMP is granted a lease of the facilities.

CDA No. 2 (26)

As part of the same procurement for CDA No. 1, NTE Mobility Partners Segments 2–4 LLC (NTEMP2–4) was also awarded the CDA for predevelopment work and first right of negotiation for Segments 2 through 4. NTEMP2–4 is comprised of Cintra, Concesiones de Infraestructuras de Transporte S.A., Meridiam Infrastructure, and DPFPS. The agreement called for the creation of a master development plan and a master financial plan. The master development plan outlines the developer’s roles and responsibilities and explains the process of compensating the developer. Additionally, the plan identifies surrounding facilities for connectivity, safety, and financing. Planning, phasing, milestones, and schedules for the segments are also included.

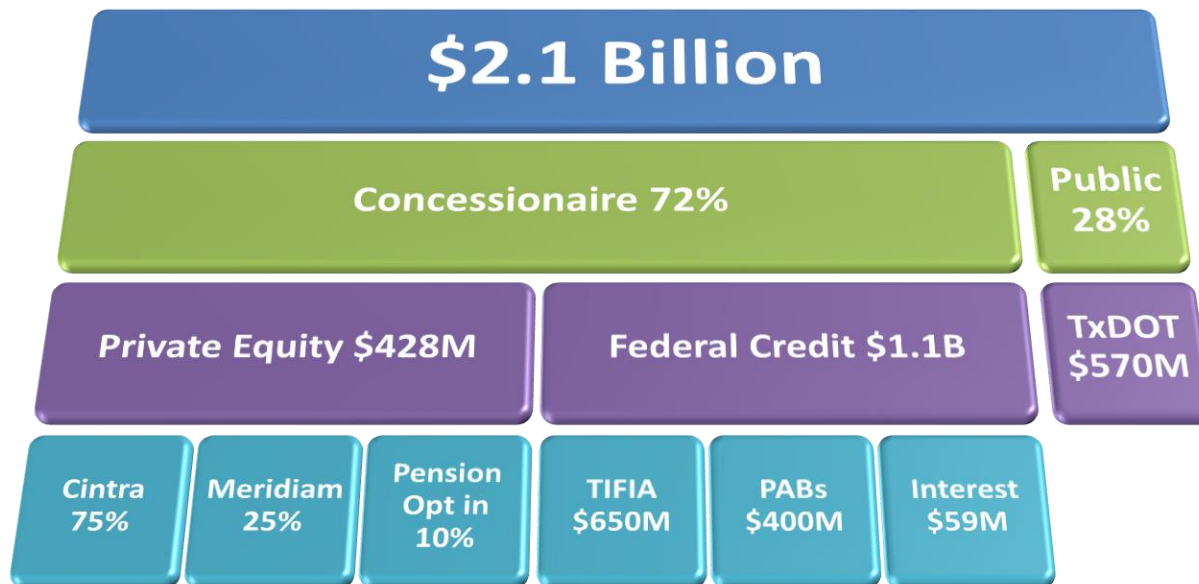
CDA No. 3 (27)

NTE Mobility Partners Segment 3 LLC (NTEMP3) successfully negotiated the concession agreement for Segments 3A and 3B. NTEMP3 was created by Cintra Infraestructuras S.A., Meridiam Infrastructure, DPFPS, and APG (Stichting Investment Fund). Other private partners include Ferrovia Agroman S.A. and North Tarrant Infrastructure LLC. NTEMP3, as concessionaire, will design, build, finance, operate, and maintain Segment 3A. Additionally, NTEMP3 will operate and maintain Segment 3B while TxDOT designs, builds, and finances the project. This agreement covers a period of 49 years, or 52 years from the date of execution of CDA No. 2.

Finance

CDA No. 1 and 2

Public monies were used to fund 28 percent of the project, and the concessionaire provided 21 percent. The remaining 51 percent consists of monies from PABs and a TIFIA loan procured by the concessionaire. Operation and maintenance costs are an additional \$444 million (2009 dollars). The estimated annual developer maintenance costs are \$1.3 million (\$1.2 in 2009 dollars). Figure 13 shows the breakdown of project financing.



Source: (28)

Figure 13. NTE Project Funding Sources—CDA No. 1.

The project calls for the debt to be repaid through managed lane toll revenues. The project will continue toll operations after the debt is paid. Table 6 catalogues the application of funds described in the CDA.

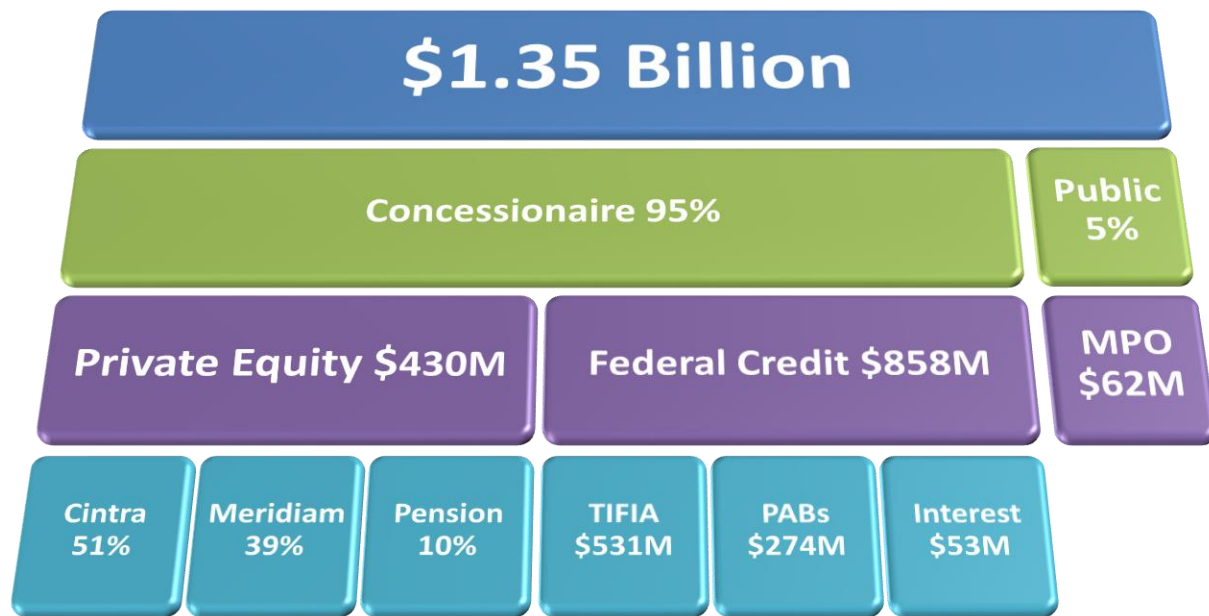
Table 6. NTE Use of Funds—CDA No. 1.

Use of Funds	Millions
Design-Build Contract Price	\$1,456
Right of Way	\$198
ITS and TCS Budget	\$148
Development Costs	\$32
Capitalized Interest (all debt)	\$206
Debt Fees	\$4
Debt Service Reserve Account	\$40
Major Maintenance Reserve Account	\$20
Total	\$2,104

Source: (28, 29).

CDA No. 3

Public monies were used to fund only 5 percent of Segment 3A. Private equity contributed 32 percent, and the remainder was supplemented through PABs, interest income, and a TIFIA loan. Figure 14 shows the breakdown of project financing.



Source: (25, 30)

Figure 14. NTE Project Funding Sources—Segment 3A.

Table 7 lists the proposed application of funds for Segment 3A. At the time of this report, Segment 3A was estimated to be approximately 33 percent complete.

Table 7. NTE Use of Funds—Segment 3A.

Use of Funds	Millions
Design-Build Contract Price	\$990
Tolling and ITS	\$90
Right of Way	\$39
Debt Interest	\$141
Development Fees/Bid Costs	\$35
Debt Fees	\$6
Debt Service Reserve Account	\$27
Major Maintenance Reserve Account	\$20
Total	\$1,348

Source: (30, 31).

Public monies (state and federal) were used to fund the design, build, and finance portion of Segment 3B. NTEMP3 will direct the maintenance and operation of the segment. Category 12 funding is reserved for strategic priority projects (32). Figure 15 shows the funding sources.



Source: (25)

Figure 15. NTE Project Funding Sources—Segment 3B.

Table 8 lists the proposed application of funds for Segment 3B. Substantial completion is estimated to occur in 2016.

Table 8. NTE Use of Funds—Segment 3B.

Estimated Projected Cost (Interim)	Millions
Design, Construction	\$123
Right of Way	\$25
Utilities	\$11
Plan, Specifications, and Estimates	\$9
Construction Engineering and Inspection	\$10
Total	\$177

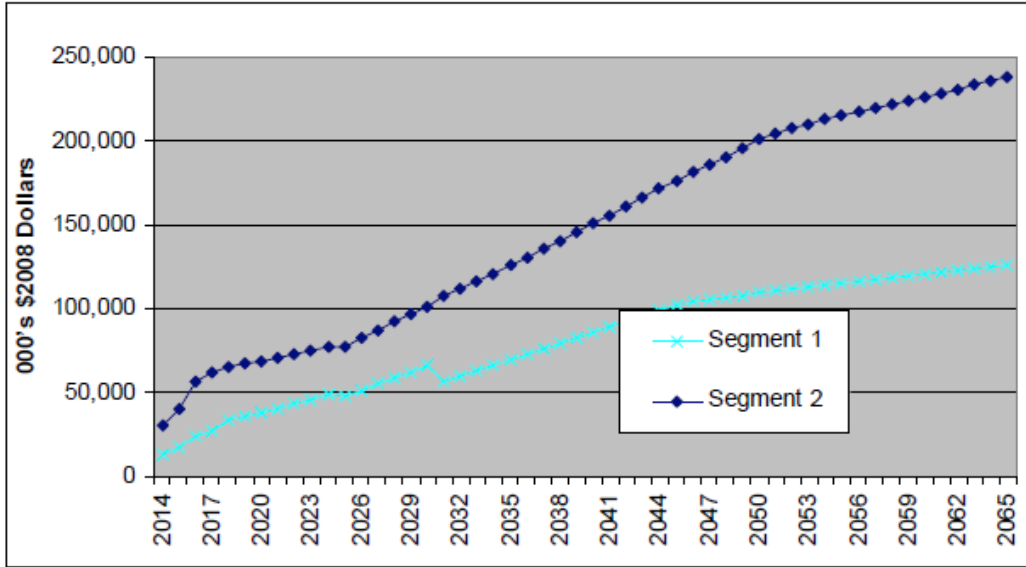
Source: (24).

Tolling

Toll collection will be provided by the North Texas Tollway Authority. All of the three major electronic transponders available in the state (TxTag, TollTag, and EZ TAG) will be accepted on the corridor. After the initial six months of operation, the developer can set toll rates that allow for congestion management pricing. Like the LBJ Project, the developer may implement a scheduled or dynamic toll rate setting regime. The developer has implemented scheduled toll rates, with the toll rates varying depending on the time of day and traffic volumes to allow the managed lane traffic to maintain a minimum average speed of 50 mph (33).

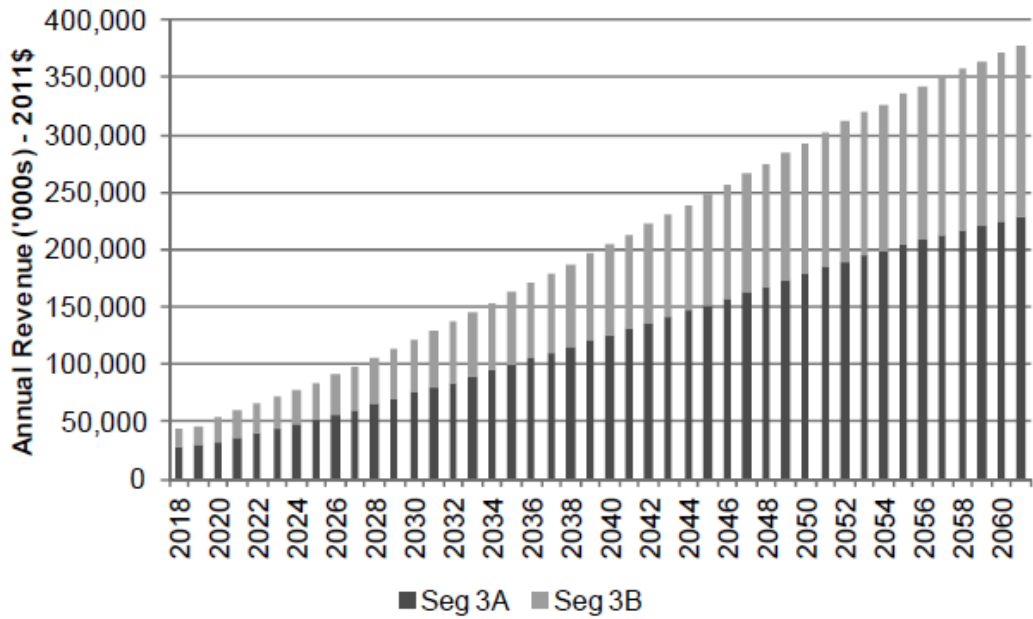
Forecasts

Traffic and revenue forecasts were conducted for Segments 1 and 2 and for Segments 3A and 3B and are shown in Figure 16 and Figure 17, respectively. Revenues for Segments 1 and 2 are shown in 2008 dollars, and revenues for Segments 3A and 3B are shown in 2011 dollars.



Source: (28)

Figure 16. NTE Segments 1 and 2 Revenue Forecast.



Note: ('000's 2011 US Dollars); Excluding Ramp-up impacts at opening

Source: (30)

Figure 17. NTE Segments 3A and 3B Revenue Forecast.

SH 130 (Segments 5 and 6)

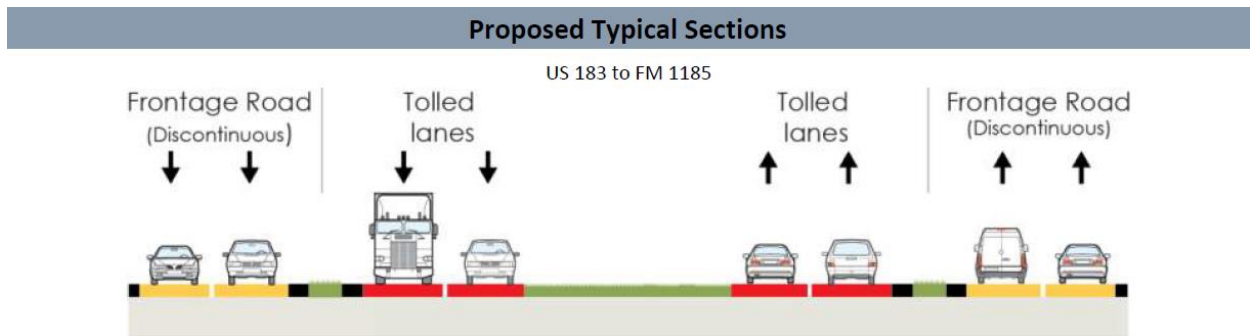
Segments 5 and 6 of SH 130 extend from Austin to Seguin (see Figure 18). The segments consist of 41 miles of tolled lanes from SH 130 at SH 45 southeast near Creedmoor to I-10 east of Seguin (34). Segment 5 follows the current US 183 alignment and is approximately 12 miles from north of Mustang Ridge to FM 1185 north of Lockhart. Segment 6 is comprised of 29 miles from FM 1185 to I-10 northeast of Seguin. The roadway is built through Travis, Caldwell, and Guadalupe Counties. The completed Segments 5 and 6 are part of a 91-mile tollway stretching from Georgetown to Seguin.



Source: (35)

Figure 18. SH 130 (Segments 5 and 6) Project Map.

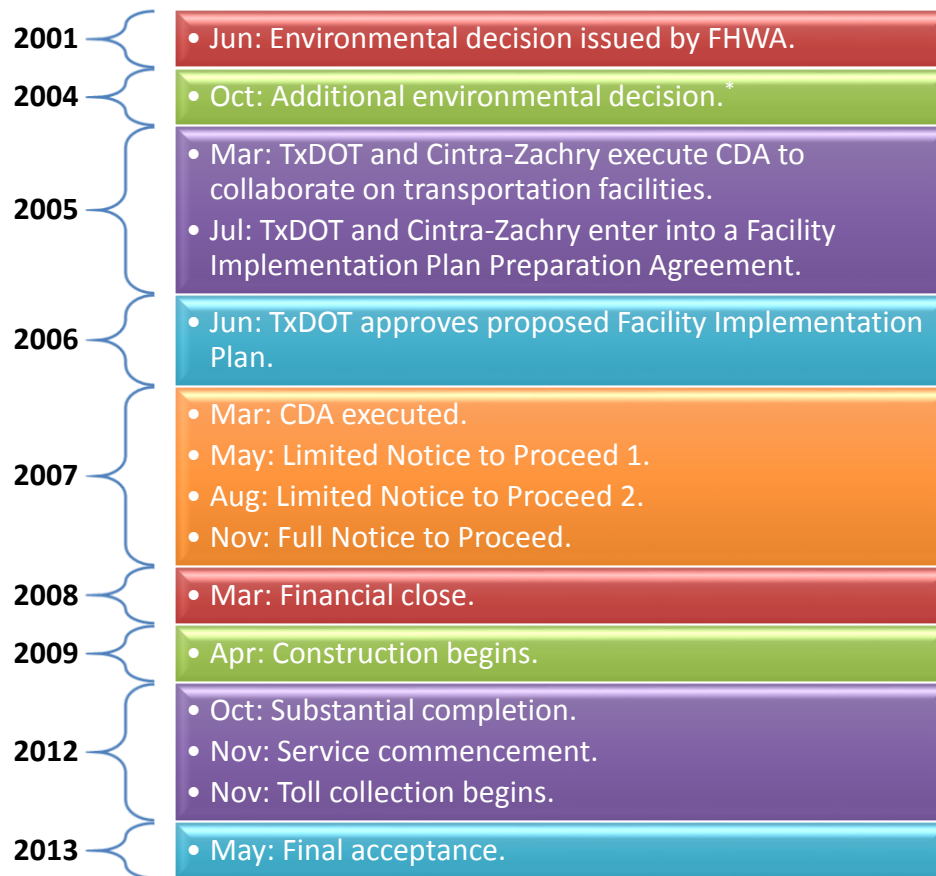
The project consists of a minimum of two tolled lanes in each direction, with roughly 17 miles of nontolled frontage road covering all of Segment 5 and part of Segment 6. Figure 19 illustrates a cross section of the roadway.



Source: (35)

Figure 19. SH 130 (Segments 5 and 6) Cross Section.

As the owner of the roadway, TxDOT entered into an agreement with the developer to design, build, finance, operate, and maintain the project. Figure 20 lists the significant project dates. SH 130 (Segments 5 and 6) was identified as part of the Trans Texas Corridor 35 master development plan prepared by Cintra. The master development plan identified “specific projects within the corridor that might be ripe to advance in the near term” (36) and authorized Cintra to negotiate a CDA to develop these additional projects.



*From CR 119/Tschoepe Road to I-10
Source: (35)

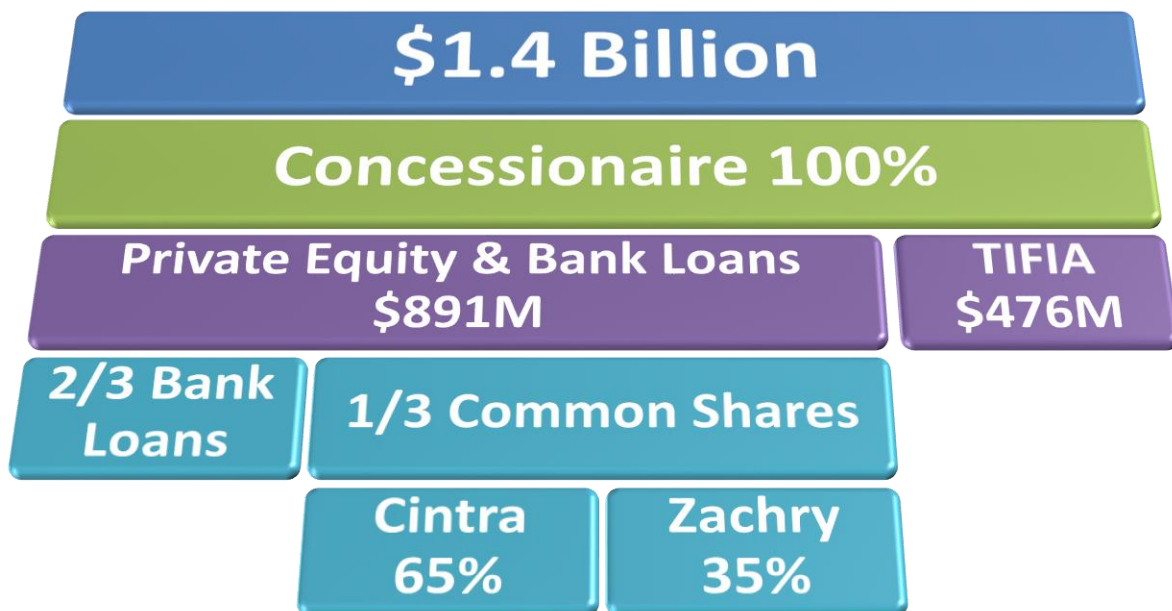
Figure 20. SH 130 (Segments 5 and 6) Project Timeline.

Terms of the CDA

The SH 130 Concession Company LLC was awarded, as developer/concessionaire, the CDA to finance, develop, design, and construct the facility. The concession company was formed by Cintra-Zachry American Infrastructure. Cintra is a Spanish company and one of the largest private developers of transportation facilities worldwide. Zachry is a Texas-based company with a history of constructing transportation infrastructure in the state. TxDOT owns the project, and the concessionaire was granted a lease for a period of 50 years, beginning on the service commencement date (37). The concessionaire has the exclusive right to toll and set rates of the limited access lanes within the guidelines established in the agreement. TxDOT has a right to share in the toll revenues as payments for the lease granted but is under no obligation to repay any of the debt acquired by the concessionaire.

Finance

Private equity and bank loans funded 65 percent of the project, and the remaining balance was funded through a federal TIFIA loan issued to the concessionaire. The \$1.4 billion project consists of \$891 million from equity partners and \$476 from TIFIA payments. Figure 21 shows the funding breakdown. The developer will also be responsible for the operations and maintenance of the facility.



Source: (35)

Figure 21. SH 130 (Segments 5 and 6) Project Funding Sources.

The concessionaire was required to create a proceeds account that included revenues from tolls, proceeds of loans or other debt, amounts released from the maintenance reserve that were not otherwise dedicated, insurance proceeds not otherwise applied, and any other revenue resulting from the agreement. The proceeds account was used to pay operating expenses, major maintenance costs, fees, debt services (bank and TIFIA), and contributions to the maintenance reserve as required (38). Table 9 lists the estimated project fund uses.

Table 9. SH 130 (Segments 5 and 6) Use of Funds.

Estimated Projected Cost (Interim)	Millions
Design, Construction	\$900
Right of Way	\$377
Upfront Concession Fee	\$27
Utilities	\$44
Tolling/ITS	\$18
Total	\$1,367

Note: Costs are in nominal dollars.

Source: (35).

Tolling

There are no toll plazas or collectors located along the facility. All tolls are collected electronically at certain designated points along the roadway segments. The maximum toll rate is adjusted every 12 months. Depending on where the user enters the facility, the rates for Class A vehicles (including motorcycles) range from \$0.49 to \$5.07 if paying with a tolling tag and from \$0.65 to \$6.74 if paying by mail (39).

In 2014, transactions numbered 4.9 million for passenger vehicles and 1.1 million for commercial vehicles. At the close of the 2015 third quarter, passenger transactions numbered 4.1 million and commercial transactions totaled just under 1 million (40).

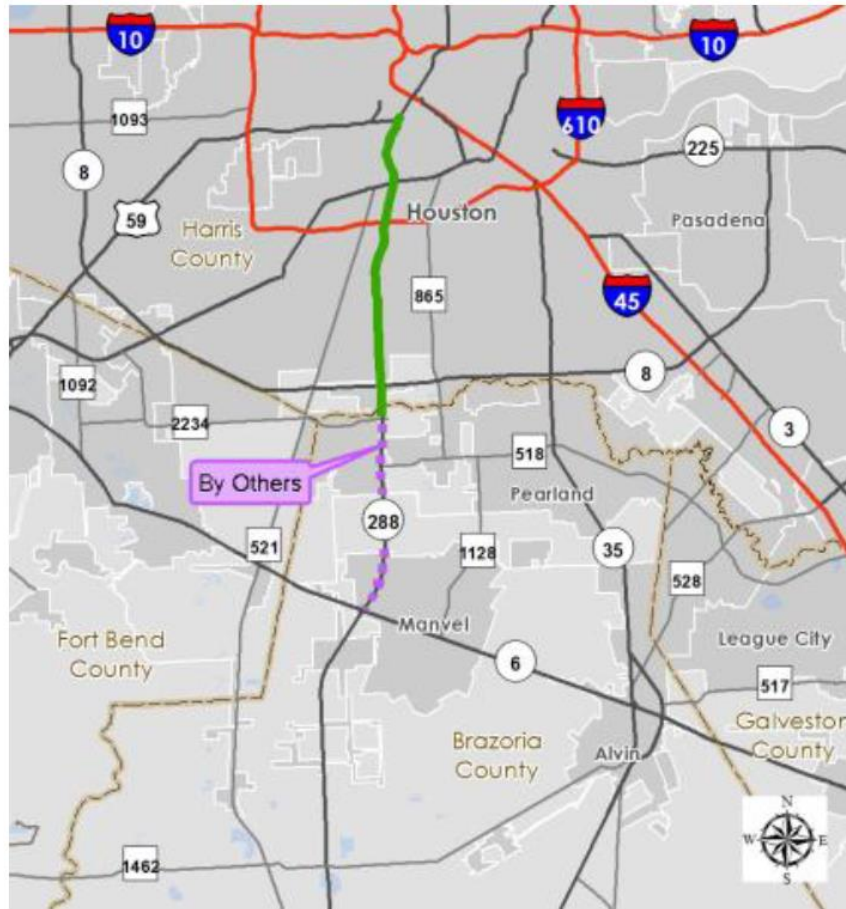
Recent Default

Traffic on Segments 5 and 6 has failed to meet initial projections, and revenue levels have been reported as more than 60 percent below original forecasts (36). In 2014, the concessionaire negotiated with lenders to postpone the interest payment until January 2016 to avoid default. In early 2016, SH 130 Concession Company filed for Chapter 11 bankruptcy due to a recent downgrade of its debt by Moody's.

Operation of the road is not expected to be affected by this development. SH 130 Concession Company CEO Alfonso Orol says that despite the bankruptcy proceedings, "It's business as usual for our customers, employees, vendors, and surrounding communities during these proceedings" (41). A press release dated March 2, 2016, states that the concession company hopes to announce a resolution in the coming months (42).

SH 288

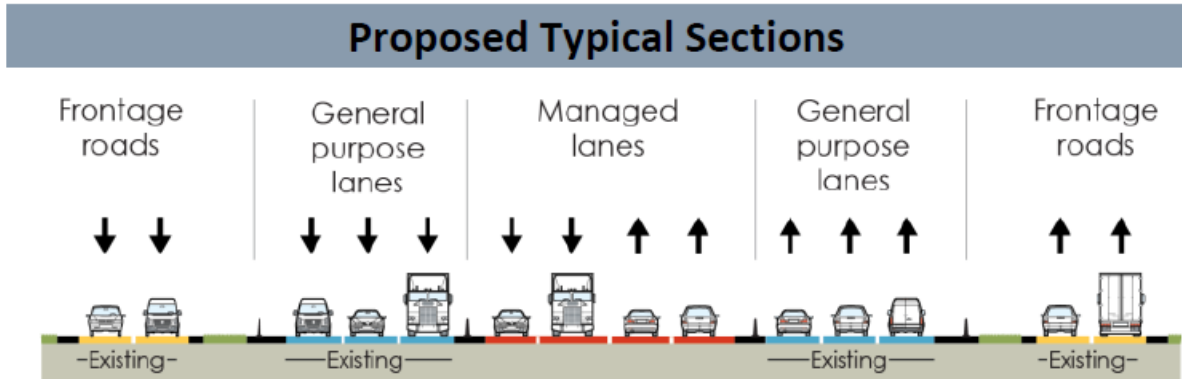
SH 288 is a recent addition to the list of concession projects. It is located near the center of Houston in Harris County. The project will consist of 10.3 miles from US 59 south of downtown Houston to Clear Creek some 200 feet past the Brazoria County line. It will comprise four toll lanes. The project will also include direct connectors to Beltway 8, the Texas Medical Center, and I-610. The ultimate project is estimated to be 25.2 miles and terminate at County Road 60 (SH 99) (43). Figure 22 shows the project map.



Source: (44)

Figure 22. SH 288 Project Map.

As Figure 23 illustrates, the project will consist of two managed lanes in each direction located in between the existing general purpose lanes.



Source: (44)

Figure 23. SH 288 Cross Section.

Harris County rescinded primacy on September 12, 2012, while Brazoria County retained primacy for the southern phase of the project. TxDOT then entered into an agreement with the developer to design, build, finance, and maintain the project in Harris County. Figure 24 lists the significant project dates.



Source: (45)

Figure 24. SH 288 Project Timeline.

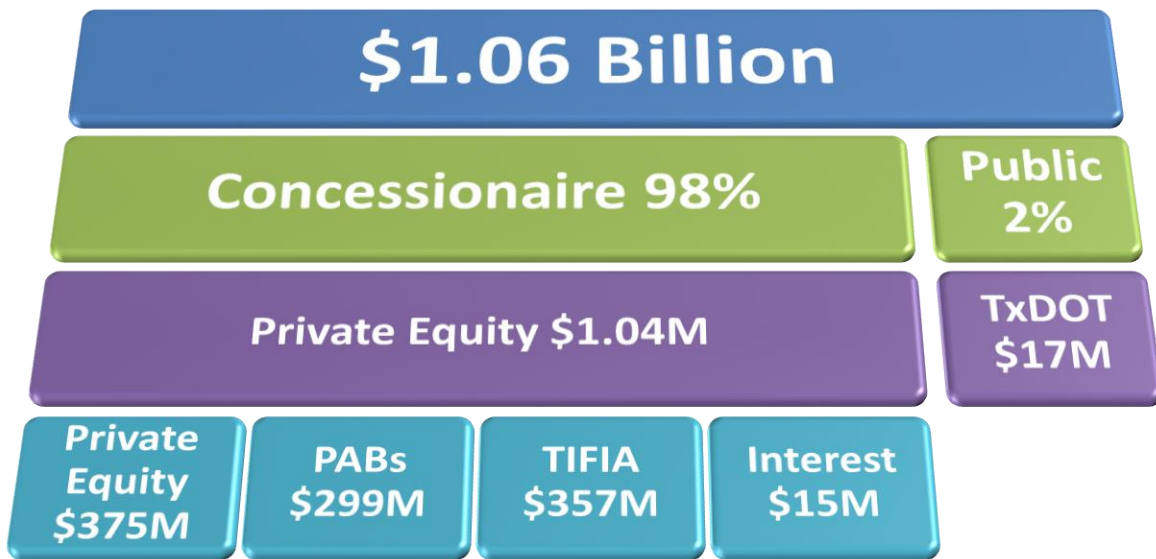
Terms of the CDA

The Blueridge Transportation Group (BTG) was awarded, as concessionaire, the CDA to design, build, finance, and maintain the project. BTG consists of three equity partners: ACS Servicios y Concesiones S.L. at 30 percent, InfraRed Capital Partners Limited at 40 percent, and Shikun &

Binui Concessions USA Inc. at 30 percent. At the time of this report, the CDA was not yet publically available.

Finance

Developer funding made up 98 percent of the project, and 2 percent was funded by TxDOT. The \$1.06 billion project consists of \$299 million in PABs, a \$357 million TIFIA loan, and \$375 million in private equity. Figure 25 shows the breakdown of funding.



Source: (44)

Figure 25. SH 288 Project Funding Sources.

As shown in Table 10, funding will be used for design, construction, utilities, and right of way.

Table 10. SH 288 Uses of Funds.

Estimated Capital Cost	Millions
Design-Build Costs	\$815
TxDOT Concession Payment	\$25
Development Cost	\$23
Overhead Cost during Construction	\$68
Debt Interest	\$58
Debt Fees	\$1
Ramp-Up Reserve Account	\$66
Debt Service Reserve Account	\$7
Major Maintenance Reserve Account	\$0.3
Total	\$1,063

Source: (44).

Tolling

The initial tolling policy set a minimum toll charge at \$0.06 per mile and \$0.35 per gantry location. Time-of-day pricing will be utilized, with the toll rate adjusting to maintain an average speed of 45 mph. TxDOT and Brazoria County will set a maximum rate (46).

Conclusion

The financial terms of the concession projects summarized illustrate the varying concessionaire and public entity participation. Private contributions ranged from 66 percent to 100 percent. Additionally, in all projects, the concessionaire controlled operations and maintenance for the life of the contract. The concession agreements summarized in this report were entered into between 2007 and 2016. Between 2009 and 2016, CDAs in Texas were created as design-build projects. The SH 288 concession project is the first revenue-risk CDA awarded since 2009.

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