OFFICIAL STATEMENT DATED JANUARY 21, 2015

NEW ISSUES – Book-Entry-Only **RATINGS: See "RATINGS" herein**

In the opinion of McCall, Parkhurst & Horton L.L.P., Bond Counsel, interest on the Bonds (defined herein) will be excludable from gross income for federal income tax purposes under statutes, regulations, court decisions, and published rulings existing on the date thereof subject to the matters described under "TAX MATTERS" herein, including the alternative minimum tax consequences on corporations.

$1,608,339,800
TEXAS TRANSPORTATION COMMISSION
CENTRAL TEXAS TURNPIKE SYSTEM REVENUE BONDS

$225,000,000 FIRST TIER REVENUE REFUNDING PUT BONDS, SERIES 2015-A	$226,019,800 FIRST TIER REVENUE REFUNDING BONDS, SERIES 2015-B	$1,157,320,000 SECOND TIER REVENUE REFUNDING BONDS, SERIES 2015-C

Interest Accrues or Accretes from Date of Delivery **Due**: As shown on pages iii, iv and v

The Texas Transportation Commission (the "*Commission*"), the governing body of the Texas Department of Transportation (the "*Department*"), is issuing its Central Texas Turnpike System Revenue Bonds, consisting of the Commission's First Tier Revenue Refunding Put Bonds, Series 2015-A (the "*Series 2015-A Bonds*"), its First Tier Revenue Refunding Bonds, Series 2015-B (the "*Series 2015-B Bonds*") and its Second Tier Revenue Refunding Bonds, Series 2015-C (the "*Series 2015-C Bonds,*" and collectively with the Series 2015-A Bonds and the Series 2015-B Bonds, the "*Bonds*"). The Bonds are being issued pursuant to an Indenture of Trust, dated as of July 15, 2002 (the "*Master Indenture*") as supplemented by the Amended and Restated Seventh Supplemental Indenture of Trust, dated as of January 1, 2015 (the "*Seventh Supplemental Indenture*," and collectively, with the Master Indenture, the "*Indenture*") between the Commission and The Bank of New York Mellon Trust Company, National Association, as trustee (the "*Trustee*") and paying agent for the Bonds.

The Bonds are special, limited obligations of the Commission payable solely from gross Revenues, including toll revenues, of the Central Texas Turnpike System (as defined herein) and funds held under the Indenture and are payable prior to the payment of Operating Expenses and Maintenance Expenses (as such terms are defined herein). The Series 2015-A Bonds and the Series 2015-B Bonds, together with the remaining outstanding First Tier Obligations (as defined herein), and any additional First Tier Obligations, are payable solely from and secured by a first lien on, pledge of, and security interest in such gross Revenues and funds. The Series 2015-C Bonds together with any additional Second Tier Obligations constitute special, limited obligations of the Commission payable solely from and secured by a lien on, pledge of, and security interest in such gross Revenues and funds junior and subordinate to the First Tier Obligations but senior to the lien on, pledge of and security interest in such gross Revenues and funds for any subsequently issued Subordinate Tier Obligations (as defined herein). See "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Sources of Payment." The Commission has agreed to pay, subject to appropriation of funds by the Legislature in a manner that would allow their use, Operating Expenses to the extent of any deficiency in the Operating Account and all Maintenance Expenses of the Central Texas Turnpike System. See "SYSTEM-RELATED FUNDING OBLIGATIONS OF COMMISSION."

Proceeds of the Bonds will be used to (i) refund a portion of the outstanding Obligations (as defined herein), as further identified in Schedule I attached hereto (the "*Refunded Obligations*"), (ii) fund debt service reserves and (iii) pay the costs of issuing the Bonds.

MATURITY SCHEDULES, INTEREST RATES, PRICES AND OTHER TERMS FOR EACH SERIES OF THE BONDS
See pages iii, iv and v

This cover page contains information for quick reference only and is not a summary of the Bonds. Potential investors must read this entire Official Statement to obtain information essential to making an informed investment decision. Investment in the Bonds is subject to certain risks. See "RISK FACTORS" herein.

NONE OF THE STATE OF TEXAS, THE COMMISSION, THE DEPARTMENT, OR ANY OTHER AGENCY OR POLITICAL SUBDIVISION OF THE STATE OF TEXAS IS OBLIGATED TO PAY THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE BONDS EXCEPT THE COMMISSION SOLELY FROM THE TRUST ESTATE AND CERTAIN FUNDS CREATED UNDER THE INDENTURE. NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OF TEXAS OR ANY AGENCY OR POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE BONDS. NEITHER THE COMMISSION NOR THE DEPARTMENT HAS ANY TAXING POWER. THE INDENTURE DOES NOT CREATE A MORTGAGE ON THE CENTRAL TEXAS TURNPIKE SYSTEM.

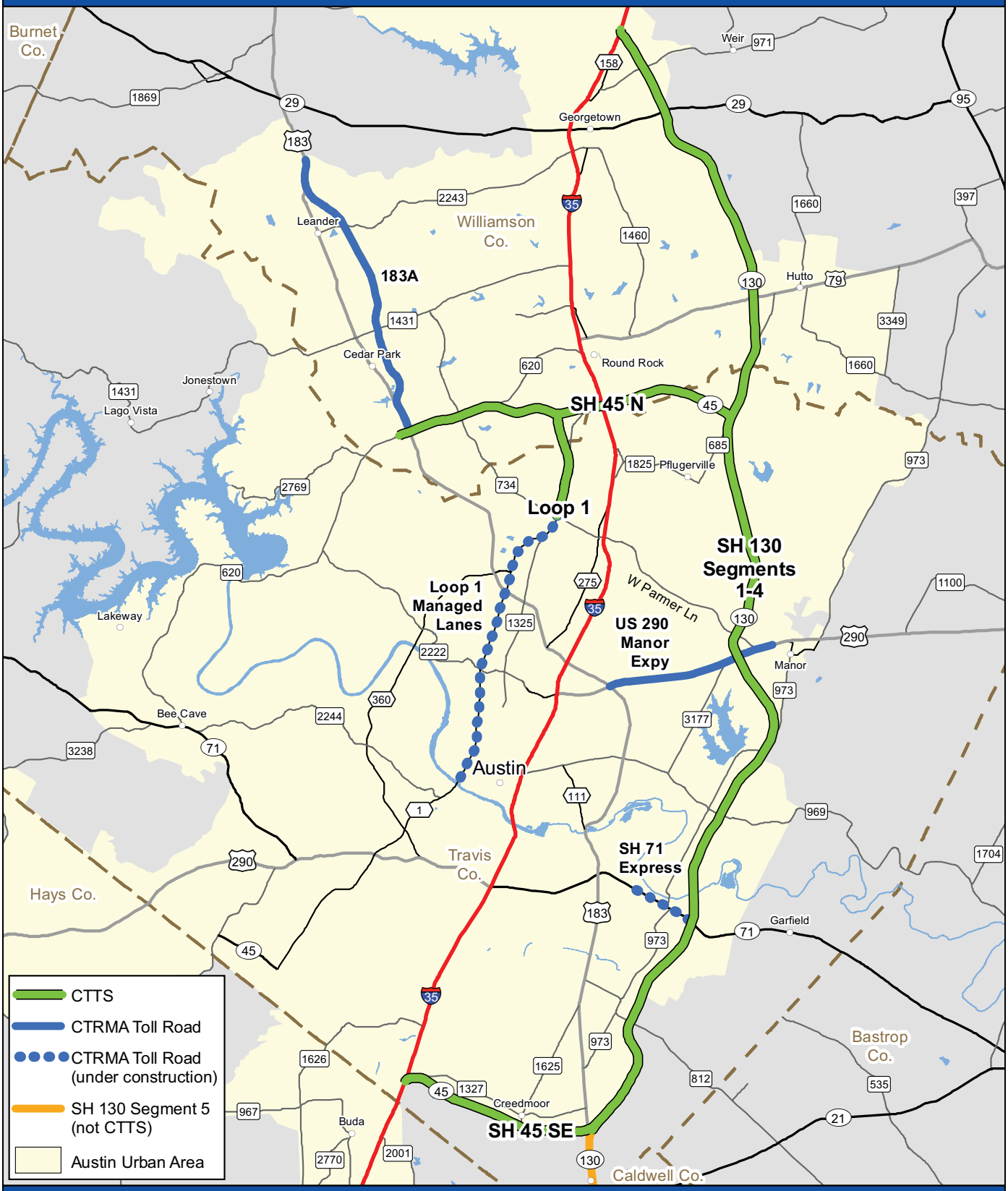
The Bonds are offered for delivery when, as, and if issued and accepted by the Underwriters, and subject to the approval of the Attorney General of the State and the opinion of McCall, Parkhurst & Horton L.L.P., Bond Counsel. Certain legal matters will be passed upon for the Commission by the General Counsel to the Commission and by McCall, Parkhurst & Horton L.L.P., Disclosure Counsel to the Commission. Certain legal matters will be passed upon for the Underwriters by their co-counsel, Norton Rose Fulbright US LLP and Mahomes Bolden PC. It is expected that the Bonds will be delivered on or about February 4, 2015, through the facilities of The Depository Trust Company, New York, New York.

BARCLAYS **J.P. MORGAN**

Citigroup **Frost Bank** **Morgan Stanley** **Piper Jaffray & Co.**

Ramirez & Co., Inc. **RBC Capital Markets** **Siebert Brandford Shank & Co., L.L.C.**

Central Texas Turnpike System (CTTS) and Regional Transportation Network



Texas Department of Transportation
Transportation Planning and Programming Division
Data Analysis, Mapping and Reporting Branch
January 8, 2015

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Notice
This map was produced for internal use within the Texas Department of Transportation. Accuracy is limited to the validity of available data as of December 31, 2014.

MATURITY SCHEDULES, INTEREST RATES, PRICES AND OTHER TERMS FOR THE BONDS

$225,000,000 FIRST TIER REVENUE REFUNDING PUT BONDS, SERIES 2015-A

General. The $225,000,000 Texas Transportation Commission Central Texas Turnpike System First Tier Revenue Refunding Put Bonds, Series 2015-A (the "*Series 2015-A Bonds*") are being issued as Current Interest Bonds. During the period that commences on the Date of Delivery and ends on the day immediately prior to the Mandatory Tender Date described below (the "*Initial Multiannual Period*"), interest on the Series 2015-A Bonds will accrue at the Initial Interest Rate specified below and will be payable on February 15 and August 15 of each year, commencing August 15, 2015. The Series 2015-A Bonds will be issued as fully registered obligations in denominations of $5,000 principal amount and integral multiples thereof within a maturity.

MATURITY SCHEDULE FOR SERIES 2015-A BONDS

Maturity Date	Principal Amount	Initial Interest Rate	Initial Yield [1]	Mandatory Tender Date	CUSIP No.[2]
August 15, 2042	$225,000,000	5.000%	1.620%	April 1, 2020	88283KAJ7

(Interest accrues from Date of Delivery)

Optional Redemption. The Series 2015-A Bonds are not subject to optional redemption prior to the end of the Initial Multiannual Period. See "THE SERIES 2015-A BONDS – Redemption."

Special Redemption. The Series 2015-A Bonds are subject to special redemption at the option of the Commission on any date prior to maturity as more fully described herein. See "GENERAL INFORMATION REGARDING THE BONDS – Special Redemption."

Optional and Mandatory Tender. The Series 2015-A Bonds are not subject to optional tender by the holders thereof for purchase prior to the end of the Initial Multiannual Period. The Series 2015-A Bonds are subject to mandatory tender for purchase by the Commission at a price equal to 100% of the principal amount plus accrued interest on the Mandatory Tender Date referred to above, subject to the successful remarketing of such Series 2015-A Bonds. See "THE SERIES 2015-A BONDS – Optional and Mandatory Tender of Series 2015-A Bonds."

Conversion. The Series 2015-A Bonds are not subject to conversion to another interest rate mode until purchased on or after the Mandatory Tender Date. See "THE SERIES 2015-A BONDS – Future Terms of Series 2015-A Bonds."

No Credit or Liquidity Facility. As of the date of this Official Statement, the Commission has not provided any credit or liquidity facility for the payment of the purchase price of the Series 2015-A Bonds payable upon the mandatory tender of the Series 2015-A Bonds on the Mandatory Tender Date, nor is there any requirement or expectation that such credit or liquidity facility will be obtained. The principal portion of the purchase price for the Series 2015-A Bonds is expected to be obtained from the remarketing thereof. The obligation of the Commission to purchase Series 2015-A Bonds on the Mandatory Tender Date is subject to the successful remarketing of such Series 2015-A Bonds and a failed conversion and remarketing will not constitute an Event of Default under the Indenture. The Commission has no obligation to purchase Series 2015-A Bonds except from remarketing proceeds. If the Series 2015-A Bonds are not remarketed or refunded, the Series 2015-A Bonds will bear interest at the Stepped Coupon Rate of 8% per annum from the Mandatory Tender Date until purchased or redeemed.

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[1] Calculated through the last day of the Initial Multiannual Period.

[2] CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein is provided by CUSIP Global Services, managed by Standard & Poor's Financial Services LLC on behalf of the American Bankers Association. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Services. CUSIP numbers are included herein solely for the convenience of the owners of the Series 2015-A Bonds. None of the Department, the Commission, the Financial Advisor or the Underwriters shall be responsible for the selection or correctness of the CUSIP numbers shown herein.

$226,019,800 FIRST TIER REVENUE REFUNDING BONDS, SERIES 2015-B

General. The $226,019,800 Texas Transportation Commission Central Texas Turnpike System First Tier Revenue Refunding Bonds, Series 2015-B (the "*Series 2015-B Bonds*") are being issued as (i) $198,025,000 of Current Interest Bonds ("*Series 2015-B CIBs*") and (ii) $27,994,800 of Capital Appreciation Bonds ("*Series 2015-B CABs*"). Interest on the Series 2015-B CIBs will accrue from their Date of Delivery and will be payable on February 15 and August 15 of each year, commencing August 15, 2015, until maturity or prior redemption. The Series 2015-B CIBs will be issued as fully-registered obligations in principal denominations of $5,000 or any integral multiple thereof within a maturity. Interest on the Series 2015-B CABs will accrete from their Date of Delivery, will be compounded on February 15 and August 15 of each year, commencing February 15, 2015, and will be payable at maturity or prior redemption. The Series 2015-B CABs will be issued as fully registered obligations in Maturity Amount denominations of $5,000 or any integral multiple thereof within a maturity. The Maturity Amount for the Series 2015-B CABs represents the total principal thereof and the accreted interest thereon payable at maturity.

MATURITY SCHEDULES FOR THE SERIES 2015-B BONDS

SERIES 2015-B CURRENT INTEREST BONDS

Maturity (August 15)	Principal Amount	Interest Rate	Initial Yield[1]	CUSIP No.[2]
2032	$40,000,000	5.000%	3.020%	88283KAN8

Term Series 2015-B Bonds

$158,025,000 5.000% Term Bonds due August 15, 2037, Priced to Yield 3.170%[1]; CUSIP No. 88283KAL2[2]

(Interest accrues from Date of Delivery)

SERIES 2015-B CAPITAL APPRECIATION BONDS

Maturity (August 15)	Principal Amount	Initial Yield to Maturity	Maturity Amount	Initial Offering Price per $5,000 In Maturity Amount	CUSIP No.[2]
2036	$14,679,600	4.360%	$120,000,000	$1,975.40	88283KAM0
2037	13,315,200	4.380	120,000,000	1,883.70	88283KAK4

(Interest accretes from Date of Delivery)

Optional and Mandatory Redemption. The Series 2015-B Bonds are subject to optional and mandatory redemption prior to maturity as more fully described herein. See "THE SERIES 2015-B BONDS – Redemption."

Special Redemption. The Series 2015-B Bonds are subject to special redemption at the option of the Commission on any date prior to maturity as more fully described herein. See "GENERAL INFORMATION REGARDING THE BONDS – Special Redemption."

No Conversion. The Series 2015-B Bonds are issued only as fixed rate bonds and are *not* subject to conversion to another interest rate mode.

No Optional or Mandatory Tender. The Series 2015-B Bonds are *not* subject to optional or mandatory tender for purchase.

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(1) Initial yield calculated to the first optional redemption date for the Series 2015-B Bonds.

(2) CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein is provided by CUSIP Global Services, managed by Standard & Poor's Financial Services LLC on behalf of the American Bankers Association. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Services. CUSIP numbers are included herein solely for the convenience of the owners of the Series 2015-B Bonds. None of the Department, the Commission, the Financial Advisor or the Underwriters shall be responsible for the selection or correctness of the CUSIP numbers shown herein.

$1,157,320,000 SECOND TIER REVENUE REFUNDING BONDS, SERIES 2015-C

General. The $1,157,320,000 Texas Transportation Commission Central Texas Turnpike System Second Tier Revenue Refunding Bonds, Series 2015-C (the "*Series 2015-C Bonds*") are being issued as Current Interest Bonds. Interest on the Series 2015-C Bonds will accrue from their Date of Delivery and will be payable on February 15 and August 15 of each year, commencing August 15, 2015, until maturity or prior redemption. The Series 2015-C Bonds will be issued as fully registered obligations in denominations of $5,000 principal amount and integral multiples thereof within a maturity.

MATURITY SCHEDULE FOR THE SERIES 2015-C BONDS

Maturity (August 15)	Principal Amount	Interest Rate	Initial Yield	CUSIP No.[1]
2022	$2,200,000	5.000%	2.160%	88283KBD9
2023	5,375,000	5.000	2.340	88283KBA5
2024	8,655,000	5.000	2.490	88283KBB3
2025	12,245,000	5.000	2.630[2]	88283KBC1
2026	9,825,000	5.000	2.790[2]	88283KAP3
2027	14,050,000	5.000	2.930[2]	88283KAQ1
2028	13,395,000	5.000	3.050[2]	88283KAR9
2029	14,620,000	5.000	3.150[2]	88283KAS7
2030	16,290,000	5.000	3.250[2]	88283KAT5
2031	125,215,000	5.000	3.300[2]	88283KAU2
2032	97,730,000	5.000	3.350[2]	88283KAV0
2033	151,045,000	5.000	3.400[2]	88283KAW8
2034	150,165,000	5.000	3.430[2]	88283KAX6

Term Series 2015-C Bonds

$183,205,000 5.000% Term Bonds due August 15, 2037, Priced to Yield 3.460%[2]; CUSIP No. 88283KAY4[1]
$353,305,000 5.000% Term Bonds due August 15, 2042, Priced to Yield 3.510%[2]; CUSIP No. 88283KAZ1[1]

(Interest accrues from Date of Delivery)

Optional and Mandatory Redemption. The Series 2015-C Bonds are subject to optional and mandatory redemption prior to maturity as more fully described herein. See "THE SERIES 2015-C BONDS – Redemption."

Special Redemption. The Series 2015-C Bonds are subject to special redemption at the option of the Commission on any date prior to maturity as more fully described herein. See "GENERAL INFORMATION REGARDING THE BONDS – Special Redemption."

No Conversion. The Series 2015-C Bonds are issued only as fixed rate bonds and are *not* subject to conversion to another interest rate mode.

No Optional or Mandatory Tender. The Series 2015-C Bonds are *not* subject to optional or mandatory tender for purchase.

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[1] CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein is provided by CUSIP Global Services, managed by Standard & Poor's Financial Services LLC on behalf of the American Bankers Association. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Services. CUSIP numbers are included herein solely for the convenience of the owners of the Series 2015-C Bonds. None of the Department, the Commission, the Financial Advisor or the Underwriters shall be responsible for the selection or correctness of the CUSIP numbers shown herein.

[2] Initial yield calculated to the first optional redemption date for the Series 2015-C Bonds.

TEXAS TRANSPORTATION COMMISSION

Name	Title	Term Expires
Ted Houghton	Chairman	February 1, 2015*
Jeff Austin, III	Commissioner	February 1, 2019
Jeff Moseley	Commissioner	February 1, 2017
Fred Underwood	Commissioner	February 1, 2015*
Victor Vandergriff	Commissioner	February 1, 2019

* State law provides that a Commissioner continues to serve until such Commissioner's replacement is appointed, qualified and takes the oath of office.

TEXAS DEPARTMENT OF TRANSPORTATION – SELECTED PERSONNEL

Name	Position	Total Years of Service with the Department
Lt. General Joe Weber	Executive Director	Under 1 year
John Barton, P.E.	Deputy Executive Director	29 years
James M. Bass	Chief Financial Officer	26 years
Benjamin H. Asher	Innovative Financing/Debt Management Officer	2 years
Brian Ragland, CPA	Finance Director	8 years
Jeff Graham	General Counsel	2 years
Doug Woodall, P.E.(1)	Director, Toll Operations Division	30 years

1) Effective January 31, 2015, Mr. Woodall will be retiring from the Department.

CONSULTANTS AND ADVISORS

Financial Advisor ..... Estrada Hinojosa & Company, Inc., Austin, Texas
Bond Counsel and Disclosure Counsel..... McCall, Parkhurst & Horton L.L.P., Austin, Texas
Traffic Consultant……..... Stantec Consulting Services Inc., New York, New York
General Engineering Consultant……..... Atkins North America, Inc., Austin, Texas
Trustee……..... The Bank of New York Mellon Trust Company, National Association, Houston, Texas
Verification Agent ..... Causey Demgen & Moore P.C.

For additional information regarding the Commission or the Department, please contact either:

James M. Bass
Chief Financial Officer
Texas Department of Transportation
125 E. 11th Street
Austin, Texas 78701-2483
(512) 305-9507
james.bass@txdot.gov

Paul Jack
Managing Director
Estrada Hinojosa & Company, Inc.
823 Congress Avenue, Suite 1550
Austin, Texas 78701
(512) 605-2444
pjack@ehmuni.com

For additional information regarding the Trustee for the Bonds, please contact:

Lynette Lewandowski
The Bank of New York Mellon Trust Company,
National Association
601 Travis Street, 16th Floor
Houston, Texas 77002
Telephone: (713) 483-6530
lynette.lewandowski@bnymellon.com

USE OF INFORMATION IN OFFICIAL STATEMENT

Use of Official Statement

No dealer, broker, salesman, or other person has been authorized by the Commission or the Underwriters set forth on the cover page hereof (the "*Underwriters*") to give any information or to make any representation other than those contained in this Official Statement, and, if given or made, such other information or representation must not be relied upon as having been authorized by the Commission or the Underwriters. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of the Bonds by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation, or sale.

Certain information set forth in this Official Statement has been furnished by the Commission and other sources which are believed to be reliable, but such information is not to be construed as a representation by the Commission or the Underwriters. Additionally, this Official Statement contains, in part, estimates and matters of opinion that are not intended as statements of fact, and no representation or warranty is made as to the correctness of such estimates and matters of opinion, or that they will be realized.

The Underwriters have provided the following sentence for inclusion in this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

THIS OFFICIAL STATEMENT IS INTENDED TO REFLECT FACTS AND CIRCUMSTANCES ON THE DATE OF THIS OFFICIAL STATEMENT OR ON SUCH OTHER DATE OR AT SUCH OTHER TIME AS IDENTIFIED HEREIN. NO ASSURANCE CAN BE GIVEN THAT SUCH INFORMATION MAY NOT BE MISLEADING AT A LATER DATE. CONSEQUENTLY, RELIANCE ON THIS OFFICIAL STATEMENT AT TIMES SUBSEQUENT TO THE ISSUANCE OF THE BONDS DESCRIBED HEREIN SHOULD NOT BE MADE ON THE ASSUMPTION THAT ANY SUCH FACTS OR CIRCUMSTANCES ARE UNCHANGED.

Neither the Commission nor the Financial Advisor makes any representation or warranty with respect to the information contained in this Official Statement regarding The Depository Trust Company ("*DTC*") or its book-entry-only system, as provided for in APPENDIX C – "Book-Entry-Only System," as such information was furnished by DTC.

Marketability

THE PRICE AND OTHER TERMS RESPECTING THE OFFERING AND SALE OF THE BONDS MAY BE CHANGED FROM TIME TO TIME BY THE UNDERWRITERS AFTER SUCH BONDS ARE RELEASED FOR SALE, AND SUCH BONDS MAY BE OFFERED AND SOLD AT PRICES OTHER THAN THE INITIAL OFFERING PRICES, INCLUDING TO DEALERS WHO MAY SELL SUCH BONDS INTO INVESTMENT ACCOUNTS. IN CONNECTION WITH THE OFFERING OF THE BONDS, THE UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS THAT STABILIZE OR MAINTAIN THE MARKET PRICE OF SUCH BONDS AT A LEVEL ABOVE THOSE WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

Securities Laws

NEITHER THE UNITED STATES SECURITIES AND EXCHANGE COMMISSION (THE "SEC") NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THE BONDS OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS OFFICIAL STATEMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

No registration statement relating to the Bonds has been filed with the SEC under the Securities Act of 1933, as amended, in reliance upon an exemption provided thereunder. The Bonds have not been registered or qualified under the Securities Act of Texas in reliance upon various exemptions contained therein; nor have the Bonds been registered or qualified under the securities laws of any other jurisdiction. The Commission assumes no responsibility for registration or qualification for sale or other disposition of the Bonds under the securities laws of any jurisdiction in which the Bonds may be offered, sold, or otherwise transferred. This disclaimer of responsibility for registration or qualification for sale or other disposition of the Bonds shall not be construed as an interpretation of any kind with regard to the availability of any exemption from securities registration or qualification provisions.

Historical Information

For purposes of providing additional background information with respect to the System, this Official Statement contains references to certain historical documents available online through the Department's website at http://txdot.gov/business/investors.html by following the links for Central Texas Turnpike System Bonds and CTTS Reports, including but not limited to prior traffic and revenue reports. THE FOREGOING LINK IS NOT INCORPORATED BY REFERENCE, EITHER EXPRESSLY OR BY IMPLICATION, INTO THIS OFFICIAL STATEMENT, NOR ARE ANY MATERIALS ON SUCH WEBSITE. THE INFORMATION CONTAINED AT THE LINK LOCATION IS DATED AS OF THE DATE OF SUCH REPORTS OR DOCUMENTS, AND THERE CAN BE NO ASSURANCE THAT SUCH INFORMATION WILL BE UPDATED IN THE FUTURE. THE COMMISSION, THE DEPARTMENT, ITS FINANCIAL ADVISOR, AND THE UNDERWRITERS DISCLAIM ANY RESPONSIBILITY TO UPDATE SUCH INFORMATION. THE DEPARTMENT, ITS FINANCIAL ADVISOR, AND THE UNDERWRITERS DISCLAIM ANY RESPONSIBILITY AS TO THE ACCURACY OR COMPLETENESS OF ANY MATERIAL CONTAINED ON OTHER INTERNET SITES ACCESSED THROUGH SUCH WEBSITE.

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OFFICIAL STATEMENT
Relating to

$1,608,339,800
TEXAS TRANSPORTATION COMMISSION
CENTRAL TEXAS TURNPIKE SYSTEM REVENUE BONDS

$225,000,000	$226,019,800	$1,157,320,000
FIRST TIER REVENUE REFUNDING PUT BONDS, SERIES 2015-A	FIRST TIER REVENUE REFUNDING BONDS, SERIES 2015-B	SECOND TIER REVENUE REFUNDING BONDS, SERIES 2015-C

INTRODUCTION

General

This Official Statement (the "*Official Statement*") contains certain information relating to the offering by the Texas Transportation Commission (the "*Commission*"), the governing body of the Texas Department of Transportation (the "*Department*"), of its Central Texas Turnpike System First Tier Revenue Refunding Put Bonds, Series 2015-A (the "*Series 2015-A Bonds*"), its First Tier Revenue Refunding Bonds, Series 2015-B (the *"Series 2015-B Bonds*") and its Second Tier Revenue Refunding Bonds, Series 2015-C (the "*Series 2015-C Bonds*", and collectively with the Series 2015-A Bonds and the Series 2015-B Bonds, the "*Bonds*"). **Capitalized terms used in this Official Statement that are not otherwise defined herein have the meanings assigned to them in "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – DEFINITIONS."**

Purpose

The Bonds are being issued to refund certain outstanding Obligations (as defined herein) and pursuant to an Indenture of Trust, dated as of July 15, 2002 (the "*Master Indenture*") as supplemented by an Amended and Restated Seventh Supplemental Indenture of Trust, dated as of January 1, 2015 (the "*Seventh Supplemental Indenture*," and collectively with the Master Indenture, the "*Indenture*"), between the Commission and The Bank of New York Mellon Trust Company, National Association, as trustee (the "*Trustee*").

Security

The Bonds are special, limited obligations of the Commission payable solely from gross Revenues, including Toll revenues, of the Central Texas Turnpike System (the "*System*") located in Travis and Williamson Counties, Texas, in the greater City of Austin, Texas metropolitan area and from funds held under the Indenture. The Series 2015-A Bonds and the Series 2015-B Bonds are payable from and secured by a first lien on, pledge of, and security interest in the Trust Estate (as defined herein) granted in the Indenture, on an equal and ratable basis with outstanding First Tier Obligations and such additional First Tier Obligations as may hereafter be issued in accordance with the Master Indenture. The Series 2015-C Bonds are payable from and secured by a lien on, pledge of, and security interest in the Trust Estate granted in the Indenture, on a basis junior and subordinate to the First Tier Obligations and on an equal and ratable basis with any additional Second Tier Obligations as may hereafter be issued in accordance with the Master Indenture. See "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Sources of Payment."

Central Texas Turnpike System

The System currently consists of the following four elements: (i) Segments 1 through 4 of State Highway 130 (the "*SH 130 Element*"); (ii) State Highway 45 North (the "*SH 45N Element*"); (iii) the north extension of Loop 1 (the "*Loop 1 Element*"); and (iv) State Highway 45 Southeast (the "*SH 45SE Element*"). The SH 130 Element does ***not*** include Segments 5 and 6 of State Highway 130 ("*SH 130*"), which were financed and constructed, and are being operated and maintained by a private company pursuant to a concession agreement with the Department. The

Elements of the System were opened for traffic in stages from 2006 to 2009 with the SH 45SE Element being added to the System effective September 2012. See "THE SYSTEM."

Commission Operating and Maintenance Commitment

The Commission has covenanted, subject to funds appropriated by the Legislature in a manner that would allow their use, to (i) pay Operating Expenses to the extent of any deficiency in the Operating Account; (ii) pay all Maintenance Expenses when due and (iii) fund the Reserve Maintenance Account. This obligation of the Commission historically has been funded from the State Highway Fund. See "SYSTEM-RELATED FUNDING OBLIGATIONS OF COMMISSION" and "FUNDING OF COMMISSION OBLIGATIONS."

PLAN OF FINANCE

General

The Bonds are being issued to: (i) refund a portion of the outstanding Obligations as further identified in Schedule I attached hereto (the "*Refunded Obligations*"), (ii) fund debt service reserves and (iii) pay costs of issuance of the Bonds. See Schedule I hereto for the details of the specific series and maturities of Refunded Obligations to be refunded and their respective redemption dates and redemption prices. For further details regarding the Bonds, see "THE SERIES 2015-A BONDS," "THE SERIES 2015-B BONDS," "THE SERIES 2015-C BONDS" and "GENERAL INFORMATION REGARDING THE BONDS."

The Bonds are being issued by the Commission pursuant to the laws of the State, particularly Chapters 1207 and 1371, Texas Government Code, as amended, and Subchapter C of Chapter 228, Texas Transportation Code, as amended (collectively, the "*Acts*"), an authorizing minute order adopted by the Commission on November 20, 2014 and the Indenture.

Table 1 below shows the total Obligations issued to finance or refinance the System both as they are currently outstanding and as they are anticipated to be outstanding following the issuance of the Bonds to refund the Refunded Obligations.

Table 1 – Outstanding Obligations

Obligations	Amount Currently Outstanding [1]	Amount Outstanding After Issuance of the Bonds[2]
First Tier		
First Tier Revenue Bonds, Series 2002-A	$ 865,393,467.24	$ 424,223,958.88
First Tier Revenue Refunding Bonds, Series 2012-A	585,330,000.00	585,330,000.00
First Tier Revenue Refunding Put Bonds, Series 2012-B	225,000,000.00	-
First Tier Revenue Refunding Put Bonds, Series 2015-A	-	225,000,000.00
First Tier Revenue Refunding Bonds, Series 2015-B	-	226,019,800.00
Subtotal	$1,675,723,467.24	$1,460,573,758.88
Second Tier		
Second Tier Revenue Refunding Bonds, Series 2015-C	-	$1,157,320,000.00
Subordinate Lien		
TIFIA Loan Agreement and 2002 TIFIA Bond	$1,106,799,165.24	-
Total	**$2,782,522,632.48**	**$2,617,893,758.88**

(1) Includes the Refunded Obligations and excludes the Bonds. Amounts for Series 2002-A Bonds are shown using accreted values as of February 4, 2015.

(2) Excludes the Refunded Obligations and includes the Bonds. Amounts for Series 2002-A Bonds are shown using accreted values as of February 4, 2015. Amounts for the Series 2015-B Bonds, a portion of which are Capital Appreciation Bonds, are shown using principal amount.

Refunding

Proceeds of the Bonds, together with other funds of the Commission, will be deposited into special refunding accounts with the Trustee to refund and defease the Refunded Obligations. The principal of and interest due on the Refunded Obligations are to be paid on their respective maturity or redemption dates from funds deposited to the account pursuant to the terms of the Indenture to accomplish the discharge and final payment of the Refunded Obligations on their scheduled maturity or redemption dates. Such funds to be deposited with the Trustee will be irrevocably pledged to the payment of the principal of and interest on the Refunded Obligations and, until used, will be invested in direct noncallable obligations of the United States, including obligations that are unconditionally guaranteed by the United States (the "*Escrowed Securities*"). The refunding accounts will not be available to pay principal of or interest on the Bonds.

Upon such deposit with the Trustee, the Refunded Obligations will no longer be entitled to the benefits of the Indenture (other than for payment, transfer and exchange) and no longer be considered Outstanding, and the Commission will have no further responsibility with respect to the payment of such Refunded Obligations including any insufficiency to receive payments when due on Escrowed Securities.

Causey Demgen & Moore P.C., a nationally-recognized accounting firm, will verify at the time of delivery of the Bonds to the Underwriters the mathematical accuracy of the schedules that demonstrate that the Escrowed Securities will mature and pay interest in such amounts which, together with uninvested funds, if any, in the refunding accounts, will be sufficient to pay, when due, the principal of, premium on, if any, and interest on the Refunded Obligations to and on their scheduled redemption or maturity dates. Causey Demgen & Moore P.C. will also verify the yields relied on by Bond Counsel to support its opinion that none of the Bonds is an arbitrage bond under section 148 of the Internal Revenue Code of 1986, as amended (the "*Code*"). Such verification report will be based on information and assumptions supplied by the Commission, its Financial Advisor and the Underwriters, and such verifications, information and assumptions will be relied upon by Bond Counsel in rendering its opinions described herein. See "VERIFICATION OF MATHEMATICAL ACCURACY" and "TAX MATTERS."

Sources and Uses

The proceeds from the sale of the Bonds, together with other funds of the Commission, will be applied approximately as follows:

	Series 2015-A Bonds	Series 2015-B Bonds	Series 2015-C Bonds	Total
Sources				
Par Amount of Bonds	$225,000,000.00	$226,019,800.00	$1,157,320,000.00	$1,608,339,800.00
Original IssuePremium	37,482,750.00	94,764,337.50	150,644,033.40	282,891,120.90
Debt Service Fund Contribution	1,406,250.00	2,095,030.37		3,501,280.37
First Tier Debt Service Reserve Fund Contribution	-	5.81	-	5.81
Total	$263,889,000.00	$322,879,173.68	$1,307,964,033.40	$1,894,732,207.08
Uses				
Deposit to Refunding Accounts	$262,683,823.33	$320,736,511.20	$1,246,534,355.81	$1,829,954,690.34
Deposit to Second Tier Debt Service Reserve Fund			53,132,126.30	53,132,126.30
Underwriters' Discount	616,257.80	1,553,527.66	5,942,292.24	8,112,077.70
Costs of Issuance	588,918.87	589,134.82	2,355,259.05	3,533,312.74
Total	$263,889,000.00	$322,879,173.68	$1,307,964,033.40	$1,894,732,207.08

THE SYSTEM

Description of the System

The System is a network of toll roads owned and operated by the Department in the Austin, Texas area. A map of the System, together with certain existing and future connector and complementary facilities which are not part of the System, is included on the inside cover page hereof. The four distinct elements of the System are summarized as follows:

SH 130 Element: The SH 130 Element extends from the IH 35/SH 195 junction at Georgetown in Williamson County (north of Austin) 49.0 miles southward, on the east side of Austin, to a junction with US 183 and SH 45SE in southern Travis County, south of Austin-Bergstrom International Airport. The SH 130 Element is a four-lane limited-access roadway with toll facilities, overpasses, underpasses, discontinuous non-tolled frontage roads and direct-connectors at interchanges where warranted, including the interchanges with IH 35 and SH 45N. The SH 130 Element has been divided into four segments. Segments 1 and 2 were opened to traffic in December 2006 and in October 2006, respectively, and Segments 3 and 4 were opened to traffic in September 2007 and in April 2008, respectively. The SH 130 Element does ***not*** include Segments 5 and 6 of SH 130, which were financed and constructed and are being operated and maintained by a private company pursuant to a concession agreement with the Department.

SH 45N Element: The SH 45N Element is a 12.8 mile element located in Travis and Williamson Counties, Texas that extends from US 183 on the west to SH 130 on the east, and is an east-west route. The SH 45N Element serves as a connector between the Cities of Austin, Round Rock, and Pflugerville, Texas, and consists of six-lane divided limited-access roadways except for one section, which is a four-lane divided limited-access roadway and discontinuous non-tolled frontage roads. The first four sections of the SH 45N Element opened to traffic in October 2006, and the remaining two sections opened to traffic in February 2007 and in April 2007, respectively.

Loop 1 Element: The Loop 1 Element is a 4.0 mile element located in Travis and Williamson Counties, Texas that extends northward from the existing Loop 1 at Parmer Lane to the SH 45N Element and is a north-south route. The Loop 1 Element has three lanes in each direction on the southern end and four lanes in each direction on the northern end. The Loop 1 Element includes discontinuous non-tolled frontage roads, toll facilities, overpasses, underpasses and direct-connectors at the interchange with the SH 45N Element. The Loop 1 Element opened to traffic in October 2006.

SH 45SE Element: The SH 45SE Element links IH 35 at FM 1327, north of the City of Buda, to the junction of SH 130 and US 183 near Mustang Ridge. The 7.0 mile long facility is a four-lane roadway with controlled access and a wide center median. The SH 45SE Element was financed with lawfully available funds of the Department, opened to traffic in May 2009 and was added to the System effective September 1, 2012.

The toll operations for the System are managed by the Toll Operations Division within the Department. The Toll Operations Division reports to the Department's Chief Financial Officer.

Payment Methods for Tolls

General. The Department currently allows all drivers to pay Tolls for the use of the System in two ways, by: (i) using an electronic toll collection ("*ETC*") transponder in the vehicle to debit a pre-paid account or (ii) paying a bill for Tolls sent by mail ("*Pay by Mail*") as more fully described in "*– Pay by Mail Payment Method*" below. Prior to January 1, 2013, the Department also allowed drivers to pay Tolls on certain portions of the System in cash. In Fiscal Year 2014, 70% of the total transactions processed for the System were attributable to ETC transponder accounts and 30% were attributable to image-based transactions, consisting of invoiced Pay by Mail transactions and uninvoiced, unbillable transactions. For a breakdown of the Fiscal Year 2013 percentages of payment types for average weekday toll transactions on each element of the System, see Tables 7.9 through 7.11 in the 2014 Traffic and Revenue Study set forth in "APPENDIX D – CENTRAL TEXAS TURNPIKE SYSTEM 2014 TRAFFIC AND REVENUE STUDY."

The Department has contracted with Xerox State and Local Solutions, Inc. ("*Xerox*") to (a) provide and operate a turnkey customer service center and account for, invoice and collect Tolls for all of its toll roads statewide and (b) manage, operate and maintain the System's toll plaza and ramp facilities. The Department has also contracted with Transcore LLC ("*Transcore*") for maintenance of the tolling equipment, which includes performing all preventative maintenance necessary to keep the tolling equipment in operation in accordance with the toll system performance requirements. See "– Toll Collection Facilities and Technology."

ETC Transponder Payment Method. The ETC transponder payment method requires that drivers attach a small sticker to the windshields of their vehicles containing a thin transponder which sends a signal to the electronic tolling equipment as the vehicle crosses a tolling point. The Department's ETC transponder is branded as a TxTag ("*TxTag*"). Each TxTag transponder is tied to an automatic pre-paid customer toll account and funds are withdrawn daily by the Department from such account as Tolls are incurred. A single toll account can have multiple TxTag transponders associated with such account. As of November 30, 2014, there were 873,379 active toll accounts with 1,572,614 active TxTag transponders state-wide. As of June 30, 2014, the number of active TxTags increased approximately 13% over such number as of June 30, 2013. ETC transactions are processed on the System using TxTags as well as ETC transponders issued by other tolling entities. See "– Interoperability."

Pay by Mail Payment Method. The Pay by Mail payment method was first instituted by the Department as a pilot program in January 2007 and was adopted as a permanent payment method effective September 1, 2012. Pay by Mail is utilized when a driver crosses a tolling point and a valid ETC transponder is not recognized. An image of the vehicle's license plate is captured, and if there is an existing customer toll account for that license plate, the transaction is posted to such account and processed as an ETC transponder payment. If there is no existing customer toll account for a license plate, the Department sends the vehicle owner a bill by mail for the toll charges. Drivers utilizing Pay by Mail are charged a 33% higher toll rate than the ETC transponder toll rate, plus a per statement fee, in order to cover the additional costs to the Department attributable to image-based transactions incurred under this method. See "– Customer Service Center Revenues – Fees and Charges."

Certain image-based transactions that occur on the System are not able to be invoiced as Pay by Mail transactions because the license plate could not be read accurately, because the vehicle was exempt from payment of Tolls (primarily government or emergency vehicles) or for other technical reasons. For the first six months of Fiscal Year 2014, approximately 26.7% of all image-based transactions on the System could not be invoiced. Additionally, for such six month period of Fiscal Year 2014, the collection rate for invoiced Pay by Mail transactions on the System was 65.1% and the collection rate for all image-based transactions (invoiced and non-invoiced) was 47.7%. The collection rate for Pay by Mail in the last six months of Fiscal Year 2014 is unavailable due to the interruption of certain billing functions associated with the transition to a new system provided by Xerox and the resulting delay in invoicing Pay by Mail transactions. See "– Toll Collection Facilities and Technology" below. The 2014 Traffic and Revenue Study assumes a 47.7% collection rate for all image-based transactions (invoiced and not invoiced) from Fiscal Year 2015 through Fiscal Year 2042. See "APPENDIX D – CENTRAL TEXAS TURNPIKE SYSTEM 2014 TRAFFIC AND REVENUE STUDY."

Toll Enforcement and Collection Efforts. The Commission continues to refine its processes and procedures related to collection of unpaid Tolls, including enforcement through justice of the peace court proceedings. In 2010, the Commission began enforcing unpaid Tolls through court proceedings, typically resulting in settlement agreements and payment plans. Currently, prior to filing court action, the Commission sends "last chance letters" to toll violators. To date, approximately 64% of the toll violators that were sent last chance letters since 2010 have contacted the Commission, entered into payment plans for unpaid Tolls, and have become TxTag account holders. The Commission intends to continue filing court actions against unpaid toll accounts. Due to limitations on the number of complaints that can be filed in the justice of the peace courts, the Department has to prioritize cases based on amounts owed and the age of the unpaid balance. Based on the results of a pilot study that was initiated in November 2012, the Department is currently implementing a strategy to pursue a higher proportion of accounts with past due amounts of $1,000 or less through justice of the peace courts to better align collections efforts with the likelihood of collecting amounts due from such accounts.

In June 2013, additional toll enforcement legislation authorized new toll enforcement tools to pursue habitual violators throughout Texas. Habitual violators are those with more than 100 unpaid Tolls in a one-year period and who have been sent at least two notices of non-payment. Previously, the Department was limited to

sending repeated invoices with fees or seeking restitution through the justice of the peace courts program as described above. The 2013 legislation provides more authority to enforce non-payment, including publishing violator names, addresses and amounts due on websites and in newspapers and banning the vehicles from using Department toll roads. If caught driving on a prohibited toll road after being banned and ticketed, the violator's vehicle may be impounded. The legislation also includes authority to report habitual violators to county tax assessor collectors, who are responsible for vehicle registration. County tax-assessor collectors have discretion to block the renewal of habitual violators' vehicle registration based on non-payment of tolls.

The compensation method with Xerox under its agreement, described below under "– Toll Collection Facilities and Technology," was not in place for previous collections contracts and is intended to improve Revenues collected through the Pay by Mail payment method. Additionally, a collections policy was recently implemented by the Department that includes a goal of increasing the collection rate for Pay by Mail transactions from the current 65% to 69% by the end of Fiscal Year 2018. There can be no assurance such goal will be attained.

Toll Collection Facilities and Technology

The System utilizes an express ETC transponder system allowing toll collection to occur with no physical barriers or toll islands while vehicles travel at normal highway speeds. Toll collection equipment is mounted in the pavement, outside the shoulder area or in overhead gantries. See "– Payment Methods for Tolls" herein. The Commission has equipped all lanes in the System with an automated violation enforcement and image-based billing system. Such system records electronic images of vehicles' license plates for image-based billing and possible prosecution under State statutes for non-payment of tolls. Such image-based billing system is utilized in the System's Pay by Mail payment method. See "– Payment Methods for Tolls – *Pay by Mail Payment Method*" above. The toll collection and enforcement system was procured from United Toll Systems. The maintenance of such system was transitioned to Transcore during Fiscal Year 2014 for cost savings. The back office systems, including customer service, violations and image-based billing, were originally procured from VESystems, LLC and were transitioned to Xerox on July 3, 2014, including new information systems (hardware and software), to achieve operational efficiencies and increase revenues. The incentive-based contract with Xerox provides for added service options intended to improve the ability of ETC customers to maintain accounts and make payments.

Xerox's statewide customer service center responsibilities include all customer account management, customer service activities (e.g., invoicing, printing and mailing services, payment processing and toll violation collection), and toll transaction processing. The contract includes milestone payments for setup, monthly fixed amounts for facility operations and maintenance and fixed amounts per collected toll transaction. To incentivize collection efforts, the Department pays Xerox a percentage of collections of past due transactions that have entered a collection process, with the percentage depending on whether the one-, 12- and 24-month statewide collection rates each month are higher or lower than fixed benchmarks, up to a capped percentage. The Xerox contract extends to June 2018 and may be extended by the Department up to June 2023 or terminated by the Department for cause or convenience.

The transition to the Xerox system beginning July 3, 2014 required interruptions to certain customer service and billing functions including delayed toll postings, statement processing, Pay by Mail billing, escalation of past due transactions to violations and collections. Daily processing for monthly statements resumed in phases after the transition, and all processes including substantially all Pay by Mail billings and escalation of past due transactions became current in December 2014. Although these delays in invoicing have delayed receipt of certain Revenues, the Commission does not expect such transition to have an adverse impact on the Commission's ability to generate Toll revenue sufficient to comply with the rate covenant or to make the required deposits pursuant to the Master Indenture.

Toll Rates

Table 2 below sets out the toll rates for each element of the System effective for 2014 and 2015. The rates shown are for ETC transactions for two-axle vehicles ("*Auto*") for all elements of the System.

Table 2 – Auto ETC Toll Rates

		Full Length Toll Rates		Per Mile Toll Rates	
Element		**2014**	**2015**	**2014**	**2015**
SH 45N	(12.8 miles)	$2.08	$2.12	$0.16	$0.17
Loop 1	(4.0 miles)	$1.04	$1.06	$0.26	$0.27
SH 130	(49.0 miles)	$6.88	$7.00	$0.14	$0.14
SH 45SE	(7.0 miles)	$1.02	$1.04	$0.15	$0.15

The full length Toll rates include mainline plaza rates multiplied by the number of mainline tolling points for each element and exclude entrance and exit ramp charges. For a more detailed description of the System's current Toll rates for each element, vehicle classification and particular tolling points, see the Commission's Minute Order Number 114117 dated October 30, 2014 and attached as hereto as Appendix E. More information on historical Toll rates for the System is available in the historical traffic and revenue reports available online at http://txdot.gov/business/investors.html. The information contained on (or accessed through) such website is not incorporated herein and should not be construed as part of this Official Statement.

Toll Escalation Policy

The Commission adopted a Toll escalation policy for the System on August 30, 2012. Under the policy, and subject in all instances to the provisions, requirements and restrictions of the Indenture, beginning on October 1, 2013 and on each October 1 thereafter (each a "*Toll Escalation Determination Date*"), a percentage increase in the Toll rates charged on all toll facilities in the System is to be determined in an amount equal to the Toll Rate Escalation Percentage based on changes in CPI (both as defined below). The Toll Rate Escalation Percentage, as calculated on each Toll Escalation Determination Date, is to be reported to the Commission each year at its October meeting. The percentage increase in the Toll rates will be effective automatically on January 1 of the next calendar year, and implemented by the Department's Executive Director, unless the Commission affirmatively votes prior to January 1 to modify such Toll Rate Escalation Percentage. If the Commission votes to modify a Toll Rate Escalation Percentage, the Toll rate increase, if any, to be effective on January 1 of the next calendar year will be based on the modified Toll Rate Escalation Percentage. The CPI used on the October 1 Toll Escalation Determination Date each year is based on the twelve month period ending August 31 of the year preceding the effective date of any Toll increase. The Toll escalation policy provides a formula for future rate increases without further Commission action. The Toll escalation policy does not supersede the rate covenant in the Master Indenture. In the event a conflict exists, the covenant in the Master Indenture will prevail in determining Toll rates used on the System. The Commission may modify or terminate its Toll policies, including the Toll escalation policy, at any time provided that such change is made in accordance with the requirements of the Master Indenture.

A certification of the Traffic Consultant was received in 2012 in connection with the adoption of the Toll escalation policy and no further certification is required unless such policy is changed. See "– Traffic Consultant Certification."

For purposes of determining the Toll Rate Escalation Percentage, the following capitalized terms have the meanings provided below:

"*Toll Rate Escalation Percentage*" = a percentage amount equal to $[(CPI^{t} – CPI^{t-12})/CPI^{t-12}]$. In the event the Toll Rate Escalation Percentage is calculated to equal less than 0%, then the Toll Rate Escalation Percentage will be deemed to equal 0%.

"*CPI*" = the most recently published non-revised index of Consumer Prices for All Urban Consumers (CPI-U) before seasonal adjustment ("*CPI*"), as published by the Bureau of Labor Statistics of the U.S. Department of Labor ("*BLS*") prior to the Toll Escalation Determination Date for which such calculation is being made. The CPI is published monthly, and the CPI for a particular month is generally released and published during the following month. The CPI is a measure of the average change in consumer prices over time for a fixed market basket of goods and services, including food, clothing, shelter, fuels, transportation, charges for doctors' and dentists' services and drugs. In calculating the CPI, price changes for the various items are averaged together with weights that represent

their importance in the spending of urban households in the United States. The contents of the market basket of goods and services and the weights assigned to the various items are updated periodically by the BLS to take into account changes in consumer expenditure patterns. The CPI is expressed in relative terms in relation to a time base reference period for which the level is set at 100.0. The base reference period for the CPI is the 1982-1984 average.

"CPI^{t-12}" = the CPI published by the BLS in the month that is 12 months prior to the month used to established CPI^{t}.

If the CPI is discontinued or substantially altered, as determined in the sole discretion of the Department, the Department will determine an appropriate substitute index or, if no such substitute index is able to be determined, the Commission may modify its Toll escalation policy. For more information on these future increases in Toll rates, see "– Traffic and Revenue Results" herein and "APPENDIX D – CENTRAL TEXAS TURNPIKE SYSTEM 2014 TRAFFIC AND REVENUE STUDY."

Traffic Consultant Certification

Prior to adopting any change in the Toll rate schedule, the Commission must obtain and file with the Trustee a certificate by the Traffic Consultant stating either: (A) in their opinion, that if such proposed Toll rate schedule had been in effect during the preceding annual period, and taking into effect the Revenues anticipated to be received in such annual period, as evidenced by a certificate of an authorized representative, it would not have caused a decrease in the Revenues for said preceding annual period; or (B) in their opinion, that the adoption of such proposed Toll rate schedule will not adversely affect the ability of the Commission to comply with its rate covenants. See "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Rate Covenant – *Certification by Traffic Consultant.*"

Toll Discounts

Veteran Toll Waiver Program. In compliance with the provisions of the Master Indenture and after receipt of the required certification by the Traffic Consultant, the Commission has authorized free passage on the System for both TxTag and Pay by Mail customers who are disabled veterans or recipients of the Purple Heart, Congressional Medal of Honor, Air Force Cross, Distinguished Service Cross, Army Distinguished Service Cross or Navy Cross (Legion of Valor) effective December 24, 2012. To take advantage of this program, eligible veterans are required to register the license plates of their vehicles with the Texas Department of Motor Vehicles. The Pay by Mail transactions for such registered license plates are invoiced to the Department, and the Department pays the System for the transactions. The Department has a monitoring program to identify eligible transactions and the associated revenue to be reimbursed. The Department reimburses the appropriate Master Indenture account for the cost of Tolls not paid by customers with such eligible plates. Since the program began, the Department has paid the System approximately $3.3 million in revenue to pay for approximately 2.6 million in eligible veteran transactions. See "– Traffic Consultant Certification."

Truck Tolls. In compliance with the provisions of the Master Indenture and after receipt of the required certification by the Traffic Consultant, the Commission reduced Toll rates effective March 1, 2011 for trucks with five or more axles on the SH 130 Element and SH 45SE to the rates for four axle trucks in an effort to increase truck traffic on SH 130 and SH 45SE. Additionally, for a five-week period in December 2011 and January 2012 and for ten months in 2013, the Commission temporarily reduced Toll rates for trucks on the SH 130 Element and SH 45SE to the rates for two axle autos in an effort to increase truck traffic on SH 130 and SH 45SE and improve traffic flow through Austin on IH 35. The Commission reimbursed the System amounts necessary to make up the difference in revenue between the temporary Toll rates charged and the non-discounted Toll rates. These reimbursements are included in the reported Toll revenues. See " – Traffic Consultant Certification."

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Customer Service Center Revenues – Fees and Charges

In addition to the Toll rates charged for the System, the Commission charges fees for various customer services related to utilizing the various toll facilities of the Department, including:

Standard TxTag Fee - $13.85 (if customer does not sign up for automatic account replenishment)
Specialty TxTag Fee (motorcycles and license plates) - $45.00 (includes $35.00 refundable deposit)
Mailed or Faxed Account Statement Fee - $1.15 for each five pages or any number of pages less than five
Returned Check Fee - $30.00 per check

The Commission charges administrative fees per transaction related to the collection of unpaid Tolls, which include the following:

Notice of Non Payment Fee - $5.00[(1)]
Submission to Collection Agency Fee - $25.00[(1)]
Submission to Court Fee - $100.00[(1)(2)]

(1) Administrative fees are not cumulative, and the total fee assessed for each violation will not exceed $100.00.
(2) Does not include costs payable to the applicable court. In practice, an individual with multiple uncollected transactions is typically only assessed the Submission to Court fee for up to three transactions per court filing.

Depending on when a transaction occurs, an invoice is first sent to the registered owner of the vehicle within 35 days after such transaction, and the recipient has 35 days from the date of the invoice to pay the invoice, including a $1.15 statement fee. If the first invoice is not paid within 35 days, another invoice is sent with an additional $1.15 statement fee. If the second invoice is not paid within 35 days, a violation occurs and a "Notice of Non Payment Fee" of $5 per transaction is added and the two $1.15 statement fees are removed. When an account stays in violation for at least 35 days and is not paid, the Department retains a collection agent to pursue payment. At the collections phase, the $5 fee is replaced with a $25 "Submission to Collection Agency Fee" per transaction. After 35 days in collections, the account is then eligible for court action, where a $100 administrative fee per court filing is added plus costs payable to the applicable court. In practice, an individual with multiple uncollected transactions is typically assessed the $100 administrative fee for up to three transactions per court filing, but all unpaid Tolls and negotiated fees are considered by the court.

The Commission continually monitors and evaluates its fee structure and may adopt additional fees in the future or revise the existing fee structure as it determines to be appropriate. The revenue derived from the fees and charges described above are referred to herein as "*Customer Service Center Revenues*." To the extent such Customer Service Center Revenues are attributable to a particular toll transaction, such Customer Service Center Revenues are allocated to the toll road on which the transaction occurred. The percentage of such Customer Service Center Revenues that are not attributable to a particular toll transaction that constitutes Revenues is determined based on the percentage of Toll revenue generated by the System in relation to the total toll revenue generated from the various toll roads of the Department. Eighty-one percent of the Customer Service Center Revenues not attributable to a particular toll transaction were allocated as System Revenues in Fiscal Year 2014. This allocation is subject to change based on the number of roads for which the Department provides toll operations and the proportion of System Revenues to all revenues derived from such facilities.

Interoperability

The Department and several other tolling entities within Texas, including the North Texas Tollway Authority and Harris County, acting through the Harris County Toll Road Authority, entered into an Interlocal Agreement in 2007 (the "*Interoperability Agreement*") relating to the interoperability of the various toll collection systems within Texas and fees relating thereto. The Interoperability Agreement provides for the use of any tolling entity's toll tag on any other tolling entity's toll road or system and the processing by each agency of tolls for the transactions of their own customers' transponders occurring on toll roads owned by other agencies. The interoperability of toll systems and flow of funds among the parties to the Interoperability Agreement has operated as expected since the implementation of the Interoperability Agreement in 2007. In order to reimburse the costs to

process these transactions and manage customer accounts, by agreement, the processing agency is paid by the owner of the toll road a fee, which is currently 8% of the revenue generated for each interoperable transaction. Interoperability revenue is reconciled and settled monthly between the various toll authorities. Interoperability revenue for the System represented approximately 7.9% and 8.6% of toll revenues in Fiscal Years 2013 and 2014, respectively.

Lockbox and Custodial Agreement

The Department's customer service center receives information from various toll road operators in the State, including the Department-owned toll roads such as the System, regarding the use of toll roads in the State. The Department also provides clearinghouse services and back office functions relating to the operation of certain toll roads including call center operations, account management and maintenance, transponder issuance and replacement for toll roads, invoicing, toll collection, violation processing and enforcement, revenue handling and accounting and customer service support.

In order to properly account for and disburse revenue received as a result of the Interoperability Agreement, the Department executed a Master Lockbox and Custodial Account Agreement (the "*Lockbox and Custodial Agreement*") dated as of November 9, 2007, as amended, with The Bank of New York Mellon Trust Company, National Association, as custodian (the "*Custodian*") to hold, administer and disburse funds from certain lockbox and custodial revenue accounts. Funds received from Department TxTag users, Pay by Mail users and transponder users for non-Department owned toll roads are held by the Custodian in segregated lockbox and revenue accounts and are then disbursed on a daily basis to the appropriate beneficiary. The Custodian, which also serves as the Trustee for the System, will disburse to the Trustee on a daily basis any Revenues received related to the System. The Department is analyzing ways to streamline the flow of funds in the Lockbox and Custodial Agreement to increase transparency and efficiency and the Department currently expects to amend such agreement in 2015.

Other Available System Funds

As of November 30, 2014, approximately $197 million was on deposit in the Construction Fund created under the Master Indenture and held by the Trustee. Such amount is comprised of Department contributions and amounts received from local governments and other entities as well as accumulated interest earnings, but does not constitute proceeds of any Obligations and are not part of the Trust Estate. Approximately $6 million of such amount is being retained to pay for the final costs of acquired right-of-way and utility relocation. Approximately $137 million of such amount may only be used for major capital maintenance of the System. The remaining approximately $54 million in the Construction Fund represents accumulated interest earnings which are available for lawful System purposes.

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Traffic and Revenue Results

The following tables set forth the unaudited total System transactions and Toll revenue by month for Fiscal Years 2010 through 2014.

Table 3 – Historical System Total Transactions[1]
(In Thousands)

	FY 2010[2]		FY 2011[2]		FY 2012[2]		FY 2013		FY 2014	
Month	Total Transactions	% Change Over Prior Year	Total Transactions	% Change Over Prior Year	Total Transactions	% Change Over Prior Year	Total Transactions	% Change Over Prior Year	Total Transactions	% Change Over Prior Year
September	6,529	12%	7,016	7%	7,352	5%	7,951	8%	8,573	8%
October	6,834	9	7,282	7	7,478	3	8,797	18	9,160	4
November	6,539	15	6,979	7	7,310	5	8,805	20	8,854	1
December	6,554	12	7,040	7	7,392	5	8,253	12	8,452	2
January	6,135	10	6,546	7	7,177	10	7,798	9	8,041	3
February	6,015	11	6,431	7	7,248	13	7,684	6	7,928	3
March	7,189	18	7,730	8	8,210	6	8,899	8	9,376	5
April	7,104	15	7,470	5	8,078	8	8,759	8	9,511	9
May	7,153	6	7,563	6	8,467	12	9,124	8	9,754	7
June	7,063	3	7,426	5	8,334	12	8,655	4	9,664	12
July	7,028	3	7,238	3	8,154	13	8,648	6	9,814	13
August	7,251	7	7,467	3	8,674	16	9,135	5	9,922	9
Total	81,393	10	86,188	6	93,874	9	102,507	9	109,049	6

Note: Numbers may not compute due to rounding.

(1) System transactions are shown in the month in which they occur. As used herein, System transactions occur when each vehicle crosses a tolling point within the System, including all ETC, Pay by Mail and non-invoiced transactions. For a discussion of certain truck Toll discounts effective periodically, see "– Toll Discounts – *Truck Tolls*."

(2) Transactions shown include the SH 45N, Loop 1, SH 130 and SH 45SE Elements, including SH 45SE Element transactions while not part of the System. The SH 45SE Element became part of the System effective Fiscal Year 2013.

Table 4 – Historical System Toll Revenue[1]
(In Thousands)

	FY 2010[2]		FY 2011[2]		FY 2012[2]		FY 2013		FY 2014	
Month	Toll Revenue	% Change Over Prior Year	Toll Revenue	% Change Over Prior Year	Toll Revenue	% Change Over Prior Year	Toll Revenue	% Change Over Prior Year	Toll Revenue	% Change Over Prior Year
September	$ 5,459	17%	$ 5,989	10%	$ 6,408	7%	$ 7,131	11%	$11,007	54%
October	5,606	13	6,082	9	6,361	5	7,734	22	11,397	47
November	5,737	29	5,838	2	6,106	5	7,435	22	10,543	42
December	5,562	22	5,976	7	6,319	6	7,056	12	9,237	31
January	5,232	13	5,702	9	5,978	5	8,708	46	9,440	8
February	5,167	14	5,066	-2	6,073	20	7,773	28	9,399	21
March	6,115	23	6,447	5	6,924	7	9,722	40	10,878	12
April	6,220	28	6,439	4	6,684	4	9,615	44	10,776	12
May	6,006	18	6,133	2	7,054	15	10,711	52	10,502	-2
June	6,022	11	6,228	3	6,819	9	10,064	48	12,559	25
July	6,082	8	6,117	1	7,184	17	9,209	28	9,877	7
August	6,147	10	6,401	4	8,031	25	8,826	10	9,549	8
Total	$69,354	17	$72,418	4	$79,941	10	$103,985	30	$125,163	20

Note: Numbers may not compute due to rounding.

(1) Toll revenues from ETC payment method are shown on an accrual basis. Toll revenues from Pay by Mail payment method are shown on a cash basis. Total annual Toll revenue differs from results shown in the audited financials of the System due to adjustment to reflect Pay by Mail revenues earned but not collected, less allowance for doubtful accounts. For a discussion of certain truck toll discounts effective periodically, see "– Toll Discounts – *Truck Tolls*."

(2) Toll revenues shown include the SH 45N, Loop 1, SH 130 and SH 45SE Elements, including SH 45SE Element Toll revenues while not part of the System. The SH 45SE Element became part of the System effective Fiscal Year 2013.

Table 5 – Historical Revenues, Expenses and Debt Service Coverage[1]

	Fiscal Years Ended August 31 (In Thousands)				
	2010[4]	2011[4]	2012[4]	2013	2014
Revenues					
Toll Revenue	$66,136	$68,802	$75,695	$105,848	$130,902
Fee Revenue[2]	7,163	6,062	10,111	13,290	13,312
Interest & Other Revenue[3]	6,371	6,598	6,683	6,121	6,033
Total	79,670	81,462	92,489	125,259	150,247
Debt Service					
First Tier Obligations Debt Service	44,626	42,946	45,772	41,509	41,002
TIFIA Loan Debt Service	18,475	30,082	31,690	33,698	35,022
Total	63,101	73,028	77,462	75,207	76,024
Coverage of First Tier Debt Service by Total Revenues	1.79x	1.90x	2.02x	3.02x	3.66x
Coverage of Total Debt Service by Total Revenues	1.26x	1.12x	1.19x	1.67x	1.98x
Current Revenues in Excess of Current Debt Service	$16,569	$8,434	$15,027	$50,052	$74,223
Transfers (to)/from Commission for Expenses					
Transfers from the Commission to the System[5]	49,859	52,926	55,758	47,954	53,604
Transfers (to) the Commission from the System, excluding transfers to reserves held by the Commission[6]	(15,069)	(6,869)	(516)	(52,308)	(51,529)
Net Transfers (to)/from Commission	34,790	46,057	55,242	(4,353)	2,075
Total Current Fiscal Year Available Revenues[7]	$51,359	$54,491	$70,269	$45,698	$76,298
System Operating, Maintenance and Capital Expenses[8]	$49,860	$52,223	$55,873	$47,380	$52,970

Note: Numbers may not compute due to rounding.

(1) Revenues and expenses are reported on the accrual basis of accounting.
(2) Fee Revenue includes revenues from Customer Service Center fees and charges. For more information, see "– Customer Service Center Revenues – Fees and Charges."
(3) Primarily comprised of interest earnings on the First Tier Debt Service Reserve Fund.
(4) The SH 45SE Element was not part of the System prior to September 1, 2012, and was financed with available funds of the Commission. Revenues and operating and maintenance expenses of the SH 45SE Element are not included in Fiscal Years 2010 through 2012.
(5) Transfers from the Commission represent payments made by the State Highway Fund related to operating, maintenance and capital expenditures of the System. See "SYSTEM-RELATED FUNDING OBLIGATIONS OF COMMISSION."
(6) Transfers to the Commission represent payments by the System to reimburse the State Highway Fund for operating, maintenance and capital expenses. These payments exclude certain transfers to reserves held by the Commission outside of the Indenture. These reserves are required to be funded at two months of the ensuing year's budgeted operating, maintenance and capital expenses. As of Fiscal Year end 2014, these reserves totaled approximately $25.6 million representing approximately 5.6 months in budgeted operating, maintenance and capital expenses (the two month requirement is approximately $9.1 million).
(7) Represents Revenues of the System after payment of Debt Service plus Net Transfers (to)/from the Commission.
(8) Operations, maintenance and capital expenses shown do not reflect depreciation.

System Forecasted Cash Flow and Debt Service Coverage

Table 6 on the following page shows forecasted Revenues of the System for the Fiscal Years 2015 through 2042 as estimated by the Traffic Consultant based upon their 2014 Traffic and Revenue Study, including investment and other earnings for the same period as estimated by the Commission and Operating Expenses, Maintenance Expenses and Capital Expenditures as estimated by the System's General Engineering Consultant, Atkins North America, Inc. Based on the forecasted Revenues and the Debt Service Requirements for the Obligations to be Outstanding after the issuance of the Bonds, estimated debt service coverage for each of the following periods is set forth in the table on the following page. See "SCHEDULE II – DEBT SERVICE REQUIREMENTS" for the debt service requirements with respect to the Outstanding Obligations, including the Bonds and excluding the Refunded Obligations. See "APPENDIX D – CENTRAL TEXAS TURNPIKE SYSTEM 2014 TRAFFIC AND REVENUE STUDY."

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Table 6 – System Forecasted Cash Flow and Debt Service Coverage (dollar amounts shown in millions)

Fiscal Year	Revenues[1]	1st Tier Debt Service[2]	1st Tier Coverage	Second Tier Debt Service[2]	All Debt Service Coverage	Revenues In Excess Of Debt Service	Total O&M Costs[3]	Capital Costs[4]	Remaining Revenues[5]
2015	$ 163.67	$ 47.67	3.43x	$ 30.70	2.09x	$ 85.30	$ 53.95	$ 1.27	$ 30.09
2016	176.90	50.93	3.47x	57.87	1.63x	68.10	56.61	2.07	9.42
2017	189.70	57.07	3.32x	57.87	1.65x	74.76	58.12	2.20	14.43
2018	202.65	63.41	3.20x	57.87	1.67x	81.37	59.66	2.39	19.32
2019	215.53	69.55	3.10x	57.87	1.69x	88.11	63.53	2.23	22.35
2020	228.09	75.90	3.01x	57.87	1.71x	94.32	65.64	0.63	28.05
2021	240.96	85.67	2.81x	57.87	1.68x	97.43	67.97	3.75	25.71
2022	254.39	92.34	2.76x	60.07	1.67x	101.99	70.55	1.56	29.88
2023	263.64	98.13	2.69x	63.13	1.63x	102.38	73.30	4.39	24.69
2024	278.35	103.91	2.68x	66.14	1.64x	108.30	76.21	5.58	26.50
2025	293.67	109.60	2.68x	69.30	1.64x	114.77	79.32	0.72	34.73
2026	310.18	126.39	2.45x	66.27	1.61x	117.52	82.63	0.74	34.15
2027	327.70	133.54	2.45x	70.00	1.61x	124.16	86.06	35.69	2.40
2028	346.01	141.02	2.45x	68.64	1.65x	136.35	89.64	15.27	31.44
2029	365.14	146.23	2.50x	69.20	1.69x	149.72	93.36	19.49	36.87
2030	385.13	151.21	2.55x	70.14	1.74x	163.79	97.22	12.53	54.03
2031	405.70	49.19	8.25x	178.25	1.78x	178.27	101.07	5.75	71.45
2032	427.03	89.19	4.79x	144.50	1.83x	193.34	104.98	2.15	86.21
2033	449.34	47.19	9.52x	192.93	1.87x	209.22	109.03	0.91	99.28
2034	472.65	47.19	10.02x	184.50	2.04x	240.97	113.24	4.19	123.54
2035	497.03	160.71	3.09x	92.73	1.96x	243.60	117.60	5.20	120.80
2036	522.50	186.01	2.81x	74.47	2.01x	262.02	122.13	1.00	138.90
2037	549.13	180.28	3.05x	87.35	2.05x	281.49	126.83	8.14	146.52
2038	576.95	162.52	3.55x	105.98	2.15x	308.45	131.70	4.99	171.76
2039	606.03	193.77	3.13x	74.73	2.26x	337.53	136.76	11.62	189.15
2040	636.41	193.77	3.28x	74.73	2.37x	367.91	142.00	1.12	224.78
2041	666.85	193.77	3.44x	74.73	2.48x	398.36	147.43	5.78	245.15
2042	876.03	193.77	4.52x	74.73	3.26x	607.53	153.05	2.98	451.50
	$10,927.37	$ 3,249.89		$ 2,340.41		$ 5,337.07	$ 2,679.57	$ 164.39	$ 2,493.11

Note: Numbers may not compute due to rounding

(1) Revenues shown in this table constitute "Revenues" as defined in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Sources of Payments – *Revenues,*" which include Tolls, Customer Service Center Revenues and interest earning on the First Tier Debt Service Reserve Fund, the Second Tier Debt Service Reserve Fund and Rate Stabilization Fund. Except as detailed below, interest earnings on money in the Rate Stabilization Fund, First Tier Debt Service Reserve Fund and Second Tier Debt Service Reserve Fund are assumed to be 1.0% per annum. Through Fiscal Year 2022, approximately $115 million of the First Tier Debt Service Reserve Fund will be invested pursuant to the Citigroup Master Repurchase Agreement and will earn 5.2% per annum. Interest earnings are assumed to be $7.3 million through Fiscal Year 2022 and $2.5 million thereafter. See "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts – *First Tier Debt Service Reserve Fund."* Fiscal Year 2042 Revenues include the balances of the First Tier Debt Service Reserve Fund and the Second Tier Debt Service Reserve Fund. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Funds and Accounts." Toll revenues are derived from the projections in the 2014 Traffic and Revenue Study and are based on certain assumptions described therein. There can be no assurance that the Toll revenue projections will be realized. See "RISK FACTORS – Traffic and Revenue Forecasts."

(2) Includes the Bonds and excludes the Refunded Obligations. For estimation purposes, debt service associated with the Series 2015-A Bonds after the end of the Initial Multiannual Period assumes a 5% interest rate, with principal of the Series 2015-A Bonds to be paid in mandatory sinking fund installments and at maturity.

(3) Operating Expenses exclude indirect costs of the Department to be paid from general Department funds. Operating expenses have been estimated by the Department and the System's General Engineering Consultant, Atkins North America, Inc.

(4) Increases in reserve capital expenditures in certain fiscal years include major scheduled maintenance for gantries, guardrails, lighting, pavement and toll equipment. See "– Other Available System Funds."

(5) Revenues remaining after all required deposits under the Master Indenture are to be deposited in the General Reserve Fund. For a description of the General Reserve Fund's application, see "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Funds and Accounts – *General Reserve Fund.*"

Financial Statements

The audited financial statements of the System for Fiscal Year 2014 are attached hereto as Appendix A. See "APPENDIX A – AUDITED FINANCIAL STATEMENTS OF THE SYSTEM FOR FISCAL YEAR ENDED AUGUST 31, 2014."

The System's financial statements for Fiscal Year 2014 have been audited by Crowe Horwath LLP. Crowe Horwath LLP has not reviewed, commented on or approved, and is not associated with, this Official Statement. Crowe Horwath LLP has not performed any procedures on such financial statements since the date of such report, and has not performed any procedures on any other financial information of the System, including without limitation, any of the information contained in this Official Statement, and has not been asked to consent to the inclusion of its report, or otherwise be associated with this Official Statement.

Inspection of the System

Pursuant to the Master Indenture, the Commission is required to cause the General Engineering Consultant to make an inspection of the System at least once in each Fiscal Year. Atkins North America, Inc., the current General Engineering Consultant, submitted to the Commission its Central Texas Turnpike Project Annual Inspection Report dated May 9, 2014 (the "*2014 Inspection Report*") for Fiscal Year 2014, which is the seventh annual inspection of the System since it opened to traffic.

The 2014 Inspection Report noted that the condition of the System was excellent with an overall rating of 95 out of 100. The complete 2014 Inspection Report is available online in the Investors Section at http://txdot.gov/business/investors.html. The information contained on (or accessed through) such website is not incorporated herein and should not be construed as part of this Official Statement.

Insurance for the System

The Commission has covenanted in the Master Indenture to insure the System and its use and operation at all times in such amounts, subject to such exceptions and deductibles and against such risks, as are customary for similar organizations, including business interruption insurance. Such insurance must be effected through policies written by responsible insurance companies or a self-insurance program that is actuarially sound in the opinion of an accredited actuary filed with the Trustee annually. Since Substantial Completion of the 2002 Project, the Department has maintained a self-insurance program (the "*SIP*") taking into account available amounts in the Rate Stabilization Fund to satisfy this requirement. As of November 30, 2014, the Rate Stabilization Fund contained approximately $67.8 million, and the Department currently intends to use the balance in the Rate Stabilization Fund, if necessary, together with other available funds to continue to provide self-insurance for the System.

The adequacy of the SIP is reviewed annually by an accredited actuary, most recently in a June 30, 2014 report by Madison Consulting Group, Inc. (the "*Insurance Consultant*"). In such report, the Insurance Consultant assumed that the SIP was designed to provide (i) up to $65 million in coverage, in excess of a $5 million per claim deductible, (ii) coverage in a manner consistent with a standard special form commercial multi-peril policy and (iii) business interruption insurance resulting from physical damage to the System's property covered by a standard special form commercial multi-peril policy. Based on such assumptions, the Insurance Consultant concluded that there is no liability for unpaid claims of the SIP as of June 30, 2014 and that the Rate Stabilization Fund provides adequate access to funds to support the SIP in an actuarially sound and prudent manner for the twelve-month period from July 1, 2014 to June 30, 2015. In its review of the adequacy of the SIP, the Insurance Consultant also found such coverage to be reasonable and customary for similar organizations. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Particular Covenants – *Insurance*."

2014 TRAFFIC AND REVENUE STUDY

Traffic Consultant's Executive Summary

Stantec Consulting Services Inc. ("*Stantec*"), the current Traffic Consultant for the System, has prepared the 2014 Traffic and Revenue Study in connection with the issuance of the Bonds. Stantec's summary below of the 2014 Traffic and Revenue Study does not purport to be comprehensive or definitive and is qualified in its entirety by reference to the 2014 Traffic and Revenue Study. The 2014 Traffic and Revenue Study is attached hereto as "APPENDIX D – CENTRAL TEXAS TURNPIKE SYSTEM 2014 TRAFFIC AND REVENUE STUDY."

The 2014 Traffic and Revenue Study shows that total System transactions in Fiscal Years 2013 and 2014 were, respectively, 15.4% and 17.6% higher than Stantec's previous traffic and revenue study on the System, its Central Texas Turnpike System 2012 Traffic and Revenue Forecast, dated October 23, 2012 (the "*2012 Update*"), despite toll increases in January 2013 and January 2014. Total operating revenues (Toll revenue and Customer Service Center Revenue) of the System for Fiscal Years 2013 and 2014 were, respectively, 9.5% and 9.2% higher than the 2012 Update forecasts.

For the 2014 Traffic and Revenue Study, the travel demand modeling process used for the past 15 years to forecast System traffic was updated by Stantec to reflect population and employment growth in the Austin region and the expansion of the Austin area toll road system. Future toll rates are based on (a) the Commission's toll escalation policy adopted in 2012 and first implemented in January 2014, whereby Tolls are escalated annually based on changes in the CPI absent further Commission action and (b) assumptions regarding future growth of the CPI. See "THE SYSTEM – Toll Escalation Policy." Annual CPI-based toll increases and Pay by Mail surcharges are consistent with other toll roads in the Austin area.

Strong development trends in the modeled study area which includes Austin and San Antonio, particularly in the various toll road corridors, have exceeded statewide and national trends. Population in the study area grew at an annual average rate of 2.6% between 2010 and 2013 while employment grew at 3.1% in 2012 and 3.7% in 2013. Future growth in such area is expected by Stantec to be concentrated in the System toll road corridors. An additional factor contributing to Stantec's expected System transaction growth is its forecast of increased congestion on IH 35 and other roads in the regional highway network, increasing forecasted demand for the System.

Over the forecast period, Fiscal Years 2015 to 2042, the 2014 Traffic and Revenue Study forecasts an increase in total transactions when compared to those projected in the 2012 Update, while the Revenue forecast in the 2014 Traffic and Revenue Study is similar to the 2012 Update's forecast. The 2014 Traffic and Revenue Study's annual transaction forecasts range from 15% to 23% higher than those forecasted by the 2012 Update, with a declining difference in the later years of the forecast period. Revenue forecasts of the 2014 Traffic and Revenue Study are approximately 13% higher in Fiscal Year 2015 and the higher revenue values then gradually transition towards forecasted revenues from the 2012 Update. By Fiscal Year 2030 the revenue estimates from the 2014 Traffic and Revenue Study are nearly equal to the 2012 Update, and thereafter revenue estimates from the 2014 Traffic and Revenue Study gradually increase until the end of the forecast period.

The gradual decline in the forecasted rate of revenue growth in the 2014 Traffic and Revenue Study compared to the 2012 Update is due to several changes in the forecasting assumptions from the conditions used in the 2012 Update. These changes include (i) lower CPI-based toll escalation rates in the early forecast years, (ii) lower ETC transactions as a percent of total transactions in the early forecast years reflecting the decline experienced during the transition to a cashless payment system in 2013 and transition to a new back office system in 2014; and (iii) lower collection rates for Pay by Mail transactions reflecting the near-term impact resulting from the conversion to a new back office system, although collection experience is expected by the Department to improve due to a new performance-based contract and added toll enforcement efforts.

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The forecasts in the 2014 Traffic and Revenue Study are shown for selected years in Table 7 below. Annual data are shown in "APPENDIX D – CENTRAL TEXAS TURNPIKE SYSTEM 2014 TRAFFIC AND REVENUE STUDY."

Table 7 – Forecasts of System Transactions and Toll Revenue (in thousands)

Fiscal Year	Total Transactions	Average Annual Growth Rate[1]	Toll Revenue[2]	Average Annual Growth Rate[1]
2015	121,820	11.7%	$140,665	12.4%
2020	152,156	4.5	201,669	7.5
2025	177,189	3.1	268,800	5.9
2030	202,874	2.7	356,850	5.8
2035	224,750	2.1	465,962	5.5
2040	246,847	1.9	602,557	5.3

Note: Numbers may not compute due to rounding.

(1) Average Annual Growth Rate for Fiscal Year 2015 represents the annual growth rate relative to Fiscal Year 2014. Average Annual Growth Rates for all other Fiscal Years shown in the table are calculated as the average of annual growth rates over the immediately preceding five year period.

(2) Revenue includes Pay by Mail surcharge (33% of ETC Tolls).

While the traffic and revenue forecasts within the 2014 Traffic and Revenue Study are stated year-by-year, they are intended to show the trends that may reasonably be anticipated on the basis of the assumptions described in the 2014 Traffic and Revenue Study. **For a discussion of certain factors that may impact the 2014 Traffic and Revenue Study's forecasted results, including the realization of the assumptions described therein, see "RISK FACTORS" herein.**

Traffic Consultant

Stantec, founded in 1954, provides professional consulting services in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics for infrastructure and facilities projects, including studies within the Austin area over the past 15 years. Stantec supports public and private sector clients in a diverse range of markets, at every stage, from initial concept and financial feasibility to project completion and beyond. Stantec services are offered through approximately 15,000 employees operating out of more than 230 locations in North America. Stantec trades on the New York Stock Exchange and on the Toronto Stock Exchange under the symbol STN.

Stantec has prepared traffic and revenue financing studies that have been the basis for the sale of more than $38 billion in revenue bonds. Drawing upon a depth in transportation planning and over 30 years of experience in the toll facility industry, Stantec staff advises clients on establishing screening criteria for potential toll facility corridors, completing traffic and revenue analyses at the investment-grade level, developing financial plans and appropriate toll structures, determining the extent to which a proposed toll facility could provide financing for itself and/or other highway projects, maximizing revenue potential, planning and designing for the future, and solving operational problems.

CONSIDERATIONS REGARDING SYSTEM ELEMENTS

Expansion of the System

The System will include any future Project to expand, enlarge or extend the System, any future Project pooled with the System pursuant to Texas Transportation Code, Chapter 228 and any other roads, bridges, tunnels or other toll facilities for which the Commission has operational responsibility and is collecting Tolls, unless the Commission declares in writing, delivered to the Trustee, that such roads, bridges, tunnels or other toll facilities are not part of the System for the purposes of the Master Indenture. The Commission currently has no plans to expand the System.

Future Development of IH 35 Corridor

IH 35 Advisory Committee Report. In 2008, the Commission appointed an advisory committee comprised of business professionals, environmental planners, rail advocates, professors, local officials and residents that live and do business in the IH 35 corridor to develop a grassroots planning process for looking at the short-term and long-term needs in the IH 35 corridor in the Austin metropolitan area. In its report dated August 2011, the advisory committee presented its recommendations for projects and policies related to the IH 35 corridor in the Austin area. The August 2011 report contains a number of recommendations to address congestion in the Austin area, including: (i) converting one general purpose lane on IH 35 in each direction to a minimum of one dynamically priced managed lane and two non-tolled lanes in each direction from SH 195 to SH 45SE and re-designating the facility from an interstate to a non-interstate facility, (ii) widening the SH 130 Element to six lanes, removing the tolls and re-designating a portion of SH 130 from Georgetown to SH 45SE as IH 35 and (iii) widening SH 45SE to six lanes, removing tolls and re-designating SH 45SE to IH 35. The advisory committee noted that because of the complexity of this recommendation, an estimated cost could not be determined.

The Commission has taken no action related to the report. No assurance can be given whether any of the report's recommendations will ever be implemented. Additional information regarding the advisory committee and its report can be found at http://www.my35.org by following the links about "my35" and "Advisory Committee." The information contained on (or accessed through) such website is not incorporated herein and should not be construed as part of this Official Statement.

Possible IH 35 Improvements. Still in the early development and review stages are capacity improvements to a 65-mile segment of IH 35 from Georgetown to San Marcos. The potential project or series of projects (named Mobility 35), if implemented, would include the addition of one lane in each direction for the full distance. Recent study results indicate the best use of this lane would be a tolled express lane. The overall scope of the possible improvements includes many separate elements which include some isolated improvements of independent utility such as auxiliary lanes and collector-distributor lanes at critical locations, some of which may be ready for construction bidding in 2015. Preliminary cost estimates for collective possible improvements exceed $4.0 billion, with funding yet to be identified. Due to the congested traffic conditions on IH 35 in the greater Austin area, project improvements contemplated by Mobility 35, if built, would likely be built in phases, with the most critical segment in central Austin contingent on the construction of other improvements that would provide additional capacity as bypasses during the construction phase, among other factors. Those contingent facilities include the Bergstrom Expressway and the MoPac improvements currently being developed by the Central Texas Regional Mobility Authority (both assumed by the 2014 Traffic and Revenue Study to be completed by 2020).

The collective improvements contemplated by Mobility 35 could be constructed in seven to ten years, and the segment in central Austin could be initiated in 2021 and completed by 2025; however, funding sources have not yet been identified. Given that construction of major improvements would require significant detours of existing traffic for extensive periods of time, it is anticipated by Stantec that, should this project actually be constructed, it would have a potential positive impact on System traffic and revenue during the construction period. Given the uncertainty of the project, the significant construction costs and the lack of committed funding, this project is not assumed to be constructed for purposes of the 2014 Traffic and Revenue Study. Accordingly, no assurance can be given that any future improvements to the IH 35 corridor in the greater Austin area will or will not be constructed or, if constructed, whether they will have a negative, neutral or positive effect on the System in the long term.

IH 35 Austin Project Feasibility Comparative Analysis. In October 2014, the Department executed a contract for a comparative analysis of project feasibility of key elements of proposed IH 35 improvements in the greater Austin area, known as the IH 35 Austin project (the "*IH 35 Study*"), components of which are included in Mobility 35. The IH 35 Austin project includes consideration of a tolled express lane in each direction along the portion of IH 35 in Travis County and adjacent counties from SH 45N to SH 45SE extending approximately 30 miles in length. Most of the corridor has at least three main lanes and a typical minimum of three frontage road lanes each for north and southbound traffic. There are several major freeway connections (US 183, US 290E and US 290W/SH71) along the corridor with SH 45N and SH 45SE at the terminus.

The IH 35 Study will include the analysis of project delivery alternatives and the project feasibility of those alternatives, including the determination of reasonable assumptions for revenues and construction costs, operating and maintenance expenses as well as a risk profile for each financing structure analyzed. Financial and cost models for the most viable alternatives, number and phasing of individual improvements in the IH 35 Austin project corridor as well as the most preferred delivery method for each alternative may be developed. The IH 35 Study in tandem with additional technical, environmental and operational studies will direct how the corridor may be developed in the future.

The final feasibility, nature and scope of the improvements to the IH 35 Austin corridor have not yet been determined by the Commission. Due to the time expected to be required to obtain environmental approvals and to design, contract for, and construct any such improvements between SH 45N and SH 45SE, the Department expects any feasibility review of such a project to assume that it would not be open to traffic in its entirety until after 2025, if delivered as a single-phase project, or later, if delivered in multiple phases. Due to the preliminary nature of the project feasibility and delivery process, the analysis may pause at certain points to allow the State and stakeholders to further evaluate and determine the appropriate course of action or may be terminated entirely. No assurance can be given whether any of the findings of the study will or will not ever be implemented and, if implemented, whether they will have a negative, neutral or positive effect on the System in the long term. Additional information regarding the development of the IH 35 corridor in the Austin area can be found at http://www.my35.org. The information contained on (or accessed through) such website is not incorporated herein and should not be construed as part of this Official Statement.

System Transfer Conditions

Transfer to Governmental Toll Agency Considerations. Pursuant to Section 718 of the Master Indenture, the Commission has reserved the right to transfer all or a portion of the System, including revenue-producing portions of the System to another governmental tolling agency. Any such transfer of a portion of the System could occur without the retirement or redemption of all or a portion of the then Outstanding Obligations, including the Bonds. In connection with any such transfer of a part of the System, the Commission must comply with the transfer requirements set forth in the Master Indenture, including (a) confirmation of the ratings assigned to the then Outstanding Obligations, (b) a resulting Projected Debt Service Coverage Ratio that would be sufficient to permit each of the then Outstanding Obligations to be reissued in compliance with the terms of the Master Indenture and (c) repayment to the State Highway Fund of moneys paid by the Department for the design, construction, operation and maintenance of the transferred portion of the System, estimated to be $1.06 billion for the System as a whole as of August 31, 2014. See "GENERAL INFORMATION REGARDING THE BONDS – Special Redemption" as well as "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Reservation of Right to Transfer System" for a complete description of all conditions in connection with such partial transfer.

State Law Conditions Regarding the Transfer of all or a Part of the System. The Texas Transportation Code, as outlined below, sets forth the following statutory requirements, among others, that must be met, in addition to the conditions set forth in Section 718 of the Master Indenture, prior to any sale, conveyance or other disposition of all or any part of the System to another governmental tolling agency: (i) Section 228.151 of the Transportation Code requires that the Commission and the Governor of the State of Texas must approve such actions as being in the best interest of the State and the entity receiving the toll project element or system; (ii) Section 228.152 of the Texas Transportation Code further requires that an agreement to sell or convey a toll project element or system must provide for the discharge and final payment or redemption of outstanding bond indebtedness allocable to the element or system transferred (after issuance of the Bonds, there will remain $2.6 billion aggregate principal amount of debt outstanding in connection with the System); (iii) Section 228.153 of the Texas Transportation Code requires that the agreement to sell or convey a toll project element or system must provide for the repayment of any expenditures of the Department for financing, design, development, construction, operation or maintenance of the portion of a toll project element or system transferred which expenditures have not been reimbursed with the proceeds of bonds originally issued for such toll project element or system unless the Commission waives repayment of all or a portion of the expenditures if it finds that the transfer will result in substantial net benefits to the State, the Department and the public that equal or exceed the amount of repayment waived (as of August 31, 2014, the Department had expended an estimated $1.06 billion in connection with the construction, operation and maintenance of the System as a whole); and (iv) Section 228.154 of the Texas Transportation Code requires an

agreement for the lease, sale or conveyance of a toll project element or system to be submitted to the Attorney General of the State of Texas for approval as part of the record of proceedings relating to the issuance of bonds of the governmental entity acquiring such toll project element or system. These provisions may be amended by future legislation.

Transfer Due to Concession or Other Public-Private Partnership Arrangements. Except as described above under "– *Transfer to Governmental Toll Agency Considerations*," the Commission is not permitted under the Master Indenture to transfer all or any part of the System, including in connection with a public-private partnership arrangement. Additionally, the Commission and the Department do not currently have legislative authority to enter into a concession or other public-private partnership arrangement in connection with the System.

If legislation is enacted in the future to authorize public-private partnership arrangement for the System, an analysis would be undertaken at that time to determine whether such a public-private partnership arrangement is feasible for the System considering the factors at that time including the existing contractual commitments the Department has in place with other toll roads in the Central Texas area. Additionally, to ensure compliance with the Commission's covenant to maintain the tax-exempt status of the outstanding Obligations, the Commission may be required to redeem and/or defease all outstanding Obligations if the Department implements a public-private partnership arrangement for the System. The Commission and the Department cannot predict whether legislation to authorize a transfer of the System pursuant to a public-private partnership arrangement would be enacted into law or what impact such legislation would have on the System. See "GENERAL INFORMATION REGARDING THE BONDS – Special Redemption."

SOURCES OF PAYMENT AND SECURITY FOR THE BONDS

Sources of Payment

Special, Limited Obligations. The First Tier Obligations, including the Series 2015-A Bonds and the Series 2015-B Bonds, are special, limited obligations of the Commission and are payable solely from, and equally and ratably secured by a first lien on, pledge of and security interest in: (i) all Revenues and, to the extent set forth in a Supplemental Indenture, any Additional Obligation Security; (ii) all money, including investment earnings, deposited into any fund or account held by the Trustee under the Indenture as described below and in "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Granting Clauses"; (iii) any insurance proceeds and other money required to be deposited in the pledged funds listed in (ii) above; and (iv) all payments received by the Commission pursuant to any Approved Swap Agreements with respect to First Tier Obligations, all subject to the provisions in the Master Indenture limiting the use of funds and accounts (collectively, the "*Trust Estate*").

The Second Tier Obligations, which initially consists only of the Series 2015-C Bonds, are special, limited obligations of the Commission payable solely from, and equally and ratably secured by a lien on, pledge of and security interest in the Trust Estate, but the lien, pledge and security interest securing the Second Tier Obligations is subordinate and junior to the lien, pledge and security interest securing the First Tier Obligations.

The Commission may issue in the future Subordinate Lien Obligations under the Master Indenture which, if issued, will also be special, limited obligations of the Commission payable solely from, and secured solely by, a lien on, pledge of and security interest in the Trust Estate subordinate to the lien on, pledge and security interest in the Trust Estate pledged for the security and payment of the First Tier Obligations and the Second Tier Obligations. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Limitations on Other Indebtedness."

Consistent with the pledge of and security interest in the Trust Estate, debt service on Obligations, including the Bonds, is paid prior to the payment of Operating Expenses and Maintenance Expenses. See "SYSTEM-RELATED FUNDING OBLIGATIONS OF COMMISSION."

Notwithstanding the foregoing, money deposited to the First Tier Debt Service Fund or First Tier Debt Service Reserve Fund may ***not*** be applied to pay any Obligations other than First Tier Obligations and money in the

Second Tier Debt Service Fund or Second Tier Debt Service Reserve Fund may ***not*** be applied to any Obligations other than Second Tier Obligations so long as Obligations of such tier are outstanding.

NONE OF THE STATE, THE COMMISSION, THE DEPARTMENT OR ANY OTHER AGENCY OR POLITICAL SUBDIVISION OF THE STATE IS OBLIGATED TO PAY THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE BONDS EXCEPT THE COMMISSION SOLELY FROM THE TRUST ESTATE. NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OR ANY AGENCY OR POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE BONDS. NEITHER THE COMMISSION NOR THE DEPARTMENT HAS ANY TAXING POWER. THE INDENTURE DOES NOT CREATE A MORTGAGE ON THE SYSTEM.

Other than the pledge of the Trust Estate, the Commission has not mortgaged, assigned or pledged any interest in any real or personal property or improvements, including any interest in the System or any expansions or extensions thereto, as security for payment of the Bonds.

Revenues. "*Revenues*" consist of all income and revenues derived from the operation of the System, including (a) all rates, rents, fees, charges, fines and other income derived by the Commission from vehicular usage of the System together with all rights of the Commission to receive the same (collectively, the "*Tolls*") received by or on behalf of the Commission, (b) any other sources of revenues or funds of the Commission derived from or attributable to the System or from the ownership or the holding of certain properties constituting a part of the System, (c) the proceeds of any insurance covering business-interruption loss relating to the System, (d) any other sources of revenues or funds of the Commission that the Commission chooses to designate as Revenues pursuant to a Supplemental Indenture, (e) the interest and income earned on any fund or account in which said interest or income is required to be credited to the Revenue Fund created under the Master Indenture and (f) transfers of excess funds from the Rate Stabilization Fund to the Revenue Fund as described under "– Funds and Accounts – *Rate Stabilization Fund*." "*Revenues*" do not include any Additional Obligation Security.

Interoperability, Lockbox and Other Agreements. The Master Indenture authorizes the Commission and the Department to enter into agreements with other entities with respect to the collection of Tolls or advances or prepayment of Tolls charged for trips over all or a portion of the System and to promote and maintain interoperability of all toll facilities within the State. Amounts received by the Commission and the Department from any such entity under such agreements less any interoperability fees are required to be deposited in the Revenue Fund and will constitute Revenues to the extent the Commission is not required to pay such amounts to another entity in accordance with such agreements. The Department has entered into an Interoperability Agreement with other toll agencies. See "THE SYSTEM – Interoperability." The Lockbox and Custodial Agreement holds, administers and disburses funds from certain lockbox and custodial revenue accounts. Funds received from Department TxTag users, Pay by Mail users and ETC transponder users from non-Department owned toll roads are held by the Custodian in segregated lockbox and revenue accounts and are then disbursed on a daily basis to the appropriate beneficiary including any Revenues of the System to the Trustee of the Bonds. See "THE SYSTEM – Lockbox and Custodial Agreement."

Funds and Accounts

The Master Indenture establishes the "Revenue Fund," the "Rebate Fund," the "First Tier Debt Service Fund," the "First Tier Debt Service Reserve Fund," the "Second Tier Debt Service Fund," the "Second Tier Debt Service Reserve Fund," the "Subordinate Lien Debt Service Fund," the "Rate Stabilization Fund," the "General Reserve Fund" and the "Construction Fund," all of which are held by the Trustee. The Master Indenture also establishes the "Operating Account," the "Maintenance Account" and the "Reserve Maintenance Account," each to be held by the Commission outside of the Master Indenture. For additional details regarding the purpose and function of the various funds and accounts established pursuant to the Indenture and the flow of Revenues through such funds and accounts, see "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Funds and Accounts."

First Tier Debt Service Reserve Fund. Money, investments and any First Tier DSRF Security (as defined below) held in the First Tier Debt Service Reserve Fund will be held and used for the purpose of paying interest on,

maturing principal of, and mandatory sinking fund redemption price of First Tier Obligations whenever and to the extent that the money held for the credit of the First Tier Debt Service Fund, after making all required transfers from other Funds, is insufficient for such purpose.

The "*First Tier Debt Service Reserve Requirement*" is an amount equal to the least of (i) the maximum Annual Debt Service of all First Tier Obligations, (ii) 1.25 times the Average Annual Debt Service of all First Tier Obligations or (iii) 10% of the aggregate amount of the Outstanding First Tier Obligations, as determined on the date each Series of First Tier Obligations is issued. The First Tier Debt Service Reserve Requirement was funded with proceeds of the Obligations issued to finance the 2002 Project. If at any time the money and the principal amount of any First Tier DSRF Security held in the First Tier Debt Service Reserve Fund exceeds the First Tier Debt Service Reserve Requirement, subject to receipt of an opinion of Bond Counsel to the effect that such transfer and use will not adversely affect the tax treatment of any Outstanding Obligations, the Commission will direct whether such excess money is to be transferred by the Trustee to the credit of the First Tier Debt Service Fund, used to reduce the principal amount of any First Tier DSRF Security, if any, or, to the extent that such excess was derived from Revenues, transferred to the Revenue Fund or the General Reserve Fund.

In lieu of the deposit of money into the First Tier Debt Service Reserve Fund, the Commission may cause to be provided a surety bond, an insurance policy, a letter of credit or similar financial instrument (each, a "*First Tier DSRF Security*") payable to the Trustee for the benefit of the Secured Owners in an amount equal to the difference between the First Tier Debt Service Reserve Requirement and the amounts then on deposit in the First Tier Debt Service Reserve Fund. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Funds and Accounts – *First Tier Debt Service Reserve Fund*." There is currently no First Tier DSRF Security.

As of November 30, 2014, approximately $125 million in investments was on deposit in the First Tier Debt Service Reserve Fund. In 2002, the Commission entered into a Master Repurchase Agreement (the "*Master Repurchase Agreement*") with Salomon Brothers Holding Company, and now with Citigroup Global Markets Holdings Inc. ("*Citigroup Holdings*"), with Citigroup Inc. ("*Citigroup*") acting as guarantor of Citigroup Holdings' obligations, as an investment of approximately $115 million in the First Tier Debt Service Reserve Fund to provide a fixed rate of return of 5.2% per annum through August 15, 2022. The First Tier Debt Service Reserve Fund also contains approximately $10 million invested in a J.P. Morgan U.S. government money market fund.

The Master Repurchase Agreement requires Citigroup Holdings to deliver securities to a custodian to secure its obligations to the Commission. As of November 30, 2014, Citigroup's long-term senior unsecured debt ratings were "Baa2" with a stable outlook by Moody's, "A-" with a negative outlook by S&P and "A" with a stable outlook by Fitch. Citigroup Holdings has provided notice of prior downgrades to the Commission, and as a result has delivered additional securities to the Commission as collateral, in an amount equal to 104% of the par amount of the Master Repurchase Agreement. The Commission has taken no additional action regarding such rating downgrades.

Second Tier Debt Service Reserve Fund. A Second Tier Debt Service Reserve Fund is being established in connection with, and funded from a portion of, the proceeds of the Series 2015-C Bonds pursuant to the Seventh Supplemental Indenture. One or more Second Tier Debt Service Reserve Funds may be created with respect to each Series of Additional Second Tier Obligations issued pursuant to any Supplemental Indenture. Money, investments and any Second Tier DSRF Security (as defined below), if any, held in the Second Tier Debt Service Reserve Fund will be held and used for the purpose of paying interest on, maturing principal of, and mandatory sinking fund redemption price of all outstanding Second Tier Obligations (unless excluded by a Supplemental Indenture) whenever and to the extent that the money held for the credit of the Second Tier Debt Service Fund, after making all required transfers from other Funds, is insufficient for such purpose. The Second Tier Debt Service Reserve Fund and the Second Tier Debt Service Reserve Fund Requirement, defined below, are both applicable to all Second Tier Obligations issued unless a series of Second Tier Obligation is specifically excluded pursuant to a Supplemental Indenture.

The "*Second Tier Debt Service Reserve Fund Requirement*" is an amount equal to the least of (i) 50% of maximum Annual Debt Service of all Second Tier Obligations, (ii) 50% of 125% Average Annual Debt Service of all Second Tier Obligations or (iii) 5% of aggregate par amount of the Outstanding Second Tier Obligations, as

determined on the date each Series of Second Tier Obligations are issued. If at any time the money and the principal amount of any Second Tier DSRF Security held in the Second Tier Debt Service Reserve Fund exceeds the Second Tier Debt Service Reserve Requirement, subject to receipt of an opinion of Bond Counsel to the effect that such transfer and use will not adversely affect the tax treatment of any Outstanding Obligations, the Commission will direct whether such excess money is to be transferred by the Trustee to the credit of the Second Tier Debt Service Fund, used to reduce the principal amount of any Second Tier DSRF Security or, to the extent that such excess was derived from Revenues, transferred to the Revenue Fund or the General Reserve Fund. Upon delivery of the Bonds, a portion of the proceeds of the Series 2015-C Bonds will be deposited into the Second Tier Debt Service Reserve Fund to fund the Second Tier Debt Service Reserve Fund Requirement. See "SOURCES AND USES OF FUNDS."

In lieu of the deposit of money into the Second Tier Debt Service Reserve Fund, the Commission may cause to be provided a surety bond, an insurance policy, a letter of credit or similar financial instrument (each, a "*Second Tier DSRF Security*") payable to the Trustee for the benefit of the Secured Owners in an amount equal to the difference between the Second Tier Debt Service Reserve Requirement and the amounts then on deposit in the Second Tier Debt Service Reserve Fund. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Funds and Accounts – *Second Tier Debt Service Reserve Fund*."

Rate Stabilization Fund. The Commission has covenanted in the Master Indenture to accumulate and maintain funds at least equal to the Rate Stabilization Fund Requirement in the Rate Stabilization Fund as described below. Money held in the Rate Stabilization Fund is intended to enable the Commission to allow rates and charges associated with the System to remain competitive and reasonable.

Rate Stabilization Fund Requirement. Except as described below, for so long as the Series 2002-A Bonds remain outstanding, the Rate Stabilization Fund Requirement will be equal to approximately $67.86 million, which represents all Revenues received through August 31, 2008. A Supplemental Indenture may increase the Rate Stabilization Fund Requirement (or, if the Series 2002-A Bonds are no longer outstanding, decrease it). Notwithstanding the foregoing, whenever amounts in the Rate Stabilization Fund are used to cure a deficiency in the First Tier Debt Service Fund, the Second Tier Debt Service Fund or the Subordinate Lien Debt Service Fund, the Rate Stabilization Fund Requirement will be reduced by such amount, but in no event shall the Rate Stabilization Fund Requirement be below $10,000,000.

Funding of Rate Stabilization Fund. In each Fiscal Year, after first having made or provided for all required deposits described in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Flow of Funds" and "APPENDIX B – SUMMARY OF MASTER INDENTURE AND SEVENTH SUPPLEMENTAL INDENTURE," the Trustee will transfer from the Revenue Fund to the Rate Stabilization Fund in 24 approximately equal monthly deposits amounts sufficient to accumulate in the Rate Stabilization Fund an amount equal to the Rate Stabilization Fund Requirement.

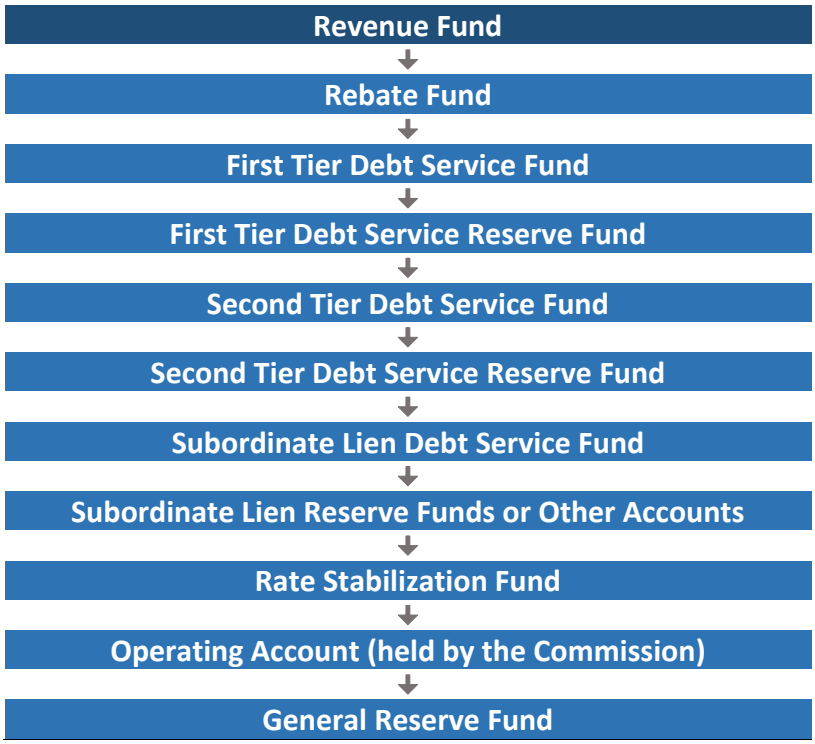
Uses of Money in the Rate Stabilization Fund. Amounts on deposit in the Rate Stabilization Fund, if any, may be used to cure a deficiency in the First Tier Debt Service Fund, the Second Tier Debt Service Fund or the Subordinate Lien Debt Service Fund (prior to the amounts in the respective reserve funds being used for such purpose). Upon direction of the Commission, amounts held in the Rate Stabilization Fund may be (i) deposited to the Operating Account in any month that Revenues on deposit in the Revenue Fund are less than Projected Operating Expenses Capacity, (ii) used to pay Operating Expenses or Maintenance Expenses for which Revenues or amounts on deposit in the Operating Account or Maintenance Account are insufficient or (iii) used, to the extent such amounts exceed the Rate Stabilization Fund Requirement, for any other purpose for which Revenues are permitted to be used under applicable law and the Master Indenture. The Master Indenture specifies that the use of the amounts on deposit in the Rate Stabilization Fund for any of the foregoing purposes will not constitute an Event of Default. The Commission also currently relies on the balance in the Rate Stabilization Fund to provide self-insurance for the System. See "THE SYSTEM – Insurance for the System."

Flow of Funds

The Master Indenture establishes the Revenue Fund for the application and deposit of all Revenues. As far as practicable, the Commission will deposit all Revenues daily to the credit of the Revenue Fund.

In recognition that Obligations may come due on various dates and may have differing security interest and payment priorities, no transfer from the Revenue Fund to any fund, as required and in the order set forth in the following chart, other than the First Tier Debt Service Fund or the First Tier Debt Service Reserve Fund, may be made in any Fiscal Year unless, in the opinion of a Chief Financial Officer set forth in a certificate delivered to the Trustee, the transfer is not anticipated to result in the inability of the Commission to make a later transfer, as required by the Master Indenture, to a fund securing Obligations that have a security interest in the Trust Estate senior to that securing the Obligations that are secured by the fund into which the transfer is scheduled to be made. The chart below depicts the priority of transfers from the Revenue Fund to other funds under the Indenture. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE –MASTER INDENTURE – Funds and Accounts" for a full description of all funds and accounts, the timing of deposits and other information.

Flow of Funds Chart



In addition, the Maintenance Account and the Reserve Maintenance Account are held by the Commission and are funded in accordance with its obligations described under "SYSTEM-RELATED FUNDING OBLIGATIONS OF COMMISSION."

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Table 8 – Fund and Account Balances

Name of Fund or Account	Approximate Balance in Millions (as of November 30, 2014)
Held by Trustee:	
Revenue Fund	$ 30.8
First Tier Debt Service Fund	23.8
First Tier Debt Service Reserve Fund	125.0
Second Tier Debt Service Fund	-
Second Tier Debt Service Reserve Fund	53.1[1]
Subordinate Lien Debt Service Fund	18.2
Rate Stabilization Fund	67.8
General Reserve Fund	- [2]
Construction Fund	197.0[3]
Held by Commission:	
Operating Account	18.7[4]
Maintenance Account	5.7[4]
Reserve Maintenance Account	1.3[5]

(1) As of the Date of Delivery of the Bonds.
(2) For administrative ease, the Commission has historically paid all operations, maintenance and capital expenses on behalf of the System, and the System has periodically reimbursed the Commission from available revenues in excess of debt service from and to the extent of funds available in the General Reserve Fund. See "THE SYSTEM – Table 5 – Historical Revenues, Expenses and Debt Service Coverage."
(3) See "THE SYSTEM – Other Available System Funds" for a discussion of the sources and available uses of funds in the Construction Fund.
(4) Represents an estimated 5.5 month reserve.
(5) Represents an estimated 12 month reserve.

Rate Covenant

Maintenance of Rates. The Commission has covenanted in the Master Indenture that it will (a) adopt and maintain in effect a Toll rate schedule for the System, in substantial conformity with the recommendation of the Traffic Consultant and (b) establish charges for other uses of the property constituting a part of the System, such as real property leases, designed collectively to produce Revenues in each Fiscal Year in an amount at least equal to the sum of (i) and (ii) below as follows:

(i) the amounts required to be deposited in the First Tier Debt Service Reserve Fund, the Second Tier Debt Service Reserve Fund, the Rate Stabilization Fund and any other fund established by a Supplemental Indenture to be funded by Revenues; and

(ii) the greater of (a), (b) or (c) as follows:

(a) 140% of the Annual Debt Service (as defined below) on all Outstanding First Tier Obligations; or

(b) 110% of the Annual Debt Service on all Outstanding First Tier Obligations and all Outstanding Second Tier Obligations; or

(c) 100% of the Annual Debt Service on all Outstanding First Tier Obligations, all Outstanding Second Tier Obligations and all Outstanding Subordinate Lien Obligations.

In making the calculations in (a), (b) and (c) above, the Commission may take into account any amounts reasonably expected to be received in the Fiscal Year from or as a result of any Additional Obligation Security the Commission has pledged for the benefit of all Obligations or the Obligations of any particular Tier or Series;

however, if the pledge is not for the benefit of all Obligations, the amounts reasonably expected to be received may be taken into account only when making the calculation for the affected Obligations.

"*Annual Debt Service*," for any annual period, means with respect to all Outstanding Obligations or to all First Tier Obligations, Second Tier Obligations, or Subordinate Lien Obligations, (i) the amount of principal and interest paid or payable with respect to such Obligations in the annual period, plus (ii) Reimbursement Obligations paid or payable by the Commission in such annual period (but only to the extent they are not duplicative of such principal and interest), plus (iii) the amounts, if any, paid or payable by the Commission in such annual period with respect to Approved Swap Agreements, minus (iv) the amounts, if any, paid or payable to the Commission in such annual period with respect to Approved Swap Agreements, provided that the difference between the amounts described in clauses (iii) and (iv) will be included only to the extent that such difference would not be recognized as a result of the application of the assumptions set forth below, and minus (v) all amounts which are deposited to the credit of a debt service fund or the Construction Fund for the payment of interest on First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations, as the case may be, from original proceeds from the sale of such Obligations or from any other lawfully available source (other than the Revenue Fund or any money that would constitute Revenues in the subject annual period), and that are used or scheduled to be used to pay interest on such Obligations during any annual period. The Master Indenture sets forth the following assumptions to be used in calculating Annual Debt Service:

(A) in determining the principal amount paid or payable with respect to Obligations or Reimbursement Obligations in each annual period, payment will be assumed to be made in accordance with any amortization schedule established for such Indebtedness, including amounts paid or payable pursuant to any mandatory redemption schedule for such Indebtedness;

(B) if any of the Indebtedness or proposed Indebtedness constitutes Balloon Indebtedness or Short-Term Indebtedness, then such amounts constituting Balloon Indebtedness or Short-Term Indebtedness will be treated as if such Indebtedness is to be amortized in substantially equal annual installments of principal and interest over the useful life of the improvements financed with the proceeds of such Balloon Indebtedness as calculated by, and set forth in a certificate of a Chief Financial Officer. Anything to the contrary herein notwithstanding, during the annual period preceding the final maturity date of such Balloon Indebtedness and in every case with respect to Short-Term Indebtedness, all of the principal thereof will be considered to be due on the Maturity or due date of such Balloon Indebtedness or Short-Term Indebtedness through the issuance of Long-Term Indebtedness, unless the Commission provides to the Trustee a certificate of a Financial Consultant certifying that, in its judgment, the Commission will be able to refund such Balloon Indebtedness or Short-Term Indebtedness through the issuance of Long-Term Indebtedness, in which event the Balloon Indebtedness or Short-Term Indebtedness will be amortized over the term of such proposed refunding Indebtedness and will bear the interest rate specified in the certificate of the Commission's Financial Consultant (no maturity of the Bonds shall constitute Balloon Indebtedness or Short-Term Indebtedness);

(C) as to any annual period prior to the date of any calculation, such requirements will be calculated solely on the basis of Obligations that were Outstanding as of the first day of such period; and as to any future annual period such requirements will be calculated solely on the basis of Obligations Outstanding as of the date of calculation plus any Obligations then proposed to be issued;

(D) if any of the Indebtedness or proposed Indebtedness constitutes Variable Rate Indebtedness, then subject to the following proviso, interest in future periods will be based on the Assumed Variable Rate; provided, however, that for any Approved Swap Agreement entered into by the Commission with respect to a Series of Obligations constituting Variable Rate Indebtedness, the fixed interest rate payable by the Commission under the Approved Swap Agreement will be assumed to be the interest rate on such Obligations if (i) the notional amount under the Approved Swap Agreement is equal to or greater than the Outstanding principal amount of the Obligations and reduces in the amounts and on the dates that the Obligations mature and (ii) the variable interest rate payable by the Commission on the Obligations is determined by the same formula or reference to the same index as the interest rate payable to the Commission under the Approved Swap Agreement, such that the Commission assumes no basis risk under the swap transaction (the Series 2015-A Bonds do not constitute Variable Rate Indebtedness during the Initial Multiannual Period); and

(E) termination or similar payments under an Approved Swap Agreement will not be taken into account in any calculation of Annual Debt Service.

Certification by Traffic Consultant. Prior to adopting any change in the schedule of rates or Tolls for the System, the Commission will obtain and file with the Trustee a certificate by the Traffic Consultant stating either (i) in their opinion, if such proposed Toll rate schedule had been in effect during the preceding annual period, and taking into effect the Revenues anticipated to be received in such annual period as estimated by the Commission, it would not have caused a decrease in the Revenues for said preceding annual period; or (ii) in the opinion of the Traffic Consultant, the adoption of such proposed Toll rate schedule will not adversely affect the ability of the Commission to comply with the Rate Covenant.

Any such certificate by the Traffic Consultant will be based on the opinion of the Traffic Consultant as to Revenues to be derived by the Commission from the ownership and operation of the System (which Revenues will be deemed to include all investment income previously described herein as constituting Revenues of the System, as estimated by the Commission), and upon certification by the Commission as to the amount of Operating Expenses paid or accrued during any pertinent annual period, assuming that the proposed Toll rate schedule had been in effect during such pertinent annual period.

In preparing its recommendations, the Traffic Consultant may rely upon written estimates of Revenues prepared by the other Consultants of the Commission. Copies of such written estimates signed by such Consultants will be attached to such recommendations. The Commission covenants in the Master Indenture that promptly after receipt of such recommendations and the adoption of any revised Toll rate schedule, certified copies thereof will be filed with the Trustee.

Stantec is acting as the Traffic Consultant under the Master Indenture. See "THE SYSTEM – Toll Rates" and "APPENDIX D – CENTRAL TEXAS TURNPIKE SYSTEM 2014 TRAFFIC AND REVENUE STUDY."

No Immediate Event of Default for Failure to Comply with Rate Covenant. The failure of the System in any Fiscal Year to produce Revenues in the amounts contemplated by the Rate Covenant will not constitute an Event of Default under the Master Indenture if (i) certain other Events of Default (including failure to pay debt service and any defaults under a Supplemental Indenture) have not occurred as a result of such failure, (ii) the Commission, promptly after determining that the requirements of the Rate Covenant were not met, requests that the Traffic Consultant make written recommendations as to appropriate revisions to the Toll rate schedule necessary or appropriate to meet the requirements of the Rate Covenant and furnishes the Trustee with a copy of such request and (iii) the Commission complies with the recommendations of the Traffic Consultant with respect to Tolls. In addition to any other remedies the Trustee may have under the Master Indenture, if the Commission does not comply with the recommendations of the Traffic Consultant in respect of Tolls, the Trustee may, and upon the request of the Secured Owners of not less than 25% in principal amount of the First Tier Obligations then Outstanding and upon being indemnified to its satisfaction will institute and prosecute in a court of competent jurisdiction in Travis County, Texas, any appropriate action to compel the Commission to revise the Toll rate schedule. The Commission covenants in the Master Indenture that it will adopt and charge Tolls in compliance with any final order or decree entered in any such proceeding.

Additional Obligations

The Commission has agreed in the Master Indenture not to incur any indebtedness or swap obligations secured by a lien on, pledge of, or security interest in the Revenues of the System that is prior to or, except as described below, on a parity with First Tier Obligations or Second Tier Obligations.

Additional First Tier Obligations. The Commission is authorized under the Master Indenture to issue Additional First Tier Obligations constituting Short-Term Indebtedness and Long-Term Indebtedness as well as First Tier Approved Swap Agreements, subject to certain restrictions and conditions as described below.

Short-Term Indebtedness. The Commission has agreed in the Master Indenture that it will not issue any Additional First Tier Obligations constituting Short-Term Indebtedness unless immediately after the incurrence of such Short-Term Indebtedness the outstanding principal amount of (i) all Short-Term Indebtedness

issued as First Tier Obligations or Second Tier Obligations, plus (ii) all First Tier Obligations or Second Tier Obligations Outstanding in the form of Variable Rate Indebtedness that do not constitute Short-Term Indebtedness, will not exceed 20% of the aggregate principal amount of all Outstanding Obligations. Short-Term Indebtedness issued pursuant to the provisions described in this paragraph will be on a parity with other First Tier Obligations.

Long-Term Indebtedness. The Commission has agreed in the Master Indenture that it will not issue any Additional First Tier Obligations constituting Long-Term Indebtedness (except as described under "*Completion Obligations*" below) unless it delivers specified documentation, including certain opinions, certificates, and the following:

(a) a letter from each Rating Agency then maintaining a rating on the Outstanding First Tier Obligations to the effect that the Additional First Tier Obligations have received an investment-grade rating from such Rating Agency, *and*

(b) either:

(i) a report of the Traffic Consultant to the effect that (A) the Revenues during the preceding annual period ending not more than 90 days prior to the date of delivery of the proposed Additional First Tier Obligations were sufficient to satisfy the requirements of the Rate Covenant (which report may assume that a revision of the Tolls that was approved and implemented by the Commission subsequent to the beginning of such annual period had been in effect for the entire annual period), and (B) the Projected Revenues for each Fiscal Year over the term of the proposed Additional First Tier Obligations are expected to produce a Projected Debt Service Coverage Ratio of at least (1) 1.50 with respect to First Tier Obligations, (2) 1.20 with respect to First Tier Obligations and Second Tier Obligations and (3) 1.10 with respect to all Obligations; *or*

(ii) if the Long-Term Indebtedness is being incurred solely for the purposes of refunding, repurchasing or refinancing (whether in advance or otherwise) any Outstanding Long-Term Indebtedness, a certificate of a Chief Financial Officer certifying that the Average Annual Debt Service on all Obligations prior to the issuance of the proposed Long-Term Indebtedness is greater than the Average Annual Debt Service on all Obligations after the issuance of such proposed Long-Term Indebtedness.

Pursuant to the Master Indenture, the Commission has reserved the right to expand the System in the future as well as issue additional debt to finance improvements and additions to the System; however, the Commission currently has no plans to expand the System or issue any additional debt related to the System.

First Tier Approved Swap Agreements. The Master Indenture also permits the Commission to enter into First Tier Approved Swap Agreements, subject to certain conditions and restrictions. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Limitations on Other Indebtedness – *Limitations on Issuance of Additional First Tier Obligations and Execution of First Tier Approved Swap Agreements*."

Completion Obligations. To finance the costs of completion of any improvements, extensions or enlargements to the System financed with the proceeds of Additional First Tier Obligations, the Commission may, without complying with the provisions described above under "– *Additional First Tier Obligations*," "– *Short-Term Indebtedness*" or "– *Long-Term Indebtedness*," issue Additional First Tier Obligations under certain conditions as described in "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Limitations on Other Indebtedness."

Additional Second Tier Obligations. The Master Indenture permits the Commission to issue Additional Second Tier Obligations constituting both Short-Term Indebtedness and Long-Term Indebtedness as well as Second Tier Approved Swap Agreements, subject to certain restrictions and conditions as follows.

Short-Term Indebtedness. With respect to Additional Second Tier Obligations constituting Short-Term Indebtedness, the Master Indenture restricts the amount of such Short-Term Indebtedness that may be issued to an amount that, when combined with other Short-Term Indebtedness and any Variable Rate Indebtedness then Outstanding, does not exceed 20% of the aggregate principal amount of all Outstanding Obligations. In addition,

the Commission must deliver a letter from each Rating Agency then maintaining a rating on the Outstanding First Tier Obligations or Second Tier Obligations to the effect that the Additional Second Tier Obligations being issued as Short-Term Indebtedness have received an investment-grade rating.

Long-Term Indebtedness. With respect to Additional Second Tier Obligations constituting Long-Term Indebtedness, the Master Indenture conditions issuance on delivery of certain documents, opinions and certificates, including:

(a) a letter from each Rating Agency then maintaining a rating on the Outstanding First Tier Obligations or Second Tier Obligations to the effect that the Additional Second Tier Obligations have received an investment-grade rating from such Rating Agency, *and*

(b) either:

(i) a report of the Traffic Consultant to the effect that (A) the Revenues during the preceding annual period ending not more than 90 days prior to the date of delivery of the proposed Additional Second Tier Obligations were sufficient to satisfy the requirements of the Rate Covenant (which report may assume that a revision of the Tolls that was approved and implemented by the Commission subsequent to the beginning of such annual period had been in effect for the entire annual period), and (B) the Projected Revenues for each Fiscal Year over the term of the proposed Additional Second Tier Obligations are expected to produce a Projected Debt Service Coverage Ratio of at least (1) 1.20 with respect to First Tier Obligations and Second Tier Obligations and (2) 1.10 with respect to all Obligations; *or*

(ii) if the Long-Term Indebtedness is being incurred solely for the purposes of refunding, repurchasing or refinancing (whether in advance or otherwise) any Outstanding Long-Term Indebtedness, a certificate of a Chief Financial Officer certifying that the Average Annual Debt Service on all Obligations prior to the issuance of the proposed Long-Term Indebtedness is greater than the Average Annual Debt Service on all Obligations after the issuance of such proposed Long-Term Indebtedness.

Second Tier Approved Swap Agreements. The Master Indenture also permits the Commission to enter into Second Tier Approved Swap Agreements, subject to certain conditions and restrictions. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Limitations on Other Indebtedness – *Limitations on Issuance of Additional Second Tier Obligations and Execution of Second Tier Approved Swap Agreements*."

Additional Subordinate Lien Obligations. The Master Indenture also permits the Commission to issue Additional Subordinate Lien Obligations constituting both Short-Term Indebtedness and Long-Term Indebtedness as well as Subordinate Lien Approved Swap Agreements, subject to certain restrictions and conditions. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Limitations on Other Indebtedness – *Limitations on Issuance of Additional Subordinate Lien Obligations and Execution of Approved Subordinate Lien Swaps*."

Additional Covenants

In the Master Indenture, the Commission has made certain covenants regarding the use and maintenance of the System, the retention of a General Engineering Consultant and a Traffic Consultant, the duties of the General Engineering Consultant and inspections of the System, the repair and mitigation of damage or destruction of the System, the maintenance of records, the performance of an annual audit, not building competing systems and not encumbering or transferring the System. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Particular Covenants."

Default and Remedies

Events of Default. The occurrence and continuation of any of the following constitutes an "*Event of Default*" under the Master Indenture:

(a) failure by the Commission to pay the principal of and premium, if any, or interest on any of the Obligations or to pay Capital Payments when the same shall become due and payable, either at Stated Maturity, by proceedings for redemption or pursuant to the terms of the Obligation or any failure of the Commission to purchase or cause to be purchased any Tender Indebtedness (the Bonds do not constitute Tender Indebtedness for purposes of the Master Indenture), including any applicable Variable Rate Indebtedness, upon any optional or mandatory tender to the Commission or a tender agent of the Commission; or

(b) an event of default under a Credit Facility, a First Tier DSRF Security, a Second Tier DSRF Security, an Approved Swap Agreement or a Reimbursement Agreement; or

(c) the Commission unreasonably delays or fails to carry out with reasonable dispatch or discontinue the construction of any portion of the System for which Obligations have been issued and are then Outstanding; or

(d) substantially all or any major portion of the System is destroyed or damaged to the extent of impairing its efficient operation and materially adversely affecting the Revenues and is not promptly repaired, replaced or reconstructed (whether such failure promptly to repair, replace or reconstruct the same is due to the impracticability of such repair, replacement or reconstruction or to lack of funds therefor or for any other reason); or

(e) judgment for the payment of money is rendered against the Commission if such judgment is under any circumstances payable from Revenues and is in an amount such that its payment would, in the opinion of the Trustee, have a materially adverse effect upon the financial condition of the System and any such judgment is not discharged within ninety (90) days from the entry thereof or an appeal is not taken therefrom or from the order, decree or process upon which or pursuant to which such judgment has been granted or entered, in such manner as to set aside or stay the execution of or levy under such judgment, decree or process or the enforcement thereof; or

(f) a bankruptcy or insolvency event with respect to the Commission has occurred and has not been cured, vacated, discharged or stayed within sixty (60) days after the occurrence thereof; or

(g) the Commission fails to duly and punctually perform any other covenant, condition, agreement or provision contained in any Obligations or in the Master Indenture, and, (with the exception of covenants relating to the issuance of Additional Obligations, placing encumbrances upon Revenues, disposing of System property, preserving the tax-exempt status of interest on the outstanding First Tier Obligations and the Bonds and requiring the System to refrain from funding or approving capital projects on the State Highway System that would materially adversely affect the Commission's ability to comply with the Master Indenture), such failure continues for sixty (60) days after written notice specifying such failure and requiring it to be remedied has been given to the Commission by the Trustee, which may give such notice in its discretion and must give such notice at the written request of the Secured Owners of not less than ten percent (10%) in principal amount of the Obligations then Outstanding; and the Trustee will investigate and consider any allegation of such default or Event of Default of which any Bond Insurer of record notifies the Trustee in writing.

Remedies. Upon the happening and continuance of any Event of Default, the Trustee may proceed, and upon the written request of the Secured Owners of not less than twenty percent (20%) in principal amount of the Obligations then Outstanding must proceed (subject to certain provisions of the Master Indenture governing the rights of the Trustee) to protect and enforce its rights and the rights of the Secured Owners under the Acts and under the Indenture by such suits, actions or special proceedings in equity or at law, or by proceedings in the office of any board or officer having jurisdiction, either for mandamus or the specific performance of any covenant or agreement contained in the Indenture or in aid or execution of any power herein granted or for the enforcement of any proper legal or equitable remedy, as the Trustee, being advised by counsel, shall deem most effectual to protect and enforce such rights, to the extent permitted by law.

Subject to the Commission's sovereign immunity discussed below, in enforcing any remedy under the Indenture the Trustee is entitled to sue for, enforce payment of and receive any and all amounts then or during any default becoming, and at any time remaining, due from the Commission for principal, interest or otherwise under any of the provisions of the Indenture or of the Outstanding Obligations and unpaid, with interest on overdue payments, to the extent permitted by law, at the rate or rates of interest borne by such Obligations, together with any

and all costs and expenses of collection and of all proceedings hereunder and under such Obligations, without prejudice, to any other right or remedy of the Trustee or of the Secured Owners, and to recover and enforce judgment or decree against the Commission, but solely as provided in the Indenture and in such Obligations, for any portion of such amounts remaining unpaid, with interest, costs, and expenses, and to collect (but solely from Revenues) in any manner provided by law, the money adjudged or decreed to be payable. See "RISK FACTORS – Limited Available Remedies."

The enforcement of the remedy of mandamus may be difficult and time consuming and is subject to judicial discretion. No assurance can be given that a mandamus or other legal action to enforce a default under the Indenture would be successful.

Under current State law, the Commission has, and is not authorized to waive, sovereign immunity from suit or liability with respect to the Bonds, and the owners thereof and the Trustee are prevented from bringing a suit against the Commission to adjudicate a claim to enforce their rights under the Bonds or the Indenture or for damages for breach of the Commission's obligations relating to the Bonds. However, State courts have held that mandamus proceedings against a governmental unit, such as the Commission, as discussed above, are not prohibited by sovereign immunity. The Trustee is authorized to bring a mandamus action against the Commission to compel performance of their legal duties, if such duties are not reasonably in doubt. Further, the Commission has agreed to adopt and charge Tolls in compliance with any final order or decree entered in a proceeding to compel the Commission to revise the Toll rate schedule if Revenues are insufficient to comply with the Rate Covenant. See "RISK FACTORS – Limited Available Remedies."

Pro Rata Application of Funds. If at any time the money in the First Tier Debt Service Fund, the Second Tier Debt Service Fund or the Subordinate Lien Debt Service Fund, along with money in the respective reserve funds and other funds established by the Master Indenture, is not sufficient to pay the principal of or the interest on the First Tier Obligations or the Second Tier Obligations as the same become due and payable, such money, together with any money then or thereafter available for such purpose, whether through the exercise of the remedies provided for in the Master Indenture or otherwise, will be applied as set forth in the Indenture. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Events of Default and Remedies – *Pro Rata Application of Funds*."

Majority of Secured Owners May Control Proceedings. Any other provisions of the Master Indenture notwithstanding, the Secured Owners of not less than a majority in principal amount of First Tier Obligations then Outstanding (or, if no First Tier Obligation is then Outstanding, then the Secured Owners of not less than a majority in principal amount of the Second Tier Obligations and Subordinate Lien Obligations then Outstanding) will have the right, subject to certain provisions of the Master Indenture regarding the Trustee's rights, to direct the method and place of conducting all remedial actions to be taken by the Trustee under the Master Indenture. However, the Trustee will have the right to decline to follow any such direction that in the opinion of the Trustee would be unjustly prejudicial to Secured Owners that are not parties to such direction.

Restrictions Upon Action by Individual Secured Owner. No Secured Owners of any of the Outstanding Obligations will have any right to institute any suit, action, mandamus or other proceeding in equity or at law for the execution of any trust under the Master Indenture or the protection or enforcement of any right under the Master Indenture or any resolution or minute order of the Commission authorizing the issuance of Obligations, or any right under applicable laws of the State (except for an action for the recovery of overdue and unpaid principal, interest or redemption premium) unless (i) such Secured Owner gives the Trustee written notice of the event of default or breach of trust or duty on account of which such suit or action is to be taken, (ii) the Secured Owners of not less than twenty percent (20%) in principal amount of the Obligations then Outstanding have (A) made written request of the Trustee after the right to exercise such powers or right of action, as the case may be, has accrued, (B) afforded the Trustee a reasonable opportunity either to (1) proceed to exercise the powers granted under the Master Indenture or applicable laws of the State or (2) to institute such action, suit or proceeding in its or their name and (C) offered the Trustee reasonable security and indemnity satisfactory to it against the costs, expenses and liabilities to be incurred by it and (iii) the Trustee has refused or neglected to comply with the request described in clause (ii)(A) within a reasonable time.

THE COMMISSION AND THE DEPARTMENT

The Commission

The Commission is the Department's policy-making body and is composed of five commissioners appointed by the Governor of the State (the "*Governor*") with the advice and consent of the Texas Senate. Commissioners serve overlapping six year terms. One member is designated by the Governor as the Chair and serves as the chief presiding officer of the Commission. A person is not eligible to be a member of the Commission if the person or the person's spouse is employed by or manages a business that is regulated by or regularly receives funds from the Department; directly or indirectly owns or controls more than a 10% interest in a business that is regulated by or receives funds from the Department; uses or receives a substantial amount of goods, services or funds from the Department; or is registered, certified or licensed by the Department.

The Legislature created the "State Highway Commission" on April 4, 1917, for the purpose of adopting and implementing a comprehensive system of state highways and promoting the construction of a state highway system by cooperation with counties or independently by the State Highway Commission. In 1975, the Legislature changed the name of the State Highway Commission to the "State Highway and Public Transportation Commission." In 1991, the Legislature changed the name again to the "Texas Transportation Commission," as it remains today.

The current members of the Commission are listed below. Their terms end on the dates specified on page vi of this Official Statement. State law provides that a Commissioner continues to serve until his or her replacement is appointed, qualified and takes the oath of office.

Ted Houghton, Chairman

Mr. Houghton was appointed to the Commission by Governor Perry in December of 2003, and appointed as Chairman of the Commission in October of 2011. A native of El Paso, Mr. Houghton is self-employed in the fields of financial services, executive benefits, and estate planning. He is the first resident of El Paso to serve on the Commission. Mr. Houghton has served on the State of Texas School Land Board. He also served for eight years on the El Paso Water Utilities Public Service Board and on the board of directors of the El Paso Electric Company and the El Paso Rapid Transit Board, as president of the Sun Bowl Association, and as a member of the 1984 Los Angeles Olympic Committee. Mr. Houghton received his bachelor's degree in finance from The University of Texas at El Paso.

Jeff Austin III, Commissioner

Mr. Austin was appointed to the Commission by Governor Perry in October of 2011, and is Vice Chairman of Austin Bank. He is a board member of First State Bank in Athens, Texas, and of Capital Bank in Houston, Texas, and a past president of First State Bank, Frankston, Texas. He is a board member and past chair of the Texas Bankers Association, a board member of the Bob Bullock Texas History Museum, a member of the American Bankers Association Government Relations Committee and the Bank CEO Network, an executive committee member and past director of the Texas Lyceum, and a Board member and a Past President and Scoutmaster of the East Texas Area Council of Boy Scouts. He was the presiding officer of the North East Texas Regional Mobility Authority, and board chair of the Tyler Area Chamber of Commerce. He is also a past board member of the Tyler Economic Development Corporation, the Better Business Bureau of East Texas, The University of Texas at Tyler Business School Advisory Board, the UT Tyler Health Center Development Board, and the Trinity Mother Frances Hospital Foundation. Mr. Austin received a bachelor's degree and a master's degree in Business Administration from The University of Texas at Tyler, and is a graduate of the Southern Methodist University Southwestern Graduate and Intermediate Schools of Banking, and the Harvard Business School Advanced Management Program.

Jeff Moseley, Commissioner

Mr. Moseley was appointed to the Commission by Governor Perry in June of 2012. Prior to his appointment, Mr. Moseley was chief executive officer of the Greater Houston Partnership. During seven years in this role, he worked on numerous regional transportation policy efforts and partnered with transportation stakeholders such as the Gulf Coast Regional Mobility Partners and the I-69 Corridor Coalition. He previously served as director of the Governor's Office of Economic Development and Tourism. Between 1991 and 1999, Mr. Moseley served as Denton County Judge. During that time, he was a member of the metropolitan planning organization for the North Central Texas Council of Governments, supported the passage of two mobility bond

campaigns, organized the IH 35 Corridor Coalition, and was involved in the creation of the North Texas Tollway Authority. Mr. Moseley is currently self-employed and serves as a consultant to Opportunity Houston. Mr. Moseley received the Outstanding Alumnus Award from Southern Nazarene University in Oklahoma.

Fred Underwood, Commissioner

Mr. Underwood was appointed to the Commission by Governor Perry in January of 2007. Mr. Underwood is president of the Trinity Company, a cotton bale storage facility. He is both past vice president and past director of the National Cotton Council. He also serves as chairman of the Ways and Means Committee of the Cotton Warehouse Association, where he previously served as president. Mr. Underwood also previously served as chairman of Lubbock International Airport Board and as a board member of the Lubbock Chamber of Commerce. Mr. Underwood received a bachelor's degree in management from Texas Tech University.

Victor Vandergriff, Commissioner

Mr. Vandergriff was appointed to the Commission by Governor Perry in March of 2013. Mr. Vandergriff is an attorney and private businessman specializing in business development and legislative issues. From 2009 to 2013, Mr. Vandergriff served as the chairman of the Texas Department of Motor Vehicles Board. He was also a board member for the North Texas Tollway Authority from 2007 to 2013 and served as chairman from 2010 to 2011. He formerly served as Vice President of V.T., Inc. and Automotive Investment Group, the largest private retail automotive group in the United States. He was involved as an owner, dealer and executive manager in the automobile industry for more than 25 years. Mr. Vandergriff and his family have owned and operated automobile dealerships for more than 80 years in the Dallas-Fort Worth region. Mr. Vandergriff attended The University of Southern California, where he received a degree from the School of Public Administration in Public Affairs. He received his law degree from Southern Methodist University in Dallas.

The Department

The Department is a public authority and body politic and corporate created in 1917 as the "Texas Highway Department" by an act of the Legislature to administer federal funds for highway construction and maintenance. In 1975, the Legislature merged the Texas Highway Department with the "Texas Mass Transportation Commission" to form the "State Department of Highways and Public Transportation," and in 1991, the Legislature combined the State Department of Highways and Public Transportation, the Department of Aviation, and the Texas Motor Vehicle Commission to create the Department. In 2009, the Legislature created the Department of Motor Vehicles as a separate State agency, and moved vehicle title and registration; motor carrier registration and enforcement; licensing of motor vehicle dealers, manufacturers, distributors, and other similar entities; and auto theft reduction efforts from the Department to the Department of Motor Vehicles.

The mission of the Department is to provide safe and efficient movement of people and goods, enhance economic viability and improve the quality of life for the people that travel in the state of Texas by maintaining existing roadways and collaborating with private and local entities to plan, design, build and maintain expanded transportation infrastructure. The Department's vision is to be a trusted, performance-driven organization committed to collaborating with internal and external partners to deliver a modern, interconnected and multimodal transportation system that enhances the quality of life for Texas citizens and increases the competitive position for Texas industry.

The Department is headquartered in Austin, Texas, with 34 divisions/offices and 25 district offices located throughout the State. Each district is responsible for the planning, design, construction, operation and maintenance of its area's transportation systems. The Department is managed by an Executive Director, subject to and under the direction of the Commission. The Executive Director and other key Department personnel are listed below.

Lt. General Joe Weber, Executive Director

Lieutenant General Joe Weber, United States Marine Corps (Retired) was appointed Executive Director by the Commission on April 23, 2014. Under the direction of the Commission, General Weber manages, directs and implements Department policies, programs and operating strategies. General Weber also represents the Department before the Legislature and other entities. Prior to his appointment as Executive Director, General Weber served as Vice President of Student Affairs at Texas A&M University in College Station ("*Texas A&M*"). In that role, he was responsible for the strategic planning, direction and development of fiscal and human resources, and how they

impact the overall experience of nearly 57,000 students at Texas A&M. He was also responsible for crisis management and the oversight of more than 900 student organizations and dozens of campus-wide programs and services. In his last assignment in the Marine Corps, General Weber led more than 75,000 Marines and Sailors along the eastern seaboard. During his 36 years with the Marine Corps, he also previously served in assignments throughout the United States and overseas leading major efforts, including tours in Iraq and Japan. His primary duties focused on training, education and combat readiness for thousands of Marines, Sailors, Soldiers and Airmen. General Weber is a graduate of Texas A&M and obtained a master's degree from the LBJ School of Public Affairs at The University of Texas at Austin.

John A. Barton, P.E., Deputy Executive Director

As Deputy Executive Director, Mr. Barton is responsible for assisting in all phases of directing, managing, and implementing the Department's policies, programs, and operating strategies. He oversees the management of all transportation systems for which the agency is responsible to ensure that systems are adequate, safe, and constructed and maintained for the traveling public in the most cost-effective manner. He also assists in directing long- and short-range planning for the agency including the establishment of overall operating objectives and the technical merits of programs and policies. Mr. Barton grew up in Archer City, a small rural town in north central Texas, before attending college at Texas A&M University where he graduated with honors in 1986 with a Bachelor of Science degree in Civil Engineering. Mr. Barton began working for the Department as a summer employee in the Archer City Maintenance Section of the Wichita Falls District while in high school, and then began full-time employment with the Department after graduating from Texas A&M and now has more than 29 years with the Department. Like most Department employees, he has worn many hats during his time with the Department, ranging from Construction Project Inspector and Manager to Area Engineer, to District Engineer, Assistant Executive Director for Engineering Operations, Chief Engineer, and now Deputy Executive Director.

James M. Bass, Chief Financial Officer

As the Department's Chief Financial Officer ("*CFO*"), Mr. Bass has financial oversight responsibility for the Department. Mr. Bass also oversees management of the Department's financial planning operations division (the "*Finance Division*"), which now includes programming and scheduling of all transportation projects and letting management activities associated with project delivery. In addition, the CFO has oversight of toll operations, innovative finance and debt management (including the State Infrastructure Bank and investment functions), and grant management. Under his direction, the Finance Division develops and implements systems and policies related to accounting, forecasting, budgeting, payment for goods and services, and the processing of receipts and revenues. Mr. Bass also served as Interim Executive Director of the Department from January 17, 2014 until General Weber's appointment as Executive Director. Mr. Bass began his career with the Department in 1985 in the Fort Worth District where he maintained records and audited field measurements. He also worked part-time as an engineering aide for the Austin District while earning his bachelor's degree in accounting from The University of Texas at Austin. After graduation in 1991, Mr. Bass served as an accounting clerk in the Finance Division. In 1997, Mr. Bass became a manager in the Budget and Forecasting Branch, and in that position was responsible for preparation of the Department's Legislative Appropriations Request and Operating Budget, and working with the Texas Legislative Budget Board, State Auditor's Office, and the Comptroller of Public Accounts. He also worked on the Department's Cash Forecasting System for the State Highway Fund. Mr. Bass was named Finance Division Director in 1999 and his title was changed to Chief Financial Officer in 2005.

Benjamin H. Asher, Innovative Financing/Debt Management Officer

Mr. Asher assumed the position as the Department's Innovative Financing/Debt Management Officer in June 2012. In this role he oversees the day-to-day activities of the Innovative Financing/Debt Management Office which include managing the Department's various debt programs, including the Department's TIFIA loan activity as well as the State Infrastructure Bank, toll equity, pass-through financings, and the financial aspects of the Department's public-private partnerships. Prior to joining the Department, Mr. Asher worked for the Public Resources Advisory Group, an independent financial advisory firm, most recently as a Senior Managing Director in New York. Previously, Mr. Asher worked as an associate for the First Boston Corporation in the public finance and corporate restructuring departments. Mr. Asher received his Bachelor of Arts in History from Columbia College and an M.B.A. in Finance from Columbia University Graduate School of Business.

Brian Ragland, Finance Director

As the Department's Finance Director, Mr. Ragland is responsible for the management and control of budget, revenue, disbursements, and accounting for the Department as well as programming and scheduling and letting management of all transportation projects. Mr. Ragland is also currently an elected trustee of the Employees Retirement System, with a term expiring August 31, 2017. Mr. Ragland began his career with the Department as the Director of the Department's Claims Management Section of the Finance Division in 2003. He left the Department in 2005 to pursue an opportunity as Senior Vice President and Chief Financial Officer of Walden Affordable Group, LLC, an affordable housing management firm. He began his career with The University of Texas System Administration as an accountant/auditor in their Oil and Gas department and then became the Financial Manager of their Employee Group Insurance section where he served until 1996. He then became Chief Financial Officer for the State Preservation Board where he oversaw all financial, human resources, enterprise, and information resource functions of that agency. Mr. Ragland received a bachelor's degree in Accounting from The University of Texas at Austin in 1990 and a Masters of Business Administration degree from Southwest Texas State University in 1999. He is a licensed Certified Public Accountant.

Jeff Graham, General Counsel

Mr. Graham assumed the position of General Counsel on July 16, 2012. Under his direction, the Office of General Counsel renders legal advice to the Commission and the Department. He also drafts Department rules, reviews legislation, and serves as counsel at Commission meetings. Previously, Mr. Graham served as Division Chief for the Financial and Taxation Litigation Division, under Texas Attorney General Greg Abbott. Prior to that, he served as the Division Chief for the Financial Litigation Division of the Office of Attorney General. In 2011, the Taxation Division and the Texas Workforce Commission Section were added to the Financial Litigation Division, resulting in the combined Financial and Taxation Litigation Division. In 2012, the Charitable Trust Section was also added to his portfolio. Jeff began his career at the Office of the Attorney General in 1997, and has lived in Austin since 1986. He is a graduate of Washington University School of Law in St. Louis, Missouri and The University of Texas at Austin.

Doug Woodall, P.E., Director, Toll Operations Division

As Director of the Toll Operations Division, Mr. Woodall is responsible for the management of all activities of the Toll Operations Division. This position reports to the Chief Financial Officer and is required to exercise professional expertise in the operations of tollway projects; to develop and recommend policies and procedures; and to support toll operations of the Department's public/private partnership projects statewide. During his 30 years with the Department, Mr. Woodall has also served as the Director of Turnpike Planning and Development, Director of Design for the Central Texas Turnpike System, and has had previous assignments in design, construction, operations and management within the Department. Mr. Woodall earned a bachelor's degree in civil engineering from Texas Tech University in 1983 and is a licensed professional engineer in Texas. Effective January 31, 2015, Mr. Woodall will be retiring from the Department.

Sunset Review

The Texas Sunset Act (Chapter 325, Texas Government Code) (the "*Sunset Act*") provides that virtually all agencies of the State, including the Commission and the Department, are subject to periodic review by the Legislature, and that each agency subject to sunset review will be abolished unless the Legislature specifically determines to continue its existence. The Department will be subject to its next sunset review in 2017. Pursuant to the Sunset Act, the Legislature specifically recognizes the State's continuing obligation to pay bonded indebtedness and all other obligations incurred by the Commission and the Department. Accordingly, in the event that a sunset review results in the Department being abolished, the Governor would be required by law to designate an appropriate state agency to carry out covenants and perform the obligations of the Commission and the Department. The designated agency would provide for payment of bonds and other public securities in accordance with the terms of such bonds and other public securities and would provide for payment and performance of all other obligations in accordance with their terms.

State Audits

The State Auditor's Office ("*SAO*") is the independent auditor for Texas state government. The SAO operates with oversight from the Legislative Audit Committee, a six-member permanent standing committee of the State Legislature, jointly chaired by the Lieutenant Governor and the Speaker of the House of Representatives.

The SAO is authorized, by Chapter 321, Texas Government Code, to perform audits, reviews, and investigations of any entity receiving State funds, including State agencies and higher education institutions. Audits are performed in accordance with generally accepted government auditing standards, which include standards issued by the American Institute of Certified Public Accountants.

In connection with the State's Comprehensive Annual Financial Report, the SAO issued an audit report in February 2014 (the "*Audit*") which included a discussion of the Department's statewide financial and federal compliance for fiscal year ended August 31, 2013. The SAO regularly audits State agencies that receive federal funds to ensure compliance with applicable federal requirements for the receipt of such funds. The SAO indicated the Department should improve certain financial reporting and information technology controls. As discussed in the Audit, the Department has continued to implement corrective actions in response to prior SAO's findings. State audit reports, including reports covering various aspects of the Department's performance, are available at http://www.sao.state.tx.us. The information contained on (or accessed through) such website is not incorporated herein and should not be construed as part of this Official Statement.

SYSTEM-RELATED FUNDING OBLIGATIONS OF COMMISSION

The Commission has covenanted to (i) pay Operating Expenses to the extent of any deficiency in the Operating Account; (ii) pay all Maintenance Expenses when due, for which it may be reimbursed, and (iii) fund the Reserve Maintenance Account, all subject to funds appropriated by the Legislature in a manner that would allow their use. This obligation of the Commission historically has been funded from the State Highway Fund. See "FUNDING OF COMMISSION OBLIGATIONS." The ability of the Commission to satisfy such covenant is dependent upon the continued appropriation and availability to the Commission of adequate funds for such purposes. In Fiscal Year 2015, approximately $1.5 billion was appropriated for operations and maintenance of the State's highway system. These funds, together with other funds, are available to the Commission to comply with the covenants discussed above in this paragraph, among other Commission obligations.

Covenant to Cover Shortfalls in Operating Account

The Commission has covenanted in the Master Indenture to make deposits to the Operating Account in amounts sufficient to keep a balance in the Operating Account equal to the Operating Account Requirement, to the extent that Revenues are insufficient to make the required deposits into the Operating Account in any month and the legislature has appropriated sufficient funds for that purpose. Further, the Commission has covenanted to include in its annual budget 110% of the amount, if any, by which Revenues are projected to be insufficient to pay Operating Expenses for the upcoming year. See "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Flow of Funds" and "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Funds and Accounts – *Operating Account*."

Covenant to Fund Maintenance Account

The Commission has covenanted in the Master Indenture to (1) budget for and make monthly deposits to the Maintenance Account sufficient to keep a balance in the Maintenance Account sufficient to pay the following two months of Maintenance Expenses and (2) pay all Maintenance Expenses when due if the balance in the Maintenance Account is insufficient to do so, all subject to appropriation of funds by the Legislature which allows their use for such purpose. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Funds and Accounts – *Maintenance Account*." The Commission may be reimbursed for Maintenance Expenses at the end of each Fiscal Year from and to the extent of funds available in the General Reserve Fund.

Covenant to Fund Reserve Maintenance Account

The Commission has covenanted in the Master Indenture to (1) budget for and make monthly deposits to the Reserve Maintenance Account sufficient to keep a balance in the Reserve Maintenance Account equal to the capital expenses of the System projected in the Annual Capital Budget for the ensuing two months and (2) pay all capital expenses of the System when due if the balance in the Reserve Maintenance Account is insufficient to do so, all subject to appropriation of funds by the Legislature which allows their use for such purpose. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Funds and Accounts – *Reserve Maintenance Account*." The Commission may be reimbursed for capital expenditures for repair and maintenance of the System at the end of each Fiscal Year from and to the extent of funds available in the General Reserve Fund.

System Operations, Maintenance and Capital Expenditures

Actual operations, maintenance and capital expenditures for the System in Fiscal Years 2011 through 2014, together with the budget for such expenditures for the System for Fiscal Year 2015 are set forth below in Table 9. The Fiscal Year 2015 budget is subject to amendment and change upon approval by the Commission. The Commission adopted a Fiscal Year 2015 Operations, Maintenance and Five Year Capital Plan Budget for the System on August 28, 2014 in accordance with the Master Indenture. For the 2016-2017 biennium, the Commission has requested appropriations that would cover all the System's forecasted expenses.

Table 9 – Operations, Maintenance and Capital Expenditures (in millions)

	2011 Actual[1]	2012 Actual[1]	2013 Actual	2014 Actual	2015 Budget
Operations and Maintenance[2]	$49	$53	$41	$53	$54
Capital[2] [3]	3	3	6	-	1
	$52	$56	$47	$53	$55

(1) The SH 45SE Element was not part of the System until September 1, 2012. No costs associated with SH 45SE are included in Fiscal Years 2011 and 2012.
(2) Excludes depreciation expense.
(3) The Commission budgets capital expenditures and unusual and extraordinary maintenance in the Reserve Maintenance Account for a rolling five-year period. Currently, a total of approximately $7 million is budgeted for Fiscal Years 2015 through 2019. The budget for Fiscal Years 2016 through 2019 is subject to future legislative appropriation.

For administrative ease, the Commission has historically paid all operations, maintenance and capital expenses on behalf of the System, and the System has periodically reimbursed the Commission from available revenues in excess of debt service from and to the extent of funds available in the General Reserve Fund. See "THE SYSTEM – Table 5 – Historical Revenues, Expenses and Debt Service Coverage."

FUNDING OF COMMISSION OBLIGATIONS

State Funds

The System-related funding obligations described above are to be paid, subject to appropriation by the Legislature, from lawfully available funds of the Commission. Generally, all money available to the Commission, including the money necessary to pay such System-related funding obligations, is subject to appropriation by the Legislature before it may be drawn out of the State Treasury. The Legislature meets biennially in each odd numbered year, but may appropriate funds in special session if called by the Governor for such purpose. Legislative appropriations are limited to a period of two years. Generally, appropriations are made by the Legislature separately for each Fiscal Year of the State's biennium, but an appropriation may be made for a full biennium or for a part of the biennium other than a Fiscal Year. Legislative appropriations of funds from the State Highway Fund are the primary source of funding for the construction, maintenance, and operation of the State Highway System, including the System, and have historically been the primary source of funds for payment of such System-related funding

obligations, prior to the System's periodic reimbursement of expenditures for such purposes from available revenues. Set out below are general descriptions of State highway funding and the Commission's budget process.

State Highway Fund

State Funding. The State Highway Fund is the general source for a substantial portion of funding for the State Highway System, the Department, and the administration of State laws relating to traffic and safety on public roads. The State Highway Fund receives revenue from a variety of sources, including, without limitation, certain federal transportation program funds received from the United States Department of Transportation ("*USDOT*"), State motor fuels tax funds, State motor vehicle registration funds, and State motor lubricants tax funds.

Pursuant to Article VIII, Section 7-a of the Texas Constitution, (i) 75% of the net revenues generated from the State motor fuels tax (net of enforcement, administrative, and refund charges), (ii) the State tax on motor lubricants, and (iii) the net revenues generated from the State motor vehicle registration fees (net of collection charges and the portion of such fees that is reserved for counties within the State) are dedicated for acquiring rights-of-way; constructing, maintaining, and policing public roadways; and for the administration of laws pertaining to the supervision of traffic and safety on such roads. Also, pursuant to Article VIII, Section 7-b of the Texas Constitution, all revenues received from the federal government as reimbursement for State expenditures of funds that are themselves dedicated pursuant to Article VIII, Section 7-a (as described above) are constitutionally dedicated and may be used only for those purposes.

The State Highway Fund is the general operating fund of the Department through which, generally, all revenues dedicated or appropriated to the purposes of the Department are deposited and all of the Department's administration, maintenance, and operating expenses are paid. In addition, certain expenses of the Texas Mobility Fund are processed through the State Highway Fund, whereby the Texas Mobility Fund transfers amounts for such expenses to the State Highway Fund prior to such expenses being paid (except in situations where the Texas Mobility Fund is reimbursing the State Highway Fund for expenses incurred by the State Highway Fund). The Department's ongoing, "pay as you go" construction program is also paid from the State Highway Fund. Such expenses include payroll, repairs and maintenance, costs of materials and supplies, professional fees or commitments, utilities, rent and lease payments, and intergovernmental payments. To accomplish all of these purposes, money in the State Highway Fund is appropriated by the State Legislature to the Department, the Texas Department of Public Safety, and certain other agencies of the State.

Federal Funding. Federal transportation funds are currently made available to the State by the federal government. The Federal Aid Highway Program ("*FAHP*") refers to most of the federal programs providing highway funds to the states. The Federal Highway Administration is the federal agency within the USDOT responsible for administering the FAHP. The FAHP is financed from the transportation user related revenues deposited in the Federal Highway Trust Fund ("*HTF*"). Federal government funding for infrastructure projects is usually accomplished through highway authorization bills, which establish funding over a multi-year period and annual appropriation bills. On July 6, 2012, the current multi-year transportation authorization bill, "Moving Ahead for Progress in the 21st Century" ("*MAP-21*"), was signed into law. MAP-21 replaced the previous multi-year authorization, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users ("*SAFETEA-LU*"), which was originally scheduled to expire on September 30, 2009, but was reauthorized through passage of temporary short-term extensions until June 30, 2012; established a new two-year spending authorization through September 30, 2014; and extended the taxes dedicated to the HTF at their present rates through September 30, 2016. On August 8, 2014, the Highways and Transportation Funding Act of 2014 was signed into law extending the spending authorization of MAP-21 through May 31, 2015 at 243/365th of the amount of funds available in the federal fiscal year ending September 30, 2014.

The primary source of revenues in the HTF is derived from the federal excise taxes on motor fuels, including certain alternative fuels, and transfers from the U.S. Treasury. The HTF is a dedicated federal fund with revenues dedicated for reimbursement of expenditures by the states, including Texas, for costs of eligible transportation projects, including highway projects. The Texas Constitution and State law currently provide that federal funds appropriated for public road construction in the State may only be spent by and under the supervision of the Department. Such funds are deposited to the credit of the State Highway Fund. MAP-21 authorization

provides the Department with current funding levels plus inflation, and guarantees that each state (including Texas) will receive 95% of its payments of fuel and excise taxes into the HTF.

Though MAP-21 has extended this tax authorization through September 30, 2016, there occasionally have been revenue shortfalls and periods in which the previous authorizing legislation had expired and the future legislation had yet to be enacted. In such circumstances, the federal government has found ways to avoid disruptions to state highway programs and has been able to maintain the flow of federal revenues to states in each instance; however, no representation can be made regarding the likelihood of extension of such federal funding after September 30, 2016. Failure to replenish the HTF expeditiously may have an adverse impact on the Department and Commission.

Even when federal highway authorization legislation is enacted to provide for federal funding, such funding legislation is subject to possible federal rescission of funds. Federal rescission reduces the amount of federal funds provided by an appropriations or authorization act that has already become law. Similar to an appropriation or authorization act, a rescission must be passed by both chambers of the U.S. Congress and signed into law by the President. In most instances, a rescission is used to provide funding for a new or emergency legislative priority without increasing federal spending government-wide or by a particular agency. Another common scenario is to accommodate for budget shortfalls caused by federal revenue predictions that are discovered to be too high after a spending bill is passed into law. Rescissions are generally targeted at unobligated apportionments. Prior federal highway authorization legislation has been periodically subject to rescission, including reductions to funding under SAFETEA-LU in each of the years 2005 through 2011. Any rescission of any future federal highway authorization legislation could reduce federal funds ultimately deposited into the State Highway Fund.

Although no rescission was built into MAP-21, a rescission through the appropriations process remains a possibility. The Balanced Budget and Emergency Deficit Control Act of 1985, as amended, required certain automatic reductions in federal spending (the "*Sequester Cuts*"), impacting MAP-21 funding that took effect beginning with the federal fiscal year ending September 30, 2013. The Sequester Cuts are currently scheduled to apply for each subsequent federal fiscal year through 2024. The Department experienced reductions of $2.7 million and $4.1 million for federal fiscal years 2013 and 2014, respectively, in apportionment and obligation authority from the National Highway Performance Program, which is administered by the Federal Highway Administration for highway projects that are located on the National Highway System. The Department currently anticipates a reduction of $4.2 million for the federal fiscal year ending September 30, 2015.

State Highway Fund Revenues. Table 10 sets out the amount of total State Highway Fund Revenues by source for the Fiscal Years 2010 through 2014.

Table 10 – State Highway Fund Revenues by Source (in Millions)

Fiscal Year	State Motor Fuels Tax	State Motor Vehicle Registration Fees	Other State Revenue Sources	Reimbursements from Federal Funds	Total Revenues
2010	$2,230.1	$1,171.6	$249.8	$1,791.1	$5,442.6
2011	2,272.0	1,137.5	429.0	2,182.1	6,020.6
2012	2,318.2	1,316.5	357.0	2,560.6	6,552.3
2013	2,376.9	1,355.0	326.9	2,702.9	6,761.7
2014	2,444.9	1,359.1	271.7	3,365.4	7,441.1

For further information regarding the Department and the State Highway Fund, reference is made to the section "THE STATE HIGHWAY FUND" of the Official Statement, dated March 7, 2014, for the Commission's $1,157,795,000 State Highway Fund First Tier Revenue and Refunding Bonds, Series 2014-A and its $300,000,000 State Highway Fund First Tier Revenue Bonds, Series 2014-B (the "*State Highway Fund 2014 Official Statement*") and the Department's audited financial statements for Fiscal Year 2014, which are on file with the Municipal Securities Rulemaking Board through its Electronic Municipal Market Access System. The section "THE STATE HIGHWAY FUND" of the State Highway Fund 2014 Official Statement and the Department's audited financial statements for Fiscal Year 2014 are hereby incorporated by reference and made a part hereof for all purposes.

Investment Authority and Practices of the Commission

The Commission invests its funds in accordance with its investment policies and State law. See "APPENDIX F – INVESTMENT AUTHORITY AND INVESTMENT PRACTICES OF THE COMMISSION."

RISK FACTORS

The Bonds are special, limited obligations of the Commission, payable solely from and secured exclusively by the Trust Estate. The following is a discussion of certain risks that should be considered in evaluating an investment in the Bonds. This discussion does not purport to be either comprehensive or definitive. The order in which risks are presented is not intended to reflect either the likelihood that a particular event will occur or the relative significance of such an event. There may be other risks associated with an investment in the Bonds in addition to those set forth herein.

Traffic and Revenue Forecasts

The traffic and revenue forecasts in the 2014 Traffic and Revenue Study are based upon certain assumptions as set forth in such study, including those discussed in Chapter 8. Based upon such assumptions, the Traffic Consultant has expressed its opinion that such forecasts are reasonable as of their date and have been prepared in accordance with accepted practices for such studies. Among the various assumptions in the 2014 Traffic and Revenue Study are (i) the construction and continued operation of certain complementary and competing roadway projects, (ii) a managed lane project on IH 35 will not be constructed during the study period, (iii) the socioeconomic growth described in Chapter 6 of such study will occur as forecasted, (iv) motor fuel will remain in adequate supply and motor fuel prices (regular gasoline), including federal and State motor fuel taxes, (in current dollars) will not exceed an average of $4.50 per gallon during the forecast period and (v) Toll rates will escalate at the assumed rate of inflation. The 2014 Traffic and Revenue Study, however, is not a guarantee of any future events or trends, and the realization of the forecasted traffic and revenues described therein may be affected by future economic and social conditions, demographic developments and competition that cannot be predicted with any assurance, many of which are beyond the control of the Commission or the Department. As described in "CONSIDERATIONS REGARDING SYSTEM ELEMENTS – Future Development of IH 35 Corridor – *IH 35 Austin Project Feasibility Comparative Analysis*," the Department is studying the feasibility of tolled express lanes on IH 35. If such tolled express lanes are built, or if growth of the System area is slower than projected, or if motor vehicle fuel prices are higher than assumed or if the rate of inflation is inconsistent with the assumed rate, actual results could be less than forecasted. Failure to achieve or realize any of the other assumptions listed in 2014 Traffic and Revenue Study may also have an adverse effect upon the traffic and Revenues actually realized. See "APPENDIX D – CENTRAL TEXAS TURNPIKE SYSTEM 2014 TRAFFIC AND REVENUE STUDY." For these and other reasons, actual results may differ from those forecasted in the 2014 Traffic and Revenue Study, and the difference could be significant.

Ability of the Commission to Meet Funding Obligations

The Commission has pledged to use its available funds, to the extent appropriated, to operate and maintain the System. Commission payments of System operating and maintenance costs have historically been paid from the State Highway Fund, the Commission's primary source of funding. The State Highway Fund receives constitutionally dedicated funds from a variety of sources including, without limitation, federal transportation funds from the HTF (funded through federal excise taxes on motor fuels and transfers from the U.S. Treasury). Deposits of such taxes into the HTF must periodically be reauthorized by Congress, and failure to replenish the HTF expeditiously may have an adverse impact on the Department and Commission. Even when federal highway authorization legislation is enacted to provide for federal funding, such funding legislation is subject to possible federal rescission of funds. Any rescission of any future federal highway authorization legislation could reduce federal funds ultimately deposited into the State Highway Fund and have an adverse impact on the Department and Commission. See "FUNDING OF COMMISSION OBLIGATIONS."

Although the funds described above are constitutionally dedicated to the construction, maintenance, and operation of the State Highway System, all funds available to the Commission to satisfy the covenants described

under the caption "SYSTEM-RELATED FUNDING OBLIGATIONS OF COMMISSION" are subject to appropriation and could be appropriated by the Legislature in a manner that would make such funds unavailable for support of the System. While the appropriation of amounts in the State Highway Fund are not included in appropriations of general revenue of the State and therefore, are not subject to reductions that could result from the legislative budget process, the appropriation of other funds for the Commission and the Department could be adversely affected. Any failure of the Legislature to timely appropriate sufficient funds for such purposes, the imposition by the Legislature of any significant restrictions on the Department's ability to transfer other Department appropriations to such purposes or restrictions on such appropriation preventing support of the System, could result in insufficient funds being available to the Commission for it to satisfy such covenants in support of the System.

Cyber-Attack Risks

Computer hacking, cyber-attacks or other malicious activities could disrupt the operation of the System. Further, security breaches such as leakage and compromised personal and credit information of pre-paid ETC customers, loss of confidential or proprietary data and failure or disruption of information technology systems could materially and adversely affect the reputation and Revenues of the System, the Commission and the Department, which could lead to significant capital outlays and decreased performance of the System, or interruption or reduction in the receipt of Revenues that could exceed the self-insurance resources of the System.

Limited Available Remedies

Limits on Remedies. The remedies available to Owners of the Bonds upon an Event of Default under the Indenture are limited to the seeking of specific performance or a writ of mandamus or other suit, action or proceeding compelling and requiring the Commission and its officers to observe and perform any covenant, condition or obligation prescribed in the Indenture. **NO ACCELERATION REMEDY IS AVAILABLE TO THE TRUSTEE OR THE OWNERS OF THE BONDS UPON AN EVENT OF DEFAULT UNDER THE INDENTURE**. See "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Default and Remedies."

Enforceability of Remedies. The remedies available under the Indenture are in many respects dependent upon regulatory and judicial actions that are often subject to discretion and delay. Under existing law, such remedies may not be readily available. In addition, enforcement of such remedies (i) may be subject to general principles of equity which may permit the exercise of judicial discretion, (ii) are subject to the exercise in the future by the State and its agencies and political subdivisions of the police power inherent in the sovereignty of the State and (iii) are subject to the exercise by the United States of the powers delegated to it by the United States Constitution. The various legal opinions to be delivered concurrently with the delivery of the Bonds will be qualified to the extent that the enforceability of certain legal rights related to the Bonds is subject to limitations imposed by bankruptcy, reorganization, insolvency or other similar laws affecting the rights of creditors generally, by equitable remedies and proceedings generally and the exercise of judicial discretion.

Sovereign Immunity. Under current State law, the Commission and the Department are immune from suits for money damages and are prohibited from waiving their sovereign immunity from suit, including with respect to Bonds. Consequently the Trustee and Secured Owners are prevented from bringing such a suit against the Commission or the Department for damages for breach of the Commission's obligations under the Indenture. While the Trustee is directed to and may bring a mandamus action against the Commission and other Department officials to compel them to perform their official duties, such an action may be barred if there is a legitimate dispute regarding Commission obligations, and courts have equitable discretion issuing mandamus orders. The remedy of mandamus is controlled by equitable principles and so rests with the discretion of the court, but may not be arbitrarily refused; provided, however, Texas case law suggests that a mandamus action to enforce a non-legislatively mandated contract may be unavailable. See "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Default and Remedies."

Risks of Competition

In the Master Indenture, the Commission agrees not to construct, operate, assist, provide funding for or support, and to use all its discretionary authority available to it under applicable law to dissuade other public and

private entities from constructing, permitting, assisting or supporting, certain highway projects that would have the purpose or reasonably foreseeable effect of materially adversely affecting the ability of the Commission to comply with its covenants in the Master Indenture, subject to certain excepted projects and improvements. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Covenant Not to Build Competing System." The excepted projects and improvements, if constructed, could compete, either directly or indirectly, with the System. No assurances can be given that competing projects will not be constructed or that such competing projects, if constructed, will not adversely affect traffic volumes and Revenues generated by the System in a manner not contemplated by the 2014 Traffic and Revenue Study. See "CONSIDERATIONS REGARDING SYSTEM ELEMENTS – Future Development of IH 35 Corridor."

Forward-Looking Statements

The statements contained in this Official Statement, and in other information provided by the Commission and the Department, that are not purely historical (or descriptive of current conditions or facts), are forward-looking statements, including statements regarding the Commission and the Department's expectations, hopes, intentions or strategies regarding the future and the projections and forecasts in the 2014 Traffic and Revenue Study. All forward-looking statements included in this Official Statement are based on information available to the Commission and the Department on the date hereof, and the Commission and the Department assume no obligation to update any such forward-looking statements.

The forward-looking statements herein are necessarily based on various assumptions and estimates that are inherently subject to numerous risks and uncertainties, including risks and uncertainties relating to the possible invalidity of the underlying assumptions and estimates and possible changes or developments in social, economic, business, industry, market, legal and regulatory circumstances and conditions and actions taken or omitted to be taken by third parties, including customers, suppliers, business partners and competitors, and legislative, judicial and other governmental authorities and officials. Assumptions related to the foregoing involve judgments with respect to, among other things, future economic, competitive and market conditions and future business decisions, all of which are difficult or impossible to predict accurately and, therefore, there can be no assurance that the forward-looking statements included in this Official Statement will prove to be descriptive of actual future events and results.

THE SERIES 2015-A BONDS

General

The Series 2015-A Bonds are being issued as fully registered Current Interest Bonds. During the period which commences on their Date of Delivery and ends on the date immediately prior to the Mandatory Tender Date defined below (the "*Initial Multiannual Period*"), interest on the Series 2015-A Bonds will accrue from the Date of Delivery, calculated on the basis of a 360-day year composed of twelve 30-day months and will be payable on February 15 and August 15 of each year, commencing August 15, 2015, at a rate of interest equal to the per annum Initial Interest Rate specified on page iii hereof (the "*Initial Multiannual Rate*"). The "*Mandatory Tender Date*" is April 1, 2020. Principal on the Series 2015-A Bonds will come due on August 15, 2042, or upon any earlier redemption of the Series 2015-A Bonds.

The Series 2015-A Bonds will be subject to mandatory tender for purchase by the Commission at a price equal to 100% of the principal amount plus accrued interest, if any, on the Mandatory Tender Date subject to the successful remarketing of such Series 2015-A Bonds as described below under "– Optional and Mandatory Tender of Series 2015-A Bonds." The purchase price of such Series 2015-A Bonds (the "*Purchase Price*") on the Mandatory Tender Date is equal to the principal amount of the Series 2015-A Bonds, plus accrued interest, if any, to the Purchase Date (defined herein). At that time, the Commission currently intends to either refund or remarket the Series 2015-A Bonds in one of the several interest rate modes authorized by the Seventh Supplemental Indenture, which include a Daily, Weekly, Monthly, Flexible, Quarterly, Semiannual, Multiannual, Index Floating Rate or Fixed Rate Mode (as such terms are defined in the Seventh Supplemental Indenture).

This Official Statement does not describe the terms and provisions of the Seventh Supplemental Indenture as they relate to the Series 2015-A Bonds following the Initial Multiannual Period except as described below in connection with the mandatory tender for purchase occurring at the end of the Initial Multiannual Period. The Series

2015-A Bonds may be remarketed or refunded following the Initial Multiannual Period with different terms, which may include a different interest rate or amortization. See "– Future Terms of Series 2015-A Bonds."

As of the date of this Official Statement, the Commission has not provided any credit or liquidity facility for the payment of the Purchase Price payable upon the mandatory tender of the Series 2015-A Bonds on the Mandatory Tender Date, nor is there any requirement or expectation that such credit or liquidity facility will be obtained. The obligation of the Commission to purchase Series 2015-A Bonds on the Mandatory Tender Date is subject to the successful remarketing of such Series 2015-A Bonds, and a failed conversion and remarketing will not constitute an Event of Default under the Indenture. The Commission has no obligation to purchase Series 2015-A Bonds except from remarketing proceeds. If the Series 2015-A Bonds are not remarketed, the interest rate on the Series 2015-A Bonds will be increased to the Stepped Coupon Rate (defined below under "– Optional and Mandatory Tender of Series 2015-A Bonds – *Effects of a Failed Remarketing*") of 8% per annum until purchased by the Commission through a remarketing, or retired or redeemed.

Redemption

Optional Redemption of Series 2015-A Bonds. The Series 2015-A Bonds may be redeemed at the option of the Commission, with funds derived from any available source, in whole or in part, on April 1, 2020 or on any date thereafter, until the Series 2015-A Bonds are purchased by the Commission, at a redemption price equal to the par amount of the Series 2015-A Bonds to be redeemed plus accrued interest thereon to the date of redemption. If less than all of the Series 2015-A Bonds of the same maturity are to be optionally redeemed, the particular Series 2015-A Bonds of such maturity to be redeemed will be determined as set forth below under "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures – *Selection of Bonds to be Redeemed.*"

Mandatory Redemption of Series 2015-A Bonds. The Series 2015-A Bonds are subject to mandatory sinking fund redemption prior to maturity in the aggregate principal amounts and on the dates set forth in the following table, at a redemption price equal to the par amount thereof plus accrued interest to, but not including, the redemption date, as follows:

Series 2015-A Bonds
Maturing August 15, 2042

Redemption Date (August 15)	Principal Amount
2041	$ 40,460,000
2042[1]	184,540,000[1]

[1]Final Maturity

If less than all of the Series 2015-A Bonds are to be redeemed pursuant to such mandatory sinking fund redemption, the particular Series 2015-A Bonds to be redeemed will be determined as set forth below under "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures – *Selection of Bonds to be Redeemed.*"

The principal amount of the Series 2015-A Bonds required to be redeemed on any redemption date pursuant to the operation of mandatory sinking fund redemption provisions will be reduced at the option of the Commission by the principal amount of any Series 2015-A Bond which, at least 45 days prior to the mandatory sinking fund redemption date, (1) has been acquired by the Commission and delivered to the Trustee for cancellation, (2) has been acquired and canceled by the Trustee, at the direction of the Commission, at a price not exceeding the principal amount of such Series 2015-A Bond plus accrued interest to the date of acquisition thereof or (3) has been redeemed pursuant to the optional redemption provisions, if in each case the Series 2015-A Bonds have not been previously credited to a scheduled mandatory redemption.

Special Redemption of Series 2015-A Bonds. The Series 2015-A Bonds are subject to special redemption at the option of the Commission on any date prior to maturity as more fully described below under "GENERAL INFORMATION REGARDING THE BONDS – Special Redemption." Such redemption may occur before the first

date on which the Series 2015-A Bonds may be redeemed as described under "– *Optional Redemption of Series 2015-A Bonds*" above.

Redemption Procedures. For a description of required notices of redemption, the selection of Series 2015-A Bonds to be redeemed if less than all and the effect of a call for redemption, see "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures."

Future Terms of Series 2015-A Bonds

The Series 2015-A Bonds are not convertible into any other interest rate mode during the Initial Multiannual Period. As described above under "– General," after the Initial Multiannual Period the Commission currently intends to either refund or remarket the Series 2015-A Bonds in one of the several interest rate modes authorized by the Seventh Supplemental Indenture. Pursuant to the Seventh Supplemental Indenture, no such remarketing of the Series 2015-A Bonds after the Initial Multiannual Period may change the maturity of or mandatory redemption requirements for the Series 2015-A Bonds, or require that they be purchased prior to maturity except from and to the extent of proceeds of remarketing the Series 2015-A Bonds or result in the Series 2015-A Bonds bearing interest at a rate greater than 8% per annum. In addition, no Series 2015-A Bonds may be converted unless they are first purchased by the Commission at the Purchase Price. See "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Limitations on Other Indebtedness – *Conversions of Variable Rate Indebtedness to a Fixed Interest Rate*."

Optional and Mandatory Tender of Series 2015-A Bonds

Optional Tender. The Series 2015-A Bonds are not subject to optional tender by the holders thereof for purchase prior to the end of the Initial Multiannual Period.

Mandatory Tender. The Series 2015-A Bonds are subject to mandatory tender for purchase on the Mandatory Tender Date at the Purchase Price and must be tendered for purchase to the Trustee by the owners thereof, with no right of retention by such owners. The Commission is obligated to purchase the Series 2015-A Bonds on the Mandatory Tender Date at the Purchase Price from and to the extent of remarketing proceeds. **The obligation of the Commission to purchase Series 2015-A Bonds on the Mandatory Tender Date is subject to the successful remarketing of Series 2015-A Bonds. The Commission has no obligation to effect the purchase of Series 2015-A Bonds except from remarketing proceeds. As of the date of this Official Statement, the Commission has not obtained any credit or liquidity facility to provide for the payment of the Purchase Price payable upon the mandatory tender of the Series 2015-A Bonds on the Mandatory Tender Date, nor is there any requirement or expectation that such credit or liquidity facility will be obtained. The principal portion of the Purchase Price for the Series 2015-A Bonds is expected to be obtained from the remarketing thereof**.

The Commission has agreed to appoint one or more remarketing agents (each a "*Remarketing Agent*"), prior to the Mandatory Tender Date, to use its best efforts to have the Series 2015-A Bonds remarketed on the Mandatory Tender Date for a price sufficient to pay the Purchase Price, if the Series 2015-A Bonds are not redeemed on such date. Each Remarketing Agent must have a capitalization of at least $100,000,000 and be authorized by law to perform all the duties imposed upon it by the Seventh Supplemental Indenture. Such future Remarketing Agents may not remarket any Series 2015-A Bonds if a default in the payment of principal of or interest on the Series 2015-A Bonds has occurred and is continuing. The Remarketing Agent to be appointed by a Chief Financial Officer on behalf of the Commission will be required to use their best efforts to remarket the Series 2015-A Bonds on the Mandatory Tender Date at a rate not to exceed 8% per annum (the "*Series 2015-A Maximum Rate*") (and thereafter until the Series 2015-A Bonds have been remarketed for a price sufficient to pay the Purchase Price). If on the Mandatory Tender Date money sufficient to pay the Purchase Price is on deposit with the Trustee, acting as tender agent, the Series 2015-A Bonds will be deemed to have been tendered on such date for purchase and interest on such tendered Series 2015-A Bonds will cease to accrue. Series 2015-A Bonds that have been deemed tendered, but have not been delivered to the Trustee, will not be considered outstanding under the Indenture on the Purchase Date. See "– *Undelivered Series 2015-A Bonds*" below.

Prior to the initial Mandatory Tender Date, or a later purchase date in the event of a failed conversion and/or remarketing of the Series 2015-A Bonds on the initial Mandatory Tender Date (in either case a "*Purchase Date*"), a Chief Financial Officer, on behalf of the Commission, will determine the interest rate mode or modes that

will be applicable to the Series 2015-A Bonds from and after the Purchase Date. The interest rate or rates to be borne by the Series 2015-A Bonds immediately after the Purchase Date will be determined by the Remarketing Agents and will be equal to the rate or rates that, in the opinion of the Remarketing Agents, will permit the remarketing of such Series 2015-A Bonds at par at a rate not to exceed the Series 2015-A Maximum Rate.

Payment of the Purchase Price of the Series 2015-A Bonds will be made by the Trustee on the Purchase Date provided that the Series 2015-A Bonds subject to purchase are delivered to the Trustee prior to 11:00 a.m., New York City time, on the Purchase Date. Payment will be made in immediately available funds (or by wire transfer). The principal portion of the Purchase Price of Series 2015-A Bonds tendered for purchase will be paid by the Trustee to the owners solely from the proceeds of the remarketing of the Series 2015-A Bonds.

Effects of a Failed Remarketing. In the event that all Series 2015-A Bonds cannot be remarketed on the initial Mandatory Tender Date, the Commission has no obligation to effect the purchase of the Series 2015-A Bonds subject to mandatory tender on the initial Mandatory Tender Date, the failed remarketing will not constitute an Event of Default under the Indenture, the mandatory tender will be deemed to have been rescinded for that date and such Series 2015-A Bonds (i) will continue to be outstanding, (ii) will be required to be tendered and purchased upon the availability of funds to be received from any subsequent remarketing of such Series 2015-A Bonds, (iii) will bear interest at the rate of 8% per annum (the "*Stepped Coupon Rate*") from the initial Mandatory Tender Date until purchased upon a subsequent remarketing (the "*Stepped Rate Period*"), (iv) will be subject to optional redemption and mandatory tender for purchase on any date during the Stepped Rate Period and (v) will be deemed to continue in a Multiannual Mode and in the Initial Multiannual Period, though bearing interest at the Stepped Coupon Rate through the day prior to the day they are purchased. In the event of a failed remarketing on the initial Mandatory Tender Date, the Commission has agreed that it will cause the Series 2015-A Bonds to be remarketed on the earliest possible date on which they can be sold at par, in such rate mode or modes as the Commission directs, at a rate not exceeding 8% per annum.

Undelivered Series 2015-A Bonds. If a Book-Entry-Only System is not in effect at the time any Series 2015-A Bond is subject to mandatory tender for purchase, and if the Trustee is in receipt of an amount sufficient to pay the Purchase Price, then such Series 2015-A Bond (or portion) will be deemed purchased on the Purchase Date, and ownership of such Series 2015-A Bond (or portion) shall be transferred to the purchaser thereof. Any registered owner who fails to deliver such Series 2015-A Bond for purchase will not be entitled to any payment other than the Purchase Price for such Series 2015-A Bond upon surrender of such Series 2015-A Bond to the Trustee, and such Series 2015-A Bond will no longer be outstanding and entitled to the benefits of the Indenture, except for the payment of the Purchase Price of such Series 2015-A Bond from money held by the Trustee for such payment upon presentation and surrender of the Series 2015-A Bond. Money which remains unclaimed three years after the due date will, at the request of the Commission, and if the Commission is not, at the time, to the knowledge of the Trustee, in default with respect to any covenant in the Indenture or the Series 2015-A Bonds, be paid to the Commission, and the owners of the Series 2015-A Bonds for which the deposit was made will thereafter be limited to a claim against the Commission.

THE SERIES 2015-B BONDS

General

The Series 2015-B Bonds are being issued as (i) Current Interest Bonds ("*Series 2015-B CIBs*") and (ii) Capital Appreciation Bonds ("*Series 2015-B CABs*").

The Series 2015-B CIBs will mature on the dates and in the principal amounts shown on page iv hereof. Interest on the Series 2015-B CIBs will accrue from their Date of Delivery and will be payable on each February 15 and August 15, commencing August 15, 2015, until maturity or prior redemption, and such interest will be calculated on the basis of a 360-day year consisting of twelve 30-day months.

The Series 2015-B CABs will mature on the dates and in the Maturity Amounts set forth on page iv hereof. Interest on the Series 2015-B CABs will accrete from their Date of Delivery, will be compounded on each February 15 and August 15 (each an "*Accretion Date*"), commencing February 15, 2015, and will be payable together with principal at maturity or prior redemption. The Maturity Amounts of the Series 2015-B CABs will be payable only at

maturity. The interest on the Series 2015-B CABs will be calculated on the basis of a 360-day year of twelve 30-day months.

As used herein the "*Accreted Value*" of the Series 2015-B CABs per $5,000 Maturity Amount is as presented in "SCHEDULE III – ACCRETED VALUE TABLE" attached hereto. Such Accreted Values are based on the initial offering prices and the approximate initial yields to maturity therefor. Such table of Accreted Values is provided for informational purposes only and may not reflect the prices for the Series 2015-B CABs in the secondary market. For any day other than an Accretion Date with respect to a Series 2015-B CABs, the Accreted Value shall be determined by a straight-line interpolation between the values for the applicable semiannual compounding dates (based on 30-day months).

The approximate yields of the Series 2015-B CABs as set forth on page iv of this Official Statement are based upon the initial offering prices therefor set forth on such page. For various reasons, securities that do not pay interest periodically, such as the Series 2015-B CABs, have traditionally experienced greater price fluctuations in the secondary market than securities that pay interest on a periodic basis with the same maturity date.

Redemption

Optional Redemption of Series 2015-B CIBs. Series 2015-B CIBs are subject to optional redemption prior to maturity at the option of the Commission, with funds derived from any available source, on August 15, 2024 or on any date thereafter, in whole or in part, at a redemption price equal to the par amount of the Series 2015-B CIBs to be redeemed plus accrued interest thereon to the date of redemption. If less than all of the Series 2015-B CIBs of the same maturity are to be optionally redeemed, the particular Series 2015-B CIBs of such maturity to be redeemed will be determined as set forth below under "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures – *Selection of Bonds to be Redeemed.*"

Optional Redemption of Series 2015-B CABs. The Series 2015-B CABs are subject to optional redemption prior to maturity at the option of the Commission, with funds derived from any available source, on August 15, 2024 or on any date thereafter, in whole or in part, at a redemption price (equal to the Accreted Value of such Series 2015-B CABs on the redemption date) applicable to the date of redemption. See "– General" above. If less than all of the Series 2015-B CABs of the same maturity are to be optionally redeemed, the particular Series 2015-B CABs of such maturity to be redeemed will be determined as set forth below under "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures – *Selection of Bonds to be Redeemed.*"

Mandatory Redemption of Series 2015-B CIBs. The Series 2015-B CIBs maturing on August 15, 2037 (the "*Series 2015-B Term Bonds*") are subject to mandatory sinking fund redemption prior to maturity in the aggregate principal amounts and on the dates set forth in the following table, at a redemption price equal to the par amount thereof plus accrued interest to, but not including, the redemption date, as follows:

Series 2015-B Term Bonds
Maturing August 15, 2037

Redemption Date (August 15)	Principal Amount
2035	$113,520,000
2036	24,505,000
2037[1]	20,000,000[1]

[1]Final Maturity

If less than all of the Series 2015-B Term Bonds are to be redeemed pursuant to such mandatory sinking fund redemption, the particular Series 2015-B Term Bonds to be redeemed will be determined as set forth below under "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures – *Selection of Bonds to be Redeemed.*"

The principal amount of the Series 2015-B Term Bonds required to be redeemed on any redemption date pursuant to the operation of mandatory sinking fund redemption provisions will be reduced at the option of the Commission by the principal amount of any Series 2015-B Term Bond which, at least 45 days prior to the mandatory sinking fund redemption date, (1) has been acquired by the Commission and delivered to the Trustee for cancellation, (2) has been acquired and canceled by the Trustee, at the direction of the Commission, at a price not exceeding the principal amount of such Series 2015-B Term Bond plus accrued interest to the date of acquisition thereof, or (3) has been redeemed pursuant to the optional redemption provisions and not previously credited to a scheduled mandatory redemption.

Special Redemption of Series 2015-B Bonds. The Series 2015-B Bonds are subject to special redemption at the option of the Commission on any date prior to maturity as more fully described below under "GENERAL INFORMATION REGARDING THE BONDS – Special Redemption." Such redemption may occur before the first date on which the Series 2015-B Bonds may be redeemed as described under "– *Optional Redemption of Series 2015-B CIBs*" and "– *Optional Redemption of Series 2015-B CABs*" above.

Redemption Procedures. For a description of required notices of redemption, the selection of Series 2015-B Bonds to be redeemed, if less than all, and the effect of a call for redemption, see "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures."

THE SERIES 2015-C BONDS

General

The Series 2015-C Bonds are being issued as Current Interest Bonds. The Series 2015-C Bonds mature on the dates and in the principal amounts shown on page vii hereof. Interest on the Series 2015-C Bonds will accrue from their Date of Delivery and will be payable on each February 15 and August 15, commencing August 15, 2015, until maturity or prior redemption and such interest will be calculated on the basis of a 360-day year consisting of twelve 30-day months.

Redemption

Optional Redemption of Series 2015-C Bonds. The Series 2015-C Bonds may be redeemed at the option of the Commission, with the funds derived from any available source, in whole or in part, on August 15, 2024 or on any date thereafter, at a redemption price equal to the par amount of the Series 2015-C Bonds to be redeemed plus accrued interest thereon to the date of redemption. If less than all of the Series 2015-C Bonds of the same maturity are to be optionally redeemed, the particular Series 2015-C Bonds of such maturity to be redeemed will be determined as set forth below under "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures – *Selection of Bonds to be Redeemed*."

Mandatory Redemption of Series 2015-C Bonds. The Series 2015-C Bonds maturing on August 15, 2037 and August 15, 2042 (the "*Series 2015-C Term Bonds*") are subject to mandatory sinking fund redemption prior to maturity in the aggregate principal amounts and on the dates set forth in the following table, at a redemption price equal to the par amount thereof plus accrued interest to, but not including, the redemption date, as follows:

Series 2015-C Term Bonds
Maturing August 15, 2037

Redemption Date (August 15)	Principal Amount
2035	$65,900,000
2036	50,935,000
2037[(1)]	66,370,000[(1)]

[(1)]Final Maturity

Series 2015-C Term Bonds
Maturing August 15, 2042

Redemption Date (August 15)	Principal Amount
2038	$88,315,000
2039	61,480,000
2040	64,555,000
2041	67,780,000
2042[1]	71,175,000[1]

[1]Final Maturity

If less than all of the Series 2015-C Term Bonds of the same maturity are to be redeemed pursuant to such mandatory sinking fund redemption, the particular Series 2015-C Term Bonds of such maturity to be redeemed will be determined as set forth below under "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures – *Selection of Bonds to be Redeemed.*"

The principal amount of the Series 2015-C Term Bonds required to be redeemed on any redemption date pursuant to the operation of mandatory sinking fund redemption provisions will be reduced at the option of the Commission by the principal amount of any Series 2015-C Term Bond of the same maturity which, at least 45 days prior to the mandatory sinking fund redemption date, (1) has been acquired by the Commission and delivered to the Trustee for cancellation, (2) has been acquired and canceled by the Trustee, at the direction of the Commission, at a price not exceeding the principal amount of such Series 2015-C Term Bond plus accrued interest to the date of acquisition thereof, or (3) has been redeemed pursuant to the optional redemption provisions and not previously credited to a scheduled mandatory redemption.

Special Redemption of Series 2015-C Bonds. The Series 2015-C Bonds are subject to special redemption at the option of the Commission on any date prior to maturity as more fully described below under "GENERAL INFORMATION REGARDING THE BONDS – Special Redemption." Such redemption may occur before the first date on which the Series 2015-C Bonds may be redeemed as described under "– *Optional Redemption of Series 2015-C Bonds*" above.

Redemption Procedures. For a description of required notices of redemption, the selection of Series 2015-C Bonds to be redeemed if less than all, and the effect of a call for redemption, see "GENERAL INFORMATION REGARDING THE BONDS – Redemption Procedures."

GENERAL INFORMATION REGARDING THE BONDS

General

The Bonds will be issued as fully registered bonds, without coupons, and will be dated January 1, 2015, although interest thereon will accrue from the Date of Delivery. The Bonds will be issued in book-entry form pursuant to the book-entry-only system described in Appendix C. Beneficial owners of the Bonds will not receive physical delivery of the bond certificates. Beneficial ownership of the Bonds may be acquired in principal denominations of integral multiples of $5,000 for the Current Interest Bonds and in Maturity Amounts of integral multiples of $5,000 for the Capital Appreciation Bonds.

Record Date

The Record Date for the payment of interest with respect to the Series 2015-A Bonds during the Initial Multiannual Period and with respect to the Series 2015-B Bonds and the Series 2015-C Bonds is the close of business on the 15th day of the calendar month immediately preceding any Interest Payment Date, regardless of whether such day is a Business Day.

Payments in the Event of Holidays

If the date for payment of the principal of or interest on the Bonds is a Saturday, Sunday, a legal holiday, or a day on which banking institutions in the city where the Trustee is located are authorized by law or executive order to close, then the date for such payment shall be the next succeeding day which is not such a Saturday, Sunday, legal holiday, or day on which banking institutions are authorized to close; and payment on such date shall have the same force and effect as if made on the original date payment was due.

Special Redemption

The Bonds are subject to special redemption prior to maturity at the option of the Commission, in whole or in part (and, if in part, at the option of the Commission as to maturity) at the Unamortized Premium Redemption Price plus, in the case of the Current Interest Bonds, accrued interest on any date on or after the occurrence of a Transfer Event as certified by the TTA Representative to the Trustee. If a Transfer Event occurs with respect to part of the System and less than all of the Bonds are redeemed, the principal amount to be redeemed shall be determined by, and in the sole discretion of, the TTA Representative applying a reasonable allocation method of the Bonds and any other Obligations then outstanding to the portion of the System transferred. Only that portion of the Bonds so allocated to the portion of the System transferred are subject to a partial special redemption. If less than all of the Bonds of the same series and maturity are to be redeemed pursuant to such special redemption, the particular Bonds of such maturity to be redeemed will be determined as set forth below under "– Redemption Procedures – *Selection of Bonds to be Redeemed*."

"*Unamortized Premium Redemption Price*" means (i) for the Current Interest Bonds the unamortized original issue price of the Current Interest Bonds to be redeemed as shown on Schedule IV of this Official Statement and (ii) for the Capital Appreciation Bonds, the Accreted Value of the Capital Appreciation Bonds to be redeemed, as shown on Schedule III of this Official Statement. For any day other than a date shown on the applicable schedule, the Unamortized Premium Redemption Price shall be determined by a straight-line interpolation between the values for the applicable semiannual dates (based on 30-day months).

"*Transfer Event*" means the occurrence of (i) the sale, conveyance or other disposition of all or a part of the System, (ii) the transfer of the control of all or a part of the System through a concession or other long-term public-private partnership agreement or arrangement or (iii) any combination of (i) and (ii). See "CONSIDERATIONS REGARDING SYSTEM ELEMENTS – System Transfer Conditions" for a description of the conditions to transferring the System, or any portion thereof, including the condition that each rating agency that rates the Bonds must confirm that no such transfer will adversely affect its rating.

If a Transfer Event occurs, the Commission may redeem Bonds before the first date on which such Bonds may be redeemed by optional redemption as described herein, and at such time investments available for the reinvestment of redemption proceeds may be available only at yields which are lower than the yields at which the Bonds have been purchased.

Redemption Procedures

Notice of Redemption. At least 30 days (two days with respect to any Series 2015-A Bonds during a Stepped Rate Period) prior to the date fixed for optional redemption of any Bonds, a written notice is required to be sent by the Trustee by United States mail, first-class postage prepaid, to the Registered Owner of each Bond to be redeemed at its address as it appeared in the registration books maintained by the Trustee on the 45th day prior to such redemption date; provided, however, that the failure to send, mail, or receive such notice, or any defect therein or in the sending or mailing thereof, will not affect the validity or effectiveness of the proceedings for the optional redemption of any such Bond. The mailing of such notice as required above in connection with the redemption of such Bonds prior to maturity at the option of the Commission will be the only notice actually required in connection with or as a prerequisite to such optional redemption of any Bonds or portions thereof. All redemption notices for the Bonds are required to contain a description of the Bonds to be redeemed including such items specified in the Indenture.

In addition to the foregoing notice, in the event the Bonds to be redeemed are not subject to redemption within the next succeeding 60 days, the Trustee must give further notice to the Registered Owners that the deposit required by the Master Indenture has been made and that such Bonds are deemed to have been paid in accordance with the Master Indenture.

So long as a Book-Entry-Only System is used for the Bonds, the Trustee will send any notices with respect to such Bonds only to DTC. Any failure by DTC to advise any DTC participant, or of any DTC participant or indirect participant to notify the beneficial owner, will not affect the validity of the redemption of such Bonds called for redemption or any other action premised on any such notice.

During any period in which ownership of the Bonds is determined by a book-entry at a securities depository for the Bonds, if fewer than all of the Bonds of the same maturity and bearing the same interest rate are to be redeemed, the particular Bonds of such maturity bearing such interest rate will be selected in accordance with the arrangements between the Commission and DTC.

Conditional Notice of Redemption. In the case of an optional redemption of the Bonds, the notice may state (1) that it is conditioned upon the deposit of money with the Trustee, in an amount equal to the amount necessary to effect the redemption, no later than the redemption date or (2) that the Commission retains the right to rescind such notice at any time prior to the scheduled redemption date if the Commission delivers a certificate of a Chief Financial Officer to the Trustee instructing the Trustee to rescind the redemption notice (in either case, a "*Conditional Redemption*"), and such notice and optional redemption shall be of no effect if such money is not so deposited or if the notice is rescinded as described in the paragraph below.

Any Conditional Redemption may be rescinded in whole or in part at any time prior to the redemption date if the Commission delivers a certificate of a Chief Financial Officer to the Trustee instructing the Trustee to rescind the redemption notice. The Trustee is required to give prompt notice of such rescission or failure to deposit funds to the affected Registered Owners. Any Bonds subject to Conditional Redemption where redemption has been rescinded or funds to effect the redemption have not been deposited will remain outstanding and the rescission or failure to deposit funds will not constitute an event of default.

Selection of Bonds to be Redeemed. If the Bonds are registered in book-entry-only form and so long as DTC or a successor securities depository is the sole registered owner of such Bonds, if less than all of the Bonds of a particular Series, interest rate and maturity are called for prior redemption, the particular Bonds or portions thereof to be redeemed shall be allocated on a pro rata pass-through distribution of principal basis in accordance with DTC procedures, provided that, so long as the Bonds are held in book-entry form, the selection for redemption of such Bonds shall be made in accordance with the operational arrangements of DTC then in effect, and, if the DTC operational arrangements do not allow for redemption on a pro rata pass-through distribution of principal basis, the Bonds will be selected for redemption, in accordance with DTC procedures, by lot or such other method then required by DTC; provided that any such redemption must be performed such that all Bonds remaining outstanding will be in Authorized Denominations.

If a Current Interest Bond is in a principal denomination in excess of $5,000, portions of the principal sum in amounts of $5,000 or any integral multiple thereof may be redeemed, and, if less than all of the principal sum is to be redeemed, there will be issued, without charge to the Registered Owner, upon the surrender of the Current Interest Bond at the designated office of the Trustee, a new Current Interest Bond of like maturity, Series, and interest rate in any Authorized Denominations provided by the Indenture for the then unredeemed balance of the principal amount.

If a Capital Appreciation Bond is in a Maturity Amount denomination in excess of $5,000, portions of the Maturity Amount in amounts of $5,000 or any integral multiple thereof may be redeemed, and, if less than all of the Maturity Amount is to be redeemed, there will be issued, without charge to the Registered Owner, upon the surrender of the Capital Appreciation Bond at the designated office of the Trustee, a new Capital Appreciation Bond of like maturity, Series, and interest rate in any Authorized Denominations provided by the Indenture for the then unredeemed balance of the Maturity Amount.

If a Bond is selected for redemption, in whole or in part, neither the Commission nor the Trustee will be required to transfer such Bond to an assignee of the Registered Owner within 45 days of the redemption date;

provided, however, that such limitation on transferability will not be applicable to any exchange by the Registered Owner of the unredeemed balance in the event of its redemption in part.

Effect of Redemption. If due provision has been made with the Trustee for the payment of the required redemption price for the Bonds or portions thereof which are to be redeemed, plus any accrued interest on the Current Interest Bonds or accreted interest on the Capital Appreciation Bonds, as applicable, to the date fixed for redemption, and notice is duly given as provided above, the Bonds or portions thereof which are to be redeemed will automatically be treated as redeemed prior to their scheduled maturities, and they will not bear interest after the date fixed for redemption, and they will not be regarded as being outstanding except for the right of the Registered Owners to receive the redemption price plus any accrued interest on the Current Interest Bonds or accreted interest on the Capital Appreciation Bonds, as applicable, from the Trustee out of the funds provided for such payment.

Trustee

The Commission has covenanted to maintain and provide a Trustee at all times while Bonds are outstanding, and any successor Trustee must be a corporation or banking association, duly organized and doing business under the laws of the United States or of any state, authorized under such laws to exercise corporate trust powers and subject to supervision or examination by federal or state banking authority, of good standing, and having, at the time of its appointment, a combined capital and surplus aggregating not less than $100,000,000, or is an affiliate of, or has a contractual relationship with, a corporation or banking association meeting such capital and surplus requirement which guarantees the obligations and liabilities of the proposed trustee, and which is subject to supervision or examination by federal or state banking authority. In the event that the entity at any time acting as Trustee should resign or otherwise cease to act as such, the Commission will promptly appoint a successor Trustee by written instrument. If an instrument of acceptance has not been delivered to the resigning Trustee within 30 days after the giving of such notice of resignation, the resigning Trustee or any Secured Owner may petition a court of competent jurisdiction for the appointment of a successor Trustee.

For a description of limitations on the obligation of the Trustee to take action and exculpatory provisions, see "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE – MASTER INDENTURE – Trustee."

Transfer, Exchange and Registration

Beneficial ownership of the Bonds registered in the name of Cede & Co. will initially be transferred as described in "APPENDIX C – BOOK-ENTRY-ONLY SYSTEM."

As Bond Registrar, so long as any Obligations of a series remain outstanding, the Trustee will maintain a Bond Register for the registration and transfer of the Obligations of such series in accordance with the terms of the Indenture.

Upon surrender of any Bond at the designated office of the Trustee, together with an assignment duly executed by the current Registered Owner of such Bond or such Registered Owner's duly authorized representative, such Bond may, at the option of the Registered Owner, be exchanged for an equal aggregate principal amount of Bonds of the same maturity, of Authorized Denominations and bearing interest at the same rate and in the same form as the Bond being surrendered for exchange, registered in the name or names designated on the assignment; provided that the Trustee is not required to exchange or register the transfer of Bonds after the giving of notice calling such Bonds for redemption, in whole or in part.

The Trustee may make a charge to any Registered Owner requesting such exchange or registration in the amount of any tax or other governmental charge required to be paid with respect thereto and the Commission may charge such amount as it deems appropriate for each new Bond delivered upon such exchange or transfer, which charge or charges shall be paid before any new Bond shall be delivered.

The Trustee will not be required to transfer or exchange any Bond after the giving of notice calling such Bonds for redemption, in whole or in part.

Defeasance

Any Obligations and the interest thereon shall be deemed to be paid, retired and no longer outstanding (each a "*Defeased Obligation*") within the meaning of the Master Indenture, except to the extent provided in the third paragraph below under this section entitled "*Defeasance,*" when payment of the principal of such Defeased Obligation, plus interest thereon to the due date (whether such due date be by reason of Maturity or otherwise) either (i) shall have been made or caused to be made in accordance with the terms thereof, or (ii) shall have been provided for on or before such due date by irrevocably depositing with or making available to the Trustee (or other bank or similar institution with trust powers meeting the qualifications of a trustee under the Master Indenture) as escrow agent (the "*Escrow Agent*") in accordance with an escrow agreement or other instrument (the "*Future Escrow Agreement*") for such payment (1) lawful money of the United States sufficient to make such payment or (2) Defeasance Securities that mature as to principal and interest in such amounts and at such times as will insure the availability, without reinvestment, of sufficient money to provide for such payment, and when proper arrangements have been made by the Commission with the Escrow Agent for the payment of its services and those of the Trustee relating to such Defeased Obligations until such Defeased Obligations shall have become due and payable; provided, however, a Credit Facility shall not be deemed to have been paid and no longer Outstanding until all amounts due thereunder have been paid and the Credit Facility has been terminated in accordance with its terms. At such time as an Obligation shall be deemed to be a Defeased Obligation under the Master Indenture, as aforesaid, such Defeased Obligation and the interest thereon shall no longer be secured by, payable from, or entitled to the benefits of, the Trust Estate pledged as provided in the Master Indenture, and such principal and interest shall be payable solely from such money or Defeasance Securities. Notwithstanding any other provision of the Master Indenture to the contrary, it is provided that any determination not to redeem Defeased Obligations that is made in conjunction with the payment arrangements specified in clauses (i) or (ii) immediately above shall not be irrevocable, provided that, in the proceedings providing for such payment arrangements, the Commission (A) expressly reserves the right to call the Defeased Obligations for redemption; (B) gives notice of the reservation of that right to the owners of the Defeased Obligations immediately following the making of the payment arrangements; and (C) directs that notice of the reservation be included in any redemption notices that it authorizes.

Any money so deposited with the Escrow Agent may at the written direction of the Commission be invested in Defeasance Securities, maturing in the amounts and times as set forth above, and all income from such Defeasance Securities received by the Escrow Agent that is not required for the payment of the Defeased Obligations and interest thereon, with respect to which such money has been so deposited, shall be turned over to the Commission, or deposited as directed in writing by the Commission. Any Future Escrow Agreement pursuant to which the money, Defeasance Securities or a combination of the foregoing are held for the payment of Defeased Obligations may contain provisions permitting the investment or reinvestment of such money in Defeasance Securities or the substitution of other Defeasance Securities upon the satisfaction of the requirements specified in clauses (i) or (ii) in the preceding paragraph. All income from such Defeasance Securities received that is not required for the payment of the Defeased Obligations, with respect to which such money has been so deposited, shall be remitted to the Commission or deposited as directed in writing by the Commission.

Until all Defeased Obligations shall have become due and payable, the Trustee shall perform the services of Paying Agent for such Defeased Obligations the same as if they had not been defeased, and the Commission shall make proper arrangements to provide and pay for such services as required by the Master Indenture.

In the event that the Commission elects to defease less than all of the principal amount of a Series of Obligations of a Maturity with the same interest rate, the Trustee, or the Securities Depository if such Obligations are in book-entry-only form, shall select, or cause to be selected, such amount of such obligations by such random method as it deems fair and appropriate.

Book-Entry-Only System

In reading this Official Statement, it should be understood that while the Bonds are in the Book-Entry-Only System, references in other sections of this Official Statement to Registered Owners should be read to include the person for which the Direct Participant or Indirect Participant acquires an interest in the Bonds, but (i) all rights of ownership must be exercised through DTC and the Book-Entry-Only System, and (ii) except as described above,

notices that are to be given to Registered Owners under the Indenture will be given only to DTC. See "APPENDIX C – BOOK-ENTRY-ONLY SYSTEM."

LITIGATION

There is no litigation, proceeding, inquiry or investigation pending by or before any court or other governmental authority or entity (or, to the best knowledge of the Commission, threatened) that affects the obligation of the Commission to deliver the Bonds or the validity of the Bonds. There is no litigation, proceeding, inquiry or investigation pending by or before any court or other governmental authority or entity (or, to the best knowledge of the Department, threatened) against or affecting the Commission or the Department or any of its agencies or instrumentalities that (i) affects the existence of the Commission or the Department or the right of the present commissioners and officers of the Commission or the Department to hold their offices, (ii) would affect the validity or enforceability of the provisions pursuant to which the Bonds are being issued, (iii) would have a material adverse effect upon the power of the Commission to issue the Bonds or (iv) if decided adversely to the Commission, could have a material adverse effect on the financial condition of the System.

LEGAL MATTERS

Legal matters incident to the authorization, issuance and sale of the Bonds are subject to approval of legality by the Attorney General of the State and of certain legal matters by McCall, Parkhurst & Horton L.L.P., Austin, Texas, Bond Counsel and Disclosure Counsel. Though it represents the Financial Advisor and the Underwriters from time to time in matters unrelated to the issuance of the Bonds, Bond Counsel has been engaged by and represents only the Commission in connection with the issuance of the Bonds. Attached hereto as "APPENDIX G – FORMS OF OPINIONS OF BOND COUNSEL" are the forms of opinions that Bond Counsel will render in connection with the issuance of the Bonds. In its capacity as Bond Counsel, such firm has reviewed the information relating to the Bonds, the Indenture and applicable law under the captions "INTRODUCTION," "PLAN OF FINANCE," (except for information under the subheadings "Outstanding Obligations" and "Sources and Uses") "CONSIDERATIONS REGARDING SYSTEM ELEMENTS – System Transfer Conditions," "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS," "THE SERIES 2015-A BONDS," "THE SERIES 2015-B BONDS," "THE SERIES 2015-C BONDS," "GENERAL INFORMATION REGARDING THE BONDS," "LEGAL MATTERS," "TAX MATTERS," "CONTINUING DISCLOSURE OF INFORMATION" (except for information under the subheading "Compliance with Prior Undertakings"), "LEGAL INVESTMENTS IN TEXAS," "APPENDIX B – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE," and "APPENDIX G – FORMS OF OPINIONS OF BOND COUNSEL" and such firm is of the opinion that the information, other than any financial, forecast, technical, engineering and statistical statements, tables and data contained under such captions as to which no view is expressed, contained under such captions and in such appendices is a fair and accurate summary of the information purported to be shown therein and is correct as to matters of law. The payment of a portion of legal fees to Bond Counsel in connection with the issuance of the Bonds is contingent on the sale and delivery of the Bonds. Certain legal matters will be passed upon for the Underwriters by Norton Rose Fulbright US LLP and Mahomes Bolden PC, co-counsel to the Underwriters. The payment of legal fees to Underwriters' Co-Counsel in connection with the issuance of the Bonds is contingent on the sale and delivery of the Bonds.

The various legal opinions to be delivered concurrently with the delivery of the Bonds express the professional judgment of the attorneys rendering the opinions as to the legal issues explicitly addressed therein. In rendering a legal opinion, the attorney does not become an insurer or guarantor of the expression of professional judgment, of the transaction opined upon or of the future performance of the parties to the transaction, nor does the rendering of an opinion guarantee the outcome of any legal dispute that may arise out of the transaction.

TAX MATTERS

Opinion

On the date of initial delivery of the Bonds, McCall, Parkhurst & Horton L.L.P., Austin, Texas, Bond Counsel to the Commission, will render its opinion that, in accordance with statutes, regulations, published rulings and court decisions existing on the date thereof ("*Existing Law*"), (i) interest on the Bonds for federal income tax purposes will be excludable from the "gross income" of the owners thereof and (ii) the Bonds will not be treated as

"specified private activity bonds" the interest on which would be included as an alternative minimum tax preference item under section 57(a)(5) of the Code. Except as stated above, Bond Counsel will express no opinion as to any other federal, state or local tax consequences of the purchase, ownership or disposition of the Bonds. See "APPENDIX G – FORMS OF OPINIONS OF BOND COUNSEL."

In rendering its opinion, Bond Counsel will rely upon (i) certain information and representations of the Commission, including information and representations contained in the Commission's federal tax certificate, (ii) covenants of the Commission contained in the documents relating to the Bonds regarding certain matters, including arbitrage and the use of the proceeds of the Bonds and the Refunded Obligations and the property financed or refinanced therewith, and (iii) the verification report prepared by Causey Demgen & Moore P.C. Failure by the Commission to observe such representations or covenants could cause the interest on the Bonds to become taxable retroactively to the date of issuance.

The Code and the regulations promulgated thereunder contain a number of requirements that must be satisfied subsequent to the issuance of the Bonds in order for interest on the Bonds to be, and to remain, excludable from gross income for federal income tax purposes. Failure to comply with such requirements may cause interest on the Bonds to be included in gross income retroactively to the date of issuance of the Bonds. The opinion of Bond Counsel is conditioned on compliance by the Commission with such requirements, and Bond Counsel has not been retained to monitor compliance with these requirements subsequent to the issuance of the Bonds.

Bond Counsel's opinion represents its legal judgment based upon its review of Existing Law and the reliance on the aforementioned information, representations and covenants. Bond Counsel's opinion is not a guarantee of a result. Existing Law is subject to change by Congress and to subsequent judicial and administrative interpretation by the courts and the Department of the Treasury. There can be no assurance that Existing Law or the interpretation thereof will not be changed in a manner which would adversely affect the tax treatment of the purchase, ownership or disposition of the Bonds.

A ruling was not sought from the Internal Revenue Service by the Commission with respect to the Bonds or the property financed or refinanced with proceeds of the Bonds or the Refunded Obligations. No assurances can be given as to whether or not the Internal Revenue Service will commence an audit of the Bonds, or as to whether the Internal Revenue Service would agree with the opinion of Bond Counsel. If an Internal Revenue Service audit is commenced, under current procedures, the Internal Revenue Service is likely to treat the Commission as the taxpayer and the Owners may have no right to participate in such procedure. No additional interest will be paid upon any determination of taxability.

Collateral Federal Income Tax Consequences

The following discussion is a summary of certain collateral federal income tax consequences resulting from the purchase, ownership or disposition of the Bonds. This discussion is based on Existing Law, which is subject to change or modification, retroactively.

The following discussion is applicable to investors, other than those who are subject to special provisions of the Code, such as financial institutions, property and casualty insurance companies, life insurance companies, individual recipients of Social Security or Railroad Retirement benefits, individuals allowed an earned income credit, certain S corporations with accumulated earnings and profits and excess passive investment income, foreign corporations subject to the branch profits tax, taxpayers qualifying for the health insurance premium assistance credit and taxpayers who may be deemed to have incurred or continued indebtedness to purchase tax-exempt obligations.

THE DISCUSSION CONTAINED HEREIN MAY NOT BE EXHAUSTIVE. INVESTORS, INCLUDING THOSE WHO ARE SUBJECT TO SPECIAL PROVISIONS OF THE CODE, SHOULD CONSULT THEIR OWN TAX ADVISORS AS TO THE TAX TREATMENT WHICH MAY BE ANTICIPATED TO RESULT FROM THE PURCHASE, OWNERSHIP AND DISPOSITION OF TAX-EXEMPT OBLIGATIONS BEFORE DETERMINING WHETHER TO PURCHASE THE BONDS.

Interest on the Bonds will be includable as an adjustment for "adjusted current earnings" to calculate the alternative minimum tax imposed on corporations by section 55 of the Code.

Under section 6012 of the Code, owners of tax-exempt obligations, such as the Bonds, may be required to disclose interest received or accrued during each taxable year on their returns of federal income taxation.

Section 1276 of the Code provides for ordinary income tax treatment of gain recognized upon the disposition of a tax-exempt obligation, such as the Bonds, if such obligation was acquired at a "market discount" and if the fixed maturity of such obligation is equal to, or exceeds, one year from the date of issue. Such treatment applies to "market discount bonds" to the extent such gain does not exceed the accrued market discount of such bonds; although for this purpose, a de minimis amount of market discount is ignored. A "market discount bond" is one which is acquired by the owner at a purchase price which is less than the stated redemption price at maturity or, in the case of a bond issued at an original issue discount, the "revised issue price" (i.e., the issue price plus accrued original issue discount). The "accrued market discount" is the amount which bears the same ratio to the market discount as the number of days during which the owner holds the obligation bears to the number of days between the acquisition date and the final maturity date.

Future and Proposed Legislation

Tax legislation, administrative actions taken by tax authorities or court decisions, whether at the Federal or state level, may adversely affect the tax-exempt status of interest on the Bonds under Federal or state law and could affect the market price or marketability of the Bonds. Any such proposal could limit the value of certain deductions and exclusions, including the exclusion for tax-exempt interest. The likelihood of any such proposal being enacted cannot be predicted. Prospective purchasers of the Bonds should consult their own tax advisors regarding the foregoing matters.

State, Local and Foreign Taxes

Investors should consult their own tax advisors concerning the tax implications of the purchase, ownership or disposition of the Bonds under applicable state or local laws. Foreign investors should also consult their own tax advisors regarding the tax consequences unique to investors who are not United States persons.

CONTINUING DISCLOSURE OF INFORMATION

In the Indenture, the Commission has made the following agreement for the benefit of the holders and beneficial owners of the Bonds. The Commission is required to observe the agreement for so long as it remains obligated to advance funds to pay the Bonds. Under such agreement, the Commission will be obligated to provide certain updated annual financial information and operating data and timely notice of specified events to the Municipal Securities Rulemaking Board (the "*MSRB*").

Annual Reports

The Commission will provide certain updated financial information and operating data to the MSRB annually. The information to be updated includes all quantitative financial information and operating data with respect to the Commission and the System of the general type included in this Official Statement, under the headings "THE SYSTEM," "SYSTEM-RELATED FUNDING OBLIGATIONS OF COMMISSION" and "FUNDING OF COMMISSION OBLIGATIONS," and in "SCHEDULE II – DEBT SERVICE REQUIREMENTS" and "APPENDIX A – AUDITED FINANCIAL STATEMENTS OF THE SYSTEM FOR FISCAL YEAR ENDED AUGUST 31, 2014." In the annual filing the Commission will furnish (i) a table setting forth for such Fiscal Year, but not including any projection for any future period, the information shown in "Table 6 – System Forecasted Cash Flow and Debt Service Coverage" herein, (ii) a copy of the General Engineering Consultant's annual report relating to its inspection of the System and (iii) a copy of the Toll rate schedule then in effect.

The Commission will update and provide this information within six months after the end of each Fiscal Year. The Commission will provide the updated information to the MSRB in an electronic format as prescribed by the MSRB.

The Commission may provide updated information in full text or may incorporate by reference certain other publicly available documents, filed with the SEC or at the MSRB's internet website. The updated information will include audited financial statements, if the Commission commissions an audit and it is complete by the required time. If audited financial statements are not available by the required time, the Commission will provide unaudited statements by the required time and will provide audited financial statements when and if the audit report becomes available. Any such financial statements will be prepared in accordance with generally accepted accounting principles or such other accounting principles as the Commission may be required to employ from time to time pursuant to state law or regulation.

The Commission's current Fiscal Year end is August 31. Accordingly, it must provide updated information by February 28 in each year, unless the Commission changes its Fiscal Year. If the Commission changes its Fiscal Year, it will notify the MSRB of the change.

Notice of Certain Events

The Commission will provide notice to the MSRB of any of the following events with respect to the Bonds, if such event is material within the meaning of the federal securities laws: (1) non-payment related defaults; (2) modifications to rights of bondholders; (3) Bond calls; (4) release, substitution or sale of property securing repayment of the Bonds; (5) the consummation of a merger, consolidation or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms; and (6) appointment of a successor or additional trustee or the change of name of a trustee.

The Commission will also provide notice to the MSRB of any of the following events with respect to the Bonds without regard to whether such event is considered material within the meaning of the federal securities laws: (1) principal and interest payment delinquencies; (2) unscheduled draws on debt service reserves reflecting financial difficulties; (3) unscheduled draws on credit enhancements reflecting financial difficulties; (4) substitution of credit or liquidity providers, or their failure to perform; (5) adverse tax opinions or the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701–TEB) or other material notices or determinations with respect to the tax status of the Bonds, or other events affecting the tax status of the Bonds; (6) tender offers; (7) defeasances; (8) rating changes; and (9) bankruptcy, insolvency, receivership or similar event of the Commission (which is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for the Commission in a proceeding under the United States Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the Commission, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the Commission).

The Commission will provide notice of the aforementioned events to the MSRB in a timely manner (but not in excess of ten business days after the occurrence of the event). The Commission will also provide timely notice of any failure by the Commission to provide annual financial information in accordance with its agreement described above under "– Annual Reports."

Availability of Information from the MSRB

The Commission has agreed to provide the foregoing information only to the MSRB. All documents provided by the Commission to the MSRB described above under "Annual Reports" and "Notice of Certain Events" will be in an electronic format and accompanied by identifying information as prescribed by the MSRB.

The address of the MSRB is 1900 Duke Street, Suite 600, Alexandria, Virginia 22314, and its telephone number is (703) 797-6600. To make such information available to the public free of charge, the MSRB has established the Electronic Municipal Market Access system, which may be accessed over the internet at www.emma.msrb.org.

Should the Rule be amended to obligate the Commission to make filing with or provide notices to entities other than the MSRB, the Commission agrees to undertake such obligation with respect to the Bonds in accordance with the Rule as amended.

Limitations and Amendments

The Commission has agreed to update information and to provide notices of events only as described above. The Commission has not agreed to provide other information that may be relevant or material to a complete presentation of its financial results of operations, condition or prospects or agreed to update any information that is provided, except as described above. The Commission makes no representation or warranty concerning such information or concerning its usefulness to a decision to invest in or sell the Bonds at any future date. The Commission disclaims any contractual or tort liability for damages resulting in whole or in part from any breach of its continuing disclosure agreement or from any statement made pursuant to its agreement, although holders of Bonds may seek a writ of mandamus to compel the Commission to comply with its agreement.

The Commission may amend, supplement or repeal its continuing disclosure agreement to adapt to changed circumstances that arise from a change in legal requirements, a change in law or a change in the identity, nature, status or type of operations of the Commission, but only if (i) the agreement, as amended, would have permitted an underwriter to purchase or sell Bonds in the primary offering described herein in compliance with the Rule, taking into account any amendments or interpretations of the Rule to the date of such amendment, as well as such changed circumstances and (ii) either (a) the holders of a majority in aggregate principal amount of the outstanding Bonds consent to the agreement or (b) any person unaffiliated with the Commission (such as nationally-recognized bond counsel) determines that the amendment will not materially impair the interest of the holders and beneficial owners of the Bonds. The Commission may also amend or repeal its continuing disclosure agreement if the SEC amends or repeals the application provisions of the Rule or a court of final jurisdiction enters judgment that such provisions of the Rule are invalid, but only if and to the extent that the provisions of this sentence would not prevent an underwriter from lawfully purchasing or selling the Bonds in the primary offering of the Bonds.

LEGAL INVESTMENTS IN TEXAS

Section 1201.041 of the Public Security Procedures Act (Chapter 1201, Texas Government Code) provides that the Bonds are negotiable instruments governed by Chapter 8, Texas Business and Commerce Code, and are legal and authorized investments for insurance companies, fiduciaries and trustees, and for the sinking funds of municipalities or other political subdivisions or public agencies of the State. For political subdivisions in Texas that have adopted investment policies and guidelines in accordance with the Public Funds Investment Act, Chapter 2256, Texas Government Code, the Bonds may have to be assigned a rating of "A" or its equivalent as to investment quality by a national rating agency before such obligations are eligible investments for sinking funds and other public funds. See "RATINGS." In addition, various provisions of the Texas Finance Code provide that, subject to a prudent investor standard, the Bonds are legal investments for state banks, savings banks, trust companies with capital of $1,000,000 or more and savings and loan associations. The Bonds are eligible to secure deposits of any public funds of the State, its agencies and its political subdivisions, and are legal security for those deposits to the extent of their market value. No review by the Commission has been made of the laws in other states to determine whether the Bonds are legal investments for various institutions in those states.

The Commission makes no representation that the Bonds will be acceptable to banks, savings and loan associations or public entities for investment purposes or to secure deposits of public funds. The Commission has made no investigation of other laws, regulations or investment criteria that might apply to or otherwise limit the availability of the Bonds for investment or collateral purposes. Prospective purchasers are urged to carefully evaluate the investment quality of the Bonds and as to the acceptability of the Bonds for investment or collateral purposes.

RATINGS

The Series 2015-A Bonds and the Series 2015-B Bonds have received ratings of "A3" from Moody's, "A-" from S&P and "A-" from Fitch. The Series 2015-C Bonds have received ratings of "Baa1" from Moody's, "BBB+" from S&P and "BBB" from Fitch. An explanation of the significance of each such rating may be obtained from the company furnishing the rating. The ratings reflect only the views of such companies at the time such ratings are given, and the Commission makes no representation as to the appropriateness of the ratings. There is no assurance that such ratings will continue for any given period of time or that they will not be revised downward or withdrawn entirely by such companies, if in the judgment of such companies, circumstances so warrant. Any such downward revision or withdrawal of any rating may have an adverse effect on the market price of the Bonds.

FINANCIAL ADVISOR

Estrada Hinojosa & Company, Inc. is serving as the Financial Advisor to the Commission (the "*Financial Advisor*") in connection with the issuance of the Bonds. The Financial Advisor's fee for services rendered with respect to the sale of the Bonds is not contingent upon the issuance and delivery of the Bonds. The Financial Advisor has not verified and does not assume any responsibility for the information, covenants and representations contained in any of the legal documents with respect to the federal income tax status of the Bonds, or the possible impact of any present, pending or future actions taken by any legislative or judicial bodies.

UNDERWRITING

Barclays Capital Inc., as representative of the Underwriters, has agreed, on behalf of the Underwriters, subject to certain conditions, to purchase the Bonds from the Commission. The purchase price of the Series 2015-A Bonds is $261,866,492.20 (which represents the par amount of the Series 2015-A Bonds, plus an original issue premium of $37,482,750.00 and less an underwriting discount of $616,257.80). The purchase price of the Series 2015-B Bonds is $319,230,609.84 (which represents the par amount of the Series 2015-B Bonds, plus an original issue premium of $94,764,337.50 and less an underwriting discount of $1,553,527.66). The purchase price of the Series 2015-C Bonds is $1,302,021,741.16 (which represents the par amount of the Series 2015-C Bonds, plus an original issue premium of $150,644,033.40 and less an underwriting discount of $5,942,292.24). The Underwriters will be obligated to purchase all of the Bonds if any Bonds are purchased. The Bonds to be offered to the public may be offered and sold to certain dealers (including the Underwriters and other dealers depositing Bonds into investment trusts) at prices lower than the public offering prices of the Bonds and such public offering prices may be changed, from time to time, by the Underwriters.

Citigroup Global Markets Inc., an underwriter of the Bonds, has entered into a retail distribution agreement with each of TMC Bonds L.L.C. ("*TMC*") and UBS Financial Services Inc. ("*UBSFS*"). Under these distribution agreements, Citigroup Global Markets Inc. may distribute municipal securities to retail investors through the financial advisor network of UBSFS and the electronic primary offering platform of TMC. As part of this arrangement, Citigroup Global Markets Inc. may compensate TMC (and TMC may compensate its electronic platform member firms) and UBSFS for their selling efforts with respect to the Bonds.

Morgan Stanley, parent company of Morgan Stanley & Co. LLC., one of the Underwriters, has entered into a retail distribution arrangement with its affiliate Morgan Stanley Smith Barney LLC. As part of the distribution arrangement, Morgan Stanley & Co. LLC may distribute municipal securities to retail investors through the financial advisor network of Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may compensate Morgan Stanley Smith Barney LLC for its selling efforts with respect to the Bonds.

Piper Jaffray & Co. and Pershing LLC, a subsidiary of The Bank of New York Mellon Corporation, entered into an agreement (the "*Agreement*") which enables Pershing LLC to distribute certain new issue municipal securities underwritten by or allocated to Piper Jaffray & Co., including the Bonds. Under the Agreement, Piper Jaffray & Co. will share with Pershing LLC a portion of the fee or commission paid to Piper Jaffray & Co.

Siebert Brandford Shank & Co., L.L.C., one of the Underwriters of the Bonds, has entered into a separate agreement with Credit Suisse Securities USA LLC for retail distribution of certain municipal securities offerings, at

the original issue prices. Pursuant to said agreement, Siebert Brandford Shank & Co., L.L.C. will share a portion of its underwriting compensation with respect to the Bonds, with Credit Suisse Securities USA LLC.

VERIFICATION OF MATHEMATICAL ACCURACY

Causey Demgen & Moore P.C. (the "*Verification Agent*") will verify, from the information provided to them by the Financial Advisor, the mathematical accuracy as of the date of the closing on the Bonds of (i) the computations contained in the provided schedules to determine that the anticipated receipts from the securities and cash deposits listed in the Financial Advisor's schedules, to be held in escrow, will be sufficient to pay, when due, the principal, interest, and call premium payment requirements, if any, of the Refunded Obligations and (ii) the computations of yield on both the securities and the Bonds contained in the schedules used by Bond Counsel in its determination that the interest on the Bonds is exempt from federal income tax. The Verification Agent will express no opinion on the assumptions provided to them, or as to the exemption from federal taxation of the interest on the Bonds.

OTHER MATTERS

The financial data and other information contained herein have been obtained from the Commission's records, financial statements, and other sources that are believed to be reliable. There is no guarantee that any of the assumptions or estimates contained herein will be realized. All summaries of documents do not purport to be complete statements of such documents and reference is made to such documents for further information. Reference is made to original documents in all respects. Copies may be obtained from the Commission.

TEXAS TRANSPORTATION COMMISSION

BY: _____
Chief Financial Officer
Texas Department of Transportation

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SCHEDULE I

REFUNDED OBLIGATIONS

Texas Transportation Commission
Texas Turnpike Authority
Central Texas Turnpike System
First Tier Revenue Bonds, Series 2002-A

Maturity Date	Initial Offering Yield to Maturity	Par Amount	Redemption Date	Call Price*	CUSIP No.[1]
08/15/2015	4.860%	$ 2,248,605.40	N/A	N/A	882762 EB9
08/15/2016	4.960	12,140,194.80	N/A	N/A	882762 EC7
08/15/2017	5.050	10,322,898.60	N/A	N/A	882762 ED5
08/15/2018	5.160	8,547,498.75	N/A	N/A	882762 EE3
08/15/2019	5.260	7,040,622.20	N/A	N/A	882762 EF0
08/15/2020	5.360	5,601,639.20	N/A	N/A	882762 EG8
08/15/2021	5.490	3,862,108.50	N/A	N/A	882762 EH6
08/15/2022	5.580	3,300,066.00	N/A	N/A	882762 EJ2
08/15/2023	5.650	3,079,098.00	N/A	N/A	882762 EK9
08/15/2024	5.670	2,899,809.00	N/A	N/A	882762 EL7
08/15/2026	5.720	1,166,299.45	N/A	N/A	882762 EM5
08/15/2027	5.730	611,470.50	N/A	N/A	882762 EN3
08/15/2028	5.740	33,365.95	N/A	N/A	882762 EP8
08/15/2025	6.000%	$ 2,573,200.00	03/06/2015	100.000%	882762 AZ0
08/15/2026	6.010	2,419,900.00	03/06/2015	100.000	882762 BA4
08/15/2027	6.020	2,275,200.00	03/06/2015	100.000	882762 BB2
08/15/2028	6.030	2,138,800.00	03/06/2015	100.000	882762 BC0
08/15/2029	6.040	2,010,200.00	03/06/2015	100.000	882762 BD8
08/15/2030	6.050	1,888,900.00	03/06/2015	100.000	882762 BE6
08/15/2031	6.060	20,749,510.50	03/06/2015	100.000	882762 BF3
08/15/2032	6.070	20,287,006.45	03/06/2015	100.000	882762 BG1
08/15/2033	6.080	19,778,829.00	03/06/2015	100.000	882762 BH9
08/15/2034	6.080	19,290,312.40	03/06/2015	100.000	882762 BJ5
08/15/2035	6.090	18,735,808.35	03/06/2015	100.000	882762 BK2
08/15/2036	6.090	19,130,493.80	03/06/2015	100.000	882762 BL0
08/15/2037	6.100	19,780,105.80	03/06/2015	100.000	882762 BM8
08/15/2038	6.100	3,600,625.00	03/06/2015	100.000	882762 BN6

* As a percentage of principal and compounded interest (accreted value).

[1] CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein is provided by CUSIP Global Services, managed by Standard & Poor's Financial Services LLC on behalf of the American Bankers Association. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Services. CUSIP numbers are included herein solely for convenience. None of the Department, the Commission, the Financial Advisor or the Underwriters shall be responsible for the selection or correctness of the CUSIP numbers shown herein.

Texas Transportation Commission
Central Texas Turnpike System
First Tier Revenue Refunding Put Bonds, Series 2012-B

Maturity Date	Interest Rate	Par Amount	Tender Date	Purchase Price	CUSIP No.[1]
08/15/2042	1.250%	$225,000,000	2/15/2015	100%	88283KAD0

Texas Transportation Commission
Texas Turnpike Authority
Central Texas Turnpike System
Second Lien Revenue Bond, Series 2002
TIFIA – No. 2001-001, TIFIA BOND

Maturity Date	Interest Rate	Redemption Amount	Redemption Date	Call Price
07/15/2042	5.510%	$1,137,542,104.03	2/15/2015	100%

[1] CUSIP is a registered trademark of the American Bankers Association. CUSIP data herein is provided by CUSIP Global Services, managed by Standard & Poor's Financial Services LLC on behalf of the American Bankers Association. This data is not intended to create a database and does not serve in any way as a substitute for the CUSIP Services. CUSIP numbers are included herein solely for convenience. None of the Department, the Commission, the Financial Advisor or the Underwriters shall be responsible for the selection or correctness of the CUSIP numbers shown herein.

SCHEDULE II

DEBT SERVICE REQUIREMENTS

Fiscal Year	Outstanding First Tier Obligations	Series 2015-A Bonds	Series 2015-B Bonds	Total First Tier Obligations	Series 2015-C Bonds	Total Debt Service
2015	$36,449,150	$5,968,750	$5,253,163	$47,671,063	$30,701,128	$78,372,191
2016	29,779,150	11,250,000	9,901,250	50,930,400	57,866,000	108,796,400
2017	35,919,150	11,250,000	9,901,250	57,070,400	57,866,000	114,936,400
2018	42,259,150	11,250,000	9,901,250	63,410,400	57,866,000	121,276,400
2019	48,399,150	11,250,000	9,901,250	69,550,400	57,866,000	127,416,400
2020	54,749,150	11,250,000	9,901,250	75,900,400	57,866,000	133,766,400
2021	64,514,150	11,250,000	9,901,250	85,665,400	57,866,000	143,531,400
2022	71,184,150	11,250,000	9,901,250	92,335,400	60,066,000	152,401,400
2023	76,974,150	11,250,000	9,901,250	98,125,400	63,131,000	161,256,400
2024	82,759,150	11,250,000	9,901,250	103,910,400	66,142,250	170,052,650
2025	88,444,150	11,250,000	9,901,250	109,595,400	69,299,500	178,894,900
2026	105,239,150	11,250,000	9,901,250	126,390,400	66,267,250	192,657,650
2027	112,389,150	11,250,000	9,901,250	133,540,400	70,001,000	203,541,400
2028	119,864,150	11,250,000	9,901,250	141,015,400	68,643,500	209,658,900
2029	125,074,150	11,250,000	9,901,250	146,225,400	69,198,750	215,424,150
2030	130,059,150	11,250,000	9,901,250	151,210,400	70,137,750	221,348,150
2031	28,034,150	11,250,000	9,901,250	49,185,400	178,248,250	227,433,650
2032	28,034,150	11,250,000	49,901,250	89,185,400	144,502,500	233,687,900
2033	28,034,150	11,250,000	7,901,250	47,185,400	192,931,000	240,116,400
2034	28,034,150	11,250,000	7,901,250	47,185,400	184,498,750	231,684,150
2035	28,034,150	11,250,000	121,421,250	160,705,400	92,725,500	253,430,900
2036	28,034,150	11,250,000	146,730,250	186,014,400	74,465,500	260,479,900
2037	28,034,150	11,250,000	141,000,000	180,284,150	87,353,750	267,637,900
2038	151,269,150	11,250,000	-	162,519,150	105,980,250	268,499,400
2039	182,519,750	11,250,000	-	193,769,750	74,729,500	268,499,250
2040	182,519,000	11,250,000	-	193,769,000	74,730,500	268,499,500
2041	142,059,750	51,710,000	-	193,769,750	74,727,750	268,497,500
2042	-	193,767,000	-	193,767,000	74,733,750	268,500,750
	$2,078,663,100	$532,695,750	$638,528,413	$3,249,887,263	$2,340,411,128	$5,590,298,391

Note: Numbers may not compute due to rounding.

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SCHEDULE III

ACCRETED VALUE TABLE

SERIES 2015-B CABs

Delivery Date: February 4, 2015

Maturity Date:	08/15/2036	08/15/2037
Initial Offering Yield:	4.360%	4.380%
Accretion Date	Accreted Value	Accreted Value
2/04/2015	$1,975.40	$1,883.70
2/15/2015	1,978.00	1,886.20
8/15/2015	2,021.15	1,927.50
2/15/2016	2,065.20	1,969.70
8/15/2016	2,110.25	2,012.85
2/15/2017	2,156.25	2,056.95
8/15/2017	2,203.25	2,102.00
2/15/2018	2,251.25	2,148.00
8/15/2018	2,300.35	2,195.05
2/15/2019	2,350.50	2,243.15
8/15/2019	2,401.75	2,292.25
2/15/2020	2,454.10	2,342.45
8/15/2020	2,507.60	2,393.75
2/15/2021	2,562.25	2,446.20
8/15/2021	2,618.10	2,499.75
2/15/2022	2,675.20	2,554.50
8/15/2022	2,733.50	2,610.45
2/15/2023	2,793.10	2,667.60
8/15/2023	2,854.00	2,726.05
2/15/2024	2,916.20	2,785.75
8/15/2024	2,979.80	2,846.75
2/15/2025	3,044.75	2,909.10
8/15/2025	3,111.10	2,972.80
2/15/2026	3,178.95	3,037.90
8/15/2026	3,248.25	3,104.45
2/15/2027	3,319.05	3,172.40
8/15/2027	3,391.40	3,241.90
2/15/2028	3,465.35	3,312.90
8/15/2028	3,540.90	3,385.45
2/15/2029	3,618.10	3,459.60
8/15/2029	3,696.95	3,535.35
2/15/2030	3,777.55	3,612.80
8/15/2030	3,859.90	3,691.90
2/15/2031	3,944.05	3,772.75
8/15/2031	4,030.05	3,855.35
2/15/2032	4,117.90	3,939.80
8/15/2032	4,207.65	4,026.10
2/15/2033	4,299.40	4,114.25
8/15/2033	4,393.10	4,204.35
2/15/2034	4,488.90	4,296.45
8/15/2034	4,586.75	4,390.55
2/15/2035	4,686.75	4,486.70
8/15/2035	4,788.90	4,584.95
2/15/2036	4,893.30	4,685.35
8/15/2036	5,000.00	4,787.95
2/15/2037	-	4,892.80
8/15/2037	-	5,000.00

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SCHEDULE IV

UNAMORTIZED PREMIUM REDEMPTION PRICE OF CURRENT INTEREST BONDS*

	Series 2015-A Bonds	Series 2015-B Bonds	Series 2015-B Bonds	Series 2015-C Bonds	Series 2015-C Bonds	Series 2015-C Bonds	Series 2015-C Bonds	Series 2015-C Bonds	Series 2015-C Bonds	Series 2015-C Bonds
Maturity Date:	08/15/2042	08/15/2032	08/15/2037	08/15/2022	08/15/2023	08/15/2024	08/15/2025	08/15/2026	08/15/2027	08/15/2028
Call Date:	N/A	08/15/2024	08/15/2024	N/A	N/A	N/A	08/15/2024	08/15/2024	08/15/2024	08/15/2024
Interest Rate:	5.000%	5.000%	5.000%	5.000%	5.000%	5.000%	5.000%	5.000%	5.000%	5.000%
Initial Yield:	1.620%	3.020%	3.170%	2.160%	2.340%	2.490%	2.630%	2.790%	2.930%	3.050%
Redemption Date	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price
2/04/2015	116.659%	116.290%	114.950%	119.639%	120.461%	121.177%	119.863%	118.382%	117.103%	116.021%
2/15/2015	116.565	116.246	114.910	119.567	120.395	121.118	119.808	118.331	117.057	115.977
8/15/2015	115.009	115.501	114.231	118.358	119.304	120.126	118.883	117.482	116.272	115.246
2/15/2016	113.441	114.746	113.542	117.136	118.200	119.121	117.947	116.621	115.475	114.504
8/15/2016	111.860	113.978	112.841	115.901	117.083	118.104	116.998	115.748	114.667	113.750
2/15/2017	110.266	113.199	112.130	114.653	115.953	117.075	116.036	114.862	113.847	112.984
8/15/2017	108.659	112.409	111.407	113.391	114.809	116.032	115.062	113.965	113.014	112.207
2/15/2018	107.039	111.606	110.673	112.116	113.652	114.977	114.075	113.054	112.170	111.419
8/15/2018	105.406	110.791	109.927	110.827	112.482	113.908	113.075	112.132	111.313	110.618
2/15/2019	103.760	109.964	109.170	109.524	111.298	112.827	112.062	111.196	110.444	109.805
8/15/2019	102.100	109.125	108.400	108.206	110.100	111.731	111.036	110.247	109.562	108.979
2/15/2020	100.427	108.272	107.618	106.875	108.889	110.622	109.996	109.285	108.667	108.141
4/01/2020	100.000	-	-	-	-	-	-	-	-	-
8/15/2020	-	107.407	106.824	105.529	107.663	109.500	108.942	108.309	107.759	107.290
2/15/2021	-	106.529	106.017	104.169	106.422	108.363	107.875	107.320	106.838	106.427
8/15/2021	-	105.638	105.197	102.794	105.167	107.212	106.793	106.317	105.903	105.550
2/15/2022	-	104.733	104.365	101.404	103.898	106.047	105.698	105.301	104.955	104.659
8/15/2022	-	103.814	103.519	100.000	102.614	104.867	104.588	104.270	103.992	103.755
2/15/2023	-	102.882	102.660	-	101.314	103.673	103.463	103.224	103.016	102.838
8/15/2023	-	101.936	101.787	-	100.000	102.463	102.324	102.164	102.025	101.906
2/15/2024	-	100.975	100.900	-	-	101.239	101.169	101.089	101.020	100.960
8/15/2024	-	100.000	100.000	-	-	100.000	100.000	100.000	100.000	100.000

* For any day other than a date shown in this Schedule, the Unamortized Premium Redemption Price shall be determined by a straight-line interpolation between the values for the immediately preceding and succeeding dates (based on 30-day months).

UNAMORTIZED PREMIUM REDEMPTION PRICE
OF CURRENT INTEREST BONDS*

	Series 2015-C Bonds	**Series 2015-C Bonds**	**Series 2015-C Bonds**	**Series 2015-C Bonds**	**Series 2015-C Bonds**	**Series 2015-C Bonds**	**Series 2015-C Bonds**	**Series 2015-C Bonds**
Maturity Date:	08/15/2029	08/15/2030	08/15/2031	08/15/2032	08/15/2033	08/15/2034	08/15/2037	08/15/2042
Call Date:	08/15/2024	08/15/2024	08/15/2024	08/15/2024	08/15/2024	08/15/2024	08/15/2024	08/15/2024
Interest Rate:	5.000%	5.000%	5.000%	5.000%	5.000%	5.000%	5.000%	5.000%
Initial Yield:	3.150%	3.250%	3.300%	3.350%	3.400%	3.430%	3.460%	3.510%
Redemption Date	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price	Redemption Price
2/04/2015	115.128%	114.243%	113.803%	113.366%	112.930%	112.670%	112.410%	111.979%
2/15/2015	115.087	114.205	113.767	113.330	112.896	112.637	112.378	111.948
8/15/2015	114.400	113.561	113.144	112.729	112.316	112.069	111.822	111.413
2/15/2016	113.701	112.906	112.511	112.117	111.725	111.491	111.257	110.868
8/15/2016	112.992	112.241	111.867	111.495	111.124	110.903	110.681	110.314
2/15/2017	112.272	111.565	111.213	110.862	110.513	110.305	110.096	109.750
8/15/2017	111.540	110.877	110.548	110.219	109.892	109.696	109.501	109.176
2/15/2018	110.797	110.179	109.872	109.566	109.260	109.078	108.895	108.592
8/15/2018	110.042	109.470	109.185	108.901	108.618	108.448	108.279	107.998
2/15/2019	109.275	108.749	108.486	108.225	107.964	107.808	107.652	107.393
8/15/2019	108.496	108.016	107.776	107.538	107.300	107.157	107.015	106.778
2/15/2020	107.705	107.271	107.055	106.839	106.624	106.495	106.366	106.152
4/01/2020	-	-	-	-	-	-	-	-
8/15/2020	106.901	106.514	106.321	106.129	105.936	105.821	105.706	105.515
2/15/2021	106.085	105.745	105.575	105.406	105.237	105.136	105.035	104.867
8/15/2021	105.256	104.963	104.817	104.672	104.526	104.439	104.352	104.207
2/15/2022	104.414	104.169	104.047	103.925	103.803	103.730	103.657	103.536
8/15/2022	103.558	103.362	103.264	103.166	103.068	103.009	102.951	102.853
2/15/2023	102.689	102.541	102.468	102.394	102.320	102.276	102.232	102.158
8/15/2023	101.807	101.708	101.658	101.609	101.560	101.530	101.500	101.451
2/15/2024	100.910	100.861	100.836	100.811	100.786	100.771	100.756	100.732
8/15/2024	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000

* For any day other than a date shown in this Schedule, the Unamortized Premium Redemption Price shall be determined by a straight-line interpolation between the values for the immediately preceding and succeeding dates (based on 30-day months).

APPENDIX A

AUDITED FINANCIAL STATEMENTS OF THE SYSTEM FOR FISCAL YEAR ENDED AUGUST 31, 2014

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TEXAS DEPARTMENT OF TRANSPORTATION

Central Texas Turnpike System

(An Enterprise Fund of the Texas Department of Transportation)

Financial Statements for the Fiscal Years Ending August 31, 2014 and 2013

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CENTRAL TEXAS TURNPIKE SYSTEM

An Enterprise Fund of the Texas Department of Transportation

FINANCIAL STATEMENTS

For the Fiscal Years Ended August 31, 2014 and 2013

Prepared by:

Finance Division of the Texas Department of Transportation

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CENTRAL TEXAS TURNPIKE SYSTEM

Financial Statements
For the Fiscal Years Ended August 31, 2014 and 2013

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Central Texas Turnpike System
INTRODUCTORY SECTION

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Texas Department of Transportation
125 EAST 11TH STREET | AUSTIN, TEXAS 78701-2483 | (512) 463-8588 | WWW.TXDOT.GOV

December 17, 2014

TO: The Citizens of the State of Texas and the Creditors of the Central Texas Turnpike Project

The audited annual financial statements of the Central Texas Turnpike System (CTTS) for the years ended Aug. 31, 2014 and 2013, are submitted herewith. The Indenture of Trust, dated July 15, 2002, as supplemented by the first through seventh Supplemental Indentures (Indenture), requires the preparation and submission of audited annual financial statements. This report was prepared by the Accounting Management staff in the Finance Division of the Texas Department of Transportation (TxDOT).

Management is responsible for the accuracy of the data in this report as well as for the completeness and fairness of the presentation. Consequently, management assumes full responsibility for the completeness and fairness of all of the information presented in the financial statements. To the best of my knowledge and belief, the financial statements are accurate in all material respects, are reported in a manner that presents fairly the financial position and results of operations of CTTS and provide disclosures that enable the reader to understand CTTS' financial condition.

Crowe Horwath, LLP performed an independent audit, in accordance with generally accepted auditing standards, of CTTS' basic financial statements for the year ended Aug. 31, 2014. The audit opinion is presented in this report preceding the financial statements. The summarized comparative information for the prior period has been derived from the CTTS financial statements for the year ending Aug. 31, 2013, and, in their report dated Dec. 16, 2013 the Texas State Auditor's Office (SAO) expressed an unqualified opinion on those financial statements. The SAO work has not been updated since that date.

Profile of the Government

This report includes financial statements for CTTS. CTTS is part of TxDOT's reporting entity. TxDOT is an agency of the state of Texas. The functions of TxDOT have evolved over time due to statutory changes, with the most recent being the creation of the Texas Department of Motor Vehicles in 2009. Headquartered in Austin, TxDOT is organized by administration, districts, divisions, and offices. TxDOT also maintains a comprehensive public interest website that outlines the agency's policies, plans, projects status and major initiatives at www.txdot.gov.

TxDOT is managed by an executive director and is governed by the five-member Texas Transportation Commission. All members of the Commission are appointed by the governor.

The Legislature granted the Commission the authority to study, plan, design, construct, finance, operate and maintain turnpikes in all 254 counties of the state as a part of the state's highway system. The Commission can issue turnpike revenue bonds to pay all or a part of the cost of a turnpike project, to enter into comprehensive development agreements to execute projects and to acquire right of way through quick-take procedures. Such revenue bonds were issued to fund a portion of the costs of constructing the CTTS roadways.

Accounting System and Budgetary Controls

TxDOT's internal accounting controls provide reasonable assurance regarding the safeguarding of assets against loss from unauthorized use or disposal and the reliability of financial records for preparing financial

statements. The concept of reasonable assurance recognizes that the cost of a control should not exceed the resulting benefit.

Information Useful in Assessing CTTS' Financial Condition

The Management's Discussion and Analysis (MD&A) provides a narrative introduction, overview and analysis of the financial activities of CTTS. We encourage readers to consider the information in this letter of transmittal in conjunction with the MD&A.

The following are the active sub-accounts of CTTS, established in accordance with the Indenture:

- Revenue Fund – monies from CTTS tolls and fees are deposited into the Revenue Fund and flow through the Master Trust Indenture flow of funds. To the extent all funds have the required balances, any monies on deposit in the Revenue Fund can be transferred to the General Reserve Fund and used for the purposes allowed by General Reserve Fund (see below).

- First Tier Debt Service Fund – monies on deposit may be used solely for principal and interest debt service on First Tier obligations.

- Rate Stabilization Fund – monies on deposit in this account are intended to assure rates and charges remain competitive and reasonable. In accordance with the Indenture, the required balance for this fund must equal funds collected through Aug. 31, 2008 or $10 million.

- Construction Fund-Capital Contributions Account – interest earnings of approximately $53.5 million may be used for any lawful purpose of CTTS, including contribution to refunding, operating expenses, maintenance expenses, capital budget, improvements to CTTS, additional reserves or transfer to General Fund.

- First Tier Debt Service Reserve Fund – monies on deposit may be used solely to pay debt service on First Tier Obligations (other than TIFIA if it springs to First Tier) to the extent funds are not otherwise available.

TxDOT and the Trustee are responsible for ensuring that funds maintain the proper minimum balances as set forth in the Indenture and for investing in securities required to meet liquidity requirements. The criteria for suitable investments for each fund type are detailed in the Commission's investment strategy.
All monies in the revenue fund, debt service fund, rate stabilization fund and construction fund – capital contributions account are invested in money market funds and investment pools that are in compliance with the Commission's investment policy.

The debt service reserve fund is invested in a money market fund and a repurchase agreement collateralized by U.S. Treasury and Agency Securities.

For more detailed information on investments, please see the latest Texas Transportation Commission Quarterly Investment Report and Investment Policy. Requests for a copy of the Investment Policy should be addressed to the following:

Texas Department of Transportation
Finance Division
125 East 11th Street
Austin, Texas, 78701-2483

Risk Financing & Management

CTTS does not provide financing for any of the risks TxDOT is subject to in the course of its operations. TxDOT provides all accounting, debt financing and administrative services. Salaries and wages of TxDOT employees who are specifically dedicated to managing the operations of CTTS are reported as expenses in this report.

Acknowledgements

The preparation of the report requires the efforts of individuals throughout TxDOT, including the dedicated efforts of the management and staff of the TxDOT Financial Reports Section and Finance Division and the Innovative Financing/Debt Management Office. I sincerely appreciate the efforts of all these individuals who continue to strive for improvements that will make TxDOT a national leader in quality financial reporting.

Sincerely,

LtGen J. F. Weber, USMC (Ret)
Executive Director

Texas Department of Transportation
Organization Chart as of August 31, 2014

Commission and Key Personnel
As of August 31, 2014

TEXAS TRANSPORTATION COMMISSION

TED HOUGHTON ..... Chair
El Paso

JEFF AUSTIN III..... Commissioner
Tyler

JEFF MOSELEY ..... Commissioner
Houston

FRED UNDERWOOD ..... Commissioner
Lubbock

VICTOR VANDERGRIFF..... Commissioner
Fort Worth

TEXAS DEPARTMENT OF TRANSPORTATION

LT GEN JOE WEBER, USMC (RET).....Executive Director

JAMES M. BASS.... .....Chief Financial Officer

DOUG WOODALL.....Director, Toll Operations

BRIAN RAGLAND, CPA.....Director, Finance Division

BENJAMIN ASHER……..……Officer, Innovative Financing/Debt Management Office

GREG MALATEK, P.E. .....Austin District Engineer

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Central Texas Turnpike System
FINANCIAL SECTION

Crowe Horwath

Crowe Horwath LLP
Independent Member Crowe Horwath International

INDEPENDENT AUDITOR'S REPORT

Members of the Texas Transportation Commission
State of Texas

Report on the Financial Statements

We have audited the accompanying financial statements of the Central Texas Turnpike System (System), an enterprise fund of the Texas Department of Transportation (TxDOT), an agency of the State of Texas, as of and for the year ended August 31, 2014, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the System, as of August 31, 2014, and the changes in its financial position and its cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matters

As discussed in Note 1, the financial statements present only the Central Texas Turnpike System, an enterprise fund of the Texas Department of Transportation, an agency of the State of Texas, and do not purport to, and do not, present fairly the financial position of TxDOT or the State of Texas, as of August 31, 2014, the changes in its financial position and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

As discussed in Note 1 to the financial statements, in fiscal year 2014, the System adopted the depreciation approach for reporting both highways and bridges of the infrastructure assets. Under the depreciation approach, infrastructure assets are depreciated over a 40 year life, and certain preservation costs are capitalized. Prior to 2014, the modified approach was used for reporting highways and preservation and maintenance costs were therefore expensed. The System also adopted a policy to hold three years of capital costs in construction in progress at all times. In the fourth year, the first year is moved to depreciable infrastructure. Both of these changes in accounting policy are prospective to the financial statements of the System. Our opinion is not modified with respect to this matter.

As discussed in Note 8 to the financial statements, in March 2012, the GASB issued GASB Statement 65, "Items Previously Reported as Assets and Liabilities." The provisions of this Statement are effective for the System's fiscal years ending August 31, 2014. The System has implemented this Statement retroactively as of September 1, 2012 resulting in restated net position. This Statement establishes accounting and financial reporting standards that reclassify, as deferred outflows of resources or deferred inflows of resources, certain items that were previously reported as assets and liabilities and recognizes, as outflows of resources or inflows of resources, certain items that were previously reported as assets and liabilities. This Statement also provides other financial reporting guidance related to the impact of the financial statement elements deferred outflows of resources and deferred inflows of resources, such as changes in the determination of the major fund calculations and limiting the use of the term deferred in financial statement presentations. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and Modified Approach to Reporting Infrastructure Assets on pages 12-15 and 38-39 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We and other auditors have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The introductory section is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The introductory section has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

The financial statements of the System as of August 31, 2013 were audited by other auditors whose report dated December 16, 2013, expressed an unmodified opinion on those statements. The other

auditors reported on the financial statements before the restatement adjustment as discussed in Note 8 to the financial statements.

As part of our audit of the 2014 financial statements, we also audited the adjustments described in Note 8 that were applied to restate the 2013 financial statements. In our opinion, such adjustments are appropriate and have been properly applied. We were not engaged to audit, review, or apply any procedures to the 2013 financial statements of the System other than with respect to the adjustments and, accordingly, we do not express an opinion or any other form of assurance on the 2013 financial statements as a whole.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated December 17, 2014 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Crowe Horwath LLP

Crowe Horwath LLP

Dallas, Texas
December 17, 2014

MANAGEMENT'S DISCUSSION and ANALYSIS

Management's Discussion and Analysis

As management of the Texas Department of Transportation (TxDOT), we offer readers of the Central Texas Turnpike System's (CTTS) financial statements this narrative overview and analysis of its financial activities for the year ended Aug. 31, 2014, with selected comparative information for the years ended Aug. 31, 2013 and 2012. The information presented should be read in conjunction with our letter of transmittal, the financial statements and the accompanying notes to the financial statements.

Highlights

During fiscal 2014, CTTS generated $130.9 million in toll revenues, an increase of $25.1 million or 24 percent over fiscal 2013. Toll revenues increased due to a toll rate increase in January 2013 and a six percent increase in overall toll transactions, with 109.0 million transactions recorded on CTTS roadways in fiscal 2014.

CTTS reimbursed the state highway fund $51.5 million for fiscal 2014 operating and maintenance expenses paid throughout the year by the state highway fund on CTTS' behalf. In addition, CTTS increased their operating, maintenance, and reserve maintenance accounts held in the state highway fund by $15.6 million; the indenture requires these monies to be held separate and apart from its other funds and accounts. This increases the total now held in those three accounts to $25.7 million, which is reported as a Due From on the accompanying financial statements. See Note 6 for more information.

The assets and deferred outflows of resources of CTTS exceeded its liabilities by $466 million as of Aug. 31, 2014, a decrease of $59.3 million or 11.3 percent from fiscal 2013. The majority of the decrease is attributable to accretion of long-term liabilities of $71.8 million.

Overview of the Financial Statements

The annual financial report consists of two parts: management's discussion and analysis (this section) and the basic financial statements with their accompanying notes.

Fund Financial Statements

A fund is a group of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. TxDOT, like other state and local governments, uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. Proprietary funds are used to account for a government's business-type activities. The activities related to CTTS are accounted for in an enterprise fund, which is a type of proprietary fund used to report activities in which a fee is charged to external users for goods and services.

Financial Analysis

The overall financial position and operations of CTTS for the past three years is summarized on the following pages.

Condensed Statement of Net Position

August 31, 2014, 2013 and 2012

	2014	Restated 2013*	2012
ASSETS			
Assets Other Than Capital Assets	$471,277,504	$447,805,170	$492,219,101
Capital Assets	2,802,165,553	2,824,890,688	2,614,812,579
Total Assets	3,273,443,057	3,272,695,858	3,107,031,680
DEFERRED OUTFLOWS OF RESOURCES	7,071,037	7,332,928	
LIABILITIES			
Current Liabilities	18,865,937	16,426,963	12,524,502
Noncurrent Liabilities	2,795,687,814	2,738,294,058	2,667,338,627
Total Liabilities	2,814,553,751	2,754,721,021	2,679,863,129
NET POSITION			
Net Investment in Capital Assets	636,693,731	661,618,619	512,057,369
Restricted for Debt Service	38,951,993	34,969,161	7,247,155
Restricted for Other	25,696,983	10,122,504	
Unrestricted	(235,382,364)	(181,402,519)	(92,135,973)
Total Net Position	$465,960,343	$525,307,765	$427,168,551

*GASB Statement 65, implemented in fiscal 2014, required the presentation of deferred outflows of resources and the write-off of prepaid issuance costs that were previously classified as deferred charges, a noncurrent asset, and amortized as a component of interest expense. As a result, the statement of net position was restated to reflect the changes necessitated by GASB.

Condensed Changes in Net Position

For the Fiscal Years Ended August 31, 2014, 2013 and 2012

	2014	2013	2012
REVENUES			
Total Operating Revenues	$144,214,530	$119,138,781	$85,806,180
Total Nonoperating Revenues	6,321,973	6,812,013	7,245,915
Total Revenues	150,536,503	125,950,794	93,052,095
EXPENSES			
Total Operating Expenses	(106,621,892)	(67,171,392)	(73,139,164)
Total Nonoperating Expenses	(136,150,321)	(145,883,823)	(142,706,219)
Total Expenses	(242,772,213)	(213,055,215)	(215,845,383)
Loss Before Contributions and Transfers	(92,235,710)	(87,104,421)	(122,793,288)
Capital Contributions	30,813,561	229,481,409	14,808
Transfers	2,074,727	(4,353,474)	55,242,465
Change in Net Position	(59,347,422)	138,023,514	(67,536,015)
Net Position – Beginning	525,307,765	427,168,551	494,704,566
Restatements		(39,884,300)	
Net Position - Beginning, as Restated	525,307,765	387,284,251	494,704,566
Net Position – Ending	$465,960,343	$525,307,765	$427,168,551

Net position may serve over time as a useful indicator of CTTS' financial position. Net position will decline as additional noncurrent liabilities are accrued via principal accretion on outstanding CTTS debt. Investment balances remain stable, reflecting management's decision to use excess revenues to reimburse the state highway fund for operation and maintenance costs and to fund the operating and maintenance reserve accounts.

The methodology the Commission has adopted to determine the reimbursement to the state highway fund for operations and maintenance expenses is dependent upon available toll revenues, debt service requirements and indenture requirements for fund balances. In fiscal 2015, debt service is scheduled to increase $3.9 million, and operations and maintenance expense is estimated to increase $0.4 million.

Capital Assets and Debt Administration

Capital Assets

As of Aug. 31, 2014, CTTS had $2.8 billion in net capital assets.

Capital Assets-Net of Depreciation and Amortization
August 31, 2014, 2013 and 2012

	2014	2013	2012
Land	$ 668,634,073	$ 668,530,340	$ 631,109,240
Construction in Progress	30,378,284		
Land Use Rights	19,466,493	19,466,493	16,525,986
Infrastructure-Roadways and Bridges	2,078,361,453	2,131,207,607	1,961,130,104
Buildings	5,325,250	5,686,248	6,047,249
Total Capital Assets	$ 2,802,165,553	$ 2,824,890,688	$ 2,614,812,579

The decrease in capital assets of $22.7 million reflects depreciation of $53.5 million, net of the addition of an interchange on State Highway 45 North at O'Connor of $30.8 million. In fiscal 2014, TxDOT converted from the modified approach to the depreciation approach for capital assets. See Note 1 for more information.

Debt Administration

The Commission has issued revenue bonds backed by the pledged revenues and restricted assets specified in the bond resolutions. As of Aug. 31, 2014, CTTS had approximately $1.7 billion of outstanding revenue bond debt. In addition, CTTS had approximately $1.1 billion of outstanding debt under the TIFIA secured loan program. See Note 4 for more information.

Outstanding Debt Obligations
August 31, 2014, 2013 and 2012

	2014	Restated 2013*	2012
Revenue Bonds Payable	$ 1,702,787,085	$ 1,667,777,863	$ 1,616,749,809
TIFIA Secured Loan Payable	1,107,370,237	1,082,608,713	1,057,876,656
Total Outstanding Debt	$ 2,810,157,322	$ 2,750,386,576	$ 2,674,626,465

* Reflects $34,862,472 increase due to restated balances per GASB 65 implementation

Bond Credit Ratings

The Series 2002-A, Series 2012-A, and Series 2012-B bonds were rated by each of the three major Nationally Recognized Statistical Rating Organizations. As of Aug. 31, 2014, the CTTS bonds carried long-term ratings of BBB+, Baa1, and A- by Fitch Ratings, Moody's, and Standard and Poor's, respectively. An explanation of the significance of each rating may be obtained from the company furnishing the rating. The ratings reflect only the views of such companies at the time such ratings are given, and the Commission makes no representation as to the appropriateness of the ratings. There is no assurance that such ratings will continue for any given period of time or that they will not be revised downward or withdrawn entirely by such companies if, in the judgment of such companies, circumstances so warrant.

Requests for Information

This financial report is designed to provide a general overview of CTTS' finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the TxDOT Finance Division at the following address:

Texas Department of Transportation
Finance Division - Accounting Section
125 East 11th Street
Austin, Texas 78701-2483

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BASIC FINANCIAL STATEMENTS

CENTRAL TEXAS TURNPIKE SYSTEM

EXHIBIT I - STATEMENT OF NET POSITION

August 31, 2014 and 2013

	August 31, 2014	August 31, 2013
ASSETS		
Current Assets:		
Cash and Cash Equivalents (Note 3)		
Cash in Bank	$	$ 524,433
Deposit in Transit		257
Cash in State Treasury		50,819
Money Market and Similar Funds	21,597,952	20,771,108
Restricted Cash and Cash Equivalents (Note 3)		
Money Market and Similar Funds	33,790,667	30,456,111
Short-Term Investments (Note 3)	261,485,076	261,392,123
Restricted Short-Term Investments (Note 3)		251
Interest and Dividends Receivable	283,623	283,102
Accounts Receivable, net	11,358,002	4,768,560
Due from Other Funds (Note 6)	26,079,357	13,410,732
Receivables from Local Governments	200,000	200,000
Prepaid Items	569,431	85,984
Consumable Inventory	863,634	611,929
Total Current Assets	356,227,742	332,555,409
Noncurrent Assets:		
Restricted Investments (Note 3)	114,999,379	114,999,378
Receivables from Local Governments	50,383	250,383
Non-Depreciable Capital Assets (Note 2)	718,478,850	2,452,582,730
Depreciable Capital Assets Net (Note 2)	2,083,686,703	372,307,958
Total Noncurrent Assets	2,917,215,315	2,940,140,449
TOTAL ASSETS	3,273,443,057	3,272,695,858
DEFERRED OUTFLOWS OF RESOURCES		
Loss on Bond Refunding	7,071,037	7,332,928
TOTAL DEFERRED OUTFLOWS OF RESOURCES	7,071,037	7,332,928
LIABILITIES		
Current Liabilities:		
Due to Other Funds		19,038
Revenue Bonds Payable (Note 4)	14,469,508	12,092,518
Interest Payable	3,387,504	3,306,482
Unearned Revenues	1,008,925	1,008,925
Total Current Liabilities	18,865,937	16,426,963
Noncurrent Liabilities:		
Revenue Bonds Payable (Note 4)	1,688,317,577	1,655,685,345
Notes/Loans Payable (Note 4)	1,107,370,237	1,082,608,713
Total Noncurrent Liabilities	2,795,687,814	2,738,294,058
TOTAL LIABILITIES	2,814,553,751	2,754,721,021
NET POSITION		
Net Investment in Capital Assets	636,693,731	661,618,619
Restricted for Debt Service	38,951,993	34,969,161
Restricted for Other	25,696,983	10,122,504
Unrestricted	(235,382,364)	(181,402,519)
TOTAL NET POSITION	$ 465,960,343	$ 525,307,765

The accompanying notes to the financial statements are an integral part of this financial statement.

CENTRAL TEXAS TURNPIKE SYSTEM
EXHIBIT II - STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
For the fiscal years ended August 31, 2014 and 2013

	For the year ended August 31, 2014	For the year ended August 31, 2013
OPERATING REVENUES		
Toll Revenue, net	$ 130,902,420	$ 105,848,287
Fee Revenue	13,312,110	13,290,494
Total Operating Revenues	144,214,530	119,138,781
OPERATING EXPENSES		
Professional Fees and Services	8,786,024	6,671,191
Salaries	1,335,337	1,188,279
Materials and Supplies	3,664,155	4,804,799
Communication and Utilities	950,548	1,073,743
Repairs and Maintenance	8,394,849	16,247,417
Printing and Reproduction	10,326	4,143
Contracted Services	22,207,807	12,975,167
Travel	10,622	
Advertising	1,438,879	889,417
Depreciation Expense	53,652,317	19,791,589
Other Operating Expenses	6,171,028	3,525,647
Total Operating Expenses	106,621,892	67,171,392
Operating Income	37,592,638	51,967,389
NONOPERATING REVENUES (EXPENSES)		
Lease Revenue	12,864	12,864
Interest and Investment Income	6,119,948	6,334,765
Interest and Amortization Expense	(64,347,567)	(71,331,687)
Accretion on Capital Appreciation Bonds and TIFIA Note	(71,790,254)	(69,391,805)
Bond Issuance Expenses		(5,099,331)
Other Financing Fees	(12,500)	(61,000)
Other Nonoperating Revenues	189,161	464,384
Total Nonoperating Revenues (Expenses)	(129,828,348)	(139,071,810)
Loss before Capital Contributions and Transfers	(92,235,710)	(87,104,421)
CAPITAL CONTRIBUTIONS AND TRANSFERS		
Capital Contributions (Note 6)	30,813,561	229,481,409
Transfers (Note 6)	2,074,727	(4,353,474)
Total Capital Contributions and Transfers	32,888,288	225,127,935
Change in Net Position	(59,347,422)	138,023,514
Total Net Position – Beginning	525,307,765	427,168,551
Restatements (Note 8)		(39,884,300)
Total Net Position – Beginning, as Restated	525,307,765	387,284,251
Total Net Position – Ending	$ 465,960,343	$ 525,307,765

The accompanying notes to the financial statements are an integral part of this financial statement.

CENTRAL TEXAS TURNPIKE SYSTEM

EXHIBIT III - STATEMENT OF CASH FLOWS

For the fiscal years ended August 31, 2014 and 2013

	For the year ended August 31, 2014	For the year ended August 31, 2013
CASH FLOWS FROM OPERATING ACTIVITIES		
Receipts from Customers	$ 140,534,158	$ 114,933,386
Payments to Suppliers for Goods and Services	(52,377,659)	(46,658,032)
Payments to Employees	(1,327,067)	(1,188,279)
NET CASH PROVIDED BY OPERATING ACTIVITIES	86,829,432	67,087,075
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES		
Proceeds from Transfers from Other Funds	53,604,226	47,954,125
Payments for Transfers to Other Funds	(67,198,401)	(62,946,117)
NET CASH USED BY NONCAPITAL FINANCING ACTIVITIES	(13,594,175)	(14,991,992)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Proceeds from Lease Revenue	9,648	12,864
Proceeds from Capital Contributions	200,000	846,750
Payments for Additions to Land and Roadways	(38,237)	(435,644)
Proceeds from Debt Issuance, Net of Issuance Costs		856,648,017
Payments for Other Financing Costs	(12,500)	(61,000)
Payments for Debt Refunding		(857,150,000)
Payments for Debt Principal	(10,155,000)	(7,710,000)
Payments for Debt Interest	(65,869,163)	(71,779,132)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	(75,865,252)	(79,628,145)
CASH FLOWS FROM INVESTING ACTIVITIES		
Proceeds from Sales of Investments	33,457	50,042,853
Payments to Acquire Investments	(126,159)	(4,855,428)
Proceeds from Interest and Investment Income, Net of Fees	6,119,427	6,334,975
Proceeds from Judgments & Settlements	189,161	483,385
NET CASH PROVIDED BY INVESTING ACTIVITIES	6,215,886	52,005,785
NET INCREASE IN CASH AND CASH EQUIVALENTS	3,585,891	24,472,723
CASH AND CASH EQUIVALENTS – BEGINNING	51,802,728	27,330,005
CASH AND CASH EQUIVALENTS – ENDING	$ 55,388,619	$ 51,802,728

The accompanying notes to the financial statements are an integral part of this financial statement.

CENTRAL TEXAS TURNPIKE SYSTEM

EXHIBIT III - STATEMENT OF CASH FLOWS (continued)

For the fiscal years ended August 31, 2014 and 2013

	For the year ended August 31, 2014	For the year ended August 31, 2013
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES		
Operating Income	$ 37,592,638	$ 51,967,389
Adjustments:		
Depreciation expense	53,652,317	19,791,589
(Increase) in Accounts Receivable	(3,680,372)	(4,205,394)
(Increase) in Prepaid Expenses	(735,151)	(466,509)
Total Adjustments	49,236,794	15,119,686
Net Cash Provided by Operating Activities	$ 86,829,432	$ 67,087,075
NONCASH INVESTING, CAPITAL, AND FINANCING ACTIVITIES:		
Transfer in of major capital asset from other fund	30,823,451	229,410,262
	$ 30,823,451	$ 229,410,262
RECONCILIATION OF CASH AND CASH EQUIVALENTS		
Cash in Bank	$	$ 524,433
Money Market and Similar Funds	55,388,619	51,227,219
Deposits in Transit		257
Restricted Cash and Cash Equivalents in State Treasury		50,819
Cash and Cash Equivalents	$ 55,388,619	$ 51,802,728

The accompanying notes to the financial statements are an integral part of this financial statement.

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Reporting Entity

The accompanying financial statements reflect the financial position of the Central Texas Turnpike System (CTTS). CTTS is an enterprise fund of the Texas Department of Transportation (TxDOT), an agency of the state of Texas. The Texas Transportation Commission (Commission), the governing body of TxDOT, has the authority to commit CTTS to various legal agreements.

As of Aug. 31, 2014, CTTS consists of State Highway 130 Segments 1 through 4, State Highway 45 North, the tolled portion of Loop 1 and State Highway 45 Southeast. A portion of the costs of planning, designing, engineering, developing and constructing of the first three elements was financed by bonds issued by the Commission. In fiscal 2013, State Highway 45 Southeast was transferred to CTTS. In the future, at the Commission's discretion, additional projects may be added to CTTS.

CTTS does not have any employees, although labor costs are included in the cost of constructing, operating and maintaining CTTS. When TxDOT staff members perform work on behalf of CTTS, the proportionate cost of that labor is reported as an expense of CTTS. TxDOT's risk financing and insurance programs apply to CTTS.

The records of CTTS are maintained in accordance with the practices set forth in the provisions of the indentures of the outstanding revenue bonds. These practices are modeled after generally accepted accounting principles that are similar to private business enterprises.

Basis of Presentation and Basis of Accounting

The accompanying financial statements were prepared in conformance with generally accepted accounting principles (GAAP) as prescribed by the Governmental Accounting Standards Board (GASB). In fiscal 2014, CTTS adopted GASB No. 65, *Items Previously Reported as Assets and Liabilities*. GASB 65 establishes accounting and financial reporting standards that reclassify, as deferred outflows of resources or deferred inflows of resources, certain items that were previously reported as assets and liabilities. It also recognizes, as outflows of resources or inflows of resources, certain items that were previously reported as assets and liabilities. See Note 8 for additional information.

CTTS also implemented the following new GASB pronouncements for fiscal 2014. Adoption of these statements had no impact on the CTTS' financial position.

- GASB Statement No. 66, Technical Corrections — 2012 — an amendment of GASB Statements No. 10 and No. 62
- GASB Statement No. 67, Financial Reporting for Pension Plans — an amendment of GASB Statement No. 25
- GASB Statement No. 69, Government Combinations and Disposals of Government Operations
- GASB Statement No. 70, Accounting and Financial Reporting for Nonexchange Financial Guarantees

These financial statements present only the financial position, changes in financial position and cash flows of CTTS. They are not intended to, and do not, present fairly the financial position, changes in financial position or cash flows of TxDOT. The reporting period is for the state fiscal year ended Aug. 31, 2014. The fiscal 2013 columns are presented to facilitate financial analysis.

Fund Structure

The activity of CTTS is reported in a proprietary fund. Proprietary funds are accounted for using the economic resources measurement focus and the accrual basis of accounting. Under the accrual basis, revenues are recognized when earned and expenses are recognized at the time liabilities are incurred.

A proprietary fund distinguishes operating from nonoperating items. Operating revenues and expenses result from providing services or producing and delivering goods in connection with the proprietary fund's principal ongoing operations. Operating expenses for an enterprise fund include cost of sales and services, administrative expenses and depreciation on capital assets.

Assets, Deferred Outflows of Resources, Liabilities and Net Position

Cash and Cash Equivalents

Short-term highly liquid investments with an original maturity of three months or less are considered cash equivalents. On the statement of cash flows, cash and cash equivalents are considered to be cash on hand, cash in bank and money market funds with original maturities of three months or less from the date of acquisition.

Investments

Investments are reported at fair value. Fair value is the amount at which an investment could be exchanged in a current transaction between willing parties. All investment income, including changes in the fair value of investments, is recognized as nonoperating revenue in the operating statement. See Note 3 for more information.

Accounts Receivable

The accounts receivable asset is mainly comprised of toll operations revenue earned but not yet received by CTTS of $20.8 and $11.9 million, net of an allowance for doubtful accounts of $9.5 and $7.3 million, as of Aug. 31, 2014 and 2013, respectively.

Due from Other Funds

Due from Other Funds mainly reflects CTTS' funds held by the state highway fund as a reserve for future CTTS expenses. See Note 6 for more information.

Receivables from Local Governments

Receivables from local governments are amounts due from local entities for CTTS expenses not yet received as of the fiscal year end. The entire receivables balance as of Aug. 31, 2014 and 2013 is a receivable from the City of Pflugerville.

Inventory and Prepaid Items

Inventory and prepaid items include toll tags and postage. The consumption method of accounting is used to account for inventory and prepaid items. The costs of these items are expensed when the items are consumed.

Restricted Assets

Restricted assets include monies or other resources restricted by legal or contractual requirements. These assets include proceeds of enterprise fund notes/loans, revenue bonds and revenues set aside for statutory or contractual requirements. CTTS may receive funding whose related expenditure is restricted to certain activities. In situations where both restricted and unrestricted resources are available to cover expenses, CTTS will first expend the restricted resources and cover additional costs with unrestricted resources. CTTS reserves the right to selectively defer the use of restricted assets.

Capital Assets

Capital assets, which include buildings, infrastructure, land and permanent land-use rights are capitalized and reported in the financial statements.

Capital assets are assets with a cost above a set minimum capitalization threshold that, when acquired, have an estimated useful life of more than one year. Land, permanent land-use rights and construction in progress do not have a capitalization threshold and are not depreciated. The capitalization thresholds and useful lives of CTTS' depreciable capital assets are as follows:

Capitalization of Assets

Type	Capitalization Threshold	Estimated Useful Life
Buildings and Building Improvements	$100,000	22 years
Infrastructure, Depreciable	$500,000	40 years

All capital assets are capitalized at cost or estimated historical cost if actual historical cost is not available. Donated capital assets are recorded at estimated fair value at the date of donation. Costs of normal maintenance and repairs that do not add value to the asset or materially extend the asset's useful life are not capitalized.

TxDOT adopted the modified approach for reporting costs associated with highway roadways when GASB Statement 34, *Basic Financial Statements and Management's Discussion and Analysis for State and Local Governments*, was implemented in 2002. However, highway bridges were reported using the depreciation approach. Prior to fiscal 2014, TxDOT developed and implemented an asset management system that established minimum standards and made a yearly determination as to whether the minimum standards were being met. Disclosures of the minimum standards and the fiscal 2013 status of CTTS assets are included in the required supplementary information section of this report. In fiscal year 2014, CTTS adopted the following new policy on infrastructure reporting. The change in accounting policy is a prospective change to the financial statements of CTTS.

- CTTS adopted the depreciation approach for reporting both highways and highway bridges of the infrastructure assets. Under the depreciation approach, infrastructure assets are depreciated over a 40 year life, and certain preservation costs are capitalized. The same capitalization threshold of $500,000 used for highway bridges is now applied to roadways. Prior to fiscal 2014, the modified approach was used for reporting highways and preservation and maintenance costs were therefore expensed.
- CTTS also adopted the policy to hold three years of costs in construction in progress at all times. At the fourth year, the first year is moved to depreciable infrastructure. The three year assumption is based on a 2.7 year contract life when using the weighted dollar analysis of project costs and completion dates over the ten year history of the SiteManager data.

See Note 2 for more information on Capital Assets.

Deferred Outflows of Resources

Deferred outflows of resources are a consumption of net position by the government that is applicable to a future reporting period. Deferred outflows of resources increase net position, similar to assets. Loss on refunding debt is reported as deferred outflows of resources.

Unearned Revenues

CTTS, through its toll road operations, has entered into agreements with local governments whereby the local governments transfer funds to CTTS to fund purchases of right-of-way land and related costs. In some instances, the funds are paid for in advance by the local governments. CTTS' policy is to recognize revenue only when the right-of-way parcels are purchased. Recognition of these monies paid in advance by local governments is contingent upon TxDOT purchasing the parcels for the stated purpose in the agreement.

Revenue Bonds Payable

Revenue bonds payable are reported at par less unamortized discount or plus unamortized premium. Payables are reported separately as either current or noncurrent in the statement of net position. See Note 4 for more information.

Net Position

Proprietary funds report net position as the residual amount in a statement of net position. The categories of net position reported in this report include:

Net Investment in Capital Assets

Net investment in capital assets consists of capital assets, net of accumulated depreciation and deferred outflow of resources, reduced by outstanding balances for bonds, notes and other debt that are attributed to the acquisition, construction or improvement of those assets.

Restricted

Restricted net position results when constraints placed on net position's use are either externally imposed by creditors, grantors, contributors and the like, or imposed by law through constitutional provisions or enabling legislation. The restricted component of net position represents restricted assets reduced by liabilities related to those assets.

Unrestricted

Unrestricted net position consists of the assets and liabilities that are not included in the determination of net investment in capital assets or the restricted component of net position.

Revenues, Expenses, Contributions and Transfers

Operating Revenues

Operating revenues consist of tolls, net of allowance for doubtful accounts of $2.2 million and $7.3 million for fiscal 2014 and 2013, respectively, and fees earned by CTTS.

Operating Expenses

Operating expenses include expenses incurred in operating the toll roads and the customer service center, and depreciation on capital assets. During fiscal 2014, CTTS transferred its contract to manage the daily toll collection operations from URS Corp. to Xerox State and Local Solutions, Inc.

Nonoperating Revenues/Expenses

Nonoperating revenues are mainly comprised of interest and investment revenue and lease revenue. Nonoperating expenses are any expenses not classified as operating, including bond interest expense and accretion on capital appreciation bonds and Transportation Innovation Financing Infrastructure Act (TIFIA) interest expense.

Capital Contributions and Transfers

Capital contributions include contributions of capital assets from local governments or other funds of TxDOT to CTTS. Transfers represent payments made by the state highway fund related to operating and maintenance expenses of CTTS, net of payments out of CTTS to reimburse the state highway fund for payment of those expenses. See Note 6 for more information.

NOTE 2 – CAPITAL ASSETS

The tables below present the composition of CTTS' capital assets, reclassifications, transfers in and additions.

Capital Assets Activity
For the fiscal year ended August 31, 2014

	Balance 09/1/2013	Adjustments	Reclassifications*	Additions	Balance 08/31/2014
Non-Depreciable Capital Assets					
Land	$ 668,530,340			$ 103,733	$ 668,634,073
Infrastructure	1,764,585,897	$ (1,764,585,897)			0
Construction in Progress			$ 30,378,284		30,378,284
Land Use Rights	19,466,493				19,466,493
Depreciable Capital Assets					
Buildings	8,360,005				8,360,005
Infrastructure	485,950,810	1,764,585,897	445,166		2,250,981,873
Less Accumulated Depreciation:					
Buildings	(2,673,756)		1	(361,000)	(3,034,755)
Infrastructure	(119,329,101)			(53,291,319)	(172,620,420)
Total Capital Assets	$ 2,824,890,688	$ 0	$ 30,823,451	$ (53,548,586)	$ 2,802,165,553

*Transfer of the O'Connor ramps to CTTS; see Note 6 for additional information

Capital Assets Activity
For the fiscal year ended August 31, 2013

	Balance 09/1/2012	Adjustments	Reclassifications*	Additions	Balance 08/31/2013
Non-Depreciable Capital Assets					
Land	$ 631,109,240	$ (16,042)	$ 36,961,664	$ 475,478	$ 668,530,340
Infrastructure - Roadways	1,629,378,720	1	135,207,176		1,764,585,897
Construction in Progress					
Land Use Rights	16,525,986		2,940,507		19,466,493
Depreciable Capital Assets					
Buildings	8,360,006	(1)			8,360,005
Infrastructure - Bridges	422,810,212		63,140,598		485,950,810
Less Accumulated Depreciation:					
Buildings	(2,312,757)	1		(361,000)	(2,673,756)
Infrastructure	(91,058,828)		(8,839,683)	(19,430,590)	(119,329,101)
Total Capital Assets	$ 2,614,812,579	$ (16,041)	$ 229,410,262	$ (19,316,112)	$ 2,824,890,688

*Transfer of SH 45SE to CTTS; see Note 6 for additional information

NOTE 3 - DEPOSITS, INVESTMENTS, AND REPURCHASE AGREEMENTS

TxDOT is authorized by statute to make investments following the "prudent person rule". TxDOT has complied, in all material respects, with statutory authorization, bond documents, constraints and commission policies during the period.

Deposits

CTTS had no cash in bank as of Aug. 31, 2014. CTTS had the following amounts of cash in bank as of Aug. 31, 2013.

	Carrying Amount	Bank Balance
Cash in Bank	$524,690	$524,433

Custodial Credit Risk – Deposits

Custodial credit risk is the risk that, in the event of the failure of a depository financial institution, deposits or collateral securities in the possession of an outside party will not be recovered. All of CTTS' deposits are protected by insurance provided by the Federal Deposit Insurance Corporation (FDIC). Regular depository accounts are insured by the FDIC up to $250 thousand per depositor, per insured bank.

Investments

As of Aug. 31, 2014 and 2013, the fair value of investments and maturities are as presented below:

Investment Fair Value and Maturities

	August 31, 2014			August 31, 2013		
	Maturities (in Years)		Fair Value	Maturities (in Years)		Fair Value
Investment Type	Less than 1	More than 5	Total	Less than 1	More than 5	Total
Money Market Mutual Funds	$55,388,619		$55,388,619	$51,227,219		$51,227,219
Investment Pools	261,485,076		261,485,076	261,392,374		261,392,374
Repurchase Agreement		114,999,379	114,999,379		114,999,378	114,999,378
Total	$316,873,695	$114,999,379	$431,873,074	$312,619,593	$114,999,378	$427,618,971

Custodial Credit Risk - Investments

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty, the Commission will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The Commission's investment policy states that all securities purchased by the Commission shall be designated as assets of the Commission and shall be protected through the use of a third-party custody/safekeeping agent, which may be a Trustee.

The repurchase agreement is collateralized with U.S. Government and Agency securities. Collateral for the repurchase agreement is held by the Bank of New York Mellon Trust Company with the underlying securities being the property of the Citigroup Global Markets Inc. (the direct counterparty), held in trust for the Commission. Bank of New York Mellon Trust Company is rated Aa2, AA- and AA as of Aug. 31, 2014 by Moody's, Standard and Poor's (S & P) and Fitch Ratings respectively. Bank of New York Mellon Trust Company is rated Aa1, AA- and AA- as of Aug. 31, 2013 by Moody's, Standard and Poor's (S & P) and Fitch Ratings respectively.

Credit Risk - Investments

Direct credit risk for investments is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The investment policy prohibits the Commission from entering into long-term investment agreements or other ongoing investment transactions with a final maturity or termination date of longer than six months with any financial institution that initially has a long-term rating category of less than "A" and that does not have at least one long-term rating of at least "AA" by a nationally recognized statistical rating organization (NRSRO). All investments made by the Commission have been made through a firm on the then-current list of qualified financial institutions approved by the Commission.

The Commission's policy does not limit the amount of investment in obligations of the United States or its agencies. The repurchase agreement is a guaranteed investment contract (GIC) with Citigroup Global Markets Inc. as the counterparty. In addition, Citigroup Global Markets Inc. has collateralized the GIC with U.S. Government and Agency securities.

As of Aug. 31, 2014 and 2013, CTTS' investments had the following ratings:

Investments Exposed to Credit Risk

	August 31, 2014				August 31, 2013			
		Credit Ratings				Credit Ratings		
Investment Type	Fair Value	Moody's	S & P	Fitch	Fair Value	Moody's	S & P	Fitch
Money Market Mutual Funds:								
JPMorgan US Govt MMKT Cap 3164	$55,388,619	Aaa-mf	AAAm	AAAmmf	$51,227,219	Aaa-mf	AAAm	AAAmmf
Investment Pools:								
TexPool	87,173,858	NR	AAAm	NR	87,144,339	NR	AAAm	NR
TexPool Prime	87,161,571	NR	AAAm	NR	87,105,786	NR	AAAm	NR
Lone Star	87,149,647	NR	AAAm	NR	87,142,249	NR	AAAm	NR
Citigroup Global Markets, Inc.	114,999,379	Baa2	A	A	114,999,378	Baa2	A	A
Total	$431,873,074				$427,618,971			

NR = not rated

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. The only investment that the Commission has in a single issuer is the repurchase agreement. This investment constitutes 26.6 and 26.9 percent of the total investment portfolio as of Aug. 31, 2014 and 2013, respectively, and is held primarily for the CTTS debt service reserve fund, which has a long-term duration and a specific purpose.

The Commission addresses diversification in the Commission's Investment Policy. Assets held in particular funds shall be diversified to eliminate the risk of loss resulting from over-concentration of assets in a specific maturity, a specific issuer or a specific class of securities. Diversification strategies shall be determined and revised periodically by the investment officer for all funds.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The Commission has addressed interest rate risk in its various accounts by matching as closely as possible anticipated cash flows with income and return of principal on investments. In general, all securities held by the Commission are anticipated to be held to maturity, thereby avoiding interest rate risk due to an early redemption. Investment maturities are noted in the investment fair value table.

NOTE 4 - SUMMARY OF LONG-TERM LIABILITIES

As of Aug. 31, 2014 and 2013, CTTS had three bond issues outstanding and one long-term loan payable. Additional detail is provided in the sections that follow. As detailed on the next page, the following changes occurred in long-term liabilities during the year ended Aug. 31, 2014 and 2013.

Long-Term Liabilities Activity
For the fiscal year ended August 31, 2014

	Balance 09/01/2013	Additions	Reductions	Other Changes	Balance 08/31/2014	Amounts Due Within One Year	Amounts Due Thereafter
Revenue Bonds Payable	$ 1,667,777,863	$ 47,028,730	$ 10,155,000	$ (1,864,508)	$ 1,702,787,085	$ 14,469,508	$ 1,688,317,577
Loans Payable	1,082,608,713	24,761,524			1,107,370,237		1,107,370,237
Total	$ 2,750,386,576	$ 71,790,254	$ 10,155,000	$ (1,864,508)	$ 2,810,157,322	$ 14,469,508	$ 2,795,687,814

Long-Term Liabilities Activity
For the fiscal year ended August 31, 2013

	Restated Balance 09/1/2012*	Additions	Reductions	Restated Other Changes	Restated Balance 08/31/2013	Amounts Due Within One Year	Restated Amounts Due Thereafter
Revenue Bonds Payable	$ 1,620,823,414	$854,989,749	$864,860,000	$56,824,700	$ 1,667,777,863	$ 12,092,518	$ 1,655,685,345
Loans Payable	1,057,876,656	24,732,057			1,082,608,713		1,082,608,713
Total	$ 2,678,700,070	$879,721,806	$864,860,000	$56,824,700	$ 2,750,386,576	$ 12,092,518	$ 2,738,294,058

* Restated balances are a result of GASB 65 implementation.

Revenue Bonds

Transportation Code, Chapter 228 Subchapter C authorized the Commission to issue revenue bonds to pay a portion of the costs of planning, designing, engineering, developing and constructing the initial phase of CTTS. The bond obligations are payable from and secured solely by a first lien on and pledge of the trust estate consisting of all project revenues and all project earnings including investment earnings deposited into the revenue fund, construction fund (except for any amounts held in a sub-account containing monies derived from the state highway fund or any monies received by the Commission that are restricted to another use), the debt service fund, the debt service reserve fund, the rate stabilization fund, and the general reserve fund.

Miscellaneous Bond Information

Bond Description	Bonds Issued To Date	Date Issued	Range of Interest Rates	First Year Maturity	Last Year Maturity	First Call Date
First Tier Revenue Bonds Series 2002-A:						
Non-Callable Capital Appreciation Bonds*	$549,882,639	08/29/2002	4.47-5.75%	2012	2030	n/a
Callable Capital Appreciation Bonds*	317,329,162	08/29/2002	6.00-6.10%	2025	2038	08/15/2012
First Tier Revenue Refunding Bonds Series 2012-A	585,330,000	11/27/2012	4.00-5.00%	2038	2041	08/15/2022
First Tier Revenue Refunding Bonds Series 2012-B	225,000,000	11/27/2012	1.25-1.25%	2042	2042	02/15/2015
Total Bonds Issued	$1,677,541,801					

* Bonds issued to date include interest accreted to principal through Aug. 31, 2014.

Neither the state, Commission, TxDOT nor any other agency or political subdivision of the state is obligated to pay the principal, premium, discount or interest on the CTTS revenue bond obligations except from the trust estate. The bond indenture does not create a mortgage on the CTTS. Debt service requirements for the First Tier Revenue Bonds as of Aug. 31, 2014, are detailed in the following table.

Debt Service Requirements - Revenue Bonds

Year	Principal	Interest*	Total
2015	$ 12,605,000	$ 30,846,650	$ 43,451,650
2016	25,805,000	30,846,650	56,651,650
2017	29,655,000	30,846,650	60,501,650
2018	33,500,000	30,846,650	64,346,650
2019	37,350,000	30,846,650	68,196,650
2020-2024	264,980,000	154,233,250	419,213,250
2025-2029	467,995,000	154,233,250	622,228,250
2030-2034	607,840,000	154,233,250	762,073,250
2035-2039	757,640,000	149,303,850	906,943,850
2040-2044	527,680,000	29,830,500	557,510,500
	2,765,050,000	796,067,350	3,561,117,350
Unamortized Accretion	(1,109,878,199)		(1,109,878,199)
Unamortized Premium	47,615,284		47,615,284
Total	$ 1,702,787,085	$ 796,067,350	$ 2,498,854,435

*Assumes interest at 1.25 percent for Series 2012-B put bonds.

Pledged Future Revenues

Pledged revenues are those specific revenues that are formally committed to directly secure the payment of bond debt service. The table on the next page provides information on pledged revenue and pledged future revenue of the CTTS revenue bonds.

Pledged Future Revenue	August 31, 2014	August 31, 2013
Pledged Revenue Required for Future Principal and Interest on Existing Bonds	$ 3,561,117,350	$ 3,602,119,000
Term of Commitment, Year Ending Aug. 31:	2042	2042
Percentage of Revenue Pledged	99%	99%
Current Year Pledged Revenue	$ 150,246,919	$ 125,259,299
Current Year Principal and Interest Paid	$ 41,001,650	$ 45,356,781

Put Bonds

In November 2012, the Commission issued the Central Texas Turnpike System Series 2012-B refunding put bonds. The proceeds were used to refund a portion of the CTTS Series 2002-A current interest bonds and the CTTS Series 2009 put bonds. The Series 2012-B bonds were issued in a multiannual mode which terminates on the mandatory tender date of Feb. 15, 2015. At the termination of the initial multiannual period, the Series 2012-B bonds are subject to mandatory tender and purchase. Upon such mandatory tender and purchase, the Series 2012-B bonds are expected to be remarketed unless otherwise redeemed.

The Commission has not provided any credit or liquidity facility for the payment of the purchase price of the bonds payable upon the mandatory tender date. The principal portion of the purchase price for the bonds is expected to be obtained from the remarketing proceeds. The obligation of the Commission to purchase the bonds on the mandatory tender date is subject to the successful remarketing of such bonds. The Commission has no obligation to purchase bonds except from remarketing proceeds.

If the bonds are not remarketed, the interest rate on the bonds will be increased to the stepped coupon rate of 10 percent per annum. The impact of such a rate change to the debt service payments on the bonds is disclosed below.

Put Bonds – Debt Service Comparison	Interest Rate	Interest Payment
Multiannual Mode ending February 15, 2015	1.25 % per annum	$2,812,500
Stepped coupon rate period if bonds cannot be remarketed	10 % per annum	$22,500,000

Refunding

CTTS did not have any early extinguishments of bonds in fiscal 2014. On Aug. 30, 2012, the Commission approved the CTTS Sixth Supplemental Indenture which authorized issuance of revenue refunding bonds to refund certain outstanding Series 2002 bonds and all of the Series 2009 bonds. The Commission issued First Tier Revenue Refunding Bonds, Series 2012-A, with a par value of $585,330,000, and First Tier Revenue Refunding Put Bonds, Series 2012-B, with a par value of $225,000,000, for a total par amount of $810,330,000. The issuance closed on Nov. 27, 2012.

Refunding Issues
August 31, 2013

Description	Type of Refunding	Redemption Date	Par Value Refunded	Par Value of Refunding Issue: Series 2012-A	Par Value of Refunding Issue: Series 2012-B	Cash Flow Increase/(Decrease)	Economic Gain/(Loss)*
First Tier Bonds Series 2002-A CIBs	Current	12/31/2012	$ 707,875,000	$ 585,330,000	$ 72,965,000	$ 203,456,795	$ 105,214,439
First Tier Bonds Series 2009	Current	02/15/2013	149,275,000		152,035,000	9,677,070	9,772,947
			$ 857,150,000	$ 585,330,000	$ 225,000,000	$ 213,133,865	$ 114,987,386

*Net present value change of $114,987,386 partially offset by contribution of funds on hand towards redemption in the amount of $4,972,032; economic gain net of this payment is $110,015,354.

Loans Payable

The loans payable balance represents secured loans made to the Commission by the United States Department of Transportation (USDOT) under the Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA). USDOT agreed to lend the Commission $900 million to pay or reimburse a portion of CTTS' costs. In accordance with the TIFIA loan agreement, principal and interest payments can be postponed under certain circumstances and the postponed payments increase the principal amount of the loan. The original balance of the TIFIA loan was $900 million. Outstanding principal currently includes $207,370,237 of interest accreted through Aug. 31, 2014.

As of Aug. 31, 2014, the secured loan agreement's debt service requirements are as follows.

TIFIA Loan – Debt Service Requirements

Year	Principal	Interest*	Total
2015	$	$ 36,443,186	$ 36,443,186
2016		43,188,071	43,188,071
2017		45,478,072	45,478,072
2018		47,969,486	47,969,486
2019		50,259,487	50,259,487
2020-2024		297,004,615	297,004,615
2025-2029	73,995,246	336,599,990	410,595,236
2030-2034	206,870,801	301,478,834	508,349,635
2035-2039	442,594,136	224,296,642	666,890,778
2040-2042	516,220,089	59,975,874	576,195,963
Total	1,239,680,272	1,442,694,257	2,682,374,529
Unamortized Accretion	(132,310,035)		(132,310,035)
Total Requirements	$1,107,370,237	$1,442,694,257	$2,550,064,494

*At interest rate of 5.510 percent.

NOTE 5 - EMPLOYEES' RETIREMENT PLANS

CTTS does not have any employees and does not make contributions to any retirement plans. TxDOT employees provide all accounting and administrative services for CTTS. Those employees are members of the Employee Retirement System of Texas defined benefit pension plan (ERS Plan). CTTS is not obligated in any form for the funding of the pension benefits provided by the ERS Plan.

NOTE 6 – CAPITAL CONTRIBUTIONS, TRANSFERS and DUE FROM OTHER FUNDS

Contributions from the state highway fund for capital assets totaled $30.8 million for fiscal 2014, mostly comprised of construction of a new interchange on State Highway 45 North at O'Connor. Contributions from the state highway fund for capital assets totaled $229.4 for fiscal 2013 mainly due to the incorporation of State Highway 45 Southeast (SH 45 SE) into CTTS. CTTS was expanded to include SH 45 SE in an effort to more efficiently and economically meet the mobility needs of the Central Texas region by operating both CTTS and SH 45 SE as one operational and financial enterprise.

Transfers represent contributions from the state highway fund for operations and maintenance expenses, net of any reimbursements from CTTS back to the state highway fund. For fiscal 2014 and 2013, the state highway fund contributed approximately $53.6 million and $47.8 million, respectively. These contributions were offset by reimbursements from CTTS to the state highway fund of $51.5 million and $47.8 million, for fiscal 2014 and 2013, respectively. In addition, in fiscal 2013, CTTS transferred $4.3 million for prior year costs not previously reimbursed to the state highway fund.

Due from other funds, as reported on the Statement of Net Position (Exhibit I) is detailed as follows:

Due From the State Highway Fund	August 31, 2014	August 31, 2013
Operating, Maintenance and Reserve Maintenance accounts	$ 25,696,983	$ 10,122,504
Veterans Waiver Program Reimbursement	382,374	
Trucker's Incentive Program		3,288,228
Total Due From	$ 26,079,357	$ 13,410,732

NOTE 7 – CONTINUANCE SUBJECT TO REVIEW

TxDOT is currently subject to a continuance review. Under the Texas Sunset Act, TxDOT will be abolished effective Sept. 1, 2017, unless continued in existence by the 85th Legislature as provided by the Act. If abolished, TxDOT may continue until Sept. 1, 2018, to close out its operations. In the event that TxDOT is abolished pursuant to the Texas Sunset Act or other law, Texas Government Code, Section 325.017(f), acknowledges that such action will not alter the obligation of the state to pay bonded indebtedness and all other obligations of the abolished agency.

NOTE 8 –ADJUSTMENTS TO NET POSITION

The implementation of GASB Statement No. 65, *Items Previously Reported as Assets and Liabilities,* required certain accounting changes and adjustments to the fiscal 2013 balances. The impact of the adjustment is summarized in the following table.

Statement of Net Position	2013 Previously Issued	Change	2013 Revised
Deferred Charges	12,354,755	(12,354,755)	0
Deferred Outflow of Resources		7,332,928	7,332,928
Total Assets and Deferred Outflows	3,285,050,613	(5,021,827)	3,280,028,786
Revenue Bonds Payable - Current	10,855,058	1,237,460	12,092,518
Revenue Bonds Payable - Noncurrent	1,622,060,332	33,625,013	1,655,685,345
Total Liabilities	2,719,858,548	34,862,473	2,754,721,021
Net Position	565,192,065	(39,884,300)	525,307,765

The restatement made to CTTS was due to the implementation of GASB 65, which resulted in a decrease to net position. This restatement was related to the prior treatment of bond issue costs associated with CTTS debt. Of the total amount, $12.4 million was reported as deferred charges, $27.5 million was bond issue costs previously recorded as part of loss on refunding, and $7 million is the difference between the reacquisition price and the net carrying amount on a prior year refunding.

NOTE 9 – COMMITMENTS & CONTINGENCIES

Arbitrage

Arbitrage earnings, defined as earnings on tax exempt bond proceeds in excess of the yield on the bonds, must be repaid to the federal government per Internal Revenue Code Section 148(f) (IRC §148). Pursuant to the Indenture of Trust, a Rebate Fund will be established under the Indenture to which deposits will be made upon the determination by a verification agent that a rebate payment may be due pursuant to IRC §148.

Per IRC §148, the amount of rebate due the federal government is determined and payable at the end of each five-year computation period and upon final payment of the tax exempt bonds. For Series 2002-A and Series 2002 BANs, an interim determination was made in 2007 that no arbitrage rebate was then due to the federal government. For Series 2009 bonds, which were completely refunded, a determination was made in 2013 that no arbitrage rebate was due. Further analysis and determination of rebate payments due, if any, will be made on the next scheduled computation date for each series of bonds under the Indenture.

Lawsuits and Claims

CTTS is contingently liable in respect to lawsuits and claims in the ordinary course of business which, in the opinion of TxDOT's management, will not have a material adverse effect on the financial statements.

NOTE 10 – SUBSEQUENT EVENTS

Bond Issuances

The Commission intends to issue CTTS Revenue Refunding Bonds prior to February 15, 2015.

NOTE 11 - RISK FINANCING & RELATED INSURANCE

CTTS does not have any employees. TxDOT provides all accounting, debt financing and administrative services. In addition, TxDOT's risk financing and insurance programs apply to CTTS.

TxDOT is exposed to a wide range of risks due to the size, scope and nature of its activities. Some of these risks include, but are not limited to, property and casualty losses, workers' compensation and health benefit claims, theft, damage of assets, etc. CTTS self-insures through funds on deposit within the Rate Stabilization Fund. The amount of funds held on deposit in the rate stabilization fund for self-insurance has been certified as actuarially sound by the Madison Consulting Group. To date, CTTS has not had to draw upon the funds in the rate stabilization fund to settle any claims and therefore settlements have not exceeded self-insurance coverage.

Central Texas Turnpike System
REQUIRED SUPPLEMENTARY INFORMATION
(Unaudited)

MODIFIED APPROACH TO REPORTING INFRASTRUCTURE ASSETS

Prior to fiscal 2014, TxDOT adopted the modified approach for reporting the roadways associated with the Central Texas Turnpike System (CTTS). Although highway bridges are an integral part of CTTS, TxDOT had elected to depreciate highway bridges. Therefore, they were not reported using the modified approach. Starting fiscal 2014, TxDOT adopted the new policy to use the depreciation approach for both highways and highway bridges. The modified approach is no longer used for reporting infrastructure assets.

Under the modified approach, depreciation is not reported and all preservation and maintenance costs are expensed.

The modified approach requires that TxDOT:

- Maintain an asset management system that includes an up-to-date inventory of eligible infrastructure assets,
- Perform condition assessments of the eligible infrastructure assets and summarize the results using a measurement scale in order to document that the eligible infrastructure assets are being preserved approximately at (or above) the condition level established and disclosed by the government, and
- Estimate each year the annual amount needed to maintain and preserve the eligible infrastructure assets at the condition level established and disclosed by the government.

Condition Assessments

TxDOT performs yearly condition assessments through the Texas Maintenance Assessment Program (TxMAP). Under this program, visual inspections are conducted on approximately 20 percent of toll roads. For each section of highway observed, 21 elements separated into three highway components are assessed scores from 0 to 5 (0 = N/A, 1 = Failed, 2 = Poor, 3 = Fair, 4 = Good, 5 = Excellent) in order to determine the condition of the highways. Each element within a component is weighted according to importance and each component is weighted according to importance to determine the overall condition of CTTS roadways. The overall score is converted to a percentage measurement for reporting (1 = 20 percent, 2 = 40 percent, 3 = 60 percent, 4 = 80 percent, 5 = 100 percent).

Assessed Conditions

CTTS' roadways are intended to be maintained at or above the minimum condition level of 80 percent. This condition level was established by the Commission and is determined based on TxMAP assessments. The results of the condition assessments for fiscal years 2009 through 2013 are disclosed below.

TxMAP Condition Assessments for CTTS	
Fiscal Year	(Minimum 80%)
2013	85.1%
2012	86.2%
2011	89.9%
2010	87.9%
2009	90.5%

Estimated and Actual Costs for Maintenance

The table below provides a comparison between TxDOT's estimate of maintenance expenditures required to maintain CTTS' roadways at or above the adopted condition level and the actual expenditures.

CTTS	Fiscal 2013	Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009
Estimate	$13,987,845	$ 10,050,181	$11,577,672	$11,371,334	$9,178,651
Actual	$13,109,474	$ 10,627,758	$11,438,932	$6,972,452	$7,261,987

Factors Affecting Condition Assessments

In comparing actual expenditures to estimated expenditures, factors such as increases in traffic, legislative mandates, budgetary constraints and environmental effects (rainfall, drought, hurricane, freeze thaw, etc.) should be considered as they may have a major impact on needed funds and the condition of Texas roads.

Other Condition Assessments

A separate annual inspection report is performed on the Central Texas Turnpike System (CTTS) in accordance with Section 707 of the Indenture of Trust. Those inspections are performed by the general engineering consultant (GEC) of CTTS. The fiscal 2013 inspection noted that the CTTS roadways were in an overall excellent condition, achieving an overall score of 96 percent. While the GEC inspection uses the same general criteria as TxMAP, both parties have different areas of focus when performing their evaluations resulting in slight differences. In addition, there are other differences in evaluation timing and methodology which may contribute to the difference in scores; it is performed at a different time of the year, covers all 72 miles of the system instead of using a random sample of 20 percent, and uses a more detailed breakdown of each criteria.

Texas Department of Transportation

125 East 11th Street, Austin TX 78701

www.txdot.gov

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APPENDIX B

SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE

The following statements summarize certain provisions of the Master Indenture and the Seventh Supplemental Indenture. These statements do not purport to be comprehensive or definitive and are qualified in their entirety by reference to the Master Indenture and the Seventh Supplemental Indenture, respectively. Copies of the Master Indenture and the Seventh Supplemental Indenture are available for examination at the offices of the Commission.

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DEFINITIONS

"*Accounting Principles*" – "Generally Accepted Accounting Principles" for governmental entities in the United States, which are promulgated by the Governmental Accounting Standards Board ("*GASB*"), the Financial Accounting Standards Board ("*FASB*") and, when applicable, such other accounting principles as the Commission or the State, as applicable, may be required to employ from time to time, in order to comply with the terms of the Indenture, or pursuant to State law or regulation or as the Commission or the State, as applicable, may otherwise elect, provided such election does not cause a violation of the Rule.

"*Acts*" – Chapters 1207 and 1371, Texas Government Code, as amended and Subchapter C of Chapter 228, Texas Transportation Code, as amended.

"*Additional First Tier Obligations*" – First Tier Obligations, in addition to the Series 2002-A Bonds, the Series 2012-A Bonds, the Series 2015-A Bonds and the Series 2015-B Bonds, authorized to be issued or incurred under the Master Indenture and secured by a first lien on, pledge of and security interest in the Trust Estate.

"*Additional Obligation Security*" – any credit enhancement for specified Obligations and any funds received or obligations payable to the Commission, other than Revenues, which the Commission chooses to include as security for specified First Tier Obligations, Second Tier Obligations and/or Subordinate Lien Obligations pursuant to a Supplemental Indenture.

"*Additional Second Tier Obligations*" – Second Tier Obligations, in addition to the Series 2015-C Bonds, authorized to be issued or incurred under the Master Indenture and secured by a lien on, pledge of and security interest in the Trust Estate, subject to the lien on, pledge of and security interest in the Trust Estate established for the benefit and security of the First Tier Obligations.

"*Additional Subordinate Lien Obligations*" – Subordinate Lien Obligations authorized to be issued or incurred under the Master Indenture and secured by a lien on, pledge of and security interest in the Trust Estate, subject and subordinate to the lien on, pledge of and security interest in the Trust Estate established for the benefit and security of the First Tier Obligations and the Second Tier Obligations, respectively.

"*Annual Capital Budget*" – the capital budget adopted by the Commission for the System as described under the caption "Particular Covenants – Annual Operating Budget; Annual Maintenance Budget; Annual Capital Budget" of this Appendix B.

"*Annual Debt Service*" – for any annual period with respect to all Outstanding Obligations or to all First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations, (a) the amount of principal and interest paid or payable with respect to such Obligations in the annual period, plus (b) Reimbursement Obligations paid or payable by the Commission in such annual period (but only to the extent not duplicative of such principal and interest), plus (c) the amounts, if any, paid or payable by the Commission in such annual period with respect to Approved Swap Agreements, minus (d) the amounts, if any, paid or payable to the Commission in such annual period with respect to Approved Swap Agreements, provided that the difference between the amounts described in clauses (c) and (d) shall be included only to the extent that such difference would not be recognized as a result of the application of the assumptions set forth in clauses (1) through (5) below, and minus (e) all amounts that are deposited to the credit of a debt service fund or the Construction Fund for the payment of interest on First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations, as the case may be, from original proceeds from the sale of such Obligations or from any other lawfully available source (other than the Revenue Fund or any money that would constitute Revenues in the subject annual period), and that are used or scheduled to be used to pay interest on such Obligations during any annual period. The following assumptions shall be used to determine the Annual Debt Service becoming due in any annual period:

(1) in determining the principal amount paid or payable with respect to Obligations or Reimbursement Obligations in each annual period, payment shall be assumed to be made in accordance with any amortization schedule established for such Indebtedness, including amounts paid or payable pursuant to any mandatory redemption schedule for such Indebtedness;

(2) if any of the Indebtedness or proposed Indebtedness constitutes Balloon Indebtedness or Short-Term Indebtedness, then such amounts thereof as constitute Balloon Indebtedness or Short-Term Indebtedness shall be treated as if such Indebtedness is to be amortized in substantially equal annual installments of principal and interest over the useful life of the improvements financed with the proceeds of such Balloon Indebtedness as calculated by, and set forth in a certificate of a Chief Financial Officer. Anything to the contrary in the Master Indenture notwithstanding, during the annual period preceding the final maturity date of such Balloon Indebtedness and, in the case of Short-Term Indebtedness in each annual period, all of the principal thereof shall be considered to be due on Maturity or due date of such Balloon Indebtedness or Short-Term Indebtedness unless the Commission provides to the Trustee, prior to the beginning of such annual period, a certificate of a Financial Consultant certifying that, in its judgment, the Commission will be able to refund such Balloon Indebtedness or Short-Term Indebtedness through the issuance of Long-Term Indebtedness, in which event the Balloon Indebtedness or Short-Term Indebtedness shall be amortized over the term of such proposed refunding Indebtedness and shall be deemed to bear the interest rate specified in the certificate of the Financial Consultant;

(3) as to any annual period prior to the date of any calculation, such requirements shall be calculated solely on the basis of Obligations which were Outstanding as of the first day of such period; and as to any future annual period such requirements shall be calculated solely on the basis of Obligations Outstanding as of the date of calculation plus any Obligations then proposed to be issued;

(4) if any of the Indebtedness or proposed Indebtedness constitutes Variable Rate Indebtedness, then, subject to the following proviso, interest in future periods shall be based on the Assumed Variable Rate; provided, however, if the Commission has entered into an Approved Swap Agreement with respect to a Series of Obligations constituting Variable Rate Indebtedness, the fixed interest rate payable by the Commission under the Approved Swap Agreement shall be assumed to be the interest rate on such Obligations if (i) the notional amount under the Approved Swap Agreement is equal to or greater than the Outstanding principal amount of the Obligations and reduces in the amounts and on the dates that the Obligations mature and (ii) the variable interest rate payable by the Commission on the Obligations is determined by the same formula or reference to the same index and computed on the same date as the interest rate payable to the Commission under the Approved Swap Agreement, such that the Commission assumes no basis risk under the swap transaction; and

(5) termination or similar payments under an Approved Swap Agreement shall not be taken into account in any calculation of Annual Debt Service.

"*Annual Maintenance Budget*" – the budget of maintenance expenditures adopted by the Commission for the System described under the caption "Particular Covenants – Annual Operating Budget; Annual Maintenance Budget; Annual Capital Budget" in this Appendix B.

"*Annual Operating Budget*" – the operating budget adopted by the Commission for the System described under the caption "Particular Covenants – Annual Operating Budget; Annual Maintenance Budget; Annual Capital Budget" in this Appendix B.

"*Annual Period*" – the Fiscal Year or any consecutive twelve-month period.

"*Approved Swap Agreement*" – a Swap Agreement secured by or payable from Revenues for which the Commission has filed the with the Trustee the items described in subsection (e) under the caption "Limitations on Other Indebtedness – *Limitations on Issuance of Additional First Tier Obligations and Execution of First Tier Approved Swap Agreements*" in this Appendix B.

"*Assumed Variable Rate*" – in the case of:

(a) Outstanding Obligations in the form of Variable Rate Indebtedness, the greater of (1) the average interest rate on such Indebtedness for the most recently completed sixty (60) month period or the period such Variable Rate Indebtedness has been Outstanding if it is less than sixty (60) months, or (2) the rate to be determined pursuant to clause (b) below assuming the Outstanding Variable Rate Indebtedness were being issued on the date of calculation; and

(b) proposed Obligations in the form of Variable Rate Indebtedness either:

(1) to be issued on the basis that, in the opinion of Bond Counsel to be delivered at the time of the issuance thereof, interest on such Variable Rate Indebtedness would be excluded from gross income for federal income tax purposes, the greater of (i) the average of the Bond Market Association Swap Index ("*BMA Index*") for the twelve (12) month period ending seven (7) days preceding the date of calculation plus 100 basis points, or (ii) the average of the BMA Index for the sixty (60) month period ending seven (7) days preceding the date of calculation plus 100 basis points, or

(2) to be issued as Variable Rate Indebtedness not described in clause (1), the greater of the (i) average of the London Interbank Offered Rate ("*LIBOR*") for the time period most closely resembling the reset period for the Variable Rate Indebtedness for the twelve (12) month period ending seven (7) days preceding the date of calculation plus 100 basis points, or (ii) average of LIBOR for the time period most closely resembling the reset period for the Variable Rate Indebtedness for the sixty (60) month period ending seven (7) days preceding the date of calculation plus 100 basis points; and provided that if the BMA Index or LIBOR shall cease to be published, the index to be used in its place shall be that index which the Commission in consultation with the Financial Consultant determines most closely replicates such index, as set forth in a certificate of a Chief Financial Officer filed with the Trustee. Notwithstanding the foregoing, in no event shall the Assumed Variable Rate be in excess of the maximum interest rate allowed by law on obligations of the Commission.

"*Authorized Denominations*" – with respect to any Obligations, those denominations specified in the Master Indenture or a Supplemental Indenture. With respect to the Bonds, $5,000 in principal amount, or any integral multiple thereof.

"*Average Annual Debt Service*" – with respect to First Tier Obligations, Second Tier Obligations, Subordinate Lien Obligations or all Obligations, at any point in time the average amount of Annual Debt Service paid or payable in each Annual Period to the Stated Maturity of the respective Outstanding Obligations.

"*Award Certificate*" – means (i) in connection with the Bonds each certificate by a Chief Financial Officer to be executed and delivered pursuant to the Seventh Supplemental Indenture or (ii) in connection with any other Series of Obligations, the certificate executed by the TTA Representative authorized by the Commission in a manner that delegates the establishment of the terms of such Obligations and the acquisition of a DSRF Security in connection with the issuance of such Obligations to a TTA Representative.

"*Balloon Indebtedness*" – Long-Term Indebtedness of a particular issue or Series of Obligations of which 25% or more of the principal matures in the same annual period and is not required by the documents pursuant to which such Indebtedness was issued to be amortized by payment or redemption prior to that annual period, provided that such Indebtedness will not constitute Balloon Indebtedness and will be assumed to amortize in accordance with its stated terms if the Trustee is provided a certificate of a TTA Representative certifying that such Indebtedness is not to be treated as Balloon Indebtedness.

"*Bank*" or "*Banks*" – as to any particular Series of Obligations, each Person (other than a Bond Insurer) providing a Credit Facility as designated in the Supplemental Indenture providing for the issuance of such Obligations.

"*Bankruptcy Law*" – Title 9 of the United States Code, as amended from time to time, and any successor to or replacement of such Title and any other applicable federal or state bankruptcy, insolvency or similar law.

"*Bankruptcy-Related Event*" – the occurrence of any of the following: (a) the application by or consent of the Commission to the appointment of a receiver, trustee, liquidator or custodian or the like is appointed for the Commission; or (b) the Commission becomes unable to pay its debts generally as they become due; or (c) the Commission is adjudicated a bankrupt or insolvent; or (d) the Commission commences a voluntary proceeding under the Bankruptcy Law, or files a voluntary petition or answer seeking reorganization, an arrangement with creditors or an order for relief or seeking to take advantage of any insolvency law or admits the material allegations of a petition filed against the Commission in any state or federal bankruptcy, reorganization or insolvency proceeding or takes corporate action for the purpose of effecting any of the foregoing.

"*Beneficial Owner*," "*Beneficial owner*" or "*beneficial owner*" – any person who acquires a beneficial ownership interest in a Bond held by DTC. In determining the Beneficial Owner of any Bond, the Trustee and the Commission may rely conclusively upon representations made and written information given to the Trustee or the Commission by DTC or a DTC Participant with respect to any Bond held by DTC in which a beneficial interest is claimed.

"*Bond Counsel*" – any attorney or firm of attorneys engaged by the Department whose experience in matters relating to the issuance of obligations by states and their political subdivisions is nationally-recognized.

"*Bond Insurer*" – Ambac Assurance Corporation with respect to the Series 2002-A Bonds and, with respect to other Obligations, as to any particular maturity or any particular Series of Obligations, the Person undertaking to insure such Obligations as designated in an Award Certificate, the authorizing minute order or in a Supplemental Indenture providing for the issuance of such Obligations.

"*Bond Purchase Fund*" – a fund established with the Trustee pursuant to the provisions of a Supplemental Indenture to be used in connection with the tender and purchase of Tender Indebtedness.

"*Bond Register*" – the register maintained pursuant to the Indenture by the Bond Registrar.

"*Bond Registrar*" – with respect to any Series of Obligations, that Person which maintains the Bond Register or such other entity designated by the Bond Registrar to serve such function and, initially, the Trustee.

"*Bonds*" – collectively, the Series 2015-A Bonds, the Series 2015-B Bonds and the Series 2015-C Bonds.

"*Book-Entry Obligations*" or "*Book-Entry [First Tier] [Second Tier] or [Subordinate Lien] Obligations*" – all of the Obligations or those Obligations of a particular lien subject to the Book-Entry-Only System.

"*Book-Entry-Only System*" – a system similar to the system described in the Indenture pursuant to which Obligations are registered in book-entry form.

"*Business Day*" – any day other than a Saturday, a Sunday or a day on which banking institutions are required or authorized by law or executive order to remain closed in the State or the City of New York or in the city in which the designated office of the Trustee or the Securities Depository is located; provided, however, such term may have a different meaning for purposes of a Credit Facility.

"*Capital Appreciation Bonds*" – the Obligations of an issue or Series of Obligations on which interest accretes from their date of initial delivery to the Stated Maturity but is not payable prior to the Stated Maturity, maturing variously in each of the years and in the Maturity Amount set forth in an Award Certificate or Supplemental Indenture relating to such Obligations.

"*Capital Payments*" – payments under Approved Swap Agreements and Reimbursement Obligations other than Operating Expenses.

"*Central Texas Turnpike System*" – see definition of System.

"*Chief Financial Officer*" – the Chief Financial Officer of the Department, the Director of the Finance Division of the Department, the Innovative Financing/Debt Management Officer of the Department, the Deputy Director, Innovative Financing/Debt Management Office, or such other officer or employee of the Department or such other individual so designated by the Commission to perform the duties of Chief Financial Officer under the Seventh Supplemental Indenture.

"*Code*" – the Internal Revenue Code of 1986, as amended, and the regulations proposed or adopted from time to time with respect thereto.

"*Commission*" – the Texas Transportation Commission and its successors and assigns.

"*Commission Official*" – any member of the Commission or any director, officer or employee of the Department authorized to perform specific acts or duties by minute order duly adopted by the Commission.

"*Compounding Dates*" – the semi-annual dates set forth in the Award Certificate relating to the issuance of Capital Appreciation Bonds.

"*Construction and Ramp-Up Period*" – the period commencing with the delivery of Obligations to finance the costs of expanding, enlarging or extending the System and ending forty-eight (48) months after Substantial Completion of the improvements financed with the proceeds of such Obligations.

"*Construction Fund*" – the Construction Fund established pursuant to the Master Indenture and described in "– MASTER INDENTURE – Funds and Accounts – *Construction Fund*" of this Appendix B.

"*Consultant*" – a Person who shall be independent, employed by the Department as needed, being qualified and having a nationwide and favorable reputation for skill and experience in such work for which the Consultant was appointed. In those situations in which a Consultant is appointed to survey risks and to recommend insurance coverage, such Consultant may be a broker or agent with whom the Department transacts business.

"*Conversion*" or "*conversion*" – a change from one Mode to another with respect to a Series 2015-A Bonds, and with respect to a Series 2015-A Bonds in the Multiannual Mode, a change from one Interest Rate Period to another.

"*Cost*" or "*Costs*" – with respect to the System, all or any part of:

(a) the cost of study, design, construction, expansion, enlargement, extension, reconstruction, restoration, repair and rehabilitation of the System or portion thereof (including, but not limited to, indemnity and surety bonds, permits, taxes, licenses, insurance premiums, or other municipal or governmental charges lawfully levied or assessed during construction);

(b) the cost of acquisition of all real or personal property, rights, right-of-way, franchises, easements and interests acquired or used for the System or portion thereof;

(c) the cost of demolishing or removing any structures on land so acquired, including the cost of acquiring any land to which the structures may be removed;

(d) any cost of borings and other preliminary investigations necessary or incident to determining the feasibility or practicability of constructing the System or portion thereof and any cost necessary or desirable to satisfy conditions associated with the issuance of any permit for the construction thereof (including the costs of environmental related mitigation required in connection therewith);

(e) the cost of all machinery and equipment, vehicles, materials and rolling stock;

(f) Issuance Costs;

(g) provisions for working capital and interest on Obligations and on any Reimbursement Obligation for the period prior to, during and for a period of up to one year after acquisition or completion of construction as determined by the Commission, and reserves for principal and interest for extensions, enlargements, additions, replacements, renovations and improvements to the System;

(h) the cost of architectural, engineering, environmental feasibility, traffic and revenue, economic and demographic, appraisal, financial, and legal services;

(i) planning, investigations, studies, evaluations, plans, specifications, estimates, and administrative and other expenses that are necessary or incidental to the determination of the feasibility of constructing the System or portion thereof or incidental to the obtaining of construction contracts or to the construction (including construction administration and inspection), acquisition or financing thereof and that constitute capital costs;

(j) Operating Expenses and Maintenance Expenses occurring during and for a period of up to one year after acquisition or completion of construction, as determined by the Commission, provided that, if applicable, the Trustee has received an opinion of Bond Counsel (which opinion may address either specific Operating Expenses or Maintenance Expenses or categories of Operating Expenses or Maintenance Expenses) to the effect that the treatment of such Operating Expenses or Maintenance Expenses as a Cost will not adversely affect the exclusion of interest on any Obligations from gross income for federal income tax purposes;

(k) the repayment or reimbursement of any Obligation, loan or advance for any of the foregoing; and

(l) with respect to the use of proceeds of Obligations, such other costs and expenses as are permitted by the Enabling Acts at the time such Obligations are issued.

"*Counsel*" – an attorney or law firm (who may be counsel to the Commission) satisfactory to the Trustee.

"*Credit Facility*" – any letter of credit, line of credit, standby letter of credit, indemnity or surety insurance policy or agreement to purchase a debt obligation or any similar extension of credit, credit enhancement or liquidity support obtained by the Commission from a responsible financial or insurance institution, to provide for or to secure payment of principal and purchase price of, and/or interest on Obligations pursuant to the provisions of a Supplemental Indenture under which such Obligations are issued. The use of such definition is not intended to preclude the Commission from providing the credit or liquidity support with respect to one or more Series of Obligations directly rather than through a financial or insurance institution.

"*Current Interest Bonds*" – Obligations paying current interest and maturing in each of the years and in the aggregate principal amounts set forth in the Award Certificate or the Supplemental Indenture relating to such Obligations.

"*Date of Delivery*" – the date of delivery of the Bonds to the initial purchasers thereof.

"*Defeasance Securities*" – (a) Government Obligations, (b) noncallable obligations of an agency or instrumentality of the United States, including obligations that are unconditionally guaranteed or insured by the agency or instrumentality and that, on the date of the purchase thereof, are rated as to investment quality by a nationally-recognized investment rating firm not less than AAA or its equivalent, and (c) noncallable obligations of a state or an agency or a county, municipality, or other political subdivision of a state that have been refunded and that, on the date the Commission adopts or approves the proceedings authorizing the financial arrangements, are rated as to investment quality by a nationally-recognized investment rating firm not less than AAA or its equivalent.

"*Defeased Obligation*" – Obligations deemed to be paid, retired and no longer Outstanding pursuant to the provisions of the Master Indenture.

"*Department*" – the Texas Department of Transportation or its successors.

"*DSRF Security*"– a First Tier DSRF Security or a Second Tier DSRF Security.

"*DTC*" – The Depository Trust Company and it successors and assigns.

"*Enabling Acts*" – Chapters 222 and 228, Texas Transportation Code, as amended, and Chapter 1371, Texas Government Code, as amended.

"*Event of Default*" – those events specified under the caption "Events of Default and Remedies – *Events of Default*" in this Appendix B, and such other events specified in any Supplemental Indentures.

"*Financial Consultant*" – any financial advisor or firm of financial advisors of favorable national reputation for skill and experience in performing the duties for which a Financial Consultant is required to be employed pursuant to the provisions of the Master Indenture and who is retained by the Department as a Financial Consultant for the purposes of the Master Indenture.

"*First Tier Approved Swap Agreement*" – an Approved Swap Agreement entered into as a First Tier Obligation.

"First Tier Debt Service Fund" – the fund created by the Master Indenture to secure payment of First Tier Obligations and set forth in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts."

"*First Tier Debt Service Reserve Fund*" – the fund created by the Master Indenture and set forth in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts."

"*First Tier Debt Service Reserve Requirement*" – the lesser of (i) the maximum Annual Debt Service of all the First Tier Obligations, (ii) 1.25 times the Average Annual Debt Service of all First Tier Obligations or (iii) ten percent (10%) of the aggregate principal amount of the Outstanding First Tier Obligations, as determined on the date each Series of First Tier Obligations is issued and delivered.

"*First Tier DSRF Security*" – a surety bond, an insurance policy, a letter of credit or similar financial instrument satisfactory to the Rating Agency (as evidenced by a letter from the Rating Agency confirming that the First Tier DSRF Security will not result in the rating on any outstanding First Tier Obligations being downgraded).

"*First Tier Interest Account*" – the account of that name created pursuant to the Master Indenture and set forth in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts."

"*First Tier Obligations*" – the Series 2015-A Bonds, the Series 2015-B Bonds, the Series 2012-A Bonds, the Series 2002-A Bonds and all Indebtedness of any kind or class, including bonds, notes, bond anticipation notes, commercial paper and other obligations, issued or incurred as Additional First Tier Obligations under the Master Indenture and includes all obligations of the Commission owed to Secured Owners of (i) First Tier Obligations, (ii) Reimbursement Obligations secured by the Trust Estate on a parity with First Tier Obligations and (iii) obligations of the Commission under First Tier Approved Swap Agreements.

"*First Tier Principal Account*" – the account of that name created pursuant to the Master Indenture as described under the caption "– MASTER INDENTURE – Funds and Accounts – *First Tier Debt Service Fund*" of this Appendix B.

"*First Tier Swap Agreement Counterparty*" – the counterparty to a First Tier Approved Swap Agreement with the Commission or with the Trustee.

"Fiscal Year" – the fiscal year of the Department, currently the period commencing on the first day of September and ending on the last day of August of the following year.

"*Fitch*" – Fitch, Inc., its successors and assigns, and, if such corporation shall for any reason no longer perform the functions of a securities rating agency, "Fitch" shall be deemed to refer to any other nationally-recognized rating agency designated by the Commission.

"*General Engineering Consultant*" or "*GEC*" – an engineer or firm of engineers of favorable reputation for skill and experience in performing the duties for which a General Engineering Consultant is required to be employed pursuant to the provisions of the Master Indenture and who is retained by the Department as the General Engineering Consultant for purposes of the Master Indenture.

"*General Reserve Fund*" – the fund of such name created by the Master Indenture and set forth in "– MASTER INDENTURE – Funds and Accounts – *General Reserve Fund*" of this Appendix B.

"*Government Obligations*" – direct obligations of, or obligations the principal or interest on which are unconditionally guaranteed by, the United States (including interest strips of the Resolution Funding Corporation).

"*IH 35*" – Interstate Highway 35.

"*Indebtedness*" – all indebtedness of the Commission payable from Revenues incurred or assumed by the Commission for borrowed money (including indebtedness arising under Credit Facilities) and all other financing obligations of the Commission related to the System that, in accordance with Accounting Principles, are included as a liability on a balance sheet for the System books and records, but excluding noncash accounting adjustments. For the purpose of determining the "Indebtedness" payable from the Revenues, any Defeased Obligation shall be excluded.

"*Indenture*" – collectively, the Master Indenture and the Seventh Supplemental Indenture.

"*Interest Payment Date*" – with respect to each Series of Obligations, the dates that are defined as such in the Master Indenture or in a Supplemental Indenture under which First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations are issued or in Award Certificate relating to any such Obligations. However, in each case, if the date specified above is not a Business Day then the Interest Payment Date shall be the Business Day next succeeding the date specified above. With respect to the Series 2015-A Bonds during the Initial Multiannual Period described in this Official Statement, the Series 2015-B Bonds and the Series 2015-C Bonds: (i) August 15, 2015, and each February 15 and August 15 thereafter; and (ii) the Maturity Date.

"*Interest Rate Period*," "*Rate Period*," or "*Period*" – when used with respect to any particular rate of interest for a Bond, the period during which such rate of interest determined for such Bond will remain in effect as described in the Seventh Supplemental Indenture.

"*Investment Policy*" – the investment policy of the Commission relating to the funds of the System adopted pursuant to the Public Funds Investment Act, Chapter 2256, Texas Government Code, as amended.

"*Issuance Costs*" – costs incurred by or on behalf of the Commission in connection with the issuance of Obligations including, without limitation, the following: payment of financial, rating agency, legal, accounting and appraisal fees and expenses; the Commission's fees and expenses attributable to the issuance of the Obligations; the cost of printing, engraving and reproduction services; fees and expenses incurred in connection with any Credit Facility and any Approved Swap Agreement; legal fees and expenses of Bond Counsel, Commission's counsel, Trustee's counsel and remarketing agent's counsel relating to the issuance of the Obligations; the initial or acceptance fee of the Trustee; and all other fees, charges and expenses incurred in connection with the issuance of the Obligations and the preparation of the Master Indenture and any Supplemental Indentures entered into in connection with the issuance of Obligations.

"*Legislature*" – the Legislature of the State.

"*Letter of Representations*" – the letter of representations or similar document executed by the Commission and delivered to the Securities Depository (and any amendments thereto or successor agreements) for one or more Series of Book-Entry Obligations.

"*Liquidity Agreement*" – each standby bond purchase agreement, irrevocable letter of credit, surety bond, insurance policy or similar instrument securing the payment of the Purchase Price of Variable Rate Bonds as originally executed with the original issuance of Variable Rate Bonds and any extensions thereof, as from time to time amended and supplemented, and any Alternate Liquidity Agreement, as originally executed and as such agreement may from time to time be amended and supplemented. A Liquidity Agreement is not a "Credit Facility" within the meaning of the Indenture.

"*Long-Term Indebtedness*" – all Indebtedness that is not Short-Term Indebtedness.

"*Maintenance Account*" – the Central Texas Turnpike System Maintenance Account as described under the caption "– MASTER INDENTURE – Funds and Accounts – *Maintenance Account*" of this Appendix B.

"*Maintenance Expenses*" – the Commission's reasonable and necessary expenses of repair and maintenance of the System, including, without limiting the generality of the foregoing, periodic roadway resurfacing and repair, replacement of toll collection, vehicle identification, toll integration and video enforcement equipment and all administrative and engineering expenses relating to repair and maintenance of the System and any other expenses required to be paid by the Commission as shown in the Annual Maintenance Budget for the System.

"*Master Indenture*" – the Indenture of Trust, dated July 15, 2002 by and between the Commission and the Trustee, as supplemented and amended from time to time.

"*Maturity*" – the date on which the principal of an Obligation becomes due and payable as provided therein and as provided in the Master Indenture, whether at Stated Maturity, by redemption, or otherwise.

"*Maturity Amount*" – of any Capital Appreciation Bond means the principal amount thereof plus accrued (including compounded) interest thereon due on its Maturity Date.

"*Maturity Date*" – the final maturity date of the applicable Bonds.

"*Mode*" – the period for and the manner in which the interest rates on the Series 2015-A Bonds, or any portion of the Series 2015-A Bonds, are set and includes the Daily Mode, the Flexible Mode, the Weekly Mode, the Monthly Mode, the Quarterly Mode, the Semiannual Mode, the Multiannual Mode, Index Floating Rate Mode and the Fixed Rate Mode.

"*Moody's*" – Moody's Investors Service, its successors and their assigns, and, if such corporation shall for any reason no longer perform the functions of a securities rating agency, "Moody's" shall be deemed to refer to any other nationally-recognized rating agency designated by the Commission.

"*MSRB*" – the Municipal Securities Rulemaking Board or its successor or assignee.

"*Multiannual Mode*" – the Mode in which the interest rate on any Series 2015-A Bonds is fixed for periods of one year more as designated by a Chief Financial Officer.

"*Multiannual Rate*" – the rate of interest that is set on any Series 2015-A Bonds while they are in the Multiannual Mode pursuant to the Seventh Supplemental Indenture.

"*Obligations*" – Indebtedness issued or incurred as First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations.

"*Operating Account*" – the Central Texas Turnpike System Operating Account as described under the caption "– MASTER INDENTURE – Funds and Accounts – *Operating Account*" of this Appendix B.

"*Operating Account Requirement*" – an amount sufficient to bring the balance in the Operating Account to the amount contemplated by the Annual Operating Budget and a certificate of a TTA Representative, dated no later than five days prior to the last Business Day of the month, to be necessary to pay Operating Expenses for the ensuing two months.

"*Operating Expenses*" – the Commission's reasonable and necessary expenses of operation of the System, including, without limiting the generality of the foregoing, expenses for toll collection, all premiums for insurance and payments into any self-insurance reserve fund, all administrative and engineering expenses relating to operation of the System, fees and expenses of the Traffic Consultant, the General Engineering Consultant, the Trustee and of the Paying Agents, Policy Costs, legal expenses, expenses for Public Safety Officers and any other expenses required to be paid by the Commission as shown in the Annual Operating Budget for the System.

"*Outstanding*" or "*outstanding*" in connection with Obligations – all Obligations that have been authenticated and delivered under the Master Indenture, except:

(a) Obligations theretofore canceled or delivered to the Trustee for cancellation under the Master Indenture;

(b) Obligations that are deemed to be no longer Outstanding in accordance with the Master Indenture; and

(c) Obligations in substitution for which other Obligations have been authenticated and delivered pursuant to the Master Indenture.

In determining whether the Secured Owners of a requisite aggregate principal amount of Obligations Outstanding have concurred in any request, demand, authorization, direction, notice, consent or waiver under the provisions of the Master Indenture, Obligations that are held by or on behalf of the Commission (unless all of the Outstanding Obligations are then owned by the Commission) shall be disregarded for the purpose of any such determination.

"*Paying Agent*" – with respect to any Series of Obligations, that Person appointed pursuant to the Master Indenture to make payments to Registered Owners of interest and/or principal pursuant to the terms of the Master Indenture or any Supplemental Indenture, which initially shall be the Trustee.

"*Person*" – an individual, public body, corporation, partnership, association, joint stock company, trust and any unincorporated organization.

"*Policy Costs*" – a periodic fee or charge required to be paid to maintain a DSRF Security.

"*Project*" – the 2002 Project and any improvements to the System to be financed or refinanced with the proceeds of Obligations, including refundings authorized by law.

"*Projected Annual Debt Service*" – when applied to First Tier Obligations, Second Tier Obligations, Subordinate Lien Obligations or all Obligations, for each annual period, shall equal the sum of (a) the amount of Annual Debt Service on all such First Tier Obligations, Second Tier Obligations, Subordinate Lien Obligations or all Obligations, as the case may be, then Outstanding, plus (b) the Annual Debt Service on any Obligations of such character then proposed to be issued.

"*Projected Debt Service Coverage Ratio*" – when applied to First Tier Obligations, Second Tier Obligations, Subordinate Lien Obligations or a combination of the foregoing, for each of the Fiscal Years commencing with the Fiscal Year following the end of any period during which interest was fully capitalized on the Obligations proposed to be issued and ending with the latest Fiscal Year in which any Obligation is scheduled to mature or for any other annual period, the ratio determined by dividing Projected Revenues for such annual period by the Projected Annual Debt Service for each such annual period.

"*Projected Operating Expenses*" – the Operating Expenses for each monthly period or the entire Fiscal Year as shown in the Annual Operating Budget to be adopted each Fiscal Year by the Commission pursuant to the Master Indenture.

"*Projected Operating Expenses Capacity*" – for any Fiscal Year, the portion of Operating Expenses estimated to be paid with Revenues, as reflected in the Annual Operating Budget.

"*Projected Revenues*" – Revenues projected by the Traffic Consultant to be received in the annual period in question, taking into account (i) any revisions of the Tolls that have been approved by the Commission and that will be effective during such annual period, (ii) any additional Tolls that the Traffic Consultant estimates will be received by the Commission following the completion of any Project then being constructed or proposed to be constructed, (iii) any revisions of the Tolls expected to be implemented by the Commission, as evidenced by a certificate of a TTA Representative delivered to the Trustee, and included as assumptions in a traffic and revenue report of the Traffic Consultant and (iv) for each Fiscal Year in any Construction and Ramp-Up Period, the amounts projected by a TTA Representative or the Traffic Consultant to be on deposit in the Rate Stabilization Fund and the General Reserve Fund.

"*Public Safety Officers*" – licensed public safety officers in the employment of or under contract to the Department for the purpose of performing public safety duties in connection with the System.

"*Purchase Date*" – the date upon which Series 2015-A Bonds are required to be purchased pursuant to a mandatory or optional tender, in accordance with the provisions of the Seventh Supplemental Indenture.

"*Purchase Price*" – The purchase price of the Series 2015-A Bonds pursuant to mandatory or optional tender as set forth in the Seventh Supplemental Indenture.

"*Rate Covenant*" – means the rate covenants of the Commission set for in the first paragraph under "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Rate Covenant."

"*Rate Stabilization Fund*" – the fund of that name created under the Master Indenture and set forth in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts – *Rate Stabilization Fund*."

"*Rate Stabilization Fund Requirement*" – (i) an amount equal to the greater of (A) all Revenues received, less the required deposits, if any, into the First Tier Debt Service Fund and the First Tier Debt Service Reserve Fund, through August 31, 2008, or (B) $10,000,000, or (ii) such other amount as set forth in a Supplemental Indenture, which amount may be less than the amount established in (i) above if the Series 2002-A Bonds are no longer Outstanding. Provided, however, to the extent that amounts on deposit in the Rate Stabilization Fund are transferred to the First Tier Debt Service Fund, the Second Tier Debt Service Fund or the Subordinate Lien Debt Service Fund to cure a deficiency, the Rate Stabilization Fund Requirement shall be reduced to the greater of (i) the resulting balance in the Rate Stabilization Fund after such transfer or (ii) $10,000,000.

"*Rating Agency*" – Fitch, Moody's or S&P or such other nationally-recognized securities rating agency as may be so designated in writing to the Trustee by a TTA Representative.

"*Rating Category*" – each major rating classification established by the Rating Agency, determined without regard to gradations such as "1," "2" and "3" or "plus" (+) and "minus" (-).

"*Rebate Fund*" – the fund of that name created under the Indenture.

"*Redemption Date*" – the date fixed for redemption of Bonds subject to redemption in any notice of redemption given in accordance with the terms of the Seventh Supplemental Indenture.

"*Refunded Obligations*" – All or any portion of the Obligations actually refunded as provided in each Award Certificate.

"*Regional Tollway Authority*" – a regional tollway authority established under Chapter 366, Texas Transportation Code.

"*Registered Owner*" or "*Owner*" (or the lower case version of the same) – the Person in whose name any Obligations are registered on the Bond Register maintained by the Bond Registrar.

"*Reimbursement Agreement*" – an agreement between the Commission and one or more Banks pursuant to which, among other things, such Bank or Banks issue a Credit Facility with respect to Obligations of one or more Series and the Commission agrees to reimburse such Bank or Banks for any drawings made thereunder.

"*Reimbursement Obligation*" or "*Reimbursement Obligations*" – the obligation of the Commission pursuant to a Reimbursement Agreement to repay any amounts drawn under a Credit Facility and to pay interest on such drawn amounts pursuant to such Reimbursement Agreement, which Reimbursement Obligation is secured by the Trust Estate on a parity with the First Tier Obligations, the Second Tier Obligations or Subordinate Lien Obligations, as appropriate.

"*Remarketing Agent*" – the Remarketing Agent or Remarketing Agents designated by a Chief Financial Officer pursuant to the Seventh Supplemental Indenture, and any successor remarketing agent appointed in accordance therewith.

"*Remarketing Agreement*" – any remarketing agreement executed by the Commission and the Remarketing Agent pursuant to the Seventh Supplemental Indenture.

"*Reserve Maintenance Account*" – the fund of that name created under the Master Indenture and set forth in "– MASTER INDENTURE – Funds and Accounts – *Reserve Maintenance Account*" of this Appendix B.

"*Revenue Fund*" – the fund of that name created under the Master Indenture and set forth in "– MASTER INDENTURE – Funds and Accounts – *Revenue Fund*" of this Appendix B.

"*Revenues*" – all income and revenues derived from the operation of the System, including (a) all Tolls received by or on behalf of the Commission, (b) any other sources of revenues or funds of the Commission derived from or attributable to the System or from the ownership or the holding of certain properties constituting a part of the System, (c) the proceeds of any insurance covering business interruption loss relating to the System, (d) any other sources of revenues or funds of the Commission that the Commission chooses to designate as "Revenues" pursuant to a Supplemental Indenture, (e) the interest and income earned on any fund or account where said interest or income is required to be credited to the Revenue Fund pursuant to the Master Indenture and (f) transfers of excess funds from the Rate Stabilization Fund to the Revenue Fund pursuant to the Master Indenture. As more fully set forth in the caption "Agreement With Other Turnpikes" in this Appendix B, in the event the Commission receives advances or prepayments or otherwise operates or participates in a system in which funds are collected prior to the actual usage of the System, such funds shall not be deemed to be Revenues until the usage occurs or the funds are earned pursuant to the agreement under which the Commission receives such funds. Revenues does not include Additional Obligation Security.

"*Rule*" – Rule 15c2-12 of the SEC under the Securities Exchange Act of 1934, as amended from time to time.

"*SEC*" – the United States Securities and Exchange Commission or its successors.

"*Second Tier Approved Swap Agreement*" – an Approved Swap Agreement entered into as a Second Tier Obligation.

"*Second Tier Debt Service Fund*" – the fund of that name created under the Master Indenture and set forth in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts – *Second Tier Debt Service Fund*."

"*Second Tier Debt Service Reserve Fund*" – the fund created by the Master Indenture to secure the payment of Additional Second Tier Obligations and set forth in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts – *Second Tier Debt Service Reserve Fund*."

"*Second Tier Debt Service Reserve Requirement*" – the amount set forth in the Supplemental Indentures authorizing the Additional Second Tier Obligations. The Seventh Supplement sets the requirements as described under "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts – *Second Tier Debt Service Fund*."

"*Second Tier DSRF Security*" – a surety bond, an insurance policy, a letter of credit or similar financial instrument satisfactory to the Rating Agency (as evidenced by a letter from the Rating Agency confirming that the Second Tier DSRF Security will not result in the rating on any outstanding Second Tier Obligations being downgraded) payable to the Trustee for the benefit of the Secured Owners in an amount equal to the difference between the Second Tier Debt Service Reserve Requirement and the amounts then on deposit in the Second Tier Debt Service Reserve Fund.

"*Second Tier Interest Account*" – the account of that name created under the Master Indenture and set forth in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Flow of Funds – *Second Tier Debt Service Fund*."

"*Second Tier Obligations*" – the Series 2015-C Bonds and all Indebtedness of any kind or class, including bonds, notes, bond anticipation notes, commercial paper and other obligations issued or incurred as Additional Second Tier Obligations and includes all obligations of the Commission owed to Secured Owners of Second Tier Obligations, Reimbursement Obligations secured by the Trust Estate on a parity with Second Tier Obligations and obligations of the Commission under Second Tier Swap Agreements.

"*Second Tier Principal Account*" – the account of that name created under the Master Indenture and set forth in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts – *Second Tier Debt Service Fund*."

"*Second Tier Swap Agreement Counterparty*" – the counterparty to a Second Tier Approved Swap Agreement with the Commission or with the Trustee.

"*Secured Owner*" or "*Secured Owners*" – (a) with respect to First Tier Obligations, each Person who is a Registered Owner of any First Tier Obligations, each First Tier Swap Agreement Counterparty providing a First Tier Swap Agreement, each Bank providing a Credit Facility secured on a parity with the First Tier Obligations and each Bond Insurer providing a bond insurance policy with respect to a First Tier Obligation (b) with respect to Second Tier Obligations, each Person who is a Registered Owner of any Second Tier Obligations, each Second Tier Swap Agreement Counterparty providing a Second Tier Swap Agreement, each Bank providing a Credit Facility secured on a parity with the Second Tier Obligations and each Bond Insurer providing a bond insurance policy with respect to a Second Tier Obligation and (c) with respect to Subordinate Lien Obligations, each Person who is a Registered Owner of any Subordinate Lien Obligations, each Second Tier Swap Agreement Counterparty providing a Second Tier Swap Agreement, each Bank providing a Credit Facility secured on a parity with the Subordinate Lien Obligations and each Bond Insurer providing a bond insurance policy with respect to a Subordinate Lien Obligation.

"*Securities Depository*" – a Person that is registered as a clearing agency under Section 17A of the Securities Exchange Act of 1934 or whose business is confined to the performance of the functions of a clearing agency with respect to exempted securities, as defined in Section 3(a)(12) of such act for the purposes of Section 17A thereof.

"*Series*" – one or more Obligations issued at the same time, or sharing some other common term or characteristic, and designated as a separate Series of Obligations.

"*Series 2002-A Bonds*" – the Texas Turnpike Authority[(1)] Central Texas Turnpike System First Tier Revenue Bonds, Series 2002-A.

"*Series 2012-A Bonds*" – the Texas Transportation Commission Central Texas Turnpike System First Tier Revenue Refunding Bonds, Series 2012-A.

"*Series 2015-A Bonds*" – the Texas Transportation Commission Central Texas Turnpike System First Tier Revenue Refunding Put Bonds, Series 2015-A authorized by the Seventh Supplemental Indenture.

[(1)]The Texas Transportation Code previously provided for a separate board of directors of the Texas Turnpike Authority that was authorized to issue bonds for toll projects. Effective November 6, 2001, the separate board of directors of the Texas Turnpike Authority was abolished by S.B. 342 (77th Texas Legislature, Regular Session) and all powers, duties, obligations, rights, contracts, leases, records, employees, and real or personal property of the board, including the ability to issue bonds for toll projects, were transferred to the Commission. The Toll Operations Division of the Department, formerly the Texas Turnpike Authority Division, currently operates the System.

"*Series 2015-B Bonds*" – the Texas Transportation Commission Central Texas Turnpike System First Tier Revenue Refunding Bonds, Series 2015-B authorized by the Seventh Supplemental Indenture.

"*Series 2015-C Bonds*" – the Texas Transportation Commission Central Texas Turnpike System Second Tier Revenue Refunding Bonds, Series 2015-C authorized by the Seventh Supplemental Indenture.

"*Short-Term Indebtedness*" – all Indebtedness that matures in less than 365 days and are issued as Short-Term Indebtedness pursuant to the Master Indenture. In the event a Bank has extended a line of credit or the Commission has undertaken a commercial paper or similar program, only amounts actually borrowed under such line of credit or program and repayable in less than 365 days shall be considered Short-Term Indebtedness and the full amount of such commitment or program shall not be treated as Short-Term Indebtedness to the extent that such facility remains available but undrawn.

"*Standard & Poor's*" or "*S&P*" – Standard & Poor's Ratings Services, a Standard & Poor's Financial Services LLC business, its successors and their assigns, and, if such corporation shall for any reason no longer perform the functions of a securities rating agency, "S&P" shall be deemed to refer to any other nationally-recognized securities rating agency designated by the Commission.

"*State*" – the State of Texas.

"*State Highway Fund*" – the fund established by the laws of the State known as State Highway Fund (006) held in the State Treasury by the Texas Comptroller of Public Accounts.

"*State Highway System*" – the system of highways referred to in the Texas Transportation Code as the State Highway System.

"*Stated Maturity*" – when used with respect to any Obligations, the scheduled maturity or mandatory sinking fund redemption of such Obligations.

"*Subordinate Lien Approved Swap Agreements*" – an Approved Swap Agreement entered into as a Subordinate Lien Obligation.

"*Subordinate Lien Debt Service Fund*" – the fund created under the Master Indenture to secure payment of the Subordinate Lien Obligations.

"*Subordinate Lien Obligations*" – all Indebtedness of any kind or class, including bonds, notes, bond anticipation notes, commercial paper and other obligations issued or incurred as Additional Subordinate Lien Obligations under the Master Indenture and includes all obligations of the Commission owed to Secured Owners of Subordinate Lien Obligations, Reimbursement Obligations secured by the Trust Estate on a parity with Subordinate Lien Obligations and obligations of the Commission under Subordinate Lien Approved Swap Agreements.

"*Subordinate Lien Swap Agreement Counterparty*" – a counterparty to a Subordinate Lien Approved Swap Agreement.

"*Substantial Completion*" – as evidenced by the certificate of a TTA Representative pursuant to the Master Indenture, the point in time when the 2002 Project or any additional Project has been partially opened to traffic to the extent that the portions of such Project open to traffic were projected to produce 80% of the Revenues of such Project in the Traffic and Revenue Report issued at the time of the issuance of Obligations to finance the cost of such Project.

"*Supplemental Indenture*" or "*Supplement*" – any supplemental indenture to the Master Indenture, now or hereafter duly authorized and entered into in accordance with the provisions of the Master Indenture.

"*Swap Agreement*" – a contract having an interest rate, currency, cash-flow, or other basis desired by the Commission.

"*System*" – the Central Texas Turnpike System, the 2002 Project, SH 45SE and any Project to expand, enlarge or extend the Central Texas Turnpike System, any Project pooled with the Central Texas Turnpike System pursuant to the Chapter 228 of the Transportation Code, as amended, and any other roads, bridges, tunnels or other toll facilities for which the Commission has operational responsibility and is collecting Tolls, unless the Commission identifies, in writing delivered to the Trustee, such roads, bridges, tunnels or other toll facilities as not being part of the System for the purposes of the Master Indenture.

"*Tender Agent*" – The Tender Agent for the Series 2015-A Bonds appointed by a Chief Financial Officer. "Principal Office" of the Tender Agent shall mean the office thereof designated in writing by the Tender Agent or the Commission and Remarketing Agent.

"*Tender Indebtedness*" – any Obligations (the Bonds do not constitute Tender Indebtedness):

(a) the terms of which include (i) an option or an obligation on the part of the Secured Owner to tender all or a portion of such Obligation to the Commission, the Trustee, the Paying Agent or another fiduciary or agent for payment or purchase and (ii) a requirement on the part of the Commission to purchase or cause to be purchased such Obligation or portion thereof if properly presented; and

(b) that are rated in either (i) one of the two highest long-term Rating Categories by a Rating Agency or (ii) the highest short-term, note or commercial paper Rating Category by a Rating Agency.

"*Tier*" – the designation of the lien status of the Obligations, and includes First Tier Obligations, Second Tier Obligations and Subordinate Lien Obligations.

"*Toll*" or "*Tolls*" – all rates, rents, fees, charges, fines or other income derived by the Commission from vehicular usage of the System, and all rights of the Commission to receive the same.

"*Traffic and Revenue Report*" – a report of the Traffic Consultant setting forth the estimated traffic and revenue for the System or a Project.

"*Traffic Consultant*" – any traffic and revenue consultant or firm or firms of traffic and revenue consultants of favorable national reputation for skill and experience in performing the duties for which a Traffic Consultant is required to be employed pursuant to the provisions of the Master Indenture and who are retained by the Department as a Traffic Consultant for the purposes of the Master Indenture.

"*Trust Estate*" – shall have the respective meanings set forth in "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Sources of Payment – *Special, Limited Obligations*" with respect to the First Tier Obligations, Second Tier Obligations and Subordinate Lien Obligations, respectively.

"*Trustee*" – The Bank of New York Mellon Trust Company, National Association, as successor in interest to Bank One, National Association.

"*TTA Representative* " – the Executive Director, each Deputy Executive Director and each Assistant Executive Director of the Department or such other individuals so designated by the Commission to perform the duties of the TTA Representative under the Master Indenture.

"*2002 Project*" – the initial project financed with the proceeds of Obligations, designated as the Central Texas Turnpike Project, a turnpike project composed of three elements, Loop 1, State Highway 45 North and State Highway 130, as further described in the GEC's 2002 Project Report.

"*U.S.*" – United States of America.

"*Variable Rate Indebtedness*" – any Obligation the interest rate on which fluctuates from time to time subsequent to the time of incurrence. Variable Rate Indebtedness may include, without limitation, (a) "auction rate" Obligations (i) the interest rate applicable to which (after an initial period following the issuance thereof or the conversion thereof to such an interest rate mode) is reset from time to time through an auction or bidding system and (ii) which the Commission has no obligation to repurchase in connection with the resetting of the interest rate

applicable thereto except to the extent proceeds are available for such purpose either from the remarketing of such Obligations or from such other sources as identified in the Supplemental Indenture pursuant to which such Obligations were issued; (b) Tender Indebtedness (specifically excluding the Bonds); (c) commercial paper Obligations which are intended to be reissued and refinanced periodically; or (d) other forms of Obligations on which the interest fluctuates or is subject to being set or reset from time to time, not more frequently than annually.

MASTER INDENTURE

Granting Clauses

To secure all the covenants, agreements and conditions expressed or implied in the Master Indenture and contained in the Obligations, the Commission pledges and assigns to the Trustee and grants to the Trustee a security interest in all right, title and interest of the Commission in and to (i) all Revenues and, to the extent set forth in a Supplemental Indenture, any Additional Obligation Security; (ii) all moneys, including investment earnings, deposited into accounts or funds created in the Construction Fund and other funds created under the Master Indenture or in a Supplemental Indenture to be held by or on behalf of the Trustee subject to the provisions of the Master Indenture relating to each of such funds and accounts (but excluding moneys on deposit in a Bond Purchase Fund, the Rebate Fund, amounts held in a subaccount of the Construction Fund containing moneys derived from the State Highway Fund or any other moneys received by the Commission that are restricted to another use, such as right-of-way contributions that may be used for only that purpose); (iii) any insurance proceeds and other moneys required to be deposited in such accounts and funds under the Master Indenture provisions pertaining to damage or destruction of the System or the provisions of a Supplemental Indenture; and (iv) all payments received by the Commission pursuant to Approved Swap Agreements (collectively, the "*Trust Estate*"),

FIRST: for the equal and proportionate benefit and security of all First Tier Obligations, all of which, regardless of the time or times of their delivery, maturity or other due date, shall be of equal rank without preference, priority or distinction as to lien or otherwise of any First Tier Obligation over any other First Tier Obligation, except as otherwise permitted by or provided for in the Master Indenture, and except that any funds held by the Trustee for the payment of specific First Tier Obligations which are deemed to have been paid pursuant to the provisions of governing discharge and defeasance under the Master Indenture and any funds deposited with the Trustee hereunder specifically to be held in escrow or otherwise to provide additional security or an additional source of payment for specified First Tier Obligations shall be held and used only to pay or provide security for the First Tier Obligations for which such deposit was made and shall not be held as security on a parity for all First Tier Obligations; and provided further, that the Trustee shall apply the Trust Estate hereunder to the payment of the principal of, and interest on, and other payments with respect to the First Tier Obligations and for the purposes and uses and in the order of priority set forth herein prior to the payment of the principal of, and interest on, and other payments with respect to Second Tier Obligations or Subordinate Lien Obligations;

SECOND: subject to the security interest in the Trust Estate pledged for the security and payment of the First Tier Obligations, for the equal and proportionate benefit and security of all Second Tier Obligations, all of which, regardless of the time or times of their delivery, maturity or other due date, shall be of equal rank without preference priority or distinction as to lien or otherwise of any Second Tier Obligation over any other Second Tier Obligation, except as otherwise permitted by or provided for in the Master Indenture, and except that any funds held by the Trustee for the payment of specific Second Tier Obligations that are deemed to have been paid pursuant to the provisions of discharge and defeasance under the Master Indenture and any funds deposited with the Trustee hereunder specifically to be held in escrow or otherwise to provide additional security or an additional source of payment for specified Second Tier Obligations shall be held and used only to pay or provide security for the Second Tier Obligations for which such deposit was made and shall not be held as security on a parity for all Second Tier Obligations; and provided further, that the Trustee shall apply the Trust Estate hereunder to the payment of the principal of, and interest on, and other payments with respect to the Second Tier Obligations and for the purposes and uses and in the order of priority set forth herein subordinate to the payment of the First Tier Obligations but prior to the payment of the principal of, and interest on, and other payments with respect to Subordinate Lien Obligations; and

THIRD: subject to the security interest in the Trust Estate pledged for the security and payment of the First Tier Obligations and the Second Tier Obligations for the equal and proportionate benefit and security of all Subordinate Lien Obligations, all of which, regardless of the time or times of their delivery, maturity or other due date, shall be of equal rank without preference priority or distinction as to lien or otherwise of any Obligation over any other Obligation, as to lien or otherwise of any Subordinate Lien Obligation over any other Subordinate Lien Obligation, and except that any funds held by the Trustee for the payment of specific Subordinate Lien Obligations

which are deemed to have been paid pursuant to the provisions of discharge and defeasance under the Master Indenture and any funds deposited with the Trustee hereunder specifically to be held in escrow or otherwise to provide additional security or an additional source of payment for specified Subordinate Lien Obligations shall be held and used only to pay or provide security for the Subordinate Lien Obligations for which such deposit was made and shall not be held as security on a parity for all Subordinate Lien Obligations; and provided further, that the Trustee shall apply the Trust Estate hereunder to the payment of the principal of, and interest on, and other payments with respect to the Subordinate Lien Obligations and for the purposes and uses and in the order of priority set forth herein subordinate to the payment of the First Tier Obligations and the Second Tier Obligations.

The Trustee is a fiduciary solely for the benefit of the Registered Owners of the Obligations; the Trustee is not a fiduciary of the other Secured Owners who are not Registered Owners. Upon compliance with the provisions of the Master Indenture, the First Tier Obligations, the Second Tier Obligations or the Subordinate Lien Obligations of such other Secured Owners shall be secured by the same collateral, namely the Trust Estate, on a parity (on an equal and ratable basis) with all other First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations, as the case may be, of such other Secured Owners unless stated otherwise in the Master Indenture.

Funds and Accounts

First Tier Debt Service Fund. The Master Indenture creates two separate accounts in the First Tier Debt Service Fund to be known as the "First Tier Interest Account" and the "First Tier Principal Account." The Trustee and the Commission may create such additional accounts in the First Tier Debt Service Fund pursuant to a Supplemental Indenture as they deem necessary or appropriate, including, but not limited to, (i) an account into which drawings on a Credit Facility are to be deposited and from which principal (including redemption price) of and interest on the Series of First Tier Obligations secured by such Credit Facility are to be paid (and upon such payment, amounts on deposit in the First Tier Principal Account and First Tier Interest Accounts for such First Tier Obligations shall be used to repay the provider of the Credit Facility for such payments), and (ii) an account into which payments to the Commission from any First Tier Swap Agreement Counterparty are to be deposited and from which payments from the Commission to such First Tier Swap Agreement Counterparty are to be paid.

On or before the last Business Day preceding each Interest Payment Date or principal (or sinking fund redemption) payment date for the First Tier Obligations or such other day as set forth in a Supplemental Indenture, the Trustee shall withdraw from the Revenue Fund and deposit to the applicable Account in the First Tier Debt Service Fund (or to a fund or account created to pay or repay amounts owed under a Credit Facility entered into in connection with a Series of First Tier Obligations) the amounts due on any First Tier Obligation.

The moneys in the First Tier Interest Account and First Tier Principal Account shall be held by the Trustee in trust for the benefit of the First Tier Obligations, to the moneys are payable from such accounts, and, to said extent and pending application, shall be subject to a lien and charge in favor of the Secured Owners of the First Tier Obligations until paid out or transferred as provided in the Master Indenture. There shall be withdrawn from the First Tier Interest Account (and from the Construction Fund to the extent of any available capitalized interest in the Construction Fund) and the First Tier Principal Account from time to time and set aside or deposited with the Trustee sufficient money for paying the interest on and the principal of and premium on the First Tier Obligations as the same shall become due, except to the extent such interest, principal or other amounts are payable from a fund or account other than the First Tier Debt Service Fund as provided in any Supplemental Indenture.

If at the time the Trustee is required to make a withdrawal from the First Tier Debt Service Fund and the moneys therein shall not be sufficient for such purpose, the Trustee shall withdraw the amount of such deficiency from the moneys on deposit in the following funds or accounts and transfer the same to the First Tier Debt Service Fund in the following order: the Revenue Fund; the General Reserve Fund; the Rate Stabilization Fund and the First Tier Debt Service Reserve Fund.

First Tier Debt Service Reserve Fund. In each Fiscal Year, after first having made the deposits provided by the provisions under the Master Indenture governing the Rebate fund and the First Tier Debt Service Fund, the Trustee shall transfer from the Revenue Fund on or before the last Business Day of each month to the credit of the First Tier Debt Service Reserve Fund (a) the amount, if any, required to make the amount on deposit in the First Tier Debt Service Reserve Fund equal to the First Tier Debt Service Reserve Requirement, which restoration is intended to occur within eighteen (18) months of the occurrence of any such deficiency; and (b) the amount set forth in a Supplemental Indenture if an amount different from the First Tier Debt Service Reserve Requirement is required.

Moneys, investments and First Tier DSRF Security held in the First Tier Debt Service Reserve Fund shall be held and used for the benefit of all First Tier Obligations. Moneys held in the First Tier Debt Service Reserve Fund shall be used for the purpose of paying interest on, maturing principal and mandatory sinking fund redemption price of First Tier Obligations whenever and to the extent that the moneys held for the credit of the First Tier Debt Service Fund, after making all required transfers from other Funds, shall be insufficient for such purpose. If at any time the moneys and the principal amount of any First Tier DSRF Security held in the First Tier Debt Service Reserve Fund shall exceed the First Tier Debt Service Reserve Requirement, subject to the receipt of an opinion of Bond Counsel to the effect that such transfer and use will not adversely affect the treatment of interest on any Outstanding Obligations for federal income tax purposes, the Commission shall direct whether such excess moneys shall be transferred by the Trustee to the credit of the First Tier Debt Service Fund, used to reduce the principal amount of any First Tier DSRF Security or, to the extent that such excess was derived from Revenues, transferred to the Revenue Fund or the General Reserve Fund.

In lieu of the deposit of moneys into the First Tier Debt Service Reserve Fund, the Commission may cause to be provided a surety bond, an insurance policy, a letter of credit or similar financial instrument satisfactory to the Rating Agency (as evidenced by a letter from the Rating Agency confirming that the First Tier DSRF Security will not result in the rating on any outstanding First Tier Obligations being downgraded) (each, a "First Tier DSRF Security") payable to the Trustee for the benefit of the Secured Owners in an amount equal to the difference between the First Tier Debt Service Reserve Requirement and the amounts then on deposit in the First Tier Debt Service Reserve Fund. The First Tier DSRF Security shall be payable (upon the giving of notice as required thereunder) on any Interest Payment Date, principal payment date or redemption date on which moneys will be required to be withdrawn from the First Tier Debt Service Reserve Fund and applied to the payment of the principal of or interest on any First Tier Obligations to the extent that such withdrawals cannot be made by amounts on deposit in the First Tier Debt Service Reserve Fund.

If a disbursement is made pursuant to a First Tier DSRF Security, the Commission shall be obligated either (a) to cause the reinstatement to the maximum limits of such First Tier DSRF Security or (b) to deposit into the First Tier Debt Service Reserve Fund, funds in the amount of the disbursement made under such First Tier DSRF Security, or a combination of such alternatives, as shall provide that the amount credited to the First Tier Debt Service Reserve Fund equals the First Tier Debt Service Reserve Requirement within eighteen (18) months.

If the rating on the First Tier Obligations is downgraded or threatened to be downgraded as a result of the First Tier DSRF Security, the Commission shall use reasonable efforts to replace such First Tier DSRF Security with one that would not cause the rating on the First Tier Obligations to be downgraded, but shall not be obligated to pay, or commit to pay, increased fees, expenses or interest in connection with such replacement or to deposit Revenues in the First Tier Debt Service Reserve Fund in lieu of replacing such First Tier DSRF Security with another.

Second Tier Debt Service Fund. The Master Indenture creates two separate accounts in the Second Tier Debt Service Fund designated the "Second Tier Interest Account" and the "Second Tier Principal Account" and permits the Trustee and the Commission, pursuant to a Supplemental Indenture, to create additional accounts in the First Tier Debt Service Fund as they deem necessary or appropriate, including, but not limited to, (i) an account into which drawings on a Credit Facility are to be deposited and from which principal (including redemption price) of and interest on the Series of Second Tier Obligations secured by such Credit Facility are to be paid (and upon such payment, amounts on deposit in the Second Tier Principal Account and Second Tier Interest Account for such Second Tier Obligations shall be used to repay the provider of the Credit Facility for such payments), and (ii) an account into which payments to the Commission from any Second Tier Swap Agreement Counterparty are to be deposited and from which payments from the Commission to such Second Tier Swap Agreement Counterparty are to be paid.

After first having made or provided for the deposits required by the Rebate Fund and the First Tier Debt Service Reserve Fund, on or before the last Business Day preceding each Interest Payment Date or principal (or sinking fund redemption) payment date for any Second Tier Obligations or such other day as set forth in a Supplemental Indenture, the Trustee shall withdraw from the Revenue Fund and deposit to the applicable account in the Second Tier Debt Service Fund (or to a fund or account created to pay or repay amounts owed under a Credit Facility entered into in connection with a Series of Second Tier Obligations) the amounts due on any Second Tier Obligation.

The moneys in the Second Tier Principal Account and the Second Tier Interest Account shall be held by the Trustee in trust for the benefit of the Second Tier Obligations, to the extent the moneys are payable from such accounts, and, to said extent and pending application, shall be subject to a lien and charge in favor of the Secured Owners of the Second Tier Obligations until paid out or transferred as provided under the Master Indenture. There shall be withdrawn from the Second Tier Interest Account (and from the Construction Fund to the extent of any available capitalized interest) and the Second Tier Principal Account from time to time and set aside or deposited with the Trustee sufficient money for paying the interest on and the principal of and premium on the Second Tier Obligations as the same shall become due, except to the extent such interest, principal or other amounts are payable from a fund or account other than the Second Tier Debt Service Fund as provided in any Supplemental Indenture.

If at the time the Trustee is required to make a withdrawal from the Second Tier Debt Service Fund and the moneys therein shall not be sufficient for such purpose, subject to the requirements of the Revenue Fund, the First Tier Debt Service Fund and the First Tier Debt Service Reserve Fund, the Trustee shall withdraw the amount of such deficiency from the moneys on deposit in the following funds or accounts and transfer the same to the Second Tier Debt Service Fund in the following order: the Revenue Fund; the General Reserve Fund; the Rate Stabilization Fund and the Second Tier Debt Service Reserve Fund.

Second Tier Debt Service Reserve Fund. In each Fiscal Year, after first having made the deposits required under the Master Indenture for the Rebate Fund, First Tier Debt Service Fund, First Tier Debt Service Reserve Fund, and the Second Tier Debt Service Fund, the Trustee shall transfer from the Revenue Fund on or before the last Business Day of each month to the credit of the Second Tier Debt Service Reserve Fund, if one is provided for in a Supplemental Indenture, the amounts set forth in the Supplemental Indenture establishing the Second Tier Debt Service Reserve Requirement or authorizing Additional Second Tier Obligations.

Subordinate Lien Debt Service Fund. The Master Indenture creates two separate accounts in the Subordinate Lien Debt Service Fund designated the "Subordinate Lien Interest Account" and the "Subordinate Lien Principal Account" and permits the Trustee and the Commission, pursuant to a Supplemental Indenture, to create additional accounts in the Subordinate Lien Debt Service Fund as they deem necessary or appropriate, including, but not limited to, (i) an account into which drawings on a Credit Facility are to be deposited and from which principal (including redemption price) of and interest on the Series of Subordinate Lien Obligations secured by such Credit Facility are to be paid (and upon such payment, amounts on deposit in the Subordinate Lien Principal Account and Subordinate Lien Interest Account for such Subordinate Lien Obligations shall be used to repay the provider of the Credit Facility for such payments), and (ii) an account into which payments to the Commission from any Subordinate Lien Swap Agreement Counterparty are to be deposited and from which payments from the Commission to such Subordinate Lien Swap Agreement Counterparty are to be paid.

After first having made the deposits required under the Master Indenture for the Rebate Fund and the Second Tier Debt Service Reserve Fund, on or before the last Business Day preceding each Interest Payment Date or principal (or sinking fund redemption) payment date for the Subordinate Lien Obligations or such other day as set forth in a Supplemental Indenture, the Trustee shall withdraw from the Revenue Fund and deposit to the applicable account in the Subordinate Lien Debt Service Fund (or to a fund or account created to pay or repay amounts owed under a Credit Facility entered into in connection with a Series of Subordinate Lien Obligations) the amounts due on any Subordinate Lien Obligation.

The moneys in the Subordinate Lien Principal Account and the Subordinate Lien Interest Account shall be held by the Trustee in trust for the benefit of the Subordinate Lien Obligations, to the extent the moneys are payable from such accounts, and, to said extent and pending application, shall be subject to a lien and charge in favor of the Owners of the Subordinate Lien Obligations until paid out or transferred as provided under the Master Indenture. There shall be withdrawn from the Subordinate Lien Interest Account (and from the Construction Fund to the extent of any available capitalized interest) and the Subordinate Lien Principal Account from time to time and set aside or deposited with the Trustee sufficient money for paying the interest on and the principal of and premium on the Subordinate Lien Obligations as the same shall become due, except to the extent such interest, principal or other amounts are payable from a fund or account other than the Subordinate Lien Debt Service Fund as provided in any Supplemental Indenture.

If at the time the Trustee is required to make a withdrawal from the Subordinate Lien Debt Service Fund and the moneys therein shall not be sufficient for such purpose, subject to Master Indenture's requirements for the Rebate Fund, the First Tier Debt Service Fund and the Second Tier Debt Service Reserve Fund, the Trustee shall withdraw the amount of such deficiency from the moneys on deposit in the following funds or accounts and transfer

the same to the Subordinate Lien Debt Service Fund in the following order: the Revenue Fund; the General Reserve Fund; the Rate Stabilization Fund and the respective Subordinate Lien Debt Service Reserve Funds, if any, established for a special series of Subordinate Lien Obligations.

Operating Account. The Commission shall establish an account known as the "Central Texas Turnpike System Operating Account" that shall be held by the Commission in the name of the Commission outside of the Indenture, but separate and apart from its other funds and accounts, until applied as directed under the Master Indenture. After first having made or provided for the deposits required under the Master Indenture for the Rebate Fund, First Tier Debt Service Fund, First Tier Debt Service Reserve Fund, Second Tier Debt Service Fund, Second Tier Debt Service Reserve Fund, Subordinate Lien Debt Service Fund, Subordinate Lien Debt Service Reserve Fund, and the Rate Stabilization Fund, the Trustee shall transfer from the Revenue Fund on or before the last Business Day of each month to the credit of the Operating Account an amount sufficient to bring the balance in the Operating Account to the amount contemplated by the Annual Operating Budget and a certificate of a TTA Representative, dated no later than five days prior to the last Business Day of the month, to be necessary to pay Operating Expenses for the ensuing two months (the "Operating Account Requirement"). However, in any Fiscal Year in which the Projected Operating Expenses Capacity is equal to less than the Projected Operating Expenses, the amount required to be transferred from the Revenue Fund to the Operating Account each month shall be limited to the amount set forth in the Annual Operating Budget for that Fiscal Year. In recognition that the System is a part of the Texas State Highway System, to the extent that the Revenues are insufficient to make the required deposits into the Operating Account each month or the transfer is limited to the Projected Operating Expenses Capacity amount for that month, the Commission covenants that, subject to funds being appropriated by the Legislature in a manner that would allow their use for this purpose, it will include in its annual budget provisions for and will make deposits to the Operating Account from lawfully available funds in amounts sufficient to cause the balance in the Operating Account to equal the Operating Account Requirement.

In making payments from the Operating Account, the Commission shall be deemed to be certifying that obligations in the stated amounts have been incurred by the Commission and that each item thereof was properly incurred in operating the System, and has not been paid previously.

Maintenance Account. The Master Indenture requires the Commission to establish the (Central Texas Turnpike System Maintenance Account) which shall be held by the Commission in the name of the Commission outside of the Indenture, but separate and apart from its other funds and accounts. In recognition that the System is a part of the State Highway System, the Commission covenants that, subject to funds being appropriated by the Legislature in a manner that would allow their use for this purpose, it will include in its annual budget provisions for and, on or before the last Business Day of each month, will deposit to the Maintenance Account from lawfully available funds amounts sufficient to cause the balance in the Maintenance Account to equal to the Maintenance Expenses for the ensuing two months and, to the extent that the balance in the Maintenance Account is at any time insufficient to pay the required Maintenance Expenses, to pay all Maintenance Expenses when due.

In making payments from the Maintenance Account, the Commission shall be deemed to be certifying that obligations in the stated amounts have been incurred by the Commission and that each item thereof was properly incurred in maintaining and repairing the System, and has not been paid previously.

Reserve Maintenance Account. The Commission shall establish an account known as the "Central Texas Turnpike System Reserve Maintenance Account" which shall be held by the Commission in the name of the Commission outside of the Indenture, but separate and apart from its other funds and accounts. In recognition that the System is a part of the State Highway System, the Commission covenants that, subject to funds being appropriated by the Legislature in a manner that would allow their use for this purpose, it will include in its annual budget provisions for and, on or before the last Business Day of each month, will deposit to the Reserve Maintenance Account from lawfully available funds amounts sufficient to cause the balance in the Reserve Maintenance Account to equal the expenses projected in the Annual Capital Budget for the ensuing two months and, to the extent that the balance in the Reserve Maintenance Account is at any time insufficient to pay the required capital expenses, to pay all such capital expenses when due.

Moneys in the Reserve Maintenance Account shall be disbursed to pay current capital expenditures shown in the Annual Capital Budget for the System, plus the cost of unusual or extraordinary maintenance (as determined solely by the Commission) and shall be disbursed only for such purposes which include, but are not be limited to, paying the cost of constructing, repairing, replacing, improving and reconstructing improvements and betterments to all parts of the System now or hereafter open to vehicular traffic, including, without limitation, additional lanes,

tunnels, interchanges, toll plazas, bridges, connecting roads, transit interface facilities, safety rails and other safety improvements, illumination, signage, and any equipment and other improvements deemed necessary or desirable by the Commission.

General Reserve Fund. After making the deposits required under the Master Indenture for the Rebate Fund, First Tier Debt Service fund, First Tier Debt Service Reserve Fund, Second Tier Debt Service Fund, Second Tier Debt Service Reserve Fund, Subordinate Lien Debt Service Fund, Subordinate Lien Debt Service Reserve Fund, the Rate Stabilization Fund, and the Operating Account and, subject to the following conditions, on or before the last Business Day of each Fiscal Year (or more frequently if every condition set forth below has been satisfied) the Trustee shall transfer from the Revenue Fund to the credit of the General Reserve Fund any Revenues that a TTA Representative determines, in a certificate delivered to the Trustee, to be in excess of the amount required to be reserved therein, for future transfers to the First Tier Debt Service Fund, the Second Tier Debt Service Fund, the Subordinate Lien Debt Service Fund or any fund or account established for the payment or security of any Obligations. The certificate of the TTA Representative must also state that, as of the date of the transfer:

(i) no Event of Default currently exists, and

(ii) every fund and account established by or required to be established by the Indenture contains at least the amount then required to be on deposit therein.

Moneys in the General Reserve Fund shall be used by the Trustee as provided in the Master Indenture for the First Tier Debt Service Fund and the Second Tier Debt Service Fund, and to restore deficiencies in any funds or accounts created under the Master Indenture. Any moneys remaining in the General Reserve Fund on the last day of a Fiscal Year, after satisfying the requirements of the first sentence of this paragraph, shall first be used to repay to the Commission the amount expended by the Commission in that Fiscal Year to pay Maintenance Expenses. After satisfying those requirements, such moneys may be expended for any of the following purposes, with no one item having priority over any of the others:

(i) to purchase or redeem First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations;

(ii) to pay Maintenance Expenses;

(iii) to make payments into the Construction Fund;

(iv) to fund improvements, extensions and replacements of the System; or

(v) for any other lawful purpose.

The Trustee is authorized to apply moneys on deposit in the General Reserve Fund for any of such purposes upon receipt of a requisition signed by a TTA Representative, stating in respect of each payment to be made:

(i) the name of the Person to whom payment is to be made or, if the payment is to be made to a fund or account held by the Trustee under the Master Indenture or to a fund or account held by the Commission and not subject to the Indenture, the name of such fund or account,

(ii) the amount to be paid, and

(iii) the purpose for which the payment is to be made.

Construction Fund. The Master Indenture creates two separate accounts in the Construction Fund designated the "Bond and Replacement Proceeds Account" and the "Capital Contribution Account." The Commission shall deposit the amounts received from any Person to pay Costs of the Project to the Capital Contribution Account of the Construction Fund. The Commission further covenants to deposit to the Capital Contribution Account of the Construction Fund in monthly installments commencing September 2003, the Commission's capital obligation required under the Master Indenture.

Payment of the Costs of any Project shall be made from the Construction Fund. A special account shall be created and identified for each such Project, although funds, at the written direction of the Commission, may be transferred from one such account in the Construction Fund to another account in such fund.

Tolls, Revenues and Funds

Rate Covenant

(a) Establishment of Rates. The Commission covenants that it will (i) adopt and maintain in effect a Toll rate schedule for the System, in substantial conformity with the recommendation of the Traffic Consultant and (ii) establish charges for other uses of the property constituting a part of the System, such as property leases, designed, collectively, to produce Revenues in each Fiscal Year in an amount at least equal to the sum of (i) and (ii) below as follows:

(i) the amounts required to be deposited in the First Tier Debt Service Reserve Fund, the Second Tier Debt Service Reserve Fund, the Rate Stabilization Fund, and any other fund established by a Supplemental Indenture to be funded by Revenues; and

(ii) the greater of (1), (2) or (3) as follows:

(1) one hundred forty percent (140%) of the Annual Debt Service on all Outstanding First Tier Obligations; or

(2) one hundred ten percent (110%) of the Annual Debt Service on all Outstanding First Tier Obligations, all Outstanding Second Tier Obligations; or

(3) one hundred percent (100%) of the Annual Debt Service on all Outstanding First Tier Obligations, all Outstanding Second Tier Obligations and all Outstanding Subordinate Lien Obligations.

In making the calculations in (1), (2) and (3) above, the Commission may take into account any amounts reasonably expected to be received in the Fiscal Year from or as a result of any Additional Obligation Security the Commission has pledged for the benefit of all Obligations or the Obligations of any Tier or Series, but, if the pledge is not for the benefit of all Obligations, the amounts reasonably expected to be received may only be taken into account when making the calculation for the affected Obligations.

(b) Changes to Toll Rates. Prior to adopting any change in the Toll rate schedule, the Commission shall obtain and file with the Trustee a certificate by the Traffic Consultant stating either:

(i) in their opinion, that if such proposed Toll rate schedule had been in effect during the preceding annual period, and taking into effect the Revenues anticipated to be received in such annual period, as evidenced by a certificate of a TTA Representative, it would not have caused a decrease in the Revenues for said preceding annual period; or

(ii) in their opinion, that the adoption of such proposed Toll rate schedule will not adversely affect the ability of the Commission to comply with its covenants in the "Establishment of Rates" provision above .

Any such certificate by the Traffic Consultant shall be based on the opinion of the Traffic Consultant as to Revenues to be derived by the Commission from the ownership and operation of the System (which Revenues shall be deemed to include all investment income previously described herein as constituting Revenues of the System, as estimated by the TTA Representative), and a certificate of the TTA Representative filed with the Trustee, stating the opinion of the Commission as to the amount of Operating Expenses paid or accrued during any pertinent annual period, assuming that the proposed Toll rate schedule had been in effect during such pertinent Annual Period.

(c) The failure of the System in any Fiscal Year to produce Revenues in the amounts contemplated by the Rate Covenant, which failure may continue during the succeeding Fiscal Year, shall not constitute an Event of Default under the Master Indenture if:

(i) no Event of Default has occurred under the following as a result of such failure;

(1) failure by the Commission to pay the principal of and premium, if any, or interest on any of the Obligations or to pay Capital Payments when the same shall become due and payable, either at Stated Maturity, by proceedings for redemption or pursuant to the terms of the Obligation or any failure of the Commission to purchase or cause to be purchased any Tender Indebtedness, including any applicable Variable Rate Indebtedness, upon any optional or mandatory tender to the Commission or a tender agent of the Commission; or

(2) the occurrence and continuance of an Event of Default under a Credit Facility, First Tier DSRF Security, Second Tier DSRF Security, Approved Swap Agreement or Reimbursement Agreement

(ii) the Commission, promptly after determining that the requirements of the Rate Covenant were not met, requests that the Traffic Consultant make written recommendations as to appropriate revisions to the Toll rate schedule necessary or appropriate to meet the requirements of the Rate Covenant and furnishes the Trustee with a copy of such request; and

(iii) the Commission complies with the recommendation of the Traffic Consultant in respect of Tolls.

In addition to any other remedies the Trustee may have under the Master Indenture, if the Commission does not comply with the recommendations of the Traffic Consultant in respect of Tolls, the Trustee may, and upon the request of the Secured Owners of not less than twenty-five percent (25%) in principal amount of the First Tier Obligations then Outstanding and upon being indemnified to its satisfaction shall, institute and prosecute in a court of competent jurisdiction in Travis County, Texas any appropriate action to compel the Commission to revise the Toll rate schedule. The Commission covenants that it will adopt and charge Tolls in compliance with any final order or decree entered in any such proceeding.

In the event that the Traffic Consultant shall fail to file with the Commission such recommendations in writing within sixty (60) days after its retention by the Commission, the Trustee may designate and appoint a different Traffic Consultant at the expense of the Commission to make recommendations as to an adjustment of the Toll rate schedule, which recommendations shall be reported in writing to the Commission and to the Trustee within sixty (60) days after such retention. Such written report shall for all purposes be considered to be the equivalent of and substitute for the recommendations of the Traffic Consultant retained by the Commission.

In preparing its recommendations, the Traffic Consultant may rely upon written estimates of Revenues prepared by the other Consultants of the Commission. Copies of such written estimates signed by such Consultants shall be attached to such recommendations. The Commission covenants that promptly after receipt of such recommendations and the adoption of any Toll rate schedule, certified copies thereof will be filed with the Trustee.

Flow of Funds

The Master Indenture establishes the Revenue Fund for the application and deposit of all Revenues. As far as practicable, the Commission will deposit all Revenues daily to the credit of the Revenue Fund.

In recognition that Obligations may come due on various dates, First Tier Obligations have a security interest in the Trust Estate senior to the Second Tier Obligations and the Subordinate Lien Obligations; that the security interest in the Trust Estate securing any Second Tier Obligations is superior to the security interest securing the Subordinate Lien Obligations; and that Second Tier Obligations and Subordinate Lien Obligations, or interest thereon, may become due and payable on a date or dates in a Fiscal Year prior to the date a First Tier Obligation or the interest thereon is due and Subordinate Lien Obligations may come due prior to First Tier Obligations and Second Tier Obligations, the Commission has covenanted that no transfer from the Revenue Fund to any fund, other

than the First Tier Debt Service Fund or the First Tier Debt Service Reserve Fund, will be made in any Fiscal Year unless, in the opinion of a Chief Financial Officer set forth in a certificate delivered to the Trustee, the transfer is not anticipated to result in the inability of the Commission to make a later transfer, as required by the Master Indenture, to a fund securing Obligations that have a security interest in the Trust Estate senior to that securing the Obligations that are secured by the fund into which the transfer is scheduled to be made.

Except as provided above, the Trustee will transfer amounts on deposit in the Revenue Fund to the following funds and in the following order of priority:

(1) **First**, to the Rebate Fund from time to time, money that the Commission determines to deposit to this fund for purposes of compliance with any amendments to section 148(a) of the Code or as the Commission otherwise deems necessary or appropriate to provide funds for payments to the United States of amounts due under section 148 of the Code and to pay costs related to the calculation of such amounts.

(2) **Second**, to the applicable account of the First Tier Debt Service Fund (or to a fund or account created to pay or repay amounts owed under a Credit Facility entered into in connection with a Series of First Tier Obligations) on or before the last Business Day preceding each Interest Payment Date or principal (or sinking fund redemption) payment date for the First Tier Obligations (or such other day as set forth in a Supplemental Indenture), the amounts due on any First Tier Obligation.

(3) **Third**, to the First Tier Debt Service Reserve Fund on or before the last Business Day of each month, the amount, if any, required to make the amount on deposit in the First Tier Debt Service Reserve Fund equal to the First Tier Debt Service Reserve Requirement, which restoration is intended to occur within 18 months of the occurrence of any deficiency, and the amount set forth in a Supplemental Indenture if an amount different from the First Tier Debt Service Reserve Requirement is required.

(4) **Fourth**, to the applicable account of the Second Tier Debt Service Fund (or to a fund or account created to pay or repay amounts owed under a Credit Facility entered into in connection with a Series of Second Tier Obligations) on or before the last Business Day preceding each Interest Payment Date or principal (or sinking fund redemption) payment date for the Second Tier Obligations (or such other day as set forth in a Supplemental Indenture), the amounts due on any Second Tier Obligation.

(5) **Fifth**, to the Second Tier Debt Service Reserve Fund on or before the last Business Day of each month the amount set forth in a Supplemental Indenture establishing the Second Tier Debt Service Reserve Requirement is required.

(6) **Sixth**, to the applicable account of the Subordinate Lien Debt Service Fund (or to a fund or account created to pay or repay amounts owed under a Credit Facility entered into in connection with a Series of Subordinate Lien Obligations) on or before the last Business Day preceding each Interest Payment Date or principal (or sinking fund redemption) payment date for the Subordinate Lien Obligations (or such other day as set forth in a Supplemental Indenture), the amounts due on any Subordinate Lien Obligation.

(7) **Seventh**, to any reserve fund or other funds or accounts created under Supplemental Indentures for the security of Subordinate Lien Obligations.

(8) **Eighth**, to the Rate Stabilization Fund on or before the last Business Day of each month, amounts sufficient to accumulate in or restore the balance in such fund, as soon as possible, to an amount equal to the Rate Stabilization Fund Requirement.

(9) **Ninth**, to the Operating Account on or before the last Business Day of each month, an amount sufficient to make the balance in the Operating Account equal to the amount contemplated by (i) the Commission's Annual Operating Budget and (ii) a certificate of a Chief Financial Officer, to be necessary to pay Operating Expenses for the ensuing two months (the "*Operating Account Requirement*"); however, in any Fiscal Year in which the portion of Operating Expenses estimated to be paid with Revenues for such period is equal to less than the Projected Operating Expenses, the amount required to be transferred from the Revenue Fund to the Operating Account each month will be limited to the amount set forth in the Annual Operating Budget for that Fiscal Year. The Commission has covenanted in the Master Indenture to cover shortfalls in the Operating Account.

(10) **Tenth**, to the General Reserve Fund (after retaining such funds in the Revenue Fund as are required by the Master Indenture and subject to certain conditions as described above in "Funds and Accounts –

General Reserve Fund") on or before the last Business Day of each Fiscal Year (or more frequently if every such condition has been satisfied), any Surplus Revenues from the Revenue Fund. "*Surplus Revenues*" are those funds held in the Revenue Fund that a Chief Financial Officer determines, in a certificate (the "*Surplus Revenues Certificate*") delivered to the Trustee, to be in excess of the amount required to be reserved therein for future transfers to the First Tier Debt Service Fund, the Second Tier Debt Service Fund, or any fund or account established for the payment or security of any Obligations. The Surplus Revenues Certificate must also state that as of the date of the transfer no Event of Default has occurred and is continuing and every fund and account contains the amount then required to be on deposit.

The Commission has covenanted in the Master Indenture that no transfer from the Revenue Fund to any fund, other than the First Tier Debt Service Fund or the First Tier Debt Service Reserve Fund, will be made in any year if the result of the transfer is anticipated, in the opinion of a Chief Financial Officer, to result in the inability of the Commission to make a later transfer, as required by the Master Indenture, to a fund securing Obligations that have a security interest in the Trust Estate senior to that securing the Obligations that are secured by the fund into which the transfer is scheduled to be made.

Investments of Funds

Moneys held in any fund or account may be retained uninvested, if deemed necessary by the Commission, as trust funds and secured pursuant to the Master Indenture or may be invested in investments permitted under the Master Indenture. All investments shall be made by the Trustee upon the oral request of a TTA Representative, which request is confirmed in writing by a TTA Representative specifying the account or fund from which moneys are to be invested and designating the specific permitted investments to be acquired. Such investment instructions may take the form of standing investment directions.

Investments shall be subject to withdrawal or shall mature or be subject to repurchase or redemption by the Commission, not later than the earlier of:

(i) the date or dates set forth for similar investments in the applicable Supplemental Indenture; or

(ii) the date on which the moneys may reasonably be expected to be needed for the purposes of the Master Indenture

Investments acquired with moneys in any fund or account are part of that fund or account and will be valued at fair market for purposes of determining amounts in such fund or account. Interest income remains in each fund or account unless a Supplemental Indenture provides otherwise. The Trustee, upon written direction from the Commission, or upon a determination of the Trustee, shall withdraw redeem or sell all or a portion of any investment, the proceeds of which shall be deposited by the Trustee to the appropriate fund or account to be paid pursuant to the provisions of the Master Indenture.

The Trustee shall withdraw, redeem or sell all or a portion of any investment upon receipt of the written direction from the Commission or upon a determination by the Trustee that moneys in such fund or account are to be applied or paid by the Trustee pursuant to the provisions of the Master Indenture, and the proceeds thereof shall be deposited by the Trustee in the appropriate fund or account. The Trustee shall not be liable or responsible for any depreciation in the value of the permitted investments.

Uniformity of Tolls

(a) Classification. The Commission covenants that Tolls will be classified in a reasonable way to cover all traffic, so that the Tolls may be uniform in application to all traffic falling within any reasonable class regardless of the status or character of any Person participating in the traffic; provided that the foregoing shall not be interpreted to restrict the Commission's right, in its discretion in connection with its management of the System, to establish and maintain flexible Toll schedules including, but not limited to, provisions for utilizing or otherwise taking into account, peak and nonpeak pricing, introductory pricing, vehicle weight, number of axles, method of payment, frequency, car pooling, electronic and other Toll collection technologies, traffic management systems and similar classifications.

Any change in classification that results in a reduced Toll or any new classification shall be subject to a Traffic Consultant approving the same before it is implemented unless the same is temporary (i.e., having a duration

of less than one year from the effective date). In all events, the Commission shall not make a change in classification or any new classification unless the Commission determines that such change is not expected to result in the receipt of Revenues in amounts less than that contemplated by the Rate Covenant.

(b) Free Passage or Reduced Tolls. Notwithstanding provision (a), the Commission shall not grant free passage or reduced Tolls within a class except, in its discretion, it may:

(1) reduce Tolls through the use of commutation or other tickets or privileges based upon frequency or volume if the reduction is expected to result in an increase in Revenues;

(2) grant free passage or reduce Tolls for operational, emergency or safety reasons;

(3) grant free passage to members, officers and employees of the Department acting in the discharge of their official duties related to the State Highway System;

(4) grant free passage for use by the Army, Air Force, Navy, Coast Guard, Marine Corps or militia or any branch thereof in time of war or other emergency;

(5) grant free passage to public safety officers of the United States, the State and its agencies and political subdivisions when any of them (1) are acting in the discharge of their official duties, (2) can provide proper identification, (3) are using marked public safety vehicles and (4) are traveling under flashing lights and sirens; and

(6) grant temporary free access for agents and contractors of the Department acting on behalf of the Department in connection with the construction, improvement, maintenance or operation of the System.

Reduced Tolls under (b)(1) will be reviewed by the Commission with the Traffic Consultant before they are implemented unless the reduced toll is temporary, having a duration of less than two months. Additionally, in the event the Commission did not meet the Rate Covenant for the preceding Fiscal Year, any reduced Toll will be subject to the Traffic Consultant's approval before it is implemented by the Commission unless the Commission reasonably determines that the circumstances require immediate implementation, in which event the Commission shall obtain an approval promptly following implementation. In all events, the Commission covenants not to reduce Tolls unless the Commission determines that such reduction is not expected to result in the receipt of Revenues in amounts less than that contemplated by the Rate Covenant.

(c) Discretion of Commission. The Commission's covenant as to uniformity of Tolls shall not be construed as requiring Tolls for any given class of traffic as being identical in amount throughout the entire System for trips of approximately identical lengths. The Commission may fix and place in effect a Toll rate schedule for any given class of traffic. The Commission's may charge Tolls for travel on a given section of the System in amounts different from the Tolls charged on another section of the System notwithstanding the fact that both of said sections shall be of identical or approximately identical length.

(d) Approval by the Traffic Consultant. Approval by the Traffic Consultant means that the Traffic Consultant has undertaken an analysis of the impact of the contemplated action of the Commission and determined that it would not adversely affect the ability of the Commission to meet the Rate Covenant. The Commission shall file a copy of each approval by the Traffic Consultant with the Trustee promptly after receipt.

Agreement with Other Turnpikes. Under the Master Indenture, the Commission may enter into agreements with any commission, authority or other similar legal body operating a turnpike, whether or not connected to the System, with respect to the establishment of a combined Toll rate schedule and/or for the collection and application of Tolls charged for trips over all or a portion of both combined turnpikes. Revenues to be received by any such agreement, will result in the receipt by the Commission of its allocable portion of such Tolls (less fees and expenses associated with such arrangement).

To the extent now or hereafter authorized by law, the Commission also may enter into agreements with other Persons with respect to the collection of Tolls or advances or prepayment of Tolls charged for trips over all or a portion of the System. Revenues to be received from any such agreement, will result in the receipt by the Commission of the appropriate Tolls for such trips. Unless approved by a Traffic Consultant, no agreement

establishing a combined Toll rate schedule shall restrict the ability of the Commission to implement an increase in its Tolls at least once in each Fiscal Year.

Amounts received from agreements with other turnpikes shall constitute Revenues to the extent the Commission will not be required to pay moneys to the other party in accordance with the agreement. Moneys due to another commission under a combined turnpike agreement, shall be withdrawn by the Trustee from the Revenue Fund upon delivery to the Trustee of a certificate of a TTA Representative that such withdrawal is required pursuant to the terms of an agreement entered into pursuant to this section and shall be paid by the Trustee in accordance with directions contained in such certificate. Any agreement entered into pursuant to this section shall be made available to the Trustee upon its request.

Additional Security. Except as otherwise provided or permitted herein, the Trust Estate securing all First Tier Obligations, shall be shared on a parity with other First Tier Obligations on an equal and ratable basis, Second Tier Obligations, shall be shared on a parity with other Second Tier Obligations on an equal and ratable basis but subordinate and junior to the lien on, pledge of and security in the Trust Estate for the benefit of the Secured Owners of the First Tier Obligations and Subordinate Lien Obligations, shall be shared on a parity with other Subordinate Lien Obligations on an equal and ratable basis but subordinate and junior to the lien on, pledge of and security in the Trust Estate for the benefit of the Secured Owners of the First Tier Obligations and Second Tier Obligations.

The Commission may provide Additional Obligation Security, but shall have no obligation to provide such additional security or credit enhancement to other Obligations, except that no Additional Obligation Security shall be provided unless there shall have been first delivered to the Trustee an opinion of Bond Counsel that the exclusion from gross income of interest on any Obligations for federal income tax purposes will not be adversely affected thereby.

Reconstruction; Application of Insurance Proceeds. If any material portion of the System shall be damaged or destroyed, the Commission shall, unless the Commission determines that it would not be beneficial to the System, as expeditiously as possible, cause the reconstruction or replacement thereof to be prosecuted continuously and diligently in accordance with plans and specifications approved by the General Engineering Consultant and the Commission if such plans and specifications are deemed necessary by such General Engineering Consultant and the Commission.

Proceeds of any insurance not applied within 18 months after receipt by the Commission to repairing or replacing damaged or destroyed property, or in respect to which notice in writing of intention to apply the same to the work of repairing or replacing the property damaged or destroyed shall not have been given by the Commission within such 18 months, or which the Commission shall at any time determine are not to be so applied, shall be deposited in the Revenue Fund and applied pursuant to the Flow of Funds above. The proceeds of any business interruption insurance shall be deposited in the Revenue Fund and applied pursuant to the flow of funds above.

Limitations on Other Indebtedness

Approved Swap Agreements.

The Commission may enter into one or more contracts having an interest rate, currency, cash-flow, or other basis desired by the Commission (a "*Swap Agreement*"), including, without limitation, interest rate swap agreements, currency swap agreements, forward payment conversion agreements, futures contracts, contracts providing for payments based on levels of or changes in interest rates, currency exchange rates, stock or other indices, or contracts to exchange cash flows or a series of payments, and contracts including, without limitation, interest rate floors or caps, options, puts or calls to hedge payment, currency rate, spread or similar exposure. In the event the Swap Agreement is to be secured by or payable from Revenues, the Commission shall file with the Trustee the following conditions provided below on or before entering into the Swap Agreement (in which event, such Swap Agreement shall constitute an "*Approved Swap Agreement*").

Limitations on Issuance of Additional First Tier Obligations and Execution of First Tier Approved Swap Agreements.

(a) Short-Term Indebtedness. The Commission agrees that it will not issue any Additional First Tier Obligations constituting Short-Term Indebtedness unless immediately after the incurrence of such Short-Term Indebtedness, the Outstanding Principal amount of all Obligations Outstanding in the form of Short-

Term Indebtedness plus all Obligations Outstanding in the form of Variable Rate Indebtedness that does not constitute Short-Term Indebtedness, will not exceed twenty percent (20%) of the aggregate principal amount of all Outstanding Obligations. Short-Term Indebtedness issued in accordance with the limitations set forth in this paragraph will be on a parity with other First Tier Obligations.

(b) Long-Term Indebtedness. The Commission agrees that it will not issue any Additional First Tier Obligations constituting Long-Term Indebtedness unless prior to or contemporaneously with the incurrence thereof, the following items are delivered to the Trustee:

(i) a letter from each Rating Agency then maintaining a rating on the Outstanding First Tier Obligations to the effect that the Additional First Tier Obligations have received an investment grade rating from such Rating Agency; and either

(ii) a report of the Traffic Consultant to the effect that (A) the Revenues during the preceding Annual Period ending not more than ninety (90) days prior to the date of delivery of the proposed Additional First Tier Obligations were sufficient to satisfy the requirements of the Rate Covenant (which report may assume that a revision of the Tolls that was approved and implemented by the Commission subsequent to the beginning of such Annual Period had been in effect for the entire Annual Period), and (B) the Projected Revenues for each Fiscal Year over the term of the proposed Additional First Tier Obligations is expected to produce a Projected Debt Service Coverage Ratio of at least (1) 1.50 with respect to First Tier Obligations, (2) 1.20 with respect to First Tier Obligations and Second Tier Obligations and (3) 1.10 with respect to all Obligations; or:

(iii) if the Long-Term Indebtedness is being incurred solely for the purposes of refunding, repurchasing or refinancing (whether in advance or otherwise) any Outstanding Long-Term Indebtedness, a certificate of a TTA Representative certifying the Average Annual Debt Service on all Obligations prior to the issuance of the proposed Long-Term Indebtedness is greater than the Average Annual Debt Service on all Obligations after the issuance of such proposed Long-Term Indebtedness.

(c) Completion Obligations. To finance the costs of completion of any improvements, extensions or enlargements to the Central Texas Turnpike System financed with the proceeds of Additional First Tier Obligations, the Commission may, without complying with any other provisions of paragraph (b) above, issue Additional First Tier Obligations in a principal amount not in excess of 10% of the principal amount of the original First Tier Obligations issued to finance such facilities, if prior to the issuance thereof there is delivered to the Trustee a certificate of a TTA Representative stating: (i) that at the time the original First Tier Obligations for the facilities to be completed were issued, the Commission had reason to believe that the proceeds of such First Tier Obligations together with other money then expected to be available would provide sufficient money for the completion of such facilities; (ii) the amount estimated to be needed to so complete the facilities; and (iii) that the proceeds of such First Tier Obligations to be applied to the completion of the facilities, together with a reasonable estimate of investment income to be earned on such proceeds and available to pay such Costs, the amount of money, if any, committed to such completion from available cash or marketable securities and reasonably estimated earnings thereon, enumerated bank loans (including letters or lines of credit), and any other money reasonably expected to be available, will be in an amount not less than the estimated amount needed to complete the facilities set forth in such certificate of a TTA Representative. The principal amount of the Completion Obligations to be used in assessing whether the test set forth in this paragraph has been met shall include the amount required to (i) provide completed and equipped facilities of substantially the same type and scope contemplated at the time such prior First Tier Obligations were originally issued, (ii) provide for capitalized interest during the period of construction, (iii) provide the required deposit, if any, to cause the balance in the First Tier Debt Service Reserve Fund to equal the First Tier Debt Service Reserve Requirement, and (iv) pay the costs and expenses of issuing such First Tier Obligations.

(d) Additional Items Required for Trustee. In conjunction with the issuance of Additional First Tier Obligations (other than First Tier Approved Swap Agreements), Commission shall also file the following with the Trustee:

(i) A certified copy of the Commission's minute order(s) authorizing (1) the execution and delivery of a Supplemental Indenture establishing or providing for the establishment of, among other things, the date, rate or rates of interest on, interest payment dates, Stated Maturity dates and

redemption provisions of such Additional First Tier Obligations, and (2) the issuance, sale, execution and delivery of the Additional First Tier Obligations;

(ii) An original executed Supplemental Indenture and Award Certificate, if authorized by the Supplement;

(iii) An opinion(s) of Bond Counsel to the effect that (1) issuance of the Additional First Tier Obligations is permitted under the Master Indenture, (2) each of the Supplemental Indenture and the Additional First Tier Obligations has been duly authorized, executed and delivered and is a valid, binding and enforceable obligation of the Commission, subject to bankruptcy, equitable principles and other standard legal opinion exceptions and (3) if applicable, interest on the Additional First Tier Obligations is not included in gross income for federal income tax purposes under the Code;

(iv) A signed request from the Commission to authenticate and deliver the Additional First Tier Obligations to such Person named therein upon such conditions as are set forth in the request and authorization, including, if applicable, confirmation of payment to the Trustee for the account of the Commission of a specified sum (which may include directions as to the disposition of such of such sum of money);

(v) A certificate of the Commission that the Commission is not in default under the Master Indenture or, upon the issuance of such Additional First Tier Obligations, any existing default will be cured, and evidence satisfactory to the Trustee that, upon issuance of the Additional First Tier Obligations, amounts will be deposited in the funds under the Master Indenture adequate for the necessary balances therein after issuance of the Additional First Tier Obligations (including any amount necessary to satisfy the First Tier Debt Service Reserve Requirement);

(vi) A certificate of the Commission identifying the Additional First Tier Obligations as Short-Term Indebtedness or Long-Term Indebtedness and demonstrating with reasonable detail that the applicable provisions described in subsections (a), (b) and (c) of this caption entitled "*Limitations on Issuance of Additional First Tier Obligations and Execution of First Tier Approved Swap Agreements*" have been met for the issuance of such Additional First Tier Obligations; and

(vii) Such further documents, money and securities as are required by the provisions of the Supplemental Indenture.

(e) First Tier Approved Swap Agreements. The Commission agrees that it will not enter into any First Tier Approved Swap Agreement as a First Tier Obligation unless prior to or contemporaneously with the incurrence thereof, there are delivered to the Trustee the certificates or reports required in paragraph (b)(iii) above, which certificates or reports take into account, in calculating Annual Debt Service, the expected payments to be made by and to the Commission pursuant to such First Tier Approved Swap Agreement, and the following items:

(i) A certified copy of the Commission's minute order(s) authorizing the execution and delivery of the Swap Agreement (no Supplemental Indenture is required unless the Commission determines it to be necessary) and specifying therein that payments owed by the Commission shall be secured by a pledge of and lien on the Trust Estate on a parity with other First Tier Obligations;

(ii) An original executed counterpart of the Swap Agreement;

(iii) An opinion of Bond Counsel addressed to the Commission and to the Trustee, to the effect that execution of the Swap Agreement is permitted under the laws of the State and will not adversely affect the exclusion from gross income of interest on any Outstanding First Tier Obligations for federal income tax purposes, including any Additional First Tier Obligations issued simultaneously with the delivery of the Swap Agreement;

(iv) A certificate of the Commission, signed by a TTA Representative, that the Commission is not under default under the Master Indenture;

(v) Evidence that the execution of the Swap Agreement will not result in a reduction or withdrawal of the rating then assigned to any First Tier Obligations by the Rating Agency;

(vi) Evidence that the other provisions of this subsection (e) entitled "First Tier Approved Swap Agreements" have been met; and

(vii) Such further documents as are required by the Swap Agreement or Bond Counsel, including evidence that all required legal approvals have been obtained.

In the event the Commission wishes to enter into an Approved Swap Agreement and to have its Obligations thereunder be on parity with the First Tier Obligations, it shall file with the Trustee the items set forth above, together with, if deemed necessary by the Commission, a Supplemental Indenture granting such parity position (in which event, such Swap Agreement shall constitute a "*First Tier Swap Agreement*"). Upon entering into a First Tier Swap Agreement, unless otherwise provided in the Supplemental Indenture, the Commission shall pay to the Trustee for deposit into the First Tier Interest Account the net amount payable, if any, to the First Tier Swap Agreement Counterparty as if such amounts were additional amounts of interest due; and the Trustee shall pay on behalf of the Commission to the First Tier Swap Agreement Counterparty, to the extent required under the First Tier Swap Agreement, the amounts deposited in the First Tier Interest Account. Net amounts received by the Commission or the Trustee from the counterparty pursuant to a First Tier Swap Agreement shall be deposited to the credit of the First Tier Interest Account or to such other account as designated by a TTA Representative.

Limitations on Issuance of Additional Second Tier Obligations and Execution of Approved Second Tier Swap Agreements.

(a) Short-Term Indebtedness. The Commission agrees that it will not issue any Additional Second Tier Obligations constituting Short-Term Indebtedness unless (i) immediately after the incurrence of such Short-Term Indebtedness, the Outstanding Principal amount of all Obligations Outstanding in the form of Short-Term Indebtedness plus all Obligations Outstanding in the form of Variable Rate Indebtedness that does not constitute Short-Term Indebtedness, will not exceed twenty percent (20%) of the aggregate principal amount of all Outstanding Obligations and (ii) and the Commission delivers to the Trustee a letter from each Rating Agency then maintaining a rating on the Outstanding First Tier Obligations or Second Tier Obligations to the effect that the Additional Second Tier Obligations being issued as Short-Term Indebtedness are rated no lower than the lowest short-term investment grade rating of such Rating Agency. Short-Term Indebtedness issued in accordance with the limitations set forth in this paragraph will be on a parity with other Second Tier Obligations.

(b) Long-Term Indebtedness. The Commission agrees that it will not issue any Additional Second Tier Obligations constituting Long-Term Indebtedness unless prior to or contemporaneously with the incurrence thereof, there is delivered to the Trustee:

(i) a letter from each Rating Agency then maintaining a rating on the Outstanding First Tier Obligations or Second Tier Obligations to the effect that the Additional Second Tier Obligations have received an investment grade rating from such Rating Agency; and either

(ii) a report of the Traffic Consultant to the effect that (A) the Revenues during the preceding Annual Period ending not more than ninety (90) days prior to the date of delivery of the proposed Additional Second Tier Obligations were sufficient to satisfy the requirements of the Rate Covenant (which report may assume that a revision of the Tolls that was approved and implemented by the Commission subsequent to the beginning of such Annual Period had been in effect for the entire annual period), and (B) the Projected Revenues for each Fiscal Year over the term of the proposed Additional Second Tier Obligations is expected to produce a Projected Debt Service Coverage Ratio of at least (1) 1.20 with respect to First Tier Obligations and Second Tier Obligations and (2) 1.10 with respect to all Obligations; or

(iii) if the Long-Term Indebtedness is being incurred solely for the purposes of refunding, repurchasing or refinancing (whether in advance or otherwise) any outstanding Long-Term Indebtedness, a certificate of a TTA Representative certifying the Average Annual Debt Service on all Obligations prior to the issuance of the proposed Long-Term Indebtedness is greater than the Average Annual Debt Service on all Obligations after the issuance of such proposed Long-Term Indebtedness.

(c) Additional Items Required for Trustee. In conjunction with the issuance of Additional Second Tier Obligations (other than Second Tier Approved Swap Agreements), Commission shall also file with the Trustee those items described above under "Limitations on Other Indebtedness – *Limitations on Issuance of Additional First Tier Obligations and Execution of First Tier Approved Swap Agreements* – Additional Items Required for Trustee" are met (with the exception that wherever the term "First Tier" appears it shall be read as "Second Tier").

(d) Second Tier Approved Swap Agreements. The Commission agrees that it will not enter into any Second Tier Approved Swap Agreement as a Second Tier Obligation unless prior to or contemporaneously with the incurrence thereof, the provisions described above under "Limitations on Other Indebtedness – *Limitations on Issuance of Additional First Tier Obligations and Execution of First Tier Approved Swap Agreements*" are met (with the exception that wherever the term "First Tier" appears it shall be read as "Second Tier") and there are delivered to the Trustee the certificates or reports required in paragraph (b)(ii) above, which certificates or reports take into account, in calculating Annual Debt Service, the expected payments to be made by and to the Commission pursuant to such Second Tier Approved Swap Agreement.

Limitations on Issuance of Additional Subordinate Lien Obligations and Execution of Approved Subordinate Lien Swaps.

(a) Short-Term Indebtedness. The Commission agrees that it will not issue any Additional Subordinate Lien Obligations constituting Short-Term Indebtedness unless (i) immediately after the incurrence of such Short-Term Indebtedness, the outstanding principal amount of all Obligations Outstanding in the form of Short-Term Indebtedness plus all Obligations Outstanding in the form of Variable Rate Indebtedness that does not constitute Short-Term Indebtedness, will not exceed twenty percent (20%) of the aggregate principal amount of all Outstanding Obligations and (ii) the Commission delivers to the Trustee a letter from each Rating Agency then maintaining a rating on any Outstanding Obligations to the effect that the Additional Subordinate Lien Obligations being issued as Short-Term Indebtedness are rated no lower than the lowest short-term investment grade rating of such Rating Agency. Short-Term Indebtedness issued in accordance with the limitations set forth in this paragraph will be on a parity with other Subordinate Lien Obligations.

(b) Long-Term Indebtedness. The Commission agrees that it will not issue any Additional Subordinate Lien Obligations constituting Long-Term Indebtedness unless prior to or contemporaneously with the incurrence thereof, there is delivered to the Trustee:

(i) a report of the Traffic Consultant to the effect that (A) the Revenues during the preceding Annual Period ending not more than ninety (90) days prior to the date of delivery of the proposed Additional Subordinate Lien Obligations were sufficient to satisfy the requirements of the Rate Covenant (which report may assume that a revision of the Tolls that was approved and implemented by the Commission subsequent to the beginning of such Annual Period had been in effect for the entire Annual Period), and (B) the Projected Revenues for each Fiscal Year over the term of the proposed Additional Subordinate Lien Obligations is expected to produce a Projected Debt Service Coverage Ratio of at least 1.10 with respect to all Obligations or

(ii) if the Long-Term Indebtedness is being incurred solely for the purposes of refunding, repurchasing or refinancing (whether in advance or otherwise) any Outstanding Long-Term Indebtedness, a certificate of a TTA Representative certifying the Average Annual Debt Service on all Obligations prior to the issuance of the proposed Long-Term Indebtedness is greater than the Average Annual Debt Service on all Obligations after the issuance of such proposed Long-Term Indebtedness.

(c) Additional Items Required for Trustee. In conjunction with the issuance of Additional Subordinate Lien Obligations (other than Subordinate Lien Approved Swap Agreements), the Commission shall also file with the Trustee those items described above under "Limitations on Other Indebtedness – *Limitations on Issuance of Additional First Tier Obligations and Execution of First Tier Approved Swap Agreements* – Additional Items Required for Trustee" are met (with the exception that wherever the term "First Tier" appears it shall be read as "Subordinate Lien").

(d) Subordinate Lien Approved Swap Agreements. The Commission agrees that it will not enter into any Approved Swap Agreement as a Subordinate Lien Obligation unless prior to or contemporaneously with the incurrence thereof, the provisions described above under "Limitations on Other Indebtedness – *Limitations on Issuance of Additional First Tier Obligations and Execution of First Tier Approved Swap Agreements*" are met (with the exception that wherever the term "First Tier" appears it shall be read as "Subordinate Lien") and there are delivered to the Trustee the certificates or reports required in paragraph (b)(ii) above, which certificates or reports take into account, in calculating Annual Debt Service, the expected payments to be made by and to the Commission pursuant to such Subordinate Lien Approved Swap Agreement.

Conversions of Variable Rate Indebtedness to a Fixed Interest Rate. The Commission may convert Variable Rate Indebtedness to a fixed interest rate if permitted by and pursuant to the terms of the applicable supplemental indenture thereof and if the Commission, treating the proposed conversion to a fixed interest rate as if it constituted the issuance of Additional First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations, as the case may be, can satisfy the requirements set forth in Appendix B under "Limitations on Other Indebtedness – *Limitations on Issuance of Additional First Tier Obligations and Execution of Approved Swap Agreements* – Long-Term Indebtedness," "Limitations on Other Indebtedness – *Limitations on Issuance of Additional Second Tier Obligations and Execution of Approved Second Tier Swap Agreements* – Long-Term Indebtedness," or "Limitations on Other Indebtedness – *Limitations on Issuance of Additional Subordinate Lien Obligations and Execution of Approved Subordinate Lien Swaps* – Long-Term Indebtedness," depending on whether the Obligation being converted is a First Tier Obligation, a Second Tier Obligation, or a Subordinate Lien Obligation, as the case may be.

Particular Covenants

Annual Operating Budget; Annual Maintenance Budget; Annual Capital Budget.

(a) Annual Operating Budget. The Commission covenants that on or before August 31 in each Fiscal Year (or such other date as is consistent with the Commission's policies then in effect) it will adopt an Annual Operating Budget for the System for the ensuing Fiscal Year. Prior to adopting the Operating Budget, the Commission shall provide a draft of such budget to the General Engineering Consultant sufficiently in advance of the adoption of such Annual Operating Budget in order for the General Engineering Consultant to provide comments before such adoption. The Commission further covenants that it will prepare each such Annual Operating Budget on the basis of monthly requirements, so that it will be possible to determine the estimated Operating Expenses for each month during the following Fiscal Year.

If for any reason the Commission shall not have adopted the Annual Operating Budget before the first day of any Fiscal Year, the budget for the preceding Fiscal Year shall, until the adoption of the new Annual Operating Budget, be deemed to be in force and shall be treated as the Annual Operating Budget.

Subject to the review and comment of the General Engineering Consultant, the Commission may adopt an amended or supplemental Annual Operating Budget at any time for the remainder of the then current Fiscal Year, which must be provided to the Trustee.

If the estimate of Revenues and Commission payments for Operating Expenses to be received in the Fiscal Year, as reflected in the Annual Operating Budget, shows that such amounts are expected to be insufficient to allow the Commission to pay all Operating Expenses, the Commission shall take the actions provided under "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Rate Covenant" as though the projected shortfall in Revenues has been experienced so that Revenues can be increased to an amount sufficient to provide for the payment of Operating Expenses. However, the Commission will not be required to take such actions if the Commission includes in an amended general budget for the Commission for such Fiscal Year an amount sufficient to pay the Operating Expenses.

In recognition that Revenues are not expected to be sufficient to pay all Operating Expenses for a number of years and that the Commission has covenanted to pay the Operating Expenses to the extent Revenues are not sufficient for such purpose, but solely from lawfully available funds, the Commission covenants to include in its general budget for such Fiscal Year one hundred and ten percent (110%) of the difference between the projected Operating Expenses and the Projected Operating Expenses Capacity.

(b) Annual Maintenance Budget. The Commission covenants that on or before August 31 in each Fiscal Year (or such other date as is consistent with the Commission's policies then in effect) it will adopt an Annual Maintenance Budget for the System for the ensuing Fiscal Year, which must be provided to the Trustee. Prior to adopting the Maintenance Budget, the Commission shall provide a draft of such budget to the General Engineering Consultant sufficiently in advance of the adoption of such Annual Maintenance Budget in order for the General Engineering Consultant to provide comments before such adoption. The Commission further covenants that it will prepare each such Annual Maintenance Budget on the basis of monthly requirements, so that it will be possible to determine the estimated Maintenance Expenses for each month during the following Fiscal Year.

If for any reason the Commission shall not have adopted the Annual Maintenance Budget before the first day of any Fiscal Year, the budget for the preceding Fiscal Year, shall, until the adoption of the new Annual Maintenance Budget, be deemed to be in force and shall be treated as the Annual Maintenance Budget.

Subject to the review and comment of the General Engineering Consultant, the Commission may adopt an amended or supplemental Annual Maintenance Budget at any time for the remainder of the then current Fiscal Year, which must be provided to the Trustee.

If the estimate of Commission payments for Maintenance Expenses in the Fiscal Year, as reflected in the Annual Maintenance Budget, shows that Commission's payments for Maintenance Expenses are expected to be insufficient to pay all Maintenance Expenses, the Commission shall take the actions set forth under "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Rate Covenant" as though a projected shortfall in Revenues has been experienced so that Revenues can be increased to an amount sufficient to provide for the payment of Maintenance Expenses. However, the Commission will not be required to take such actions if the Commission includes in an amended general budget for the Commission for such Fiscal Year an amount sufficient to pay the Maintenance Expenses.

(c) Annual Capital Budget. The Commission further covenants that it will adopt an Annual Capital Budget for the System on or before August 31 of each Fiscal Year (or such other date as is consistent with the Commission's policies then in effect). The Annual Capital Budget will detail the Commission's planned capital expenditures over a period of at least five (5) years and the portion of capital expenditures expected to be funded from the Reserve Maintenance Account. The Annual Capital Budget for each Fiscal Year shall include the expected beginning balance in the Reserve Maintenance Account, the amounts to be transferred by the Trustee to the Reserve Maintenance Account from the General Reserve Fund, the amount of proceeds of Indebtedness expected to become available during the Fiscal Year, the amounts expected to be transferred monthly by the Commission to the Reserve Maintenance Account, and the desired year-end balance in the Reserve Maintenance Account. Prior to adopting the Annual Capital Budget, the Commission shall provide a draft of the capital budget to the General Engineering Consultant sufficiently in advance of the Commission's adoption of the Annual Capital Budget in order for the General Engineering Consultant to provide comments before the date of such adoption. The Commission may adopt amendments or supplements to the Annual Capital Budget at any time, which must be provided to the Trustee.

Use and Operation of System. The Commission covenants that

(a) it will maintain and operate the System in an efficient and economical manner,

(b) it will maintain the System in good repair and will make all necessary repairs, renewals and replacements, to the extent funds are available therefor; and

(c) it will comply with laws and all rules, regulations, orders and directions of any legislative, executive, administrative or judicial body applicable to such System, subject to the right of the Commission to contest the same in good faith and by appropriate legal proceedings.

Inspection of the System and Duties of General Engineering Consultant. The Commission shall cause the General Engineering Consultant to make an inspection of the System at least once in the Fiscal Year following the Substantial Completion of the 2002 Project and in each Fiscal Year thereafter; provided, however, with the advice and consent of the Commission the obligations of the GEC required by this paragraph may be modified or lessened to the extent that the obligations of the GEC have been performed by other parties otherwise retained by the Commission to carry out inspections in accordance with the National Bridge Inspection Program (NBI). Following

each inspection and on or before the 90th day prior to the end of each Fiscal Year, the General Engineering Consultant shall submit to the Commission a report setting forth (a) their findings as to whether the System has been maintained in good repair, working order and condition and (b) their advice and recommendations as to the proper maintenance, repair and operation of the System during the ensuing Fiscal Year and (c) an estimate of the amount of money necessary for such purposes, including their recommendations as to the total amounts and classifications of items and amounts that should be provided for in the Annual Operating Budget, the Annual Maintenance Budget and Annual Capital Budget for the next ensuing Fiscal Year. Copies of such reports shall be provided to the Trustee, except, with the advice and consent of the Commission, the obligations of the GEC, as described in this paragraph, may be modified and lessened by the performance of the NBI, in accordance with applicable Federal law, by parties otherwise retained by the Commission to perform NBIs in the geographic region of the 2002 Project.

Construction of Projects. The Commission covenants that:

(a) it will proceed with diligence to construct any Projects in conformity with law; all requirements of all governmental authorities having jurisdiction; and the policies, rules and regulations of the Commission.

(b) the Commission shall involve the General Engineering Consultant or another Consultant to assist in quality assurance matters in connection with design, construction or both of any Project or portion thereof to the extent the Commission determines necessary or appropriate.

Employment of General Engineering Consultant and Traffic Consultant. The Commission covenants to employ an independent engineer or engineering firm or corporation having a national reputation for skill and experience in such work to perform any functions of the General Engineering Consultant and the Traffic Consultant under the Master Indenture. The General Engineering Consultant and the Traffic Consultant shall be independent of one another.

Insurance. The Commission covenants that it will keep the System and its use and operation thereof insured (including through self-insurance) at all times in such amounts, subject to such exceptions and deductibles and against such risks, as are customary for similar organizations, including business interruption insurance. All insurance policies shall be carried with a responsible insurance company or companies authorized to do business in the State or shall be provided under a self-insurance program; any self-insurance program shall be actuarially sound in the written opinion of an accredited actuary, which opinion shall be filed with the Trustee at least annually. At any time and from time to time, the Commission may elect to terminate self-insurance of a given type. Upon making such election, the Commission shall, to the extent then deemed necessary by a Consultant, obtain and maintain comparable commercial insurance.

On the July 1 following the Substantial Completion of the 2002 Project and every three years thereafter (except with respect to self-insurance, which shall be annually), the Commission shall cause the Consultant referred to in the preceding paragraph to certify to the Trustee that (a) it has reviewed the adequacy of the Commission's insurance, listing the types and amounts of insurance, and (b) it finds such coverage to be reasonable and customary for similar organizations. If the Consultant concludes that coverage other than that currently carried by the Commission should be carried, the Commission shall obtain such insurance coverage unless it determines in good faith that it is unreasonable or uneconomical to obtain such coverage and TTA Representative certifies the same in writing to the Trustee.

The Commission covenants that it will take actions as it deems necessary to demand, collect and sue for any proceeds that may become due and payable to it under any policy. To the extent that the Commission receives insurance payments under a business interruption insurance policy or liquidated damages for delayed completion under a construction contract relating to the acquisition or construction of a Project, such amounts shall be deposited into the First Tier Debt Service Fund.

Damage or Destruction. Immediately after any damage to or destruction of any part of the System that materially adversely affects the Revenues, the Commission will promptly take action to repair, reconstruct or replace the damaged or destroyed property or to otherwise ameliorate the adverse impact on Revenues.

Records; Annual Audit. The Commission covenants that it will maintain books and accounts reflecting the operations of the System, as a separate enterprise, in accordance with Accounting Principles. The books and records of the System may form a part of the books and records of the Commission but shall be maintained as a separate enterprise account.

In addition, the Commission covenants that as soon as practicable, but in no event more than one hundred twenty (120) days after the last day of each Fiscal Year, beginning the Fiscal Year ending August 31, 2003, it will prepare or cause to be prepared a financial report of the results of operations of the System for such Fiscal Year in accordance with Accounting Principles, certified by a Certified Public Accountant approved by the Commission, and containing an audited balance sheet as of the end of such Fiscal Year, an audited statement of operations for such Fiscal Year, and an audited statement of cash flows of such Fiscal Year, showing in each case, in comparative form, the financial figures for the preceding Fiscal Year. A copy of such audit shall be filed with the Trustee promptly after the receipt by the Commission for such purpose.

Encumbrance of Revenues; Sale, Lease or Other Disposition of Property. The Commission covenants that so long as any Obligations are Outstanding under the Master Indenture,

(a) (1) it will not create or suffer to be created any lien or charge upon any Revenues, except the lien and charge of the First Tier Obligations, the Second Tier Obligations and the Subordinate Lien Obligations secured hereby; and (2) from such Revenues or other funds available under the Master Indenture, it will pay or cause to be discharged, or will make adequate provision to pay or discharge, within ninety (90) days after the same shall accrue, all lawful claims and demands for labor, materials or supplies that, if unpaid, might by law become a lien upon any Revenues; provided, however, that the Commission shall not be required to pay or discharge, or make provision for such payment or discharge of, any such lien or charge so long as the validity thereof shall be contested in good faith and by appropriate legal proceedings; provided further, that in recognition that amounts on deposit in the General Reserve Fund may be used for any lawful purpose, the Commission retains the right to issue bonds or notes or otherwise incur debt secured by and payable from amounts to be deposited in the General Reserve Fund. Any encumbrance of amounts on deposit in the General Reserve Fund in addition to that created by the other provisions of the Master Indenture, shall be subject and subordinate to the security interest in, pledge of and lien on the Trust Estate established for the benefit of the Obligations and to the other provisions of the Master Indenture relating to the use of Revenues and the amounts on deposit in the General Reserve Fund.

(b) subject to the provisions of the Indenture described under "TAX MATTERS" of this Official Statement and "– Reservation of Right to Transfer System" of this Appendix B, it will not sell or otherwise dispose of any real estate or personal property comprising a portion of the System unless the TTA Representative determines in the case of property with a value of $1 million or less or the Commission determines in the case of property with a value in excess of $1 million that

(1) such property (i) has become obsolete or worn out or is reasonably expected to become so within one year after the date of such disposition, (ii) is no longer used or useful in the operation of the System or in the generation of Revenues or (iii) is to be or has been replaced by other property; or

(2) by minute order that such action will not materially adversely affect the Projected Revenues.

The Commission shall have the discretion to deposit the proceeds of such sale or disposition in a fund or account held under the Master Indenture or a Commission account held outside the Master Indenture, as it deems appropriate. In the event the Commission did not meet the Rate Covenant during the preceding Fiscal Year, however, then the Commission shall notify the Trustee of the sale or disposition of any property that generated Revenues in excess of one percent of the Commission's Revenues during the prior Fiscal Year, and all proceeds from such sale or disposition shall be deposited in the Revenue Fund.

(c) subject to the provisions of the Indenture described under "TAX MATTERS" of this Official Statement and "– Reservation of Right to Transfer System" of this Appendix B, it will not lease any real estate or personal property comprising a portion of the System unless the Commission determines by minute order that such action will not materially adversely affect the Revenues.

Without intending to limit the foregoing, the Commission also may enter into contracts or other forms of agreement for the use of any real estate comprising a portion of the System including, but not limited to, rights of way for telephone, telegraph, optic fiber and other forms of communication, electric, gas transmission and other lines, towers, or facilities for utilities, and other uses that do not materially adversely affect the operation of the System and the payments received in connection with the same shall, to the extent permitted by law, constitute Revenues. The Commission also covenants to ensure that all necessary real property filings are made in connection

with any such lease or other agreement relating to the use of real estate comprising a portion of the System to protect the interest of the Commission in such property.

Reservation of Right to Transfer System

Under the Master Indenture, the Commission reserves the right to transfer all or any part of the System to a Regional Mobility Authority established under the Texas Transportation Code, a Regional Tollway Authority or another governmental entity authorized by law to own and operate toll facilities, but only upon satisfaction of the following conditions:

(a) the General Engineering Consultant issues a report in which it estimates the Operating Expenses and Maintenance Expenses for the System following such transfer for each Fiscal Year that any Obligations are scheduled to be Outstanding;

(b) the Traffic Consultant issues a traffic and revenue projection showing the Projected Revenues for the System following such transfer for each Fiscal Year that any Obligations are scheduled to be Outstanding;

(c) a TTA Representative delivers a certificate, based upon the reports of the General Engineering Consultant and the Traffic Consultant required by (a) and (b), to the effect that (i) the Projected Debt Service Coverage Ratio would be sufficient on that day to allow each of the then-Outstanding Obligations to be issued in compliance with the terms of the Master Indenture if such Obligations were being issued on the date of such certificate and (ii) the Commission is not in default under any of the provisions of the Master Indenture;

(d) each Rating Agency then maintaining a rating on the Outstanding Obligations issues a letter to the Commission to the effect that such transfer would not have the effect of causing the Rating Agency to lower the existing rating;

(e) any money paid by the Department for the design, construction, operation and maintenance of the transferred property is repaid to the State Highway Fund;

(f) the Commission delivers an opinion of Counsel to the Trustee to the effect that the transfer is authorized by law; and

(g) the Commission delivers an Opinion of Bond Counsel to the Trustee to the effect that the transfer will not adversely affect the treatment for federal income tax purposes of interest on any Outstanding Obligations.

Covenant Not to Build Competing System

Under the Master Indenture, the Commission covenants not to directly or indirectly construct, operate or assist any entity from constructing, operating, permitting, assisting, supporting, aligning or enhancing any State Highway Capital Projects that will or foreseeably could have the effect of materially adversely affecting the ability of the Commission from complying with the covenants in the Master Indenture, except for:

(a) any State Highway System improvements necessary for improved safety, maintenance or operational purposes;

(b) any intercity, intra city, commuter, urban, high speed rail projects or any combination of the foregoing supported by the State and/or others; and

(c) any HOV exclusive lanes operationally required by environmental regulatory agencies.

"*Capital Projects*" for purposes of this section means those projects undertaken to construct a transportation facility for motorized vehicular traffic where no such facility existed previously or to construct a portion of a transportation facility where additional or widened traffic lanes are physically added on to existing traffic lanes on an already constructed facility, but excluding any projects included in the Capital Area Metropolitan Planning Organization's "CAMPO 2025 Transportation Plan" issued in 2000 (the "*CAMPO 2025 Transportation Plan*"), a planning guide that contains transportation policy and projects to 2025, or any projects undertaken to increase traffic

capacity by modifying existing facilities through the installation of traffic sensors, metering devices, intersection grade separations, and Intelligent Transportation Systems equipment or work involving the re-striping of traffic lanes, medians, and shoulders.

Notwithstanding the non-compete provisions in the Master Indenture and without causing the occurrence of an Event of Default under the Master Indenture through violation of the non-compete provisions, the Commission may take any action otherwise not permitted by the non-compete provisions or fail to take any action otherwise required by the non-compete provisions (any such action or inaction, a "*Permitted Breach*"), if:

(a) it engages the Traffic Consultant to study and report on the anticipated annual effect on Revenues of the Permitted Breach; and

(b) it deposits with the Trustee the amount, if any, shown by the report of the Traffic Consultant to be the amount by which Revenues will be reduced by the Permitted Breach. In computing the amount of the deposit, the Commission may take into account investment earnings anticipated to be earned by the amount deposited if such amount is invested in Defeasance Securities and an independent certified public accountant certifies that the amount of the deposit, together with investment earnings on the Defeasance Securities, will produce in each year an amount equal to the amount by which the Traffic Consultant estimates that Revenues will be reduced in each of such years as a result of the Permitted Breach.

Events of Default and Remedies

Events of Default. The occurrence and continuation of the following events shall constitute an Event of Default under the Master Indenture:

(a) failure by the Commission to pay the principal of and premium, if any, or interest on any of the Obligations or to pay Capital Payments when the same shall become due and payable, either at Stated Maturity, by proceedings for redemption or pursuant to the terms of the Obligation or any failure of the Commission to purchase or cause to be purchased any Tender Indebtedness, including any applicable Variable Rate Indebtedness, upon any optional or mandatory tender to the Commission or a tender agent of the Commission; or

(b) the occurrence and continuance of an event of default under a Credit Facility, First Tier DSRF Security, Second Tier DSRF Security, Approved Swap Agreement or Reimbursement Agreement; or

(c) unreasonable delay or failure of the Commission to carry on with reasonable dispatch or discontinues the construction of any portion of the System for which Obligations have been issued and are then outstanding; or

(d) destruction or damage of substantially all or any major portion of the System to the extent of impairing its efficient operation and materially adversely affecting the Revenues that shall not be promptly repaired, replaced or reconstructed (whether such failure promptly to repair, replace or reconstruct the same be due to the impracticability of such repair, replacement or reconstruction or to lack of funds therefor or for any other reason); or

(e) judgment for the payment of money rendered against the Commission if such judgment is under any circumstances payable from Revenues and is in an amount that its payment would, in the opinion of the Trustee, have a materially adverse effect upon the financial condition of the System and any such judgment shall not be discharged within ninety (90) days from the entry thereof or an appeal shall not be taken therefrom or from the order, decree or process upon which or pursuant to which such judgment shall have been granted or entered, in such manner as to set aside or stay the execution of or levy under such judgment, decree or process or the enforcement thereof, or

(f) the occurrence of a Bankruptcy-Related Event that shall not have been cured, vacated, discharged or stayed within sixty (60) days after the occurrence thereof; or

(g) failure of the Commission to duly and punctually perform any other of the covenants, conditions, agreements and provisions contained in any Obligations or in the Master Indenture on the part of the Commission to be performed, and (with the exception of covenants, conditions, agreements and provisions set forth under "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Additional

Obligations," "Limitations on Other Indebtedness" in this Official Statement and "Particular Covenants – *Encumbrance of Revenues, Sale, Lease, or Other Disposition of Property*" and "Covenant Not to Build Competing System" in this Appendix B, and Commission's covenants regarding tax exemption, a failure to perform with respect to which is not stayed) the continuation of such failure for sixty (60) days after written notice specifying such failure and requiring same to be remedied shall have been given to the Commission by the Trustee, which may give such notice in its discretion and shall give such notice at the written request of the Secured Owners of not less than ten per centum (10%) in principal amount of the Obligations then Outstanding; and the Trustee shall investigate and consider any allegation of such default or Event of Default of which any Bond Insurer of record notifies the Trustee in writing.

Remedies Applicable. The Secured Owners shall be entitled to the remedies set forth under the caption "*Events of Default and Remedies*" of this Appendix B. To the extent that a Series of Obligations is secured by a Credit Facility, a First Tier DSRF Security or a Second Tier DSRF Security, the Bank or the Bond Insurer shall be considered the Secured Owner of such Obligation for all purposes of exercising any remedy or giving any directions to the Trustee.

Enforcement of Remedies. Upon the occurrence of any Event of Default set forth under the caption "Event of Default and Remedies – *Events of Default*" of this Appendix B, then and in every such case the Trustee may proceed, and upon the written request of the Secured Owners of not less than twenty percent (20%) in principal amount of the Obligations then Outstanding shall proceed, subject to certain provisions of the Master Indenture, to protect and enforce its rights and the rights of the Secured Owners under the Enabling Acts and under the Master Indenture by such suits, actions or special proceedings in equity or at law, or by proceedings in the office of any board or officer having jurisdiction, either for mandamus or the specific performance of any covenant or agreement contained in the Master Indenture or in aid or execution of any power in the Master Indenture granted or for the enforcement of any proper legal or equitable remedy, as the Trustee, being advised by Counsel, shall deem most effectual to protect and enforce such rights.

In the enforcement of any remedy under the Master Indenture, the Trustee shall be entitled to sue for, enforce payment of and receive any and all amounts then or during any Event of Default becoming, and at any time remaining, due from the Commission for principal, interest or otherwise under any of the provisions of the Master Indenture or of the Outstanding Obligations and unpaid, with interest on overdue payments, to the extent permitted by law, at the rate or rates of interest borne by such Obligations, together with any and all costs and expenses of collection and of all proceedings under the Master Indenture and under such Obligations, without prejudice, to any other right or remedy of the Trustee or of the Secured Owners, and to recover and enforce judgment or decree against the Commission, but solely as provided in the Master Indenture and in such Obligations, for any portion of such amounts remaining unpaid, with interest, costs and expenses, and to collect (but solely from Revenues) in any manner provided by law, the money adjudged or decreed to be payable.

Pro Rata Application of Funds. If at any time the money in the First Tier Debt Service Fund, the Second Tier Debt Service Fund or the Subordinate Lien Debt Service Fund, and the respective reserve funds and other funds established by the Master Indenture shall not be sufficient to pay the principal of or the interest on any Obligations as the same become due and payable, such money, together with any money then available or thereafter becoming available for such purpose, whether through the exercise of the remedies provided by the Master Indenture or otherwise, shall be applied (subject to the provisions of the Master Indenture relating to the payment of fees and expenses of the Trustee on other costs of the Trustee) as set forth in (a) through (f) below; provided, however, amounts on deposit in a fund or account (i) dedicated to the payment or security of the First Tier Obligations, the Second Tier Obligations, or the Subordinate Lien Obligations or (ii) constituting Additional Obligation Security for the benefit of one or more specific Series of Obligations shall not be applied as provided in (a) through (f) below but shall be used only for the purpose for which such deposits were made:

(a) Unless the principal of all the First Tier Obligations shall then be due and payable, all such money shall be applied first: to the payment to the persons entitled thereto of all installments of interest then due on the First Tier Obligations, in the order of the Maturity of the installments of such interest, and, if the amount available shall not be sufficient to pay in full any particular installment, then to the payment ratably, according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the First Tier Obligations; and second: to the payment of the principal of any First Tier Obligations which have matured, and, if the amount available shall not be sufficient to pay all of such matured First Tier Obligations, then to the payment thereof ratably, according to the amount due: or if no First Tier Obligations have matured, to the retirement of First Tier Obligations.

(b) If the principal of all the First Tier Obligations shall then be due and payable, all such money shall be applied to the payment of the principal and interest then due and unpaid upon the First Tier Obligations, without preference or priority of principal over interest or of interest over principal, or of any installment of interest over any other installment of interest, or of any First Tier Obligations over any other First Tier Obligations, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or preference except as to any difference in the respective rates of interest specified in the First Tier Obligations.

(c) If there is no default existing in the payment of the principal of, premium, if any, or interest on the First Tier Obligations but the principal of, premium, if any, or interest on Second Tier Obligations has not been paid when due, unless the principal of all the Second Tier Obligations shall then be due and payable, all such money shall be applied first: to the payment to the persons entitled thereto of all installments of interest then due on the Second Tier Obligations, in the order of the Maturity of the installments of such interest, and, if the amount available shall not be sufficient to pay in full any particular installment, then to the payment ratably, according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Second Tier Obligations; and second: to the payment of the principal of any Second Tier Obligations which have matured, and, if the amount available shall not be sufficient to pay all of such matured Second Tier Obligations, then to the payment thereof ratably, according to the amount due: or if no Second Tier Obligations have matured, to the retirement of Second Tier Obligations.

(d) If there is no Event of Default existing in the payment of the principal of, premium, if any, or interest on the First Tier Obligations but the principal of all the Second Tier Obligations shall then be due and payable, all such money shall be applied to the payment of the principal and interest then due and unpaid upon the Second Tier Obligations, without preference or priority of principal over interest or of interest over principal, or of any installment of interest over any other installment of interest, or of any Second Tier Obligations over any other Second Tier Obligations, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or preference except as to any difference in the respective rates of interest specified in the Second Tier Obligations.

(e) If there is no Event of Default existing in the payment of the principal of, premium, if any, or interest on the First Tier Obligations or the Second Tier Obligations but the principal of, premium, if any, or interest on Subordinate Lien Obligations has not been paid when due, unless the principal of all the Subordinate Lien Obligations shall then be due and payable, all such money shall be applied first: to the payment to the persons entitled thereto of all installments of interest then due on the Subordinate Lien Obligations, in the order of the Maturity of the installments of such interest, and, if the amount available shall not be sufficient to pay in full any particular installment, then to the payment ratably, according to the amounts due on such installment, to the persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Subordinate Lien Obligations; and second: to the payment of the principal of any Subordinate Lien Obligations that have matured, and, if the amount available shall not be sufficient to pay all of such matured Subordinate Lien Obligations, then to the payment thereof ratably, according to the amount due: or if no Subordinate Lien Obligations have matured, to the retirement of Subordinate Lien Obligations.

(f) If there is no Event of Default existing in the payment of the principal of, premium, if any, or interest on the First Tier Obligations or Second Tier Obligations but the principal of all the Subordinate Lien Obligations shall then be due and payable, all such money shall be applied to the payment of the principal and interest then due and unpaid upon the Subordinate Lien Obligations, without preference or priority of principal over interest or of interest over principal, or of any installment of interest over any other installment of interest, or of any Subordinate Lien Obligations over any other Subordinate Lien Obligations, ratably, according to the amounts due respectively for principal and interest, to the persons entitled thereto without any discrimination or preference except as to any difference in the respective rates of interest specified in the Subordinate Lien Obligations.

Whenever money is to be applied by the Trustee as described under the caption "Events of Default and Remedies – *Pro Rata Application of Funds*" of this Appendix B, such money shall be applied by the Trustee at such times, and from time to time, as the Trustee in its sole discretion shall determine, having due regard to the amount of such money available for application and the likelihood of additional money becoming available for such application

in the future; the deposit of such money with the Trustee, or otherwise setting aside such money, in trust for the proper purpose shall constitute proper application by the Trustee; and the Trustee shall incur no liability whatsoever to the Commission, to any Secured Owner or to any other person for any delay in applying any such money, so long as the Trustee acts with reasonable diligence, having due regard to the circumstances, and ultimately applies the same in accordance with such provisions of the Master Indenture as may be applicable at the time of application by the Trustee. Whenever the Trustee shall exercise such discretion in applying such money, it shall fix the date (which shall be an Interest Payment Date unless the Trustee shall deem another date more suitable) upon which such application is to be made and upon such date interest on the amounts of principal to be paid to such date shall cease to accrue. The Trustee shall give such notice as it may deem appropriate of the fixing of any such date, and shall not be required to make payment to the Secured Owner of any unpaid Obligation or the interest thereon unless such Obligation shall be presented to the Trustee for appropriate endorsement or for cancellation if fully paid.

Effect of Discontinuance of Proceedings. In case any action taken by the Trustee on account of any Event of Default shall have been discontinued or abandoned for any reason, then and in every such case the Commission, the Trustee, any Bond Insurer of record, and the Secured Owners shall be restored to their former respective positions and rights under the Master Indenture, and all rights, remedies, powers and duties of the Trustee shall continue as though no such action had been taken.

Majority of Secured Owners May Control Proceedings. Anything in the Master Indenture to the contrary notwithstanding, the Secured Owners of not less than a majority in principal amount of the First Tier Obligations then Outstanding (or, if no First Tier Obligations are then Outstanding, then the Secured Owners of not less than a majority in principal amount of the Second Tier Obligations and Subordinate Lien Obligations then Outstanding) shall have the right, subject to certain rights of the Trustee and the Bond Insurer set forth in the Master Indenture, by an instrument or concurrent instruments in writing executed and delivered to the Trustee, to direct the method and place of conducting all remedial actions to be taken by the Trustee under the Master Indenture, provided that such direction shall not be otherwise than in accordance with law or the provisions of the Master Indenture, and that the Trustee shall have the right to decline to follow any such direction that in the opinion of the Trustee would be unjustly prejudicial to Secured Owners not parties to such direction.

Restrictions Upon Action by Individual Secured Owner. No Secured Owners of any of the Outstanding Obligations shall have any right to institute any suit, action, mandamus or other proceeding in equity or at law for the execution of any trust under the Master Indenture or the protection or enforcement of any right under the Master Indenture or any resolution or minute order of the Commission authorizing the issuance of Obligations, or any right under the Enabling Acts or other laws of the State, excepting only an action for the recovery of overdue and unpaid principal, interest or redemption premium, unless such Secured Owner previously shall have given to the Trustee written notice of the Event of Default or breach of trust or duty on account of which such suit or action is to be taken, and unless the Secured Owners of not less than twenty percent (20%) in principal amount of the Obligations then Outstanding shall have made written request of the Trustee after the right to exercise such powers or right of action, as the case may be, shall have accrued, and shall have afforded the Trustee a reasonable opportunity either to proceed to exercise the powers in the Master Indenture granted or granted by the Enabling Acts or by the other laws of the State, or to institute such action, suit or proceeding in its or their name, and unless, also, there shall have been offered to the Trustee reasonable security and indemnity satisfactory to it against the costs, expenses and liabilities to be incurred therein or thereby, and the Trustee shall have refused or neglected to comply with such request within a reasonable time; and such notification, request and offer of indemnity are hereby declared in every such case, at the option of the Trustee, to be conditions precedent to the execution of the powers and trusts of the Master Indenture or for any other remedy under the Master Indenture or under the Enabling Acts or by the other laws of the State. It is understood and intended that no one or more Secured Owners shall have any right in any manner whatever by his or their action to affect, disturb or prejudice the security of the Master Indenture, or to enforce any right under the Master Indenture or under the Enabling Acts or by the other laws of the State with respect to the Obligations or the Master Indenture, except in the manner provided in the Master Indenture, and that all proceedings at law or in equity shall be instituted, had and maintained in the manner in the Master Indenture provided and for the benefit of all Secured Owners of the Outstanding Obligations, except as otherwise permitted in the Master Indenture with reference to over-due and unpaid principal, interest or redemption premium.

Actions by Trustee. All rights of action under the Master Indenture or under any of the Obligations, enforceable by the Trustee, may be enforced by it without the possession of any of the Obligations or the production thereof on the trial or other proceeding relative thereto, and any such suit, action or proceeding instituted by the Trustee shall be brought in its name for the benefit of all the holders of such Obligations, subject to the provisions of the Master Indenture.

No Remedy Exclusive. No remedy conferred upon or reserved to the Trustee, any Bond Insurer, or to the Secured Owners of the Obligations is intended to be exclusive of any other remedy or remedies, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given under the Master Indenture or now or hereafter existing at law or in equity or by statute.

No Delay or Omission Construed to be a Waiver; Repeated Exercise of Powers and Remedies; Waiver of Default. No delay or omission of the Trustee or of any Secured Owner of the Obligations to exercise any right or power accruing upon any default shall impair any such right or power or shall be construed to be a waiver of any such default or any acquiescence therein; and every power and remedy given by the Master Indenture to the Trustee and the Secured Owners of the Obligations may be exercised from time to time and as often as may be deemed expedient.

The Trustee may, and upon written request of the Secured Owners of not less than a majority in principal amount of the Outstanding Obligations shall waive any default which in its opinion shall have been remedied before the completion of the enforcement of any remedy under the Master Indenture, but no such waiver shall extend to or affect any other existing or any subsequent default or defaults or impair any rights or remedies consequent thereon.

Notice of Default. The Trustee shall mail to each Bond Insurer, and each Secured Owner written notice of the occurrence of any Event of Default, within thirty (30) days after the Trustee has knowledge of any such Event of Default. If in any Fiscal Year the total amount of deposits to a debt service fund shall be less than the amounts required so to be deposited under the provisions of the Master Indenture, the Trustee, on or before the first day of the second month of the next succeeding Fiscal Year, shall mail to each Bond Insurer and all Secured Owners written notice of the failure to make such deposits.

Bond Insurer's Rights. Notwithstanding any other provisions described under the caption "Events of Default and Remedies – *Events of Default*" of this Appendix B, if there has been filed with the Trustee a bond insurance policy, or a certified copy thereof, with respect to any Obligation, all enforcement remedies and rights to waive defaults with respect to such Obligation may be exercised by the Secured Owners only with the written consent of such Bond Insurer, and, in the alternative, at the option of the Bond Insurer, such Bond Insurer may enforce any such remedies or waive any default with respect to such Obligation without the consent of the Secured Owners, and in such event such Bond Insurer shall be deemed to be the Secured Owner for such purpose. Any Bond Insurer under a bond insurance policy, or certified copy thereof, that has been filed with the Trustee shall, for all purposes of the Master Indenture, constitute and may be called a Bond Insurer.

Supplemental Indentures

Supplemental Indentures Without Secured Owners' Consent. The Commission and the Trustee may from time to time and at any time enter into Supplemental Indentures, without the consent of or notice to any Secured Owner, to effect any one or more of the following:

(a) cure any ambiguity, defect or omission or correct or supplement any provision in the Master Indenture or in any Supplemental Indenture;

(b) grant to or confer upon the Trustee for the benefit of the Secured Owners any additional rights, remedies, powers, authority or security that may lawfully be granted to or conferred upon the Secured Owners or the Trustee which are not contrary to or inconsistent with the Master Indenture as then in effect or to subject to the pledge and lien of the Master Indenture additional revenues, properties or collateral, including Defeasance Securities;

(c) add to the covenants and agreements of the Commission in the Master Indenture other covenants and agreements thereafter to be observed by the Commission or to surrender any right or power in the Master Indenture reserved to or conferred upon the Commission which are not contrary to or inconsistent with the Master Indenture as then in effect;

(d) permit the appointment of a co-trustee under the Master Indenture;

(e) modify, alter, supplement or amend the Master Indenture in such manner as shall permit the qualification of the Master Indenture, if required, under the Trust Indenture Act of 1939, the Securities Act of 1933 or any similar federal statute hereafter in effect;

(f) make any other change in the Master Indenture that is determined by the Commission not to be materially adverse to the interests of the Secured Owners, including changes or amendments requested by any Rating Agency as a condition to the issuance or maintenance of a rating or requested by the Texas Attorney General's office as a condition to the approval of any Additional First Tier Obligation, Additional Second Tier Obligation or Subordinate Lien Obligation;

(g) implement the issuance of Additional First Tier Obligations, Additional Second Tier Obligations or Additional Subordinate Lien Obligations permitted under the Master Indenture; or

(h) if all First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations in a Series are Book-Entry Obligations, amend, modify, alter or replace any Letter of Representations or other provisions relating to Book-Entry Obligations.

The Trustee shall not be obligated to enter into any such Supplemental Indenture that adversely affects the Trustee's own rights, duties or immunities under the Master Indenture.

Supplemental Indentures Requiring Secured Owners' Consent. The Commission and the Trustee, at any time and from time to time, may execute and deliver a Supplemental Indenture for the purpose of making any modification or amendment to the Master Indenture, but only with the written consent, given as provided under the caption "Supplemental Indentures – *Consents of Secured Owners and Opinions*" of this Appendix B, of the Secured Owners of at least a majority in aggregate principal amount of the Obligations Outstanding at the time such consent is given, and in case less than all of the Obligations then Outstanding are affected by the modification or amendment, of the Secured Owners of at least a majority in aggregate principal amount of the Obligations so affected and Outstanding at the time such consent is given; provided, however, that if such modification or amendment will, by its terms, not take effect so long as any Obligations so affected remain Outstanding, the consent of the Secured Owners of such Obligations shall not be required and such Obligations shall not be deemed to be Outstanding for the purpose of any calculation of Outstanding Obligations under this paragraph. Notwithstanding the foregoing, no modification or amendment contained in any such Supplemental Indenture shall permit any of the following, without the consent of each Secured Owner whose rights are affected thereby:

(a) a change in the terms of stated Maturity or redemption of any Obligation or of any installment of interest thereon;

(b) a reduction in the principal amount of or redemption premium on any Obligation or in the rate of interest thereon or a change in the coin or currency in which such Obligation is payable;

(c) the creation of a lien on or a pledge of any part of the Trust Estate which has priority over or parity with (to the extent not permitted under the Master Indenture) the lien or pledge granted to the Secured Owners under the Master Indenture (but this provision shall not apply to the release of any part of the Trust Estate as opposed to the creation of a prior or parity lien or pledge);

(d) the granting of a preference or priority of any First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligation, as the case may be, over any other First Tier Obligations, Second Tier Obligations or Subordinate Lien Obligations, except to the extent permitted in the Master Indenture;

(e) a reduction in the aggregate principal amount of Obligations of which the consent of the Secured Owners is required to effect any such modification or amendment; or

(f) a change in the provisions of this paragraph.

Notwithstanding the foregoing, the Secured Owner of any Obligation may extend the time for payment of the principal of or interest on such Obligation; provided, however, that upon the occurrence of an Event of Default, funds available under the Master Indenture for the payment of the principal of and interest on such Obligations shall not be applied to any payment so extended until all principal and interest payments which have not been extended have first been paid in full. Notice of any Supplemental Indenture executed pursuant to this paragraph shall be given to the affected Secured Owners promptly following the execution thereof.

Consents of Secured Owners and Opinions. Each Supplemental Indenture executed and delivered pursuant to the provisions described under the caption "Supplemental Indentures – *Supplemental Indentures Requiring Secured Owners' Consent*" of this Appendix B shall take effect only when and as provided in this section entitled

"*Consents of Secured Owners and Opinions*." A copy of such Supplemental Indenture (or brief summary thereof or reference thereto in form approved by the Trustee), together with a request to Secured Owners for their consent thereto in form satisfactory to the Trustee, shall be sent by the Trustee to Secured Owners, at the expense of the Commission, by first class mail, postage prepaid, provided that a failure to mail such request shall not affect the validity of the Supplemental Indenture when consented to as provided. Such Supplemental Indenture shall not be effective unless and until there shall have been filed with the Trustee (a) the written consents of Secured Owners of the percentage of Obligations specified under the caption "Supplemental Indentures – *Supplemental Indentures Requiring Secured Owners' Consent*" of this Appendix B given as provided in the Master Indenture, and (b) the opinion of Counsel described under the caption "– Supplemental Indentures" of this Appendix B. Any such consent shall be binding upon the Secured Owner giving such consent and upon any subsequent Secured Owner of such Obligations and of any Obligations issued in exchange therefor or in lieu thereof (whether or not such subsequent Secured Owner has notice thereof), unless such consent is revoked in writing by the Secured Owner giving such consent or a subsequent Secured Owner of such Obligations by filing such revocation with the Trustee prior to the date the Trustee receives the material required in subsections (a) and (b) of this section entitled "– *Consents of Secured Owners and Opinions*."

Notwithstanding anything else in the Master Indenture, if a Supplemental Indenture is to become effective as described under the caption "– Supplemental Indentures – *Supplemental Indentures Requiring Secured Owners' Consent*" of this Appendix B on the same date as the date of issuance of Additional First Tier Obligations, Additional Second Tier Obligations or Subordinate Lien Obligation, the consents of the underwriters or purchasers of such Additional First Tier Obligations, Additional Second Tier Obligations or Subordinate Lien Obligation, as the case may be, shall be counted for purposes described under the caption "Supplemental Indentures – *Supplemental Indentures Requiring Secured Owners' Consent*" of this Appendix B and this section entitled "*Consents of Secured Owners and Opinions*."

Effect of Supplemental Indentures. Upon the execution and delivery of any Supplemental Indenture as described under the caption "Supplemental Indentures" of this Appendix B, the Master Indenture shall be modified in accordance therewith, and such Supplemental Indenture shall form a part of the Master Indenture for all purposes; and every Secured Owner of any Obligation theretofore or thereafter authenticated and delivered under the Master Indenture shall be bound thereby.

Trustee

Duties and Responsibilities of the Trustee

(a) Prior to the occurrence of an Event of Default of which the Trustee has or is deemed to have notice of, and after the curing or waiver of any Event of Default that may have occurred, the Trustee undertakes to perform the duties of the Trustee as provided for in the Indenture, and no implied covenants or obligations shall be read into the Indenture against the Trustee. In the absence of bad faith on the part of the Trustee, the Trustee may conclusively rely on the truthfulness of the certificates or opinions furnished to it that conform to the requirements of the Indenture; but the Trustee is under a duty to examine such certificates or opinions in determining whether they conform to the Indenture.

(b) In an Event of Default of which the Trustee has or is deemed to have notice of has occurred, the Trustee shall exercise the rights and powers vested in the Trustee by the Indenture, and use the same degree of care and skill in the Trustee's exercise, as a prudent person would exercise or use in the conduct of such person's own affairs.

(c) No provision of the Indenture shall be construed to relieve the Trustee from liability for its own negligent acts or negligent failures to act, or its own willful misconduct. However, the Trustee will not be liable for any error of judgment made in good faith by a responsible officer, unless it is proven that the Trustee was negligent in ascertaining the pertinent facts.

(d) With respect to any action the Trustee takes or omits to take in accordance with the direction of the Secured Owners under any provision of the Indenture relating to time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee under the Indenture, the Trustee shall not be liable if such action or omission to act was in good faith.

(e) Every provision relating to the conduct or affecting the liability of or affording protection to the Trustee is subject to the provisions of the Indenture governing the Duties and Responsibilities of the Trustee.

(f) no provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers, if it has reasonable grounds for believing that the repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

Certain Rights of the Trustee. Except as otherwise provided for in the "— *Duties and Responsibilities of the Trustee*" section above, or in the accordance with the applicable provisions of the Master Indenture, the following rights pertain to the Trustee:

(a) the Trustee may rely and is protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, approval, bond, debenture or other paper or document believed by it to be genuine and to have been signed or presented by the proper party or parties;

(b) any request, direction, order or demand of the Commission under this Indenture shall be sufficiently evidenced by a certificate of a TTA Representative (unless other evidence thereof is specifically prescribed) and any resolution of the Commission may be sufficiently evidenced by a copy thereof certified by a TTA Representative, as appropriate;

(c) the Trustee may, in the administration of the Indenture, rely upon a certificate of a Commission Official or TTA Representative whenever it deems it necessary to have a matter proved or established prior to taking, suffering or omitting any action so long as the Trustee acts in good faith;

(d) the Trustee may consult with Counsel and the written advice of such Counsel or an opinion of Counsel shall be full and complete authorization and protection for any action taken, suffered or omitted by it in good faith and in accordance with such advice or opinion;

(e) the Trustee is not obligated to exercise any of the rights or powers vested in it by the Indenture at the request or direction of any of the Secured Owners unless such Secured Owners have offered to the Trustee security or indemnity satisfactory to the Trustee as to its terms, coverage, duration, amount and otherwise with respect to the costs, expenses and liabilities which may be incurred by it in compliance with such request or direction principal amount;

(f) the Trustee is not required to take notice or deemed to have notice of any Event of Default, except for Events of Default discussed in subsection (a) and (b) in "Events of Default and Remedies – *Events of Default*" of this Appendix B, unless a responsible officer of the trustee has actual knowledge thereof or has received notice in writing of such default or Event of Default from the Commission or the Secured Owners of at least 25% in aggregate principal amount of the Outstanding Obligations, and in the absence of any such notice, the Trustee may conclusively assume that no such Event of Default exists;

(g) the Trustee's immunities and protections from liability and its right to indemnification in connection with the performance of its duties under this Indenture shall extend to the Trustee's officers, directors, agents, attorneys and employees, including any Responsible Officer. Such immunities and protections and right to indemnification, together with the Trustee's right to compensation, shall survive the Trustee's resignation or removal, the defeasance or discharge of this Indenture and final payment of the Obligations;

(h) the Trustee is not required to make any inquiry or investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, approval, bond, debenture or other paper or document but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may deem necessary or advisable and, if the Trustee determines to make such further inquiry or investigation, it is entitled to examine the books, records and premises of the Commission, in person or by agent or attorney;

(i) the Trustee may execute any of its trusts or powers or perform any duties under this Indenture either directly or by or through agents or attorneys, and may in all cases pay, subject to reimbursement as

allowed under the Master Indenture, such reasonable compensation as it deems proper to all such agents and attorneys reasonably employed or retained by it, and the Trustee shall not be responsible for any misconduct or negligence of any agent or attorney appointed with due care by it; and

(j) except for information provided by the Trustee concerning the Trustee, the Trustee shall have no responsibility for any information in any offering memorandum or other disclosure material distributed with respect to the Obligations, and the Trustee shall have no responsibility for compliance with any state or federal securities laws in connection with the Obligations.

SEVENTH SUPPLEMENTAL INDENTURE

Limited Obligations

The Series 2015-A Bonds and the Series 2015-B Bonds are limited obligations of the Commission constituting a Series of First Tier Obligations, payable solely from a first lien on, pledge of and security interest in the Trust Estate. The Series 2015-A Bonds and the Series 2015-B Bonds, as a series of First Tier Obligations, shall constitute a valid claim of the respective Secured Owners thereof against the Trust Estate, which is pledged to secure the payment of the principal of, redemption premium, if any, and interest on the First Tier Obligations, and which shall be utilized for no other purpose, except as expressly authorized in the Master Indenture and the Seventh Supplemental Indenture.

The Series 2015-C Bonds are limited obligations of the Commission constituting a Series of Second Tier Obligations, payable solely from a lien on, pledge of and security interest in the Trust Estate junior and subordinate only to the First Tier Obligations. The Series 2015-C Bonds, as a series of Second Tier Obligations, shall constitute a valid claim of the respective Secured Owners thereof against the Trust Estate junior and subordinate only to the First Tier Obligations, which is pledged to secure the payment of the principal of, redemption premium, if any, and interest on the Second Tier Obligations, and which shall be utilized for no other purpose, except as expressly authorized in the Master Indenture and the Seventh Supplemental Indenture.

The Bonds shall not constitute general obligations of the Commission or the State and under no circumstances shall the Bonds be payable from, nor shall the Secured Owners thereof have any rightful claim to, any income, revenues, funds or assets of the Commission other than those pledged under the Seventh Supplemental Indenture as security for the payment of First Tier Obligations and Second Tier Obligations, as applicable. Neither the full faith and credit nor the taxing power of the State is pledged to the payment of the principal of, premium, if any, or interest on the Bonds.

Series 2015-A Bond Purchase Fund

The Seventh Supplemental Indenture creates and establishes with the Tender Agent a separate "Texas Transportation Commission Central Texas Turnpike System Series 2015-A Bond Purchase Fund" (the "Series 2015-A Bond Purchase Fund") with respect to the Series 2015-A Bonds, to be held as a separate escrow fund, in trust and administered and distributed by the Tender Agent. All moneys deposited into the Series 2015-A Bond Purchase Fund shall be used solely for the purposes set forth in the Seventh Supplemental Indenture and such moneys shall not constitute a part of the trust security under the Indenture. The Series 2015-A Bond Purchase Fund shall secure and be used solely for the Series 2015-A Bonds.

The Remarketing Agent shall pay or cause to be paid to the Tender Agent, in immediately available funds, by the time indicated in the Seventh Supplemental Indenture on the Purchase Date of tendered Series 2015-A Bonds, all amounts representing Remarketing Proceeds of such Series 2015-A Bonds, and all such Remarketing Proceeds shall be deposited by the Tender Agent directly into the Series 2015-A Bond Purchase Fund. All moneys received by the Tender Agent as Remarketing Proceeds shall be deposited by the Tender Agent in the Series 2015-A Bond Purchase Fund as provided in the Seventh Supplemental Indenture and shall be used solely for the payment of the Purchase Price of tendered Series 2015-A Bonds and shall not be commingled with other funds held by the Tender Agent.

The Tender Agent shall deposit or cause to be deposited into the Series 2015-A Bond Purchase Fund, when and as received, all moneys delivered to the Tender Agent as and for the Purchase Price of remarketed Series 2015-A Bonds by or on behalf of the Remarketing Agent. The Tender Agent shall disburse moneys from the Series 2015-A Bond Purchase Fund to pay the Purchase Price of the related Series 2015-A Bonds properly tendered for purchase

upon surrender of such Series 2015-A Bonds in immediately available moneys by close of business on the Purchase Date.

THE COMMISSION RESERVES THE RIGHT, BUT DOES NOT HAVE THE OBLIGATION, TO PURCHASE SERIES 2015-A BONDS TENDERED FOR PURCHASE. No purchase of Series 2015-A Bonds by the Tender Agent or the Commission or advance use of any funds to effectuate any such purchase shall be deemed to be a payment or redemption of such Series 2015-A Bonds or any portion thereof, and such purchase will not operate to extinguish or discharge the indebtedness evidenced by such Series 2015-A Bonds unless it is expressly stated in a certificate of a Chief Financial Officer delivered to the Tender Agent that the Purchase Price paid by the Commission shall be deemed the payment and discharge of the purchased Series 2015-A Bonds and directs the Tender Agent to cancel such Series 2015-A Bonds.

The moneys in the Series 2015-A Bond Purchase Funds shall not be part of the security under the Indenture, but shall be used solely to pay the Purchase Price of the related Series 2015-A Bonds as aforesaid and may not be used for any other purposes. The Tender Agent shall hold the moneys in the Series 2015-A Bond Purchase Fund for the benefit of the Registered Owners of the related Series 2015-A Bonds which have been properly tendered for purchase or deemed tendered on the Purchase Date. If sufficient funds to pay the Purchase Price for the Series 2015-A Bonds shall be held by the Tender Agent in the Series 2015-A Bond Purchase Fund for the benefit of the Registered Owners thereof, each such Registered Owner shall thereafter be restricted exclusively to that Series 2015-A Bond Purchase Fund for any claim of whatever nature on such Registered Owner's part under the Seventh Supplemental Indenture or on, or with respect to, such tendered Series 2015-A Bonds. Tendered Series 2015-A Bonds in the Multiannual Mode which are not supported by a Liquidity Agreement or Credit Facility and that are not remarketed or purchased on a Purchase Date shall bear interest at 10% until purchased or redeemed. The Commission will use its best efforts to have such Series 2015-A Bonds remarketed or purchased as soon as reasonably possible and until such time each Business Day will constitute a Purchase Date for such Series 2015-A Bonds that have not been remarketed or purchased.

Moneys held in the Series 2015-A Bond Purchase Fund for the benefit of Registered Owners of the related untendered Series 2015-A Bonds shall be held in trust and shall be invested overnight at the direction of the Commission in any bonds or other obligations which as to principal and interest constitute direct obligations of, or are unconditionally guaranteed by, the United States of America, including Treasury Receipts evidencing ownership of future interest and principal payments due on direct obligations of the United States of America. Moneys in the Series 2015-A Bond Purchase Fund which remain unclaimed three (3) years after the applicable Purchase Date shall, at the request of the Commission, and if the Commission is not at the time, to the knowledge of the Tender Agent, in default with respect to any material covenant in the Seventh Supplemental Indenture, be paid to the Commission, and the Registered Owners of the Series 2015-A Bonds for which the deposit was made shall thereafter be limited to a claim against the Commission.

Remarketing Agent for Series 2015-A Bonds

Each Remarketing Agent shall act as remarketing agent as provided in the Seventh Supplemental Indenture, and, in accordance with the Remarketing Agreement between the Remarketing Agent and the Commission, shall use its best efforts to remarket Series 2015-A Bonds required to be purchased pursuant to the Seventh Supplemental Indenture. A Chief Financial Officer shall appoint any successor Remarketing Agent for the Series 2015-A Bonds, subject to the conditions set forth in the Seventh Supplemental Indenture and the approval of each Credit Provider or Liquidity Provider for such Series 2015-A Bonds. Each Remarketing Agent shall designate its principal office to the Tender Agent and signify its acceptance of the duties and obligations imposed upon it under Seventh Supplemental Indenture by a written instrument of acceptance delivered to the Commission and the Tender Agent under which the Remarketing Agent will agree, particularly, to:

(a) determine the Flexible Rates, Daily Rates, Weekly Rates, Monthly Rates, Quarterly Rates, Semiannual Rates, Multiannual Rates, Index Floating Rates and Fixed Rates and give notice of such rates in accordance with the Seventh Supplemental Indenture;

(b) keep such books and records with respect to its duties as Remarketing Agent as shall be consistent with prudent industry practice; and

(c) remarket Series 2015-A Bonds in accordance with the Seventh Supplemental Indenture and the Remarketing Agreement.

Each Remarketing Agent shall have a capitalization of at least $100,000,000 and be authorized by law to perform all the duties imposed upon it by the Seventh Supplemental Indenture. A Remarketing Agent may at any time resign and be discharged of the duties and obligations created by the Seventh Supplemental Indenture by giving at least ten (10) days' written notice to the Commission and the Tender Agent. A Remarketing Agent may be removed at any time by the Commission, upon at least seven (7) days' notice by an instrument filed with the Remarketing Agent, the Tender Agent, each Liquidity Provider and/or Credit Provider of record for the related Series 2015-A Bonds, and the Rating Agencies.

In the event of the resignation or removal of a Remarketing Agent, such Remarketing Agent shall pay over, assign, and deliver any moneys and Series 2015-A Bonds held by it in such capacity to its successor or, if there is no successor, to the Tender Agent.

In the event that a Remarketing Agent shall resign or be removed, or be dissolved, or if the property or affairs of a Remarketing Agent shall be taken under the control of any state or federal court or administrative body because of bankruptcy or insolvency or for any other reason, and the Commission shall not have appointed its successor as Remarketing Agent, the Tender Agent shall ipso facto be deemed to be the Remarketing Agent for the related Series 2015-A Bonds for the sole and limited purpose of setting the default interest rate pursuant to the Seventh Supplemental Indenture until the appointment by the Commission of a Remarketing Agent or a successor Remarketing Agent, as the case may be.

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APPENDIX C

BOOK-ENTRY-ONLY SYSTEM

This Appendix describes how ownership of the Bonds is to be transferred and how the principal of, premium, if any, and interest on the Bonds are to be paid to and credited by The Depository Trust Company, New York, New York ("DTC"), while the Bonds are registered in its nominee name. The information in this Appendix concerning DTC and the book-entry-only system has been provided by DTC for use in disclosure documents such as this Official Statement. The Commission and the Underwriters believe the source of such information to be reliable, but take no responsibility for the accuracy or completeness thereof.

The Commission and the Underwriters cannot and do not give any assurance that (1) DTC will distribute payments of debt service on the Bonds, or redemption or other notices, to DTC Participants (as defined herein), (2) DTC Participants or others will distribute debt service payments paid to DTC or its nominee (as the registered owner of the Bonds), or redemption or other notices, to the Beneficial Owners, or that they will do so on a timely basis, or (3) DTC will serve and act in the manner described in this Official Statement. The current rules applicable to DTC are on file with the Securities and Exchange Commission, and the current procedures of DTC to be followed in dealing with DTC Participants are on file with DTC.

Book-Entry Only System

DTC will act initially as securities depository for the Bonds. The Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Bond certificate will be issued for each serial installment or maturity of the Bonds of each Series with the same interest rate and will be deposited with DTC.

DTC, the world's largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has a Standard & Poor's rating of "AA+". The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Bonds on DTC's records. The ownership interest of each actual purchaser of each Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Bonds, except in the event that use of the book-entry system for the Bonds is discontinued.

To facilitate subsequent transfers, all Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not affect any change in beneficial ownership. DTC has no knowledge of the actual

Beneficial Owners of the Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Bonds, such as redemptions, tenders, defaults, and proposed amendments to the Bond documents. For example, Beneficial Owners of Bonds may wish to ascertain that the nominee holding the Bonds for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the Paying/Agent Registrar and request that copies of notices be provided directly to them.

Redemption notices shall be sent to DTC. If less than all of the Bonds within a Series and maturity with the same interest rate are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant to be redeemed, unless a pro rata pass-through distribution of principal basis is selected in accordance with DTC's procedures.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Commission as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

All payments on the Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the Commission or the Paying Agent/Registrar, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Paying Agent/Registrar, or the Commission, subject to any statutory or regulatory requirements as may be in effect from time to time. All payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) are the responsibility of the Commission or the Paying Agent/Registrar, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as depository with respect to the Bonds at any time by giving reasonable notice to the Commission or the Paying Agent/Registrar. Under such circumstances, in the event that a successor depository is not obtained, Bond certificates are required to be printed and delivered.

To the extent permitted by law, the Commission may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Bond certificates will be printed and delivered to DTC.

Use of Certain Terms in Other Sections of this Official Statement. In reading this Official Statement it should be understood that while the Bonds are in the Book-Entry-Only System, references in other sections of this Official Statement to registered owners should be read to include the person for which the Participant acquires an interest in the Bonds, but (i) all rights of ownership must be exercised through DTC and the Book-Entry-Only System, and (ii) except as described above, notices that are to be given to registered owners under the Indenture will be given only to DTC.

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APPENDIX D

CENTRAL TEXAS TURNPIKE SYSTEM
2014 TRAFFIC AND REVENUE STUDY

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Central Texas Turnpike System
2014 Traffic & Revenue Study

Stantec

Prepared by:

Stantec Consulting Services Inc.

December 30, 2014

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EXECUTIVE SUMMARY

Stantec Consulting Services Inc. (Stantec) has conducted this Investment Grade Study to develop projections of traffic and toll revenues through 2042 for the Central Texas Turnpike System (CTTS) in the Austin area. The CTTS is owned by the Texas Transportation Commission, the governing body of the Texas Department of Transportation (TxDOT), and operated by TxDOT. This study will support the bond refinancing of the CTTS.

Introduction (Chapter 1)

The CTTS is a 72.8-mile turnpike system in the Austin area with four existing elements, as shown in Figure ES.1:

- SH 45 N extends from US 183 east to SH 130 (12.8 miles);
- Loop 1 (also called MoPac) extends from SH 45 N south to Parmer Lane (4 miles);
- SH 130 extends from IH-35 in Georgetown south to US 183/SH 45 SE south of the Austin-Bergstrom International Airport (49 miles); and
- SH 45 SE extends from US 183/SH 130 west to IH-35 (7 miles).

Figure ES.1 CTTS Toll Roads and Study Area

SH 45 N, Loop 1, and SH 130 opened in segments starting in 2006. SH 45 SE opened in May 2009 and became part of the CTTS in September 2012. The CTTS serves both commuter and through traffic in the Austin area.

On each of the CTTS elements, toll collection is by Electronic Toll Collection (ETC) and Pay by Mail (PBM), whereby the toll for the PBM transaction is billed after the trip, based on the identification of the vehicle owner via the vehicle's license plate.

Regional Transportation Network (Chapter 2)

Toll roads in the Austin area, in addition to the toll roads operated by CTTS, include 183A and the Manor Expressway owned and operated by Central Texas Regional Mobility Authority (CTRMA) and SH 130 Segments 5 & 6 financed, constructed, and operated by SH 130 Concession Company, LLC (the SH 130 Concession), a private concessionaire, pursuant to a 52-year concession agreement.

The major non-tolled routes in the Austin area which act as either feeder or competing routes with the CTTS elements include: IH-35, US 183 (Bell Boulevard/Research Boulevard), FM 734 (Parmer Lane/Ronald Reagan Boulevard), County Route 30 (Gattis School Road), US 79 (Palm Valley Boulevard), FM 1431 (Whitestone Boulevard) and FM 973. In some cases, one of these roads can be a feeder to one CTTS element and a competing route for a different CTTS element.

Key recent and proposed improvements to toll roads and toll-free routes in the region were applied to the networks used in regional transportation planning model used by Stantec in forecasting traffic for the CTTS elements. The latest available plans for proposed toll road projects in the Austin area were obtained from CTRMA and TxDOT. For other roadway projects, Stantec used the Capital Area Metropolitan Planning Organization (CAMPO) 2035 Regional Transportation Plan (adopted May 24, 2010) along with more recent amendments and also reviewed the draft version of the CAMPO 2040 Regional Transportation Plan to obtain the latest information about the implementation and configuration of individual projects. Based on the degree of commitment (feasibility studies, funding ROW status, and program inclusion), judgments were made as to whether or not to include projects in the future highway networks.

Existing Travel Patterns (Chapter 3)

For the 2014 Study traffic counts were recorded at over 200 locations along a series of screenlines and other key locations in the Austin region and on competing and feeder routes. Additional data sources included data collected during prior studies for the CTTS elements, approximately 370 counts from recent CTRMA studies, and data obtained through the TxDOT traffic database. Stantec also obtained transaction data for all toll roads that were in operation in 2013. While there was some overlap in the actual count locations, in total, traffic count data was available for 2,443 highway links for purposes of model calibration including 537 counts that were detailed vehicle classification counts used to quantify truck volumes.

A travel time data collection program was conducted in 2014 for the sections of the primary non-tolled routes that compete with the CTTS system, which include IH-35, the non-tolled section of Loop 1, US 183, FM 973, Gattis School Road and US 290. These travel time data were collected via GPS systems and were obtained for multiple trials in both directions for the peak and off-peak periods. Travel times collected in 2012 for earlier studies were also included for further model validations. These routes include SH 130, SH 45N, SH 21, SH 360, US 79, FM 685, RM 620, Parmer Lane, I-10 and SH 123.

Toll Collection (Chapter 4)

Since January 2013, TxDOT operates the CTTS elements as cashless facilities, using only two methods of toll collection: Electronic Toll Collection (ETC) and Pay by Mail (PBM). Drivers using ETC automatically pay the toll with their TxTag, while drivers without a TxTag have their license plate photographed at the pay points. TxDOT then mails a bill to the registered owner of the vehicle to collect payment.

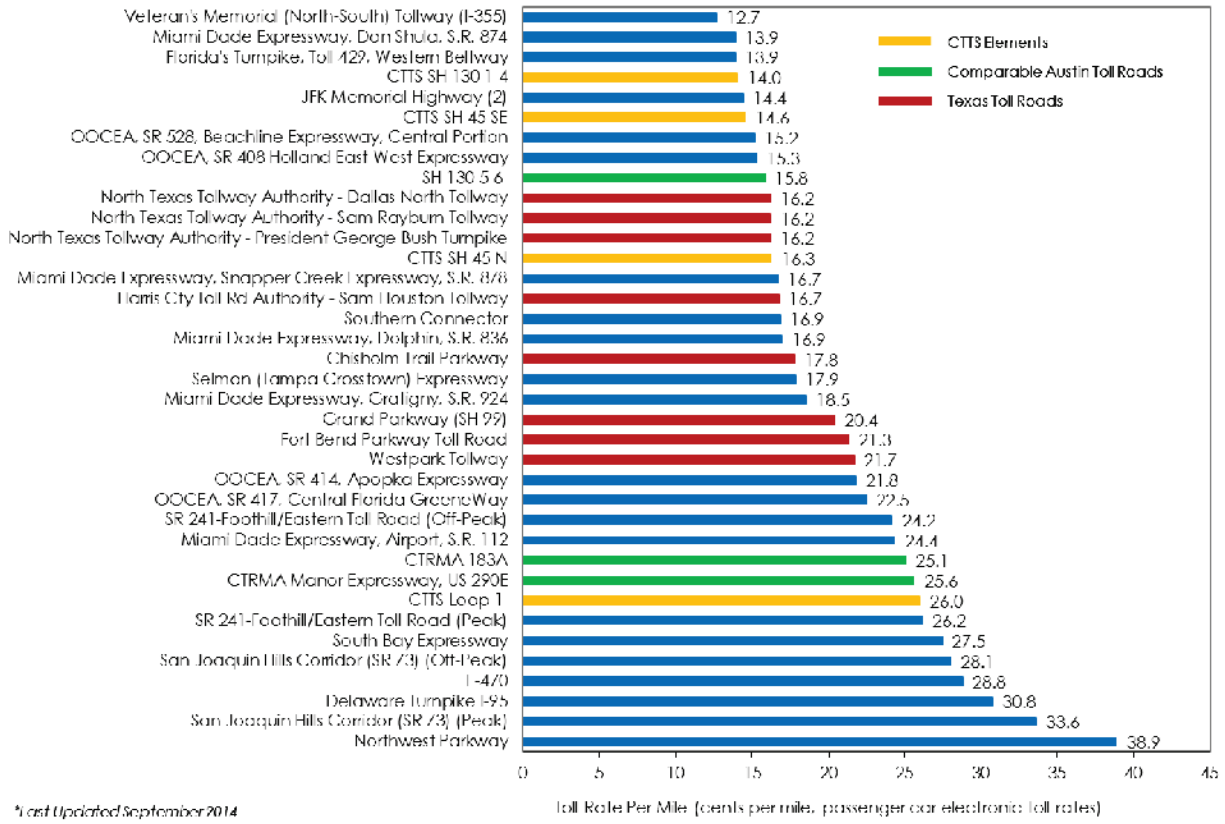
Current passenger ETC toll rates for a full-length trip on each of the CTTS elements is shown in Table ES.1. There is a 33 percent surcharge on PBM transactions. Vehicles with more than two axles pay a higher toll based on the (n - 1) formula whereby the toll is equal to the passenger car toll time the vehicle's number of axles less one. For the SH 130 and SH 45 SE, the maximum toll charge is limited to rate for a four-axle vehicle to encourage truck usage.

Table ES.1 2014 Passenger Car Toll Rates on CTTS Elements

CTTS Element	Full Length Distance (miles)	Full Length Toll	Per Mile Rate
SH 45 N	12.8	$ 2.08	$ 0.16
Loop 1	4	$ 1.04	$ 0.26
SH 130 Segments 1 - 4	49	$ 6.88	$ 0.14
SH 45 SE	7	$ 1.02	$ 0.15

Passenger car ETC toll rates for the CTTS elements are compared to rates for similar toll roads in Figure ES.2.

Figure ES.2 Toll Rates per Mile on CTTS Elements and Comparable Toll Roads



Future toll levels used for the 2014 Study are based on toll policy adopted by the Texas Transportation Commission, whereby tolls are escalated annually on January 1st based on Toll Rate Escalation Percentage, as calculated on each Toll Escalation Determination Date. The Toll Rate Escalation Percentage is the Consumer Price Index – Urban (CPI-U) on October 1st, the Toll Escalation Determination Date of each year, based on the twelve month period ending August 31st of the current year. The policy was first implemented in January 2014, when tolls were increased 1.5 percent. Figure ES.3 shows historical annual CPI-U growth trends and the forecasted trend used for the 2014 Study, while Table ES.2 shows, in detail, the recent and projected annual CPI-U growth rates used for developing future toll rates for the 2014 Study. For the 24-year period, from 1990 to the present, the average annual growth rate is calculated to be 2.5 percent. For the 34-year period from 1980 to the present, the average annual growth rate is greater, at 3.2 percent.

Figure ES.3 Annual Consumer Price Index - Historical and Projected

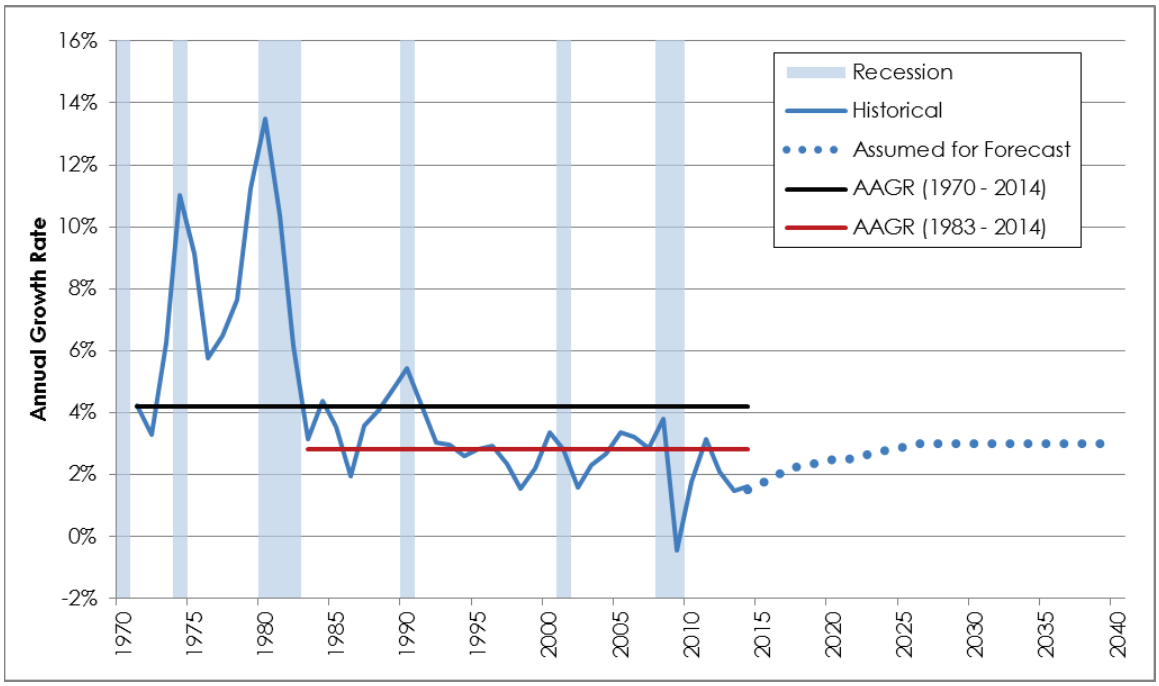


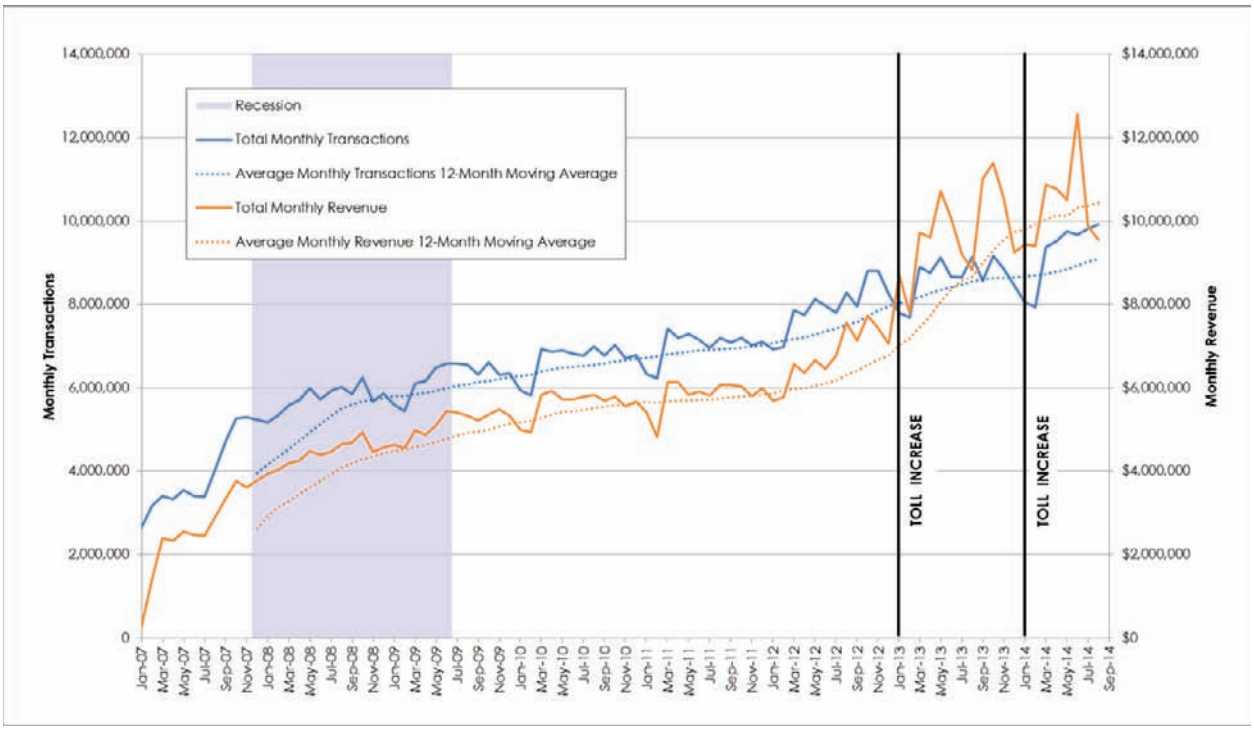
Table ES.2 Annual Toll Escalation – Recent and Projected

Year	Annual Escalation
2014 (Aug 2012 - Aug 2013)	1.5%
2015 (Aug 2013 - Aug 2014)	1.7%
2016	2.0%
2017	2.2%
2018	2.3%
2019	2.4%
2020	2.5%
2021	2.5%
2022	2.6%
2023	2.7%
2024	2.8%
2025	2.9%
2026 - 2040	3.0%
2014 - 2040	2.8%

Historical CTTS Toll Transactions and Revenue (Chapter 5)

Total transactions and revenue across the CTTS facilities have gradually increased since tolling began in 2007. Figure ES.4 shows total transactions and revenue for the CTTS elements, by month and the 12-month moving average, for the period January 2007 through August 2014.

Figure ES.4 CTTS Historical Transactions and Revenue



Total annual transactions and revenue for the CTTS elements, by fiscal year, are shown Table ES.3 and Table ES.4, respectively.

Table ES.3 Annual Fiscal Year Transactions by CTTS Element, FY 2008 – 2014

Fiscal Year	SH 45 N	% Change	Loop 1	% Change	SH 130	% Change	SH 45 SE [1]	% Change	Total	% Change
2008	29,458,300		17,194,700		19,287,000		-	-	**65,940,000**	
2009	31,269,500	6.1%	17,381,000	1.1%	24,457,300	26.8%	-	-	**73,107,800**	**10.9%**
2010	32,166,700	2.9%	18,064,100	3.9%	28,298,300	15.7%	-	-	**78,529,100**	**7.4%**
2011	33,543,300	4.3%	18,883,100	4.5%	30,583,200	8.1%	-	-	**83,009,600**	**5.7%**
2012	35,790,100	6.7%	19,889,700	5.3%	34,352,100	12.3%	-	-	**90,031,900**	**8.5%**
2013	37,126,440	3.7%	19,715,300	-0.9%	41,365,500	20.4%	4,300,000	-	**102,507,240**	**13.9%**
2014	38,255,800	3.0%	19,839,100	0.6%	46,210,700	11.7%	4,743,000	10.3%	**109,048,600**	**6.4%**

Notes: (1) SH 45 SE opened to traffic in May 2009 but did not become part of the CTTS until September 2012 (FY 2013).

Table ES.4 Annual Toll Revenue by CTTS Element, FY 2008 – 2014

Fiscal Year	SH 45 N	% Change	Loop 1	% Change	SH 130	% Change	SH 45 SE [1]	% Change	Total	% Change
2008 [2]	-	-	-	-	-	-	-	-	**$48,905,800**	
2009 [2]	-	-	-	-	-	-	-	-	**$58,913,900**	**20.5%**
2010	$19,798,600	-	$11,936,900	-	$34,408,300	-	-	-	**$66,143,800**	**12.3%**
2011	$20,268,200	2.4%	$12,316,600	3.2%	$36,237,000	5.3%	-	-	**$68,821,800**	**4.0%**
2012	$21,944,600	8.3%	$13,015,100	5.7%	$40,735,000	12.4%	-	-	**$75,694,700**	**10.0%**
2013	$29,075,300	32.5%	$16,142,700	24.0%	$54,492,200	33.8%	$4,274,300	-	**$103,984,500**	**37.4%**
2014	$34,830,800	19.8%	$18,559,800	15.0%	$67,092,300	23.1%	$4,679,700	9.5%	**$125,162,600**	**20.4%**

Notes: (1) SH 45 SE opened to traffic in May 2009 but did not become part of the CTTS until September 2012 (FY 2013).
(2) Revenue for PBM patrons was not allocated by each toll facility until September 2009 (FY 2010); therefore, only total CTTS revenue is shown for FY 2008 and FY 2009.

Socioeconomic Data (Chapter 6)

This chapter of the report discusses socioeconomic indicators that are used to identify growth in the region that encompasses the Austin area toll roads and are included in the regional transportation model. The study area included in the regional transportation model used for the CTRMA traffic forecast includes five counties in the CAMPO model area (Travis, Williamson, Hayes, Bastrop and Caldwell) and five counties in the Alamo Area Metropolitan Planning Organization (AAMPO) model area (Bexar, Guadalupe, Comal, Wilson and Kendall).

Starting with the estimated population for 2013, growth is anticipated to taper down from the annual average rate of 2.6 percent between 2010 and 2013 to 2.0 percent between 2013 and 2015. After that, it continues to slow down, reaching an annual growth rate of 1.5 percent between 2030 and 2040. The forecast of future population and average annual growth rate for the ten counties are presented in Table ES.5.

Table ES.5 Population Forecast for the Study Area, 2013 – 2040

Current & Projected Population						
REGION	**County**	**2013**	**2015**	**2020**	**2030**	**2040**
CAMPO	Travis	1,120,892	1,170,298	1,273,336	1,474,365	1,669,612
	Williamson	465,263	492,382	566,298	739,143	952,122
	Hays	175,837	188,375	220,507	288,990	364,369
	Bastrop	75,825	77,898	85,583	103,220	124,358
	Caldwell	39,226	39,969	42,471	48,235	55,111
	Total	1,877,043	1,968,922	2,188,195	2,653,953	3,165,572
AAMPO	Bexar	1,775,596	1,832,203	1,957,968	2,196,665	2,471,362
	Comal	117,419	123,502	138,646	168,731	197,279
	Guadalupe	141,300	147,921	169,057	214,674	265,018
	Kendall	37,246	39,827	45,117	55,789	66,740
	Wilson	44,869	46,215	50,898	60,663	71,049
	Total	2,116,430	2,189,668	2,361,686	2,696,522	3,071,448
Study Area Total		**3,993,473**	**4,158,590**	**4,549,881**	**5,350,475**	**6,237,020**
Average Annual Growth Rates						
REGION	**County**		**2013 - 2015**	**2015 - 2020**	**2020 - 2030**	**2030 - 2040**
CAMPO	Travis		2.2%	1.7%	1.5%	1.3%
	Williamson		2.9%	2.8%	2.7%	2.6%
	Hays		3.5%	3.2%	2.7%	2.3%
	Bastrop		1.4%	1.9%	1.9%	1.9%
	Caldwell		0.9%	1.2%	1.3%	1.3%
	Total		2.4%	2.1%	1.9%	1.8%
AAMPO	Bexar		1.6%	1.3%	1.2%	1.2%
	Comal		2.6%	2.3%	2.0%	1.6%
	Guadalupe		2.3%	2.7%	2.4%	2.1%
	Kendall		3.4%	2.5%	2.1%	1.8%
	Wilson		1.5%	1.9%	1.8%	1.6%
	Total		1.7%	1.5%	1.3%	1.3%
Study Area Total			**2.0%**	**1.8%**	**1.6%**	**1.5%**

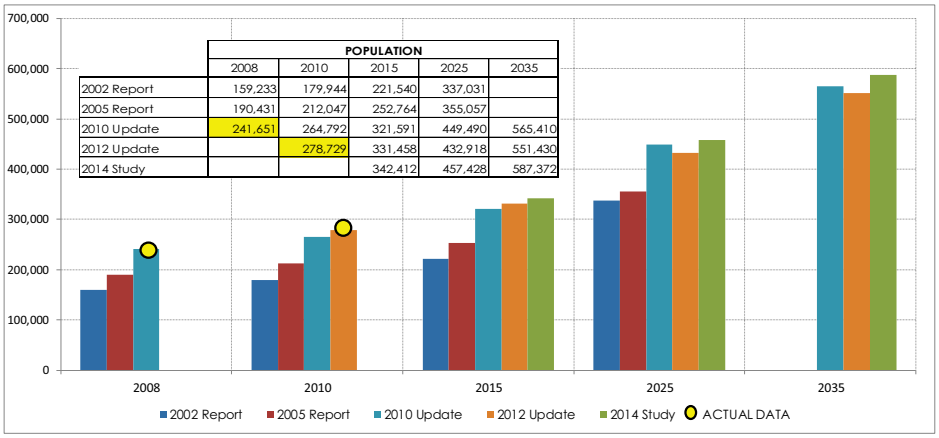
Employment growth is anticipated to taper down from the rate of 3.1 percent in 2012 and 3.7 percent in 2013 to 2.0 percent between 2013 and 2015. After that, it continues to slow down, reaching an annual growth rate of 1.5 percent between 2030 and 2040. The forecast of future employment for the ten counties is presented in Table ES.6.

Table ES.6 Employment Forecast for the Study Area, 2013 – 2040

Current & Projected Employment						
REGION	**County**	**2013**	**2015**	**2020**	**2030**	**2040**
CAMPO	Travis	635,250	660,559	717,497	839,247	962,917
	Williamson	139,191	147,884	168,721	211,554	254,472
	Hays	54,565	58,102	66,937	86,092	108,533
	Bastrop	15,058	15,797	18,221	24,358	33,126
	Caldwell	7,966	8,373	9,511	12,300	15,958
	Total	852,030	890,715	980,887	1,173,551	1,375,006
AAMPO	Bexar	771,162	796,244	856,370	982,096	1,116,034
	Comal	40,379	43,258	50,662	67,780	88,534
	Guadalupe	31,080	32,728	36,668	45,225	54,802
	Kendall	12,162	12,842	14,517	18,255	22,642
	Wilson	6,930	7,214	8,042	9,592	10,972
	Total	861,713	892,286	966,259	1,122,948	1,292,984
Study Area Total		**1,713,743**	**1,783,001**	**1,947,146**	**2,296,499**	**2,667,990**
Average Annual Growth Rates						
REGION	**County**		**2013 - 2015**	**2015 - 2020**	**2020 - 2030**	**2030 - 2040**
CAMPO	Travis		2.0%	1.7%	1.6%	1.4%
	Williamson		3.1%	2.7%	2.3%	1.9%
	Hays		3.2%	2.9%	2.5%	2.3%
	Bastrop		2.4%	2.9%	2.9%	3.1%
	Caldwell		2.5%	2.6%	2.6%	2.6%
	Total		2.2%	1.9%	1.8%	1.6%
AAMPO	Bexar		1.6%	1.5%	1.4%	1.3%
	Comal		3.5%	3.2%	3.0%	2.7%
	Guadalupe		2.6%	2.3%	2.1%	1.9%
	Kendall		2.8%	2.5%	2.3%	2.2%
	Wilson		2.0%	2.2%	1.8%	1.4%
	Total		1.8%	1.6%	1.5%	1.4%
Study Area Total			**2.0%**	**1.8%**	**1.7%**	**1.5%**

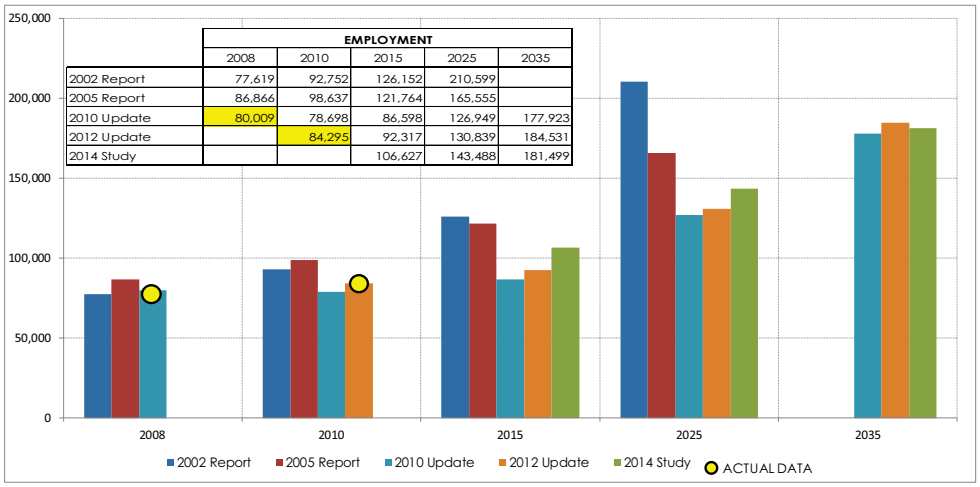
An analysis of the forecasting accuracy of estimates used for Previous Reports for selected areas was prepared by comparing the forecasts to actual results, when available. An example of this analysis is shown in Figure ES.5 for the population forecast prepared for the rapidly developing 'greenfield' corridor served by SH 130 Segments 1-4. The estimated population developed for each of the Previous Reports, by horizon year, along with the final observed values for 2008 (completion year of the CTTS) and 2010, are shown in the table in Figure ES.5. The forecasts for 2008 and 2010 were consistently lower than the actual growth within this corridor and the estimated population for 2008 and 2010 were increased in each subsequent study as the actual growth exceeded prior forecasts. Ultimately, the actual population values for 2008 and 2010 (241,651 and 278,729, shown as yellow-shaded cells in the table), exceeded the earlier forecasts. This demonstrates the reasonableness of these forecasts and the conservativeness of methodology used to generate the values. The results for employment are similar, as shown in Figure ES.6.

Figure ES.5 Comparison of SH 130 Corridor Population Forecasts



POPULATION	2008	2010	2015	2025	2035
2002 Report	159,233	179,944	221,540	337,031	
2005 Report	190,431	212,047	252,764	355,057	
2010 Update	241,651	264,792	321,591	449,490	565,410
2012 Update		278,729	331,458	432,918	551,430
2014 Study			342,412	457,428	587,372

Figure ES.6 Comparison of SH 130 Corridor Employment Forecasts



EMPLOYMENT	2008	2010	2015	2025	2035
2002 Report	77,619	92,752	126,152	210,599	
2005 Report	86,866	98,637	121,764	165,555	
2010 Update	80,009	78,698	86,598	126,949	177,923
2012 Update		84,295	92,317	130,839	184,531
2014 Study			106,627	143,488	181,499

Model Validation and Refinement (Chapter 7)

In preparing estimates of traffic and toll revenue for the CTTS elements, it was necessary to update the travel demand modeling process to reflect growth in the Austin region and the expansion of the toll road system. The model development effort included combining the CAMPO and AAMPO models to include the areas encompassed by both the Austin and San Antonio regions.

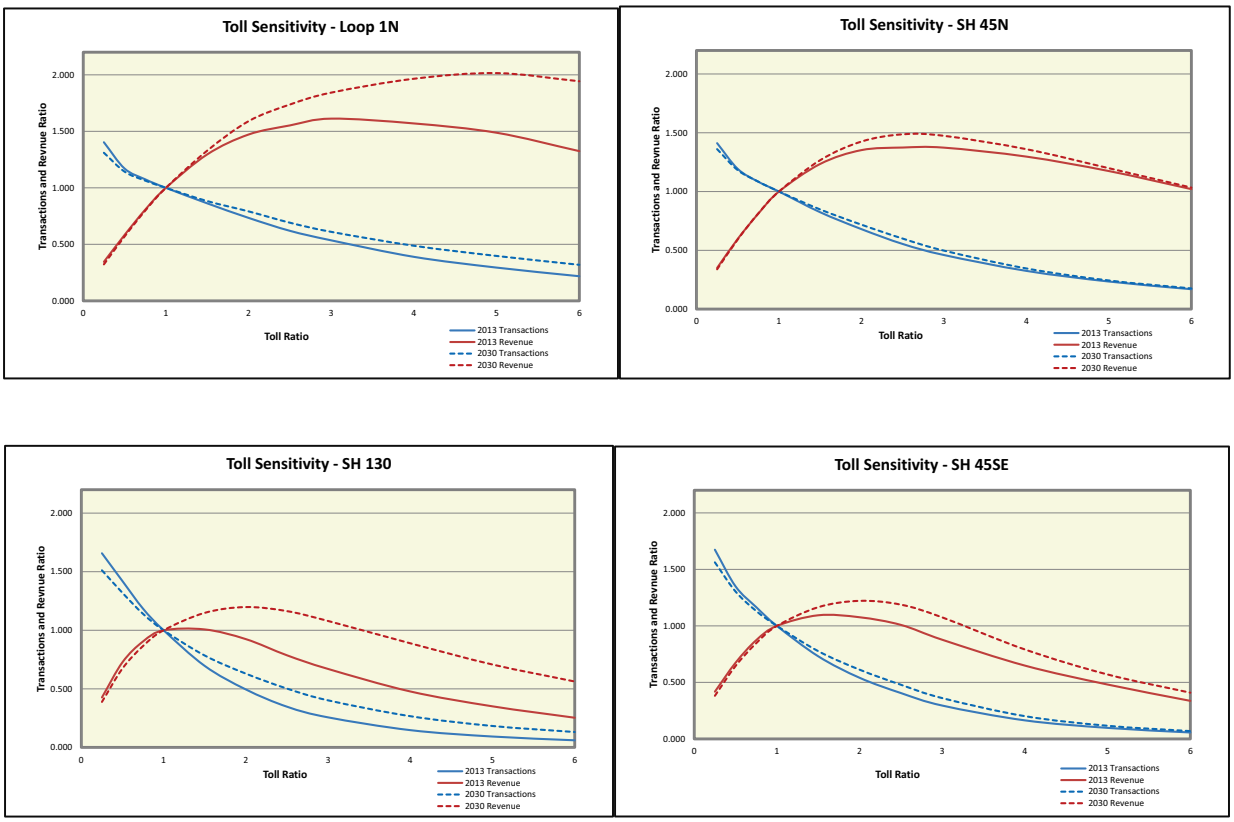
The new model utilized the existing toll diversion process as the basis for estimating tolled traffic. For the 2013 model calibration year, the temporary discounts for trucks using SH 130 and SH 45 SE were included since the discounts were applicable for 11 months of that year. Several refinements were incorporated into the toll diversion modeling to account for new tolling technologies, such as the PBM video tolling program, cashless payment, and dynamic pricing for the managed lane facilities that are planned for the Austin region. In addition to these refinements, the new toll diversion model provides for variation by household income and subregion in setting parameters, such as transponder usage. Similarly, parameters reflecting the

tolling policies of each agency (TxDOT, CTRMA, and the SH 130 Concession) and the tolling plans for trucks are now established at each tolling pay point. This enhancement permits variation in the tolling plans for each agency as well the transition to newer toll collection technologies. Finally, the introduction of a generalized cost function, instead of time-based function, for the path-building and highway assignment processes allows the model to react more realistically to the impact of toll changes.

Based on data collected from field studies and toll road records and model output, the model was calibrated to ensure that the modeling process adequately replicates both the observed traffic volumes and the observed speeds by time of day for each of the project corridors. The calibration was also structured to replicate the observed traffic and transactions by payment method to the extent feasible for each toll road by pay point.

In order to develop toll elasticity curves for the CTTS Project, the transportation model was run using a range of toll values above and below the existing toll rates for the 2013 calibration year as well with the future toll rates and networks for the year 2030. These elasticity estimates for each year are a function of both the overall travel demand and network conditions, in terms of competing roadways and congestion that exist for both years. For this analysis, a number of alternative toll rates were expressed as multiples of the base tolls. The multiples range from 0.25 to 6.0 and reveal how traffic and revenues change at different toll levels. The results were plotted for the four facilities as shown in Figure ES. 7. The transactions and revenues for 2013 are shown in solid lines while the dashed lines represent the same values in 2030 horizon year.

Figure ES. 7 Toll Sensitivity



For the future year 2030 conditions, the elasticity values decline indicating that the roadways become less elastic, primarily due to increasing congestion on the competing roadways as a result of on-going development and growth in traffic. The elasticity for SH 130 is reduced significantly as the adjacent arterial roadways become congested with traffic from development in what is currently a largely rural corridor. Elasticity for Loop 1, SH 45 North, and SH 45 SE will also decline. These reductions in elasticity indicate that under the future conditions, there will be more flexibility to increase tolls beyond the planned toll escalation assumed in the forecasts, particularly for SH 130. As shown in these figures, the optimum revenue points for each roadway increase most notably for SH 130 and Loop 1.

Traffic & Revenue Forecasts (Chapter 8)

Stantec developed traffic and toll revenue forecasts for each of the CTTS elements based on the travel demand model which incorporated future year network assumptions and revised socioeconomic forecasts. The travel demand modeling process, including the application of the individual MPO models and the toll diversion model, were applied to selected horizon years (2015, 2020, 2030, and 2040) to create annual traffic estimates from 2015 to 2042. Intermediate year estimates were developed via interpolation techniques and the years beyond 2040 were estimated via extrapolation.

Stantec reviewed the model-based forecasts, summarized the estimated traffic for each of the corridor screenlines and reviewed the detailed schematic diagrams for each horizon year. In order to prepare the final transactions and revenue streams by vehicle type and payment type, the model-based forecasts were reviewed and adjusted as necessary to account for any unacceptable model variation. Transaction and revenue streams prepared for each CTTS roadway include the key metrics related to payment type and vehicle type, along with both average weekday and annual estimates for total transactions and paying transactions using collection statistics provided by TxDOT.

The estimates of traffic and toll revenue presented in this report have been prepared by Stantec based on certain assumptions regarding tolling and traffic characteristics for each CTTS element based on observed traffic conditions and additional assumptions regarding future toll road and local and national conditions. Assumptions for future years are based on discussions with TxDOT and local government agencies and Stantec judgment. The Assumptions for the base case for 2015 are summarized in Table ES.7.

Table ES.7 Summary of Tolling and Traffic Characteristic Assumptions: Base Case – 2015

Assumptions Related to	Element			
	SH 45 N	Loop 1	SH 130	SH 45 SE
Vehicle Type Distribution				
Autos	96.2%	96.2%	91.4%	89.1%
Trucks	3.8%	3.8%	8.6%	10.9%
Payment Type Distribution - Passenger Cars				
PBM	21.3%	22.4%	33.5%	35.4%
ETC	78.7%	77.6%	66.5%	64.6%
Payment Type Distribution - Trucks				
PBM	21.2%	24.5%	35.5%	40.6%
ETC	78.8%	75.5%	64.5%	59.4%
Toll Ratios				
Truck/Auto Ratio	2.75	2.75	2.67	2.72
PBM/ETC Toll Rate	1.33	1.33	1.33	1.33
Collection Rates				
PBM	47.7%	47.7%	47.7%	47.7%
ETC	99.7%	99.7%	99.7%	99.7%
Full Length Trip				
Distance	12.8	4.0	49.0	7.0
Rate per Mile	$0.17	$0.27	$0.14	$0.15
Toll Cost (ETC)	$2.12	$1.06	$7.00	$1.04
Annualization Factor	320	320	330	330

The forecasts prepared for the 2012 Update and the 2014 Study are shown in Table ES.8. Average weekday transactions for FY 2013 and FY 2014 were 8 percent higher for both years, than forecasted in the 2012 Update. In the 2014 Study, the system-wide value of paying transactions is approximately 16 percent higher in the early years of the forecast due primarily to the higher level of recent growth in both SH 130 and SH 45 SE. The difference in paying transactions does decrease to about 12 percent by FY 2030 and generally is about 9 to 10 percent higher thereafter to 2042. In contrast, revenue is approximately 11 percent higher in FY 2015 and then gradually declines to equal the values from the 2012 Update by FY 2025. This gradual decline towards the prior forecast values is due to several changes in the forecasting assumptions from the conditions used in the prior forecasts.

These changes include:

- Lower toll escalation rates in the early forecast years;
- Lower share of ETC transactions;
- Lower level of collected PBM transactions; and
- Reduced share of SH 130 truck traffic.

Table ES.8 Comparison of 2012 and 2014 CTTS Transaction and Toll Revenue Forecasts

Fiscal Year	Average Weekday Paying Transactions			Annual Toll Revenue (in $000s)		
	2012 Update	2014 Study	% Difference	2012 Update	2014 Study	% Difference
2008	*186,366*	*186,366*	0%	***$48,906***	***$48,906***	0%
2009	*204,433*	*204,433*	0%	***$58,914***	***$58,914***	0%
2010	*217,953*	*217,953*	0%	***$66,144***	***$66,144***	0%
2011	*228,905*	*228,905*	0%	***$68,822***	***$68,822***	0%
2012	247,917	*246,593*	-1%	$74,229	***$75,695***	2%
2013	247,592	*266,619*	8%	$96,685	***$103,985***	8%
2014	258,034	*278,516*	8%	$115,359	***$125,163***	8%
2015	276,119	320,983	16%	$127,138	$140,665	11%
2016	290,229	339,503	17%	$138,980	$152,900	10%
2017	303,647	356,732	17%	$151,984	$165,020	9%
2018	317,267	373,638	18%	$165,261	$177,330	7%
2019	331,096	389,942	18%	$178,827	$189,621	6%
2020	345,142	405,435	17%	$192,703	$201,669	5%
2021	359,413	419,040	17%	$206,909	$213,939	3%
2022	373,917	431,900	16%	$221,468	$226,707	2%
2023	388,663	444,839	14%	$236,403	$240,119	2%
2024	403,659	457,859	13%	$251,740	$254,159	1%
2025	418,917	470,965	12%	$267,506	$268,800	0%
2026	431,392	484,160	12%	$285,323	$284,637	0%
2027	443,670	497,445	12%	$303,395	$301,477	-1%
2028	456,124	510,823	12%	$321,892	$319,104	-1%
2029	468,761	524,295	12%	$340,839	$337,549	-1%
2030	481,585	537,863	12%	$360,263	$356,850	-1%
2031	494,601	549,931	11%	$380,193	$376,822	-1%
2032	507,815	561,271	11%	$400,659	$397,611	-1%
2033	521,233	572,670	10%	$421,693	$419,370	-1%
2034	534,860	584,130	9%	$443,329	$442,139	0%
2035	548,701	595,651	9%	$465,605	$465,962	0%
2036	558,849	607,234	9%	$485,554	$490,885	1%
2037	567,769	618,881	9%	$504,918	$516,956	2%
2038	576,720	630,592	9%	$524,617	$544,224	4%
2039	585,702	642,369	10%	$544,666	$572,739	5%
2040	594,716	654,212	10%	$565,077	$602,557	7%
2041	603,761	665,668	10%	$585,867	$632,448	8%
2042	612,837	676,943	10%	$607,049	$662,988	9%

Notes: 1) SH 45 SE opened in May 2009 but did not become part of the CTTS until September 2012; therefore, it is not included in CTTS totals until FY 2013.
2) Revenue includes PBM surcharge (33 percent of ETC toll).
3) ***Actual Annual Revenue***

Table ES.9 shows the estimated toll plus Customer Service Center (CSC) revenue prepared for the 2014 Study and how they compare to the 2012 Update. The latest fee information for FY 2014 indicates that CSC revenue was approximately $0.065 per ETC transaction and $0.305 per PBM transaction. The CSC forecasts held these values constant during the forecast period, as TxDOT has not yet established a policy to escalate these fees over time.

Table ES.9 Estimated Toll plus Customer Service Center Revenue

Fiscal Year	Toll Revenue		CSC Revenue		Total Revenue			Annual Revenue Growth	
	2012 Update	2014 Study	2012 Update	2014 Study	2012 Update	2014 Study	% Diff.	2012 Update	2014 Study
2008	***$48,906***	***$48,906***			***$48,906***	***$48,906***	***0.0%***		
2009	***$58,914***	***$58,914***	***$5,320***	***$5,320***	***$64,234***	***$64,234***	***0.0%***	***31.3%***	***31.3%***
2010	***$66,144***	***$66,144***	***$7,172***	***$7,172***	***$73,316***	***$73,316***	***0.0%***	***14.1%***	***14.1%***
2011	***$68,822***	***$68,822***	***$6,562***	***$6,562***	***$75,384***	***$75,384***	***0.0%***	***2.8%***	***2.8%***
2012	$74,229	***$75,695***	$10,800	***$10,800***	$85,029	***$86,495***	1.7%	12.8%	***14.7%***
2013	$96,685	***$103,985***	$10,429	***$13,290***	$107,114	***$117,275***	9.5%	26.0%	***35.6%***
2014	$115,359	***$125,163***	$10,869	***$12,710***	$126,227	***$137,873***	9.2%	17.8%	***17.6%***
2015	$127,138	$140,665	$11,631	$15,961	$138,768	$156,626	12.9%	9.9%	13.6%
2016	$138,980	$152,900	$12,225	$16,707	$151,205	$169,607	12.2%	9.0%	8.3%
2017	$151,984	$165,020	$12,790	$17,386	$164,774	$182,406	10.7%	9.0%	7.5%
2018	$165,261	$177,330	$13,364	$18,028	$178,624	$195,358	9.4%	8.4%	7.1%
2019	$178,827	$189,621	$13,946	$18,619	$192,773	$208,240	8.0%	7.9%	6.6%
2020	$192,703	$201,669	$14,538	$19,132	$207,241	$220,801	6.5%	7.5%	6.0%
2021	$206,909	$213,939	$15,139	$19,734	$222,048	$233,673	5.2%	7.1%	5.8%
2022	$221,468	$226,707	$15,750	$20,397	$237,218	$247,104	4.2%	6.8%	5.7%
2023	$236,403	$240,119	$16,371	$21,063	$252,774	$261,182	3.3%	6.6%	5.7%
2024	$251,740	$254,159	$17,003	$21,733	$268,743	$275,892	2.7%	6.3%	5.6%
2025	$267,506	$268,800	$17,645	$22,406	$285,151	$291,206	2.1%	6.1%	5.6%
2026	$285,323	$284,637	$18,171	$23,083	$303,494	$307,720	1.4%	6.4%	5.7%
2027	$303,395	$301,477	$18,688	$23,763	$322,083	$325,240	1.0%	6.1%	5.7%
2028	$321,892	$319,104	$19,213	$24,446	$341,105	$343,550	0.7%	5.9%	5.6%
2029	$340,839	$337,549	$19,745	$25,134	$360,584	$362,683	0.6%	5.7%	5.6%
2030	$360,263	$356,850	$20,285	$25,825	$380,548	$382,675	0.6%	5.5%	5.5%
2031	$380,193	$376,822	$20,833	$26,418	$401,026	$403,240	0.6%	5.4%	5.4%
2032	$400,659	$397,611	$21,390	$26,962	$422,048	$424,573	0.6%	5.2%	5.3%
2033	$421,693	$419,370	$21,955	$27,508	$443,648	$446,878	0.7%	5.1%	5.3%
2034	$443,329	$442,139	$22,529	$28,056	$465,858	$470,195	0.9%	5.0%	5.2%
2035	$465,605	$465,962	$23,112	$28,606	$488,717	$494,568	1.2%	4.9%	5.2%
2036	$485,554	$490,885	$23,540	$29,159	$509,093	$520,044	2.2%	4.2%	5.2%
2037	$504,918	$516,956	$23,915	$29,714	$528,833	$546,670	3.4%	3.9%	5.1%
2038	$524,617	$544,224	$24,292	$30,271	$548,909	$574,495	4.7%	3.8%	5.1%
2039	$544,666	$572,739	$24,671	$30,830	$569,336	$603,569	6.0%	3.7%	5.1%
2040	$565,077	$602,557	$25,050	$31,391	$590,128	$633,948	7.4%	3.7%	5.0%
2041	$585,867	$632,448	$25,431	$31,946	$611,298	$664,394	8.7%	3.6%	4.8%
2042	$607,049	$662,988	$25,814	$32,497	$632,862	$695,485	9.9%	3.5%	4.7%

Notes: 1) SH 45 SE opened in May 2009 but did not become part of the CTTS until September 2012; therefore, it is not included in CTTS totals until FY 2013.
2) Historical Total Revenues differ from Audited Financial Reports due to accrued toll revenue receivables.
3) ***Actual Annual Revenue***

Sensitivities (Chapter 9)

In addition to the assumptions used for the base case, a broad range of alternative assumptions could be used in preparing the traffic and revenue for the CTTS elements. For the 2014 Study, sensitivity trials were run to assess the impacts to the forecasts based for three conditions:

- Reduced CPI growth: 0.25 percent lower than the base case;
- Reduced trip growth: 25 percent less than the base case; and
- Reduced Value of Time: 10 percent less than the base case.

Average weekday toll revenues for each sensitivity trial and the corresponding percent change in toll revenue when compared to the base case are provided in Table ES.10.

Table ES.10 Average Weekday Revenue Comparison for the Sensitivity Trials

Model Year	AVERAGE WEEKDAY TOLL REVENUE						
	Base Revenue	Sensitivity 1 (Reduced CPI)		Sensitivity 2 (Reduced Trip Growth)		Sensitivity 3 (Reduced VOT)	
		Revenue	% Difference	Revenue	% Difference	Revenue	% Difference
2020	$496,904	$487,786	-1.8%	$463,971	-6.6%	$476,566	-4.1%
2030	$872,656	$845,349	-3.1%	$775,700	-11.1%	$848,962	-2.7%
2040	$1,449,385	$1,393,799	-3.8%	$1,232,748	-14.9%	$1,419,541	-2.1%

1.0 INTRODUCTION

Acting as Traffic Consultant to the Texas Transportation Commission under the Master Indenture, Stantec Consulting Services Inc. (Stantec) has prepared this Investment Grade Study. The study includes projections of traffic and toll revenues through 2042 for the Central Texas Turnpike System (CTTS) in the Austin area. The CTTS is owned by the Texas Transportation Commission, the governing body of the Texas Department of Transportation (TxDOT), operated by TxDOT and is comprised of four tolled elements - SH 45 N, Loop 1, SH 130 Segments 1–4 (SH 130), and SH 45 SE. This study will support the bond refinancing of the CTTS.

1.1 CENTRAL TEXAS TURNPIKE SYSTEM

The CTTS is a 72.8-mile turnpike system in the Austin area with four existing elements:

- SH 45 N extends from US 183 east to SH 130 (12.8 miles);
- Loop 1 (also called Mopac) extends from SH 45 N south to Parmer Lane (4 miles);
- SH 130 extends from IH-35 in Georgetown south to US 183/SH 45 SE south of the Austin-Bergstrom International Airport (49 miles); and
- SH 45 SE extends from US 183/SH 130 west to IH-35 (7 miles).

SH 45 N, Loop 1, and SH 130 opened in segments starting in 2006. SH 45 SE opened in May 2009 and became part of the CTTS in September 2012. The CTTS serves both commuter and through traffic in the Austin area. The CTTS elements in the Austin area are shown in Figure 1.1.

On each of the CTTS elements, toll collection is by Electronic Toll Collection (ETC) and Pay by Mail (PBM), whereby the patron is billed after the trip, based on the identification of the vehicle's license plate. Cash collection was an option on SH 45 N, Loop 1 and SH 130 until being discontinued on January 1, 2013 as discussed in Chapter 2 of this report.

Figure 1.1 CTTS Toll Roads and Study Area

1.2 STUDY PURPOSE, METHODOLOGY, AND HISTORY

The purpose of this study is to provide an update to the 35-year traffic and revenue forecasts prepared in 2012 in connection with bond financing of the CTTS. The projections presented in this report have taken into account: historical traffic and toll revenue performance; toll structure; economic, population, employment and other demographic forecasts in the Austin/San Antonio metropolitan areas; traffic capacities of the roadway network in the region; and current and programmed construction activities on the regional toll roads CTTS, Central Texas Regional Mobility Authority (CTRMA) and SH 130 Concession Company LLC (the SH 130 Concession), and the non-toll highway network in the region

The transportation model used for the forecasting process was developed by Stantec for the CTTS based on the model developed by the Capital Area Metropolitan Planning Organization (CAMPO) and supplemented by an extension to the south to include the San Antonio region. The modeled area within the San Antonio region was obtained from the regional model prepared by the San Antonio – Bexar County Metropolitan Planning Organization, now the Alamo Area Metropolitan Planning Organization (AAMPO).

Previous studies for the CTTS prepared by Stantec staff date back to 2002 for the original financing of the system. At that time there were no toll roads in Austin. After CTTS opened to traffic and was expanded, updated studies were prepared in 2005, 2008, 2010 and, most recently, in 2012. These studies, including the current study, and the terms used to reference them in this report are shown in Table 1.1.

Table 1.1 CTTS Traffic & Revenue Studies

Date	Report Title	Reference Used Herein *
July 22, 2002	Central Texas Turnpike System 2002 Project Traffic and Revenue	2002 Report
December 8, 2005	Central Texas Turnpike System 2002 Project Traffic and Revenue Forecast, 2005 Update	2005 Report
February 11, 2009	Central Turnpike System 2008 Project Review	2008 Review
December 20, 2010	Central Texas Turnpike System 2010 Project Traffic and Revenue	2010 Update
September 20, 2012	Central Texas Turnpike System 2012 Project Traffic and Revenue	2012 Update
November 1, 2014	Central Texas Turnpike System 2014 Traffic and Revenue Study	2014 Study

Note: * The 2002 Report, 2005 Report, 2008 Review, 2010 Update and 2012 Update are collectively refferred to as " the Previous Reports".

1.3 ORGANIZATION OF THE REPORT

The remainder of this report is organized in the following chapters:

Chapter 2 – Regional Transportation Network. This chapter describes the CTTS, other toll roads and the non-toll highway system in the Austin area and proposed key network improvements.

Chapter 3 – Existing Travel Patterns. This chapter presents a summary of traffic counts, travel time data and other information used in developing the forecasts and discusses travel patterns in the area.

Chapter 4 – Toll Collection. This chapter presents the methods of toll collection and toll rates on the CTTS system and future toll policy.

Chapter 5 – Historical CTTS Toll Transactions and Revenue. This chapter presents the history of toll road traffic performance in terms of number and type of transactions, payment type and daily and seasonal traffic activity. This chapter also presents historical toll revenues for the CTTS elements.

Chapter 6 – Socioeconomic Review. This chapter describes historical trends as well as existing and forecasted socioeconomic conditions, and the assumptions used to assess future development in the CTTS study area.

Chapter 7 – Model Validation and Refinement. This chapter explains the methodology used to produce travel demand forecasts for the CTTS study area, based upon Stantec's integrated model developed from the CAMPO and AAMPO models. The toll diversion model developed by Stantec staff and the results of the model validation are also described.

Chapter 8 – Traffic and Revenue Forecasts. This chapter presents updates to the original 35-year forecasts of traffic and revenue for each of the CTTS elements; presents estimates of customer service center revenue; and summarizes the Assumptions and Conditions used in preparing the forecasts. Also included is an allocation process for preparing monthly forecasts of transactions and toll revenue.

Chapter 9 – Sensitivities. This chapter shows the changes in the traffic and revenue forecast using different underlying parameters, such as value of time or roadway development timing.

1.4 CONSULTANT TEAM

Stantec, founded in 1954, provides professional consulting services in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics for infrastructure and facilities projects, including studies within the Austin area over the past 15 years. Stantec supports public and private sector clients in a diverse range of markets, at every stage, from initial concept and financial feasibility to project completion and beyond. Stantec services are offered through approximately 15,000 employees operating out of more than 230 locations in North America. Stantec trades on the New York Stock Exchange and on the Toronto Stock Exchange under the symbol STN.

Stantec has prepared traffic and revenue financing studies that have been the basis for the sale of more than $38 billion in revenue bonds. Drawing upon a depth in transportation planning and over 30 years of experience in the toll facility industry, Stantec staff advises clients on establishing screening criteria for potential toll facility corridors, completing traffic and revenue analyses at the investment-grade level, developing financial plans and appropriate toll structures, determining the extent to which a proposed toll facility could provide financing for itself and/or other highway projects, maximizing revenue potential, planning and designing for the future, and solving operational problems.

Stantec led the team for the Traffic and Revenue Study and was responsible for project management, coordination, model development and forecasting traffic and revenues for the CTTS. Stantec staff prepared the current report as well as all prior studies and updates.

Three firms assisted in the preparation of this study. These firms were involved in previous traffic and revenue studies for CTTS. They are:

- Michael S. Bomba., Ph.D., (Dr. Bomba) provided the socioeconomic review and employment and population projections used in the traffic model. Income projections for the future year were also provided.

- GRAM Traffic Counting, Inc. (GRAM) provided traffic counts for non-toll locations within the study area.

- Alliance Transportation Group (ATG) conducted travel time surveys in the study area and provided local engineering support in identifying regional highway network improvements.

2.0 REGIONAL TRANSPORTATION NETWORK

The regional transportation network in the Austin area consists of tolled and non-tolled roads. Toll roads, in addition to the toll roads operated by CTTS, include 183A and Manor Expressway owned and operated by CTRMA and SH 130 Segments 5 & 6 financed, constructed, and operated by SH 130 Concession Company, LLC (the SH 130 Concession), a private concessionaire, pursuant to a 52 year concession agreement. The network is shown in Figure 1.1. This chapter includes a description of the existing network and the proposed key network improvements.

2.1 CTTS

The CTTS is a 72.8-mile toll road system in the Austin metropolitan area comprised of four elements: SH 45N, Loop 1, SH 130 (Segments 1 – 4) and SH 45SE. SH 130 opened in phases between 2006 and 2008; Loop 1 and SH 45N East, the portion east of Loop 1, opened in 2006 and SH 45N West, the portion west of Loop 1, opened in 2007. SH 45SE opened in May 2009 and became part of the CTTS in September 2012. Since the CTTS elements were the first toll roads in the Austin area, the roads opened with reduced rate tolls or toll-free. Tolls were gradually introduced as the public became more familiar with the advantages of using the toll facilities. Toll payment on all CTTS elements is by ETC or PBM; there are no operational toll booths. A chronology of major events for the CTTS elements is shown in Table 2.1.

SH 45N is an east-west route located in southern Williamson and northern Travis counties, northeast of Austin. The 12.8-mile toll road extends from US 183 eastward to SH 130. SH 45N connects the north/south routes SH 130, IH-35, Loop 1 and US 183N/183A. The western section serves commuter traffic from central Austin to the northern and western suburbs as well as several shopping areas and through traffic. The eastern section serves the northeast suburbs of Austin and through traffic.

The eastern portion of SH 45N was opened to traffic in November 2006 and the remaining western portion was completed and opened in spring 2007. The O'Connor Drive interchange opened to traffic on August 21, 2014. The road has three main lanes plus three frontage road lanes in each direction, except for one section which has two main lanes in each direction. Frontage roads are parallel to the mainline both east and west of the Loop 1 Interchange; however, they are not continuous through the Loop 1 Interchange and at the east end of SH 45N. Direct access and egress is provided for certain moves while others require frontage road connections. There are two mainline paypoints and gantries on ramps serving seven interchanges on SH 45N.

Table 2.1 Chronology of CTTS Events

Date	Event
October 2006	Loop 1, SH 45 N East and SH 130 Segment 2 open toll free
December 2006	SH 130 Segment 1 opens toll free
January 2007	Begin tolling - cash tolls full rate and ETC toll free for all open toll facilities
January 2007	PBM pilot program established
February 2007	Cash tolls full rate and ETC half rate for all open facilities
March 2007	Full rate tolls for all open facilities
August 2007	SH 45 N West opens with full rate tolls
September 2007	SH 130 Segment 3 opens with full rate tolls
April 2008	SH 130 Segment 4 opens with full rate tolls
September 2008	SH 45 N Heatherwilde Ramps open with full rate tolls
May 2009	SH 45 SE opens as TxDOT toll road; ETC toll free, PBM full rate, no cash tolls (shape-based rates)
June 2009	SH 45 SE ETC half rate and PBM full rate
July 2009	SH 45 SE full rate tolls
March 2011	Truck tolls discounted (Capped at 4-Axle Rate) on SH 130 & SH 45 SE
2011	Signalization improvements on SH 45 N frontage road at AW Grimes
Sept/Oct 2011	Speed limits changed from 70 mph to 75 mph on SH 45 N; from 65/70 to 75 mph on IH-35 north of Georgetown
December 2011	Truck tolls discounted (pay auto rate) on SH 130 & SH 45 SE - 1 Month Pilot Program
January 2012	SH 130 Cameron Road Ramps open with full rate tolls (shape based-rates)
March 2012	Speed limits changed from 75 mph to 80 mph on SH 130 Seg 1-4 and SH 45 SE
August 2012	New toll escalation policy adopted
August 2012	System-wide cashless operations adopted
August 2012	January 2013 toll increases adopted
September 2012	SH 45 SE becomes part of CTTS
September 2012	PBM adopted as a permanent payment method
December 2012	Introduction of toll free program for Disabled Veterans and Medal of Honor and Purple Heart recipients paid by SHF
January 2013	System-wide toll increases are implemented along with cashless operations
February 2013	Truck tolls discounted (pay auto rate) on SH 130 & SH 45 SE - 1 Month Pilot Program
April - December 2013	Truck tolls discounted (pay auto rate) on SH 130 & SH 45 SE - Extended Pilot Program
April 2013	Shape-based toll rate replaced by axle-based toll rates on SH 45 SE and SH 130 Cameron Road Ramps
January 2014	First toll increase based on the CPI-U following adoption of annual toll escalation policy
April 2014	Xerox assumes responsibility for toll operations and collection transition period
August 2014	Opening of SH 45 N / O'Connor Drive Ramps

Loop 1 is a north-south route located in southern Williamson and northern Travis counties and is also known as the MoPac Expressway. The route provides a by-pass around western Austin for commuter and other traffic between the northern and western suburbs and downtown Austin. Loop 1 opened to traffic in November 2006. The 4-mile toll road extends southward from a connection with SH 45N to the intersection with Parmer Lane and serves as a connector between SH 45N and non-tolled Loop 1 to the south. The road has three lanes in each direction on the southern end and four lanes in each direction on the northern end. Access and egress is via parallel frontage roads south of Shoreline Drive. There are paypoints at one mainline location and on ramps serving two interchanges.

SH 130 Segments 1 – 4 extends from IH-35 in Georgetown in Williamson County on the north side of Austin to US 183S/SH 45SE south of Austin-Bergstrom International Airport in Travis County. On its southern end, the 49-mile toll road connects with SH 45SE, which provides access to IH-35. SH 130 also connects with SH 130 Segments 5 & 6, a toll road operated by the SH 130 Concession. The full 90-mile SH 130 toll route provides an alternate route to IH-35 and a by-pass of the city of Austin for through trips. The route also serves local trips in the corridor east of Austin. There are paypoints at four mainline locations and on ramps at 16 interchanges on SH 130 Segments 1-4.

SH 130 opened in phases between November 2006 and May 2008. The Cameron Road interchange opened to traffic in January 2012. Discontinuous frontage roads parallel the four-lane toll road.

SH 45SE serves as a 7-mile connector for traffic between the southern end of SH 130 Segment 4 and IH-35 in Travis County south of Austin. The four-lane toll road has one mainline paypoint near its western terminus and two sets of ramps with paypoints at the N. Turnersville Road and FM 1625 interchanges. SH 45SE was opened in May 2009 and operated by TxDOT until September 2012 when it became part of CTTS.

2.2 OTHER TOLL ROADS IN AUSTIN AREA

Other toll roads in the Austin area include the 183A and the Manor Expressway owned and operated by CTRMA and SH 130 Segments 5 & 6 financed, constructed, and operated by a concessionaire pursuant to a 52 year concession agreement.

183A is a six-lane controlled access highway approximately 11.6 miles long and functions as a central arterial through Leander and Cedar Park in Williamson County. 183A interacts with CTTS through its interchange at the western terminus of SH 45N. The road is primarily a commuter route but it also provides access to and egress from the northwest Austin shopping areas.

Phase I of 183A opened to traffic in March 2007 providing mainline and frontage road service from SH 45N to just north of FM 1431. The toll road was opened with reduced rate tolls and full tolling began in July 2007. Phase II opened in April 2012 and extended the mainline toll lanes from FM 1431 to CR 276, approximately 5.1 miles. In December 2008, cash tolls were eliminated; required payment of tolls is either by ETC or PBM at all paypoints.

The **Manor Expressway** (US 290E), is a six-lane controlled access highway approximately 6.2 miles in length with associated ramps, frontage roads and toll collection facilities located in the City of Austin, Travis County. Tolling is at two mainline locations and at four interchanges.

- *Manor Expressway Phase I Project:* The Manor Phase I project is four tolled direct connectors and associated pavement at the US 183 interchange that provides direct access to and from the Manor Expressway Project mainlines. This phase was opened January 2013.

- *Manor Expressway Phase II Project:* The Manor Expressway Phase II Project is an approximately 6.2 mile toll road project located along the existing US 290 corridor between US Highway 183 and just east of SH 130. This phase of the project opened May 2014.

- *Manor Expressway Phase III Project:* As traffic conditions warrant and funding is identified, the Manor Expressway Phase III Project is anticipated to involve the construction of additional direct connectors at the SH 130 interchange and the associated ramps.

The Manor Expressway interacts with the CTTS through its interchange with the SH 130 element of the CTTS.

SH 130 Segments 5 & 6, operated by the SH130 Concession, extends 41 miles from the southern terminus of the CTTS SH 130 element to a connection with I-10 northeast of Seguin. SH 130 Segments 5 & 6 opened to traffic in October 2012 and consists of four toll lanes. US 183S serves as a parallel frontage road system from the segment 4 terminus of SH 130 to Lockhart, primarily within the limits of Segment 5. There are two mainline paypoints and paypoints on ramps serving seven interchanges on the road. As this facility was recently completed, its toll collection system was structured to collect tolls by either ETC or PBM. In contrast to all of the other Austin area toll roads, toll rates for SH 130 segments 5 & 6 are based on the shape of the vehicle (passenger car, single unit or tractor trailer) rather than the number of axles.

The full SH 130 route (the CTTS SH 130 elements 1-4 and Segments 5 & 6 of the SH 130 Concession) and a segment of I-10 provide a long-distance eastern by-pass around the City of Austin. The SH 130 Concession Segments 5 & 6 interacts with the CTTS SH 130 element since together the roads provide the major portion of an alternative to IH-35 for long distance traffic between Austin and San Antonio. SH 130 Segments 5 & 6 also interact with SH 45 SE, providing a continuous limited access facility from Lockhart into Austin via IH-35.

2.3 NON-TOLL ROADWAY NETWORK IN AUSTIN

The major routes in the Austin area which act as either feeder or competing routes with the CTTS elements include: IH-35, US 183 (Bell Boulevard/Research Boulevard), FM 734 (Parmer Lane), County Route 30 (Gattis School Road), US 79 (Palm Valley Boulevard), FM 1431 (Whitestone Boulevard) and FM 973. In some cases, one of these roads can be a feeder to one CTTS element and a competing route for a different CTTS element.

Stantec has developed two broad categories to provide an indication of how various highway elements relate to each other as "feeders" (F) or "competitors" (C) for specific trip patterns. Generally speaking, if a roadway intersects with another roadway they are considered feeders to each other for selected travel movements, while if two roadways are parallel and in some close proximity to each other, they are considered to be competitors for some portion of trip patterns. Due to the increasingly complex system of roadways in the Austin region, each new or expanded roadway serves multiple trip patterns and the interrelationship seldom fits neatly into one or the other category (i.e., the new or expanded roadway may carry both feeder and competitor traffic). A quantitative method of determining the interrelationships would be to

remove individual roadway elements from the travel demand model and compare the traffic forecasts without the element in place. The multitude of projects planned for this region would make this approach impractical. For purposes of this study, Stantec has applied a more qualitative method of using engineering judgment to establish the effect of roadway improvements on individual CTTS elements or segments within CTTS elements, noting that a new or expanded roadway may function as a feeder to one CTTS element/segment and a competitor to another. The limitation is that the scale of the impact cannot be easily forecast and, in the case of competitive elements, the impact applies differently to drivers depending on the specific trip pattern for which the elements are truly competitive. The relationships between these routes and the CTTS elements are summarized in Table 2.2.

Table 2.2 Relationships between Non-Toll Routes and CTTS Elements

Route		Effect on CTTS Element	
		F/C*	Element
IH-35		C	SH 130
		C	Loop 1
US 183		F	SH 45N
		C	SH 130
		C	Loop 1
FM 734	Parmer Lane	F	SH 45N
		F	SH 130
County Rt. 30	Gattis School Road	F	SH 130
		C	SH 45N
US 79	Palm Valley Blvd.	F	SH 130
		C	SH 45N
FM 1431	Whitestone Blvd.	C	SH 45N
FM 973		C	SH 130

*F = Feeder
C = Competitor

IH-35, a major north-south US route from Canada to Mexico, carries local traffic in the Austin area in addition to long distance traffic. The route has two to six lanes in each direction, plus frontage roads. In addition to the surface route, there is an elevated four-lane express route through the Austin Central Business District (CBD). IH-35 is a competing route to SH 130 for long distance through trips. According to TxDOT, in 2014, IH-35 in Travis County was the second most congested road in Texas for all traffic and the most congested road in Texas for trucks.

US 183 begins at US 90 in Luling, continues north parallel to SH 130 Segments 5 & 6 acting as a frontage road to SH 130 Segments 5 & 6. At the southern terminus of Segment 4 of SH 130, US 183 continues along the east side of downtown Austin and then turns northwest of the City. The route is a 4-lane divided highway with frontage roads between US 290 and SH 45N.

US 183 interacts with three elements of the CTTS. As the western terminus of SH 45N, US 183N is a feeder route for that facility. It is parallel to Loop 1 and, therefore, a competitor to that CTTS element. US 183 is also a competitor to the southern sections of SH 130.

Parmer Lane (FM 734) extends from US 290 southeast of Austin in a northeasterly direction to the suburbs northwest of Austin. The road intersects with SH 130; Loop 1, south of the tolled portion; and SH 45N. The road is an arterial with four lanes on its eastern and western ends and six lanes in the more populated central portion. Parmer Lane is a feeder route for SH 45N and SH 130.

Gattis School Road (County Route 30) and **US 79 (Palm Valley Boulevard)** are competing routes to the eastern section of SH 45N. Gattis School Road is an east/west 4-lane arterial route north of Austin, between IH-35 and SH 130. It is approximately three miles north of SH 45N and the nearest competing route to the eastern section of SH 45N. US 79 also extends from IH-35 easterly to SH 130, parallel to the eastern section of SH 45N. The road is a 4-lane arterial approximately one mile north of SH 45N. Both Gattis School Road and US 79 have interchanges with SH 130 and therefore act as feeder routes to that CTTS element.

FM 1431 (Whitestone Boulevard) competes with the western section of SH 45N: Whitestone Boulevard is a four-lane arterial approximate five miles north of SH 45N, extending from US 183 easterly to IH-35.

FM 973 competes with SH 130 between US 290 and US 183. FM 973 is a north/south 2-lane arterial extending over 20 miles from its southern terminus with US 183 to US 290E. The roadway parallels the alignment of SH 130 through mostly rural farmland. Capital Metro, operator of Austin's regional public transportation system, provides limited bus and light rail service in the area. MetroRail, the 32-mile light rail line, operates between Leander and downtown Austin Monday through Friday and between Lakeland and downtown Austin on Saturday. The system has nine stations and three Park & Ride facilities. The route is parallel to SH 183A, SH 45N and Loop1; however it provides limited competition with the CTTS elements due to the limited schedule.

2.4 RECENT AND PROPOSED KEY NETWORK IMPROVEMENTS

Stantec used a regional transportation planning model originally developed by CAMPO, and expanded to include the region in the AAMPO model encompassing San Antonio. Key recent and proposed improvements to toll roads and toll-free routes in the region were applied to the networks used for the base model year 2013 and for future model years 2015, 2020, 2030 and 2040. (All model years discussed in this section represent calendar years.)

The latest available plans for proposed toll road projects were obtained from CTRMA, TxDOT and the counties in the Austin area. For other roadway projects, Stantec used the CAMPO 2035 Regional Transportation Plan (adopted May 24, 2010) along with more recent amendments. In addition, the project team also reviewed the draft version of the CAMPO 2040 Regional Transportation Plan to obtain the latest information about the implementation and configuration of individual projects. Based on the degree of commitment (feasibility studies, funding ROW status, and program inclusion), judgments were made as to whether or not to include projects in the future highway networks.

Several toll road projects in the Austin area, including managed lanes with dynamic pricing, as well as expressways, are currently in the planning or development stages. These facilities will be

owned and operated by CTRMA. The description and anticipated schedule for these projects, as currently envisioned, are shown in Table 2.3.

Table 2.3 Proposed Toll Facilities in Austin Area

Roadway	Managed Lane (dynamic pricing) vs. Toll Road (fixed toll rate)	Assumed Opening Year	Length	Full Length Toll	Toll Rate per mile	Number of Tolled Mainline Segments	Lane Configuration
Bergstrom Expressway	Toll Road	2018 Interim Build, 2020 Full Build	8.0	$2.29 (in 2020$)	$0.29 (in 2020$)	2	3 lanes per direction from 290E to 71E. Direct connectors on 183S to 290E (NB to EB and WB to SB) and 183S to 71E (SB to WB and EB to NB)
MoPAC North Express Lanes	Managed Lane (3+ axle vehicles not allowed)	2016	11.5	$0.50 (in 2016$) (minimum rate is 5 cents per mile in 2016$)	$0.05 (in 2016$)	2	1 express lane per direction from Parmer Lane (FM 734) to Cesar Chavez Street
71 E Express Lanes	Toll Road	2016	3.0	$0.78 (in 2016$)	$0.26 (in 2016$)	1	1 lane per direction from Presidential to Terry Lane; 2 lanes per direction from Terry Lane to Falwell Lane; and 1 lane per direction from Falwell to east of SH 130
45 SW Phase 1	Toll Road	2017	3.4	$0.90 (in 2017$)	$0.26 (in 2017$)	1	2 lanes per direction from Loop 1 to FM 1626
MoPAC South Express Lanes	Managed Lane (3+ axle vehicles not allowed)	2020	7.9	$0.55 (in 2020$) (minimum rate is 5 cents per mile in 2016$)	$0.07 (in 2020$)	2	2 express lanes per direction from Caesar Chavez to Loop 360 and 1 express per direction from Loop 360 to Slaughter Lane
183N Express Lanes	Managed Lane (3+ axle vehicles not allowed)	2020	7.2	$0.55 (in 2020$) (minimum rate is 5 cents per mile in 2016$)	$0.08 (in 2020$)	2	1 express lane per direction from Northern Terminus to Lake Creek Parkway, 2 express per direction from Lake Creek Parkway to Loop 1. Direct connectors on 183N to MoPac North Express Lanes (SB to SB and NB to NB). Direct connectors at the Northern Terminus (4 DCs, NB egress to 45N EB&WB and SB ingress from 45N EB&WB)
45 SW Phase 2	Toll Road	2025	3.8	$1.24 (in 2025$)	$0.33 (in 2025$)	1	2 lanes per direction from FM 1626 to I-35

Note: Subject to change.

2.4.1 2012 – 2013 Key Network Improvements

A number of major network changes have been completed and opened to traffic between 2012 and 2013. These improvements were incorporated into the model to update it to the base year 2013:

- The most significant improvement to the highway network, on a regional level, is the addition of SH 130 Segments 5 and 6, which opened with toll-free operations in October 2012. Tolls were introduced in November 2012. These new segments extend the SH 130 toll road southward to I-10 northeast of San Antonio. Two direct connectors were constructed between SH 130 Segment 5 and SH 45 SE, facilitating the movements between SH 130 to/from the south and SH 45 SE to/from the west; and

- Phase I of the Manor Expressway (US 290 E), a limited-access toll road, was opened to traffic in January 2013. The project is constructed within the expanded median of US 290 and connects US 183 and SH 130. (See section 2.2 for a further information for this road.)

2.4.2 2014-2015 Key Network Improvements

Two toll projects completed in 2014 are the Phase II Full Build Manor Expressway extending from the end of Phase II Interim Milestone to 0.5 miles east of FM 734 (Parmer Lane), and the O'Connor Interchange providing an improved connection between SH 45N/Loop 1 Toll Roads and RM 620.

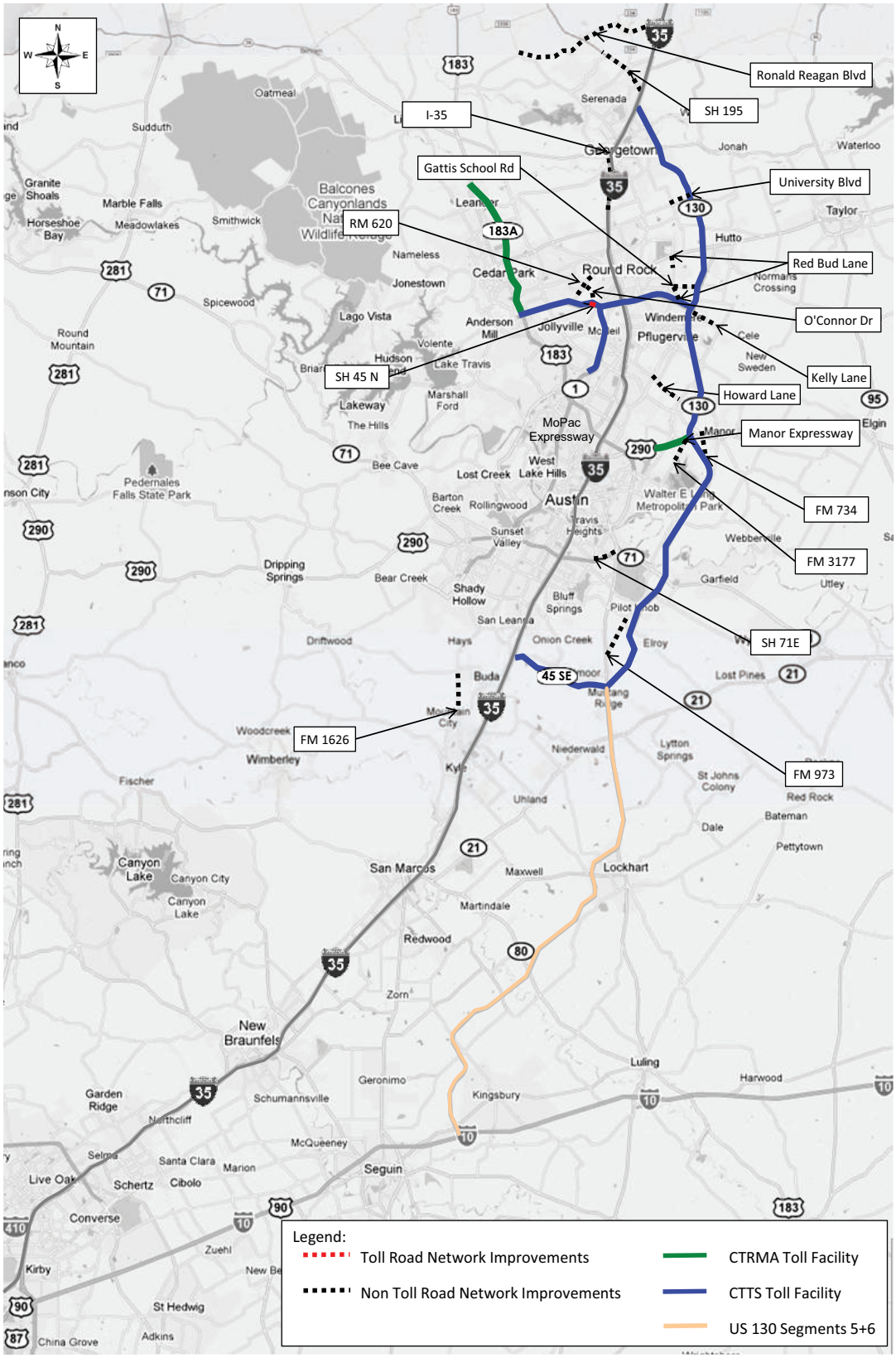
A number of other changes have been completed or are expected to be completed during this period. A new northbound frontage road from Westinghouse Road to SH 29 along IH-35 is scheduled to be completed in 2015. Other major improvements include upgrading existing roadways (SH71E, FM 1626, RM 620, Gattis School Road) and building new sections of existing roadways (FM 734, O'Connor Drive). Major improvements to the regional highway network for the period 2014 and 2015 were incorporated into the model for the year 2015. These improvements are listed in Table 2.4, along with whether they are feeder or competing routes with the CTTS elements, based on judgment, and shown in Figure 2.1.

Table 2.4 Key Network Improvements 2014 – 2015

Route Name/Number	Planned Improvement	Limits	Opening Year	Effect on CTTS Element	
				F/C*	Element
Toll Roads					
Manor Expressway, Phase II Full Build	New Toll Road	East of Springdale to east of FM 734	2014	F	SH 130
SH 45 N	O'Connor Interchange	SH 45 N/Loop 1/O'Connor Drive	2014	F	SH 45 N, Loop 1
Non Toll Roads					
US Highways					
IH-35	New NB frontage road	Westinghouse Rd to SH 29	2015	C	SH 130, Loop 1
State Highways					
SH 71E	New frontage road & interchange upgrade	West of Montopolis Rd to US 183 S	2014	F	SH 130
SH 195	Widening project	SH 138 to IH-35	2015	F	SH 130
FM 1626	Widening project	FM 967 to RM 2770	2015	NA	-
RM 620	Upgrade project	Cornerwood Dr to Wyoming Springs	2015	F	SH 45 N
FM 734	Roadway extension	Old Hwy 20 to Blue Bluff Rd	2015	F	SH 130
FM 973	Widening project	FM 812 to US 183	2015	C	SH 130
FM 3177	Roadway realignment	US 290 E to Lindell Lane	2015	F	SH 130
Other					
O'Connor Drive	Roadway extension	RM 620 to SH 45N	2014	F	SH 45 N, Loop 1
Gattis School Rd	Upgrade project	CR 122 to SH 130	2015	F	SH 130
				C	SH 45 N
Kelly Lane	Roadway extension	Murchison Ridge Lane to Moorlynch Ave	2015	F	SH 45 N, SH 130
Red Bud Lane	Upgrade and widening project	CR 123 to Woodland Loop	2015	NA	-
Red Bud Lane	Widening project	Gattis School Rd to Heatherwilde Blvd	2015	NA	-
University Blvd	Upgrade project	CR 110/Southwestern Blvd to SH 130	2015	F	SH 130
Howard Lane	Upgrade project	Dessau Rd to Cameron Rd	2015	F	SH 130
Ronald Reagan Blvd	Roadway extension & widening	FM 2338 to IH-35	2015	C	SH 130

* F = feeder; C = competitor

Figure 2.1 Key Network Improvements Map 2014-2015



2.4.3 2016 – 2020 Key Network Improvements

Several toll road projects are scheduled to be completed between 2016 and 2020. These include Managed Lanes on MoPac North in 2016, on MoPac South in 2020 and on 183 North in 2020. The Bergstrom Expressway, scheduled to be completed in phases between 2018 and 2020, will provide toll lanes in the center of US 183 South between the Manor Expressway and SH 71 E. Express lanes on SH 71E between Presidential Boulevard and SH 130 are scheduled for 2016. The 45 SW Phase 1 Toll Road is planned to open in 2017 between Loop 1 S and FM 1626.

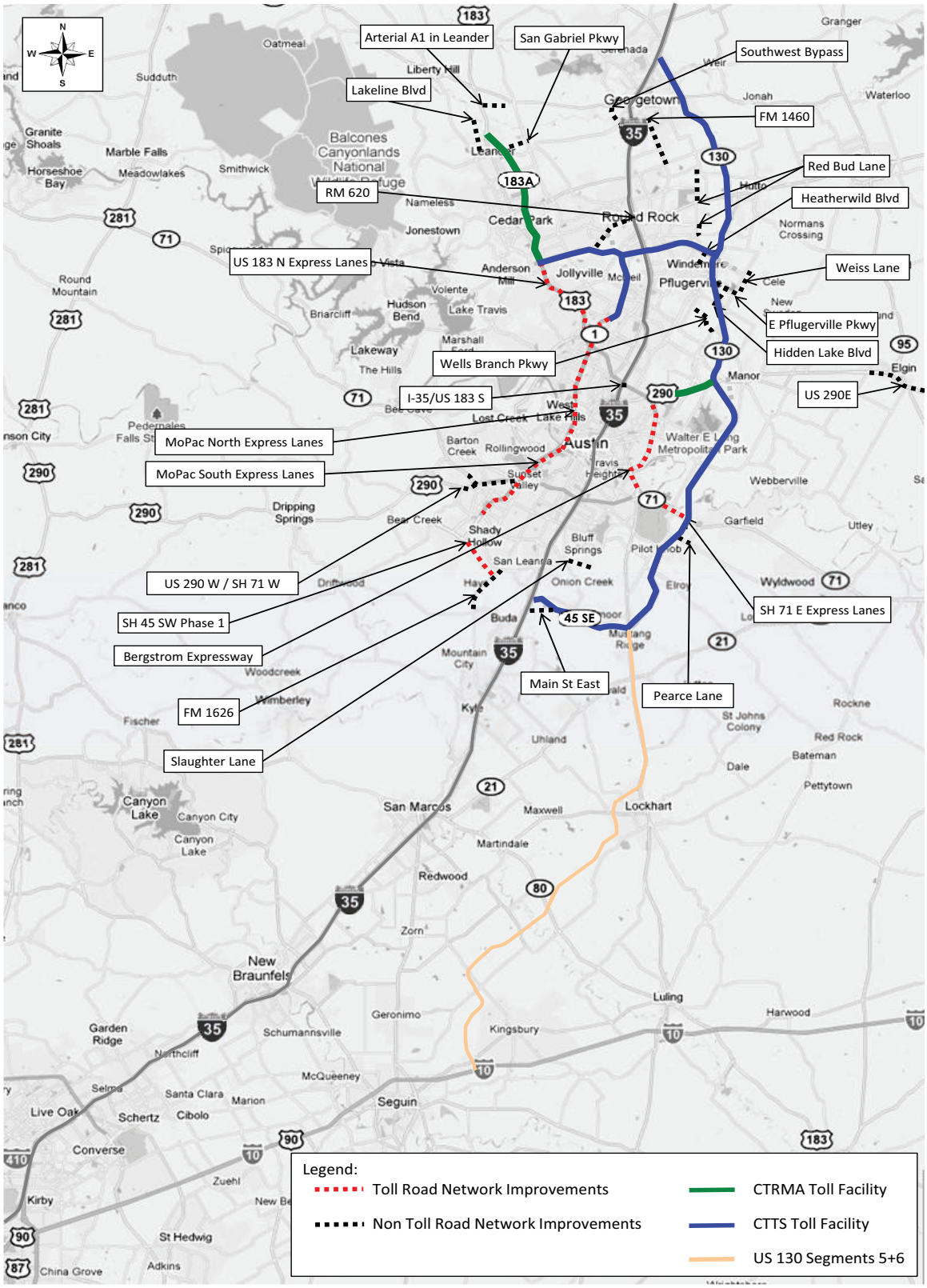
Non-toll road projects include the construction of direct connectors between IH-35 and US 183 South and the upgrade and widening of US 290E between FM 696 and the Lee County line, and US 290W/SH71W from Loop 1 to FM 1826 and US 290W to Silvermine Drive. Upgrading is also scheduled for RM 620, FM 1460 and FM 1626. The improvements listed in Table 2.5, along with their relationship to the CTTS elements, based on judgment, and shown in Figure 2.2 were included in the 2020 regional transportation model.

Table 2.5 Key Network Improvements, 2016 – 2020

Route Name/Number	Planned Improvement	Limits	Opening Year	Effect on CTTS Element	
				F/C*	Element
Toll Roads					
MoPac North Express Lanes	Managed Lanes	Between Parmer Lane and Cesar Chavez St	2016	F	Loop 1
SH 71 E Express Lanes	New Toll Road	Between Presidential Blvd and SH 130	2016	F	SH 130
SH 45 SW Phase 1	New Toll Road	Between S MoPac Expwy and FM 1626	2017	NA	-
Bergstrom Expressway	New Toll Road	Between Manor Expressway and Patton Ave; Direct Connectors to/from SH 71E	Phased 2018 to 2020	C	SH 130
US 183 N Express Lanes	Managed Lanes	SH 45 N - MoPac North	2020	F	SH 45 N
MoPac South Express Lanes	Managed Lanes	Between Cesar Chavez St and Slaughter Lane	2020	F	Loop 1
Non Toll Roads					
US Highways					
IH-35/US 183 S	Construct Direct Connectors	IH-35/US 183 to/from the south and US 183 S/IH-35 to/from the north	2017	C	SH 130
US 290 E	Upgrade and widening project	FM 696 to Lee County Line	2018	F	SH 130
US 290 W/SH 71W (Oak Hill Pkwy)	Upgrade and widening project	S MoPac Expressway to FM 1826/US 290W to Silvermine Dr	2018	NA	-
State Highways					
RM 620	Widening project	Cornerwood Dr to IH-35	2020	C	SH 45 N
FM 1460	Upgrade and widening project	FM 2243 to University Blvd	2020	C	SH 130
FM 1626	Widening project	Brodie Lane to FM 967	2020	NA	-
Other					
Main St East	New segment	IH-35 to Turnersville Rd	2016	F	SH 45 SE
Weiss Lane	Widening and upgrade project	Pecan St to Kelly/Cele Lane	2017	NA	-
Hidden Lake Blvd	New segment	E Pflugerville Pkwy to Pecan St	2016	F	SH 130
Arterial A1 in Leander	New segment	US 183 N to Kauffman Loop	2020	NA	-
CR 122/Red Bud Lane	Widening and upgrade project	CR 112 to US 79	2020	C	SH 130
CR 122/Red Bud Lane	Widening and upgrade project	Forest Creek Blvd to Gattis School Rd	2020	C	SH 130
Heatherwilde Blvd	Widening and upgrade project	SH 45N to Wilke Ridge Lane	2020	C	SH 130
				F	SH 45 N
Lakeline Blvd	New segment	San Gabriel Pkwy W to CR 271/281	2020	NA	-
Pearce Lane	Widening and upgrade project	SH 130 to Ross Rd	2020	F	SH 130
San Gabriel Pkwy	New segment	CR 270 to Ronald Reagan Blvd	2020	NA	-
Wells Branch Pkwy	Widening and upgrade project	Immanuel Rd to Cameron Rd	2020	F	SH 130
E Pflugerville Pkwy	Upgrade project	SH 130 to Weiss Lane	2020	F	SH 130
Southwest Bypass	New segment	SH 29 to IH-35	2020	NA	-
Slaughter Lane	New segment	Pleasant Valley Rd to Thaxton Rd	2020	NA	-

* F = feeder; C = competitor

Figure 2.2 Key Network Improvements Map 2016-2020



2.4.4 2021 – 2030 Key Network Improvements

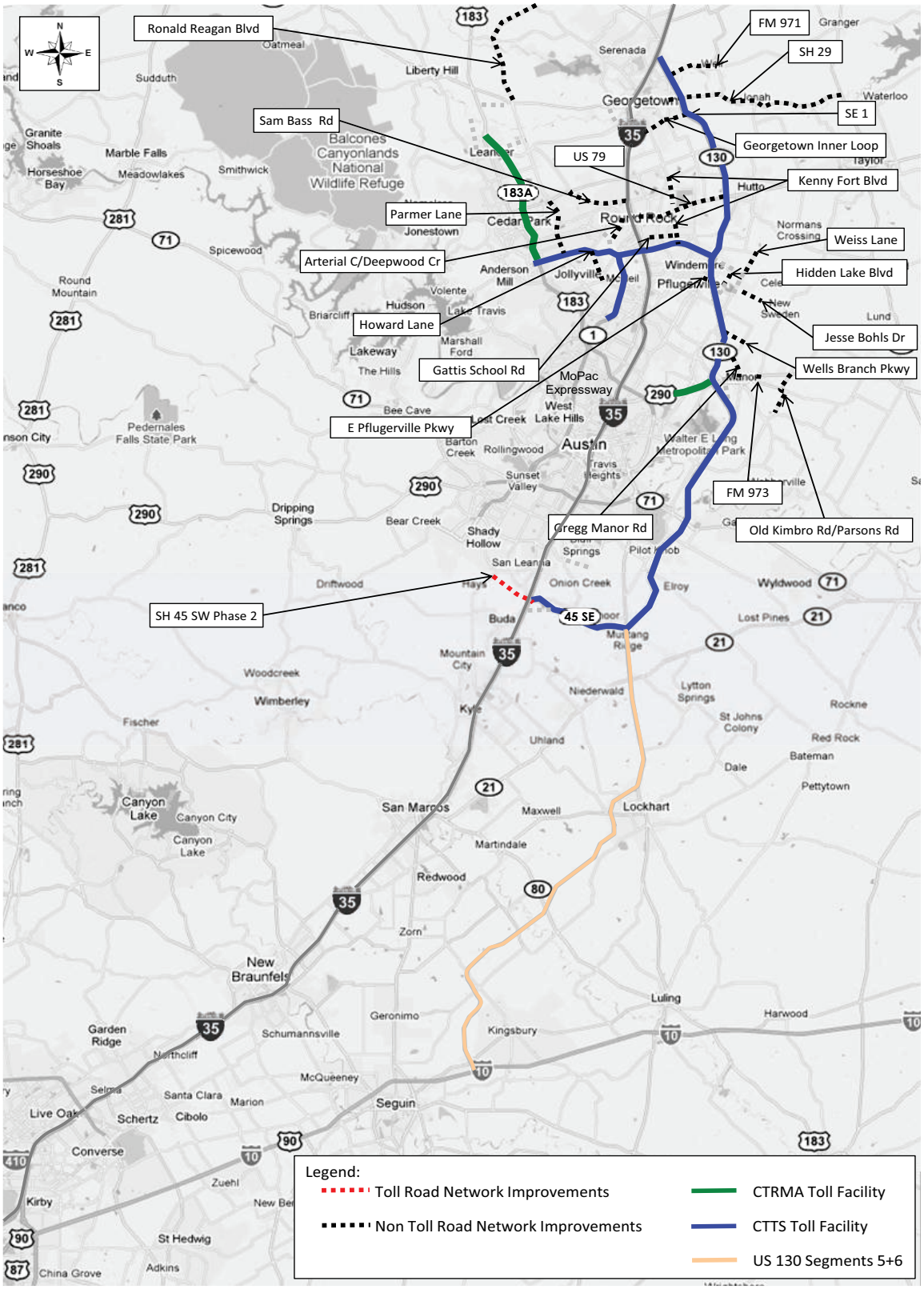
The only toll road planned to be opened in the 2021 - 2030 period is the SH 45 SW Phase 2 Project between FM 1626 and IH-35, scheduled for completion in 2025. Major non-toll road projects include completing a new segment of Howard Lane between SH 45N and McNeil Road, the widening of US 79 between IH-35 and FM 635, and the upgrade and widening of SH 29, FM 973 and FM 971. Other roadways scheduled for improvements are Ronald Reagan Boulevard, Parmer Lane and Gattis School Road. These projects and the others noted in Table 2.6 and shown in Figure 2.3 were included in the regional highway network for 2030. Also shown in Table 2.6 is the relationship to the CTTS elements, based on judgment.

Table 2.6 Key Network Improvements, 2021 – 2030

Route Name/Number	Planned Improvement	Limits	Opening Year	Effect on CTTS Element	
				F/C*	Element
Toll Roads					
SH 45 SW Phase 2	New Toll Road	FM 1626 - IH-35	2025	F	SH 45 SE
Non Toll Roads					
US Highways					
US 79	Widening project	Business Route IH-35 to FM 685	2030	F	SH 130
				C	SH 45 N
State Highways					
SH 29	Upgrade and widening project	Georgetown Inner Loop to SH 95	2030	F	SH 130
FM 973	Upgrade and widening project	US 290 to Old Hwy 20	2030	NA	-
FM 971	Upgrade project	SH 130 to FM 1105	2030	F	SH 130
Other					
Jesse Bohls Dr	Upgrade and widening project	Weiss Lane to Cameron Rd	2023	F	SH 130
Hidden Lake Dr	New segment	Dry Brook Blvd to E Pflugerville Pkwy	2025	NA	-
Howard Lane	New roadway	SH 45N to McNeil Rd	2030	F	SH 45 N
				C	Loop 1
Wells Branch Pkwy	New segment	SH 130 to Fuchs Grove Rd	2030	F	SH 130
Ronald Reagan Blvd	Widening project	FM 2338 to SH 29	2030	NA	-
Parmer Lane	Widening project	FM 1431 to Spectrum Dr	2030	F	SH 45 N
Arterial C/Deepwood Cr	New segment	Sam Bass Rd - O'Connor Dr	2030	F	SH 45 N
Weiss Lane	Upgrade and widening project	Kelly Lane to Rowe Lane	2030	C	SH 130
Kenny Fort Blvd	New segment	CR 112/117 to Chandler Creek Blvd	2030	F	SH 45 N
				C	SH 130
Kenny Fort Blvd	New segment	Forest Creek Dr to SH 45 N	2030	F	SH 45 N
				C	SH 130
E Pflugerville Pkwy	Upgrade	FM 685 to SH 130	2020	F	SH 130
Gregg Manor Rd	Upgrade and widening project	Howard Lane to US 290E	2030	F	SH 130
Gattis School Rd	Upgrade and widening project	Greenlawn Blvd to Arterial A in Round Rock	2030	C	SH 45 N
Old Kimbro Rd/Parsons Rd	Upgrade and widening project	US 290E to Blake Manor Rd	2030	NA	-
Sam Bass Rd	Upgrade and widening project	FM 1431 to IH-35	2030	NA	-
SE 1	New segment and widening of existing	Georgetown Inner Loop to SH 130	2030	F	SH 130
Georgetown Inner Loop	Upgrade project	SE 1 (CR 110) to IH-35	2030	F	SH 130

* F = feeder; C = competitor

Figure 2.3 Key Network Improvements Map 2021-2030



One significant project still in the early development stages is a capacity improvement to a 65-mile segment of IH-35 from Georgetown to San Marcos. The project (named Mobility35) generally adds one lane in each direction for the full distance. Current study results indicate the best use of this lane would be some form of express lane. The overall project has many separate elements which include some isolated spot improvements such as auxiliary lanes and collector-distributor lanes at critical locations, some of which will be ready for construction bidding next year. Preliminary cost estimates for the entire set of project improvements exceed $4.0 billion, with funding yet to be identified. Due to the congested traffic conditions on IH-35, the project would likely be built in phases, with the most critical segment in central Austin contingent on the construction of other improvements that would provide additional capacity as bypasses during the construction phase. Those contingent facilities are the planned Bergstrom Expressway and the MoPac improvements (both assumed to be completed by 2020 for the 2014 Study).

In terms of the construction schedule, the complete project could be constructed in seven to ten years, with the segment in central Austin being initiated in 2021 and completed by 2025; however, funding sources have not yet been identified. Given that project construction will require significant detours of existing traffic for extensive periods of time, it is anticipated that, should this project actually be constructed, it would have a potential positive impact on CTTS revenue during the construction period. After construction is completed, some of the diverted traffic will likely continue to use CTTS elements producing a long-term revenue increase. Given the uncertainty of the project and significant construction costs, which lack committed funding at this time, a decision was made not to include this project in the background network for the forecast of future traffic.

2.4.5 2031 – 2040 Key Network Improvements

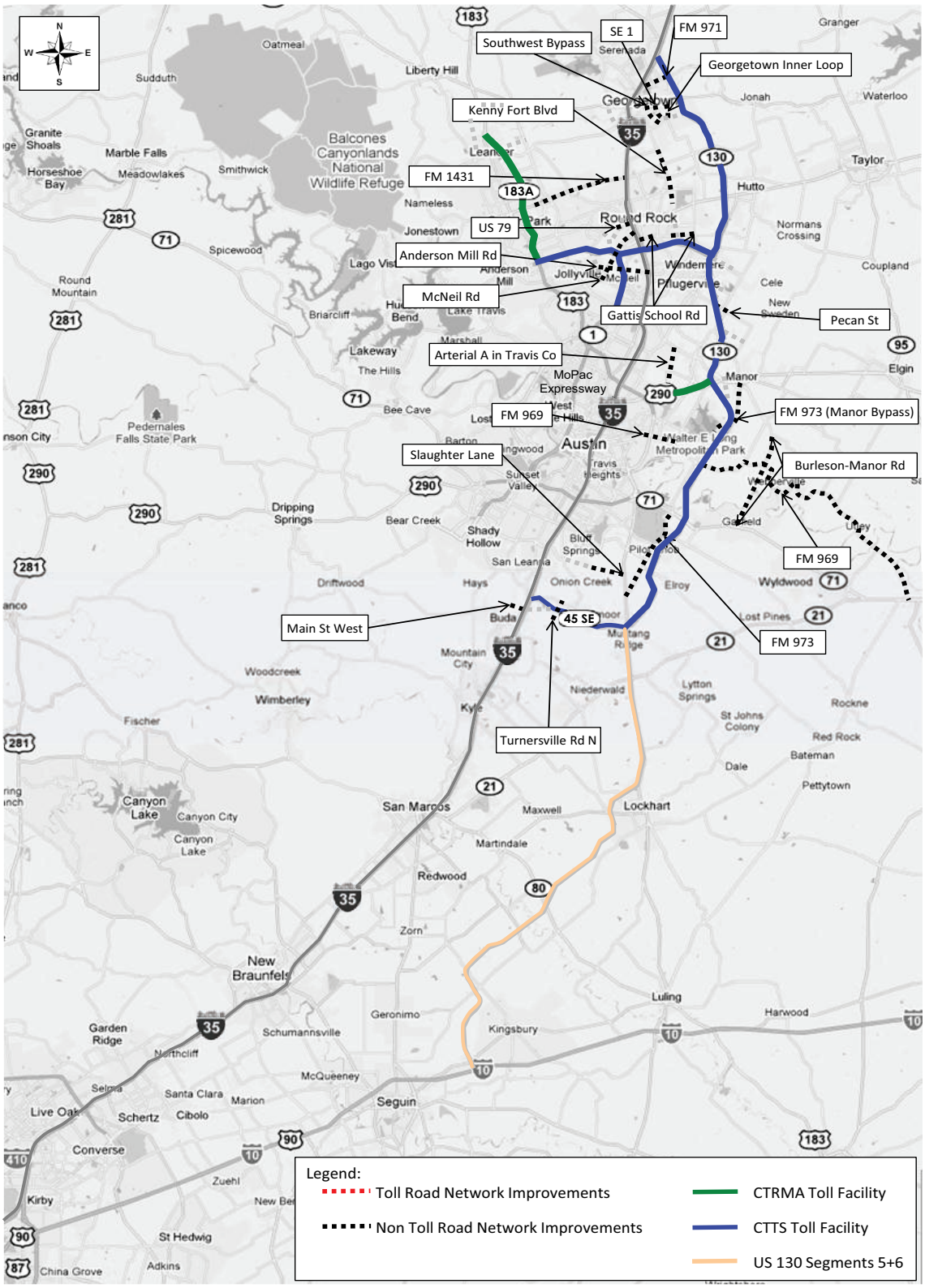
There are no toll roads scheduled for completion during the period 2031 through 2040; however major non-toll road projects include widening FM 969, FM 971 and FM 1431 and upgrading and widening FM 973, McNeil Road and Gattis School Road. New segments are planned for FM 973 (Manor Bypass) between Old Highway 20 and Decker Creek and for US 79 between Deepwood Creek Drive and IH - 35N. These projects and the others listed in Table 2.7 and shown in Figure 2.4 have been included in the highway network for the 2040 model year. The relationship of these projects to the CTTS element is also shown in Table 2.7.

Table 2.7 Key Network Improvements, 2031 – 2040

Route Name/Number	Planned Improvement	Limits	Opening Year	Effect on CTTS Element	
				F/C*	Element
Non Toll Roads					
State Highways					
FM 969	Upgrade project	Webberville Rd to Decker Lane	2035	F	SH 130
FM 969	Upgrade and widening project	East of SH 130 to SH 71	2035	F	SH 130
FM 971	Widening project	Business Route IH-35 to IH-35	2040	F	SH 130
FM 973	Widening and upgrade	SH 71 to US 183	2040	C	SH 130
FM 973 (Manor Bypass)	New segments	Old Hwy 20 to Decker Creek	2040	C	SH 130
FM 1431	Widening project	Cottonwood Creek Trail to IH-35	2040	C	SH 45 N
US 79	New segment	Deepwood Creek Dr to IH-35 N	2040	NA	-
Other					
Turnersville Rd N	Upgrade and widening project	CR 105 to FM 1327	2035	F	SH 45 SE
Anderson Mill Rd	New segment	East of Parmer Lane to Grand Ave Pkwy	2040	F	Loop 1
				C	SH 45 N
Arterial A in Travis Co	New segment	US 290 to FM 734	2040	C	SH 130
Kenny Fort Blvd	New segment	Westinghouse Rd to CR 112	2040	C	SH 130
Burleson Manor Rd	Upgrade and widening project	Blake Manor Rd to FM 969	2040	C	SH 130
Burleson Manor Rd	New segment	FM 969 to SH 71	2040	C	SH 130
McNeil Rd	Upgrade and widening project	Howard Lane to IH-35	2040	C	Loop 1
				F	SH 45 N
Main St West	Upgrade and widening project	Garrisonville Rd to IH-35	2040	NA	-
Gattis School Rd	Upgrade and widening project	Business Route IH-35 to Greenlawn Blvd	2040	C	SH 45 N
Gattis School Rd	Upgrade and widening project	Arterial A in Round Rock to CR 122	2040	C	SH 45 N
Pecan St	Widening project	SH 130 to Cameron Rd	2040	F	SH 130
Slaughter Lane	New segment	Thaxton Rd to US 183	2040	C	SH 45 SE
Southwest Bypass	Upgrade and widening project	SH 29 to CR 110/Southwestern Blvd	2040	C	SH 130
SE 1	Upgrade and widening project	Georgetown Inner Loop to SH 29	2040	C	SH 130
Georgetown Inner Loop	Upgrade and widening project	SE 1 (CR 110) to SH 29	2040	C	SH 130

* F = feeder; C = competitor

Figure 2.4 Key Network Improvements Map 2031-2040



3.0 EXISTING TRAVEL PATTERNS

An extensive traffic data collection program was undertaken to obtain information for validating the output of the regional transportation model. Surveys conducted in the Austin region included traffic counts using Automatic Traffic Recorders (ATRs) and Wavetronics electronic vehicle counting equipment, vehicle classification counts and travel time runs.

3.1 TRAFFIC VOLUMES

The data collection program for the 2014 Study was conducted by GRAM Traffic Counting, Inc. (GRAM). The data were gathered in the April – June 2014 period. Traffic counts were recorded at over 200 locations, including ten locations that included both the mainline and frontage roads. Traffic counts were collected along a series of screenlines and other key locations along the traffic corridors of the toll roads in the Austin region and on competing and feeder routes.

The locations of these screenlines are shown in Figure 3.1 and Figure 3.2. Figure 3.1 displays the screenlines used as part of the overall regional model calibration, which covers the long distance travel between Austin and San Antonio southward into the areas where IH-35 competes with segments 5 & 6 of SH 130. Figure 3.2 displays the screenlines and counts in the focused area served by the CTTS roadways.

Additional data sources were available for use in this study. These sources included approximately 370 counts from recent CTRMA studies, data collected during prior studies for the CTTS projects, as well as data obtained through the TxDOT traffic database. The TxDOT database contributed 1,638 Annual Average Daily Traffic (AADT) counts from the TxDOT 2012 count maps, 106 classification counts from TxDOT's truck count program, and 182 counts from the TxDOT (Statewide Traffic Analysis and Reporting System (STARS), database. Stantec also obtained transaction data for all toll roads that were in operation in 2013. While there was some overlap in the actual count locations, in total, traffic count data was available for 2,443 highway links for purposes of model calibration including 537 counts that were detailed vehicle classification counts used to quantify truck volumes.

Figure 3.1 Overall Screenline Map

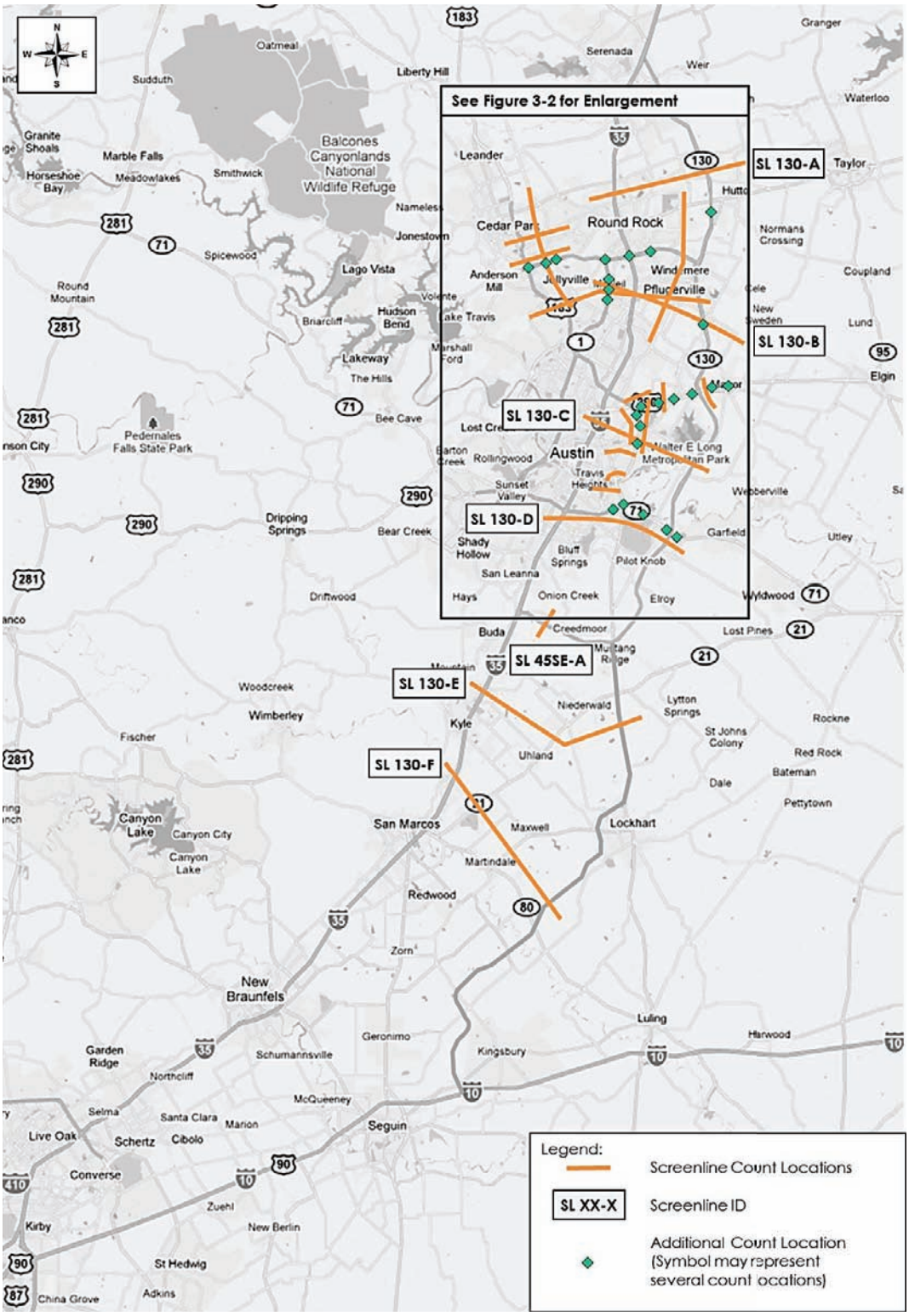


Figure 3.2 Project Area Screenline Map

The screenline locations are intended to capture the toll road traffic at the respective mainline toll paypoints and the non-toll road traffic on adjacent roadways. The observed traffic volumes, broken down by vehicle type, for each screenline count location are shown in Table 3.1 through Table 3.3.

Table 3.1 lists the screenline volumes for the CTTS SH 130 element (Segments 1-4) as well as the two screenlines for the southern section that is operated separately as a concession (Segments 5 & 6), and which is not part of the CTTS. Trucks, which are defined to include 2-axle, 6-tire vehicles for consistency with the regional models, are generally between 10 to 15 percent of all traffic. For the CTTS SH 130 element, the toll road captures approximately 6 to 13 percent of the total traffic along the screenlines. For Segments 5 & 6, the toll road share of screenline traffic is slightly lower at approximately 3 to 5 percent.

Table 3.2 shows the screenline volumes for the SH 45 North, Loop 1, SH 45 SE and 183A, the latter of which is not part of the CTTS. For these screenlines, the toll roads tend to have a larger share of the overall traffic ranging between 17 percent and 53 percent, except for the Loop 1 screenline that includes IH-35. The share of trucks on these toll roads tends be much lower, ranging from approximately 2 to 4 percent, except for SH 45 SE which is a feeder route of long-distance traffic to SH 130.

Table 3.3 lists the screenlines collected as part of the recent CTRMA traffic and revenue study for the planned Bergstrom Expressway (US 183S) in June 2014, shortly after the opening of Phase II of the Manor Expressway. Since the surveys were conducted in fairly narrow corridors centered around the recently completed Manor Expressway (290E) and US 183S, the current non-tolled alignment for the planned Bergstrom Expressway, these roadways tend to have a dominant share of traffic ranging from 26 to 60 percent of the screenline totals. Truck shares for these screenlines are approximately 10 percent.

Table 3.1 2013 Average Weekday Screenline Volumes for SH 130 Screenlines

Route		Auto	Truck	% Truck	Total	% of Total
SH 130						
Screenline 130-A	IH 35	133,510	15,255	10.3%	148,765	75.0%
	CR 115	11,098	755	6.4%	11,852	6.0%
	FM 1460	11,622	990	7.8%	12,611	6.4%
	CR 110	3,193	284	8.2%	3,476	1.8%
	SH 130	**16,617**	**1,837**	**10.0%**	**18,453**	**9.3%**
	CR 100	655	85	11.5%	740	0.4%
	FM 1660	1,760	663	27.4%	2,423	1.2%
	Total	178,453	19,869	10.0%	198,322	100.0%
Screenline 130-B	IH 35	146,092	24,105	14.2%	170,197	69.6%
	Heatherwilde Blvd	10,370	1,405	11.9%	11,775	4.8%
	Dessau / FM 685	19,137	2,779	12.7%	21,917	9.0%
	Immanuel	3,963	347	8.1%	4,310	1.8%
	SH 130	**29,035**	**2,649**	**8.4%**	**31,684**	**13.0%**
	Cameron Rd	2,904	144	4.7%	3,048	1.2%
	Fuchs Grove	1,268	424	25.1%	1,692	0.7%
	Total	212,770	31,853	13.0%	244,623	100.0%
Screenline 130-C	IH 35	197,488	42,255	17.6%	239,743	59.5%
	Cameron Rd.	15,877	1,183	6.9%	17,060	4.2%
	Berkman Dr.	9,939	1,260	11.3%	11,200	2.8%
	Manor Rd.	9,746	277	2.8%	10,024	2.5%
	Springdale Rd.	8,500	287	3.3%	8,787	2.2%
	US 183	50,847	9,026	15.1%	59,873	14.9%
	Johnny Morris Rd.	4,887	295	5.7%	5,182	1.3%
	FM 3177	8,874	863	8.9%	9,737	2.4%
	FM 973	5,682	1,097	16.2%	6,779	1.7%
	SH 130	**26,011**	**2,444**	**8.6%**	**28,454**	**7.1%**
	FM 969	5,379	546	9.2%	5,925	1.5%
	Total	343,230	59,533	14.8%	402,763	100.0%
Screenline 130-D	IH 35	166,144	20,863	11.2%	187,007	64.6%
	Todd Ln.	10,102	1,048	9.4%	11,150	3.9%
	Stassney Ln.	18,836	2,123	10.1%	20,959	7.2%
	US 183	26,725	4,789	15.2%	31,513	10.9%
	FM 973	6,525	1,374	17.4%	7,900	2.7%
	SH 130	**16,420**	**2,209**	**11.9%**	**18,630**	**6.4%**
	Ross Rd.	11,738	667	5.4%	12,405	4.3%
	Total	256,491	33,073	11.4%	289,563	100.0%
Screenline 130-E	IH 35	122,551	7,664	5.9%	130,215	77.4%
	Goforth Rd (FM 157)	2,200	162	6.8%	2,362	1.4%
	SH 21	10,546	2,794	20.9%	13,340	7.9%
	FM 2001	1,878	534	22.1%	2,412	1.4%
	US 183 - SH130 Frontage	8,403	509	5.7%	8,913	5.3%
	SH 130 Seg 5 ML	**7,451**	**1,283**	**14.7%**	**8,733**	**5.2%**
	FM 1854	2,017	254	11.2%	2,271	1.3%
	Total	155,046	13,200	7.8%	168,246	100.0%
Screenline 130-F	IH 35	117,654	11,320	8.8%	128,974	84.1%
	SH 21	10,047	2,328	18.8%	12,375	8.1%
	FM 1984	1,217	169	12.2%	1,385	0.9%
	SH 1342	4,590	469	9.3%	5,059	3.3%
	SH 130 Seg 6 ML	**3,481**	**919**	**20.9%**	**4,400**	**2.9%**
	State Park Rd (FM 20)	1,024	129	11.2%	1,152	0.8%
	Total	138,012	15,334	10.0%	153,346	100.0%

Note: Truck volumes shown include 2-axle, 6-tire trucks and 3+ axle trucks.

Table 3.2 2013 Average Weekday Screenline Volumes for SH 45 N, Loop 1, SH 45 SE, and 183A

Route		Auto	Truck	% Truck	Total	% of Total
SH 45 N						
Screenline 45N-A	FM 1431	35,239	6,589	15.8%	41,828	21.0%
	Colonial Parkway	5,550	693	11.1%	6,243	3.1%
	Brushy Creek Rd.	10,066	2,091	17.2%	12,156	6.1%
	Avery Ranch Blvd.	11,310	1,658	12.8%	12,968	6.5%
	Lakeline Blvd.	8,809	899	9.3%	9,707	4.9%
	SH 45 NW ML	**36,934**	**1,082**	**2.8%**	**38,017**	**19.1%**
	SH 45 NW Frontage	28,893	1,621	5.3%	30,514	15.3%
	Anderson Mill Rd.	15,531	3,016	16.3%	18,547	9.3%
	McNeil Dr.	25,896	3,357	11.5%	29,253	14.7%
	Total	178,229	21,005	10.5%	199,234	100.0%
Screenline 45N-B	US 79	24,120	2,651	9.9%	26,771	17.6%
	CR 168/Gattis School Rd.	14,472	1,228	7.8%	15,700	10.3%
	SH 45 NE ML	**30,696**	**1,226**	**3.8%**	**31,922**	**20.9%**
	SH 45 NE Frontage	7,872	967	10.9%	8,839	5.8%
	Pflugerville Loop Rd.	10,265	1,597	13.5%	11,862	7.8%
	FM 1825/Pecan St.	18,400	3,527	16.1%	21,928	14.4%
	Wells Branch Pkwy	13,974	1,111	7.4%	15,085	9.9%
	Howard Lane	17,788	2,599	12.7%	20,387	13.4%
	Total	137,588	14,906	9.8%	152,494	100.0%
Loop 1						
Screenline Loop 1-A	US 183	144,620	10,915	7.0%	155,535	28.6%
	Parmer Lane	35,782	4,748	11.7%	40,529	7.4%
	Howard Lane	12,720	1,929	13.2%	14,650	2.7%
	FM 1325/Loop 1 SR	21,092	867	3.9%	21,958	4.0%
	Loop 1 Mainline Plaza	**55,775**	**796**	**1.4%**	**56,571**	**10.4%**
	Bratton Lane	6,766	562	7.7%	7,328	1.3%
	IH 35	146,092	24,105	14.2%	170,197	31.2%
	Heatherwilde	15,211	551	3.5%	15,762	2.9%
	N Railroad Rd	6,134	137	2.2%	6,272	1.2%
	FM 685	21,750	2,437	10.1%	24,186	4.4%
	SH 130	29,035	2,649	8.4%	31,684	5.8%
	Total	494,977	49,696	9.1%	544,673	100.0%
SH 45 SE						
Screenline 45SE-A	FM 1327	8,993	1,488	14.2%	10,481	43.6%
	SH 45 SE ML	**11,548**	**1,296**	**10.1%**	**12,844**	**53.4%**
	Turnersville Rd.	648	79	10.9%	726	3.0%
	Total	21,189	2,863	11.9%	24,051	100.0%
183A						
Screenline 183A-A	Lakeline Blvd	22,231	2,165	8.9%	24,396	16.1%
	US 183	32,810	9,372	22.2%	42,182	27.8%
	183A ML	**38,545**	**1,471**	**3.7%**	**40,016**	**26.4%**
	Vista Ridge Blvd	6,851	481	6.6%	7,332	4.8%
	Parmer Ln	32,815	4,796	12.8%	37,610	24.8%
	Total	133,252	18,284	12.1%	151,536	100.0%
Screenline 183A-B	Pecan Park Blvd	6,792	738	9.8%	7,530	3.7%
	US 183	67,467	5,649	7.7%	73,115	35.5%
	183A ML	**35,799**	**970**	**2.6%**	**36,769**	**17.8%**
	US 183 SB On-Ramp	25,188	2,109	7.7%	27,297	13.2%
	US 183/SH 45 DC	10,798	2,225	17.1%	13,024	6.3%
	Lake Creek Pkwy	11,656	1,186	9.2%	12,843	6.2%
	Parmer Ln	30,613	5,011	14.1%	35,624	17.3%
	Total	188,313	17,888	8.7%	206,201	100.0%

Note: Truck volumes shown include 2-axle, 6-tire trucks and 3+ axle trucks.

Table 3.3 2013 Average Weekday Screenline Volumes for US 183S and US 290E

	Route	Auto	Truck	% Truck	Total	% of Total
	183S					
Screenline 183S-A	**US 183**	**32,559**	**5,344**	**14.1%**	**37,903**	**48.1%**
	US 183 Frontage Rd.	31,687	3,175	9.1%	34,862	44.2%
	Springdale Rd.	5,378	656	10.9%	6,035	7.7%
	Total	69,624	9,176	11.6%	78,800	100.0%
Screenline 183S-C	Airport Blvd.	30,238	3,816	11.2%	34,054	36.0%
	Springdale Rd.	7,553	472	5.9%	8,025	8.5%
	US 183	**46,050**	**6,593**	**12.5%**	**52,643**	**55.6%**
	Total	83,842	10,880	11.5%	94,722	100.0%
Screenline 183S-D	E. Cesar Chavez St.	10,051	1,069	9.6%	11,121	9.8%
	E. 5th St.	1,639	151	8.5%	1,790	1.6%
	E. 7th St.	12,047	1,096	8.3%	13,143	11.6%
	Airport Blvd.	23,107	3,371	12.7%	26,477	23.4%
	Bolm Rd.	4,058	745	15.5%	4,803	4.2%
	US 183	**51,767**	**4,109**	**7.4%**	**55,876**	**49.4%**
	Total	102,670	10,541	9.3%	113,210	100.0%
Screenline 183S-E	S. Pleasant Valley Rd.	15,027	1,418	8.6%	16,445	17.6%
	Montopolis Dr.	17,110	599	3.4%	17,709	19.0%
	Vargas Rd.	3,300	404	10.9%	3,704	4.0%
	US 183	**47,890**	**7,559**	**13.6%**	**55,449**	**59.4%**
	Total	83,327	9,980	10.7%	93,307	100.0%
	US 290					
Screenline 290-A	**US 290**	**24,076**	**3,510**	**12.7%**	**27,586**	**27.9%**
	US 290 Frontage Rd.	27,302	1,275	4.5%	28,576	28.9%
	Springdale Rd.	14,415	793	5.2%	15,208	15.4%
	Loyola Ln.	8,687	965	10.0%	9,652	9.8%
	MLK Blvd.	16,851	947	5.3%	17,798	18.0%
	Total	91,331	7,489	7.6%	98,820	100.0%
Screenline 290-B	Springdale Rd. (South of US 290)	8,357	923	9.9%	9,279	14.7%
	Springdale Rd. (East of US 183)	10,422	1,259	10.8%	11,681	18.5%
	Loyola Ln.	15,561	1,836	10.6%	17,397	27.5%
	MLK Blvd.	22,923	2,032	8.1%	24,955	39.4%
	Total	57,263	6,050	9.6%	63,313	100.0%
Screenline 290-C	Blue Goose Rd.	1,388	115	7.7%	1,503	3.0%
	US 290 Frontage Rd.	20,649	3,737	15.3%	24,386	49.2%
	US 290 - Giles ML Plaza	**18,380**	**750**	**3.9%**	**19,130**	**38.6%**
	Johnny Morris Rd.	4,099	472	10.3%	4,571	9.2%
	Total	44,516	5,074	10.2%	49,590	100.0%
Screenline 290-D	FM 734	14,414	3,565	19.8%	17,979	36.0%
	US 290 Frontage Rd.	15,396	3,093	16.7%	18,489	37.0%
	US 290 - Parmer ML Plaza	**12,742**	**698**	**5.2%**	**13,440**	**26.9%**
	Total	42,552	7,356	14.7%	49,908	100.0%

Note: Truck volumes shown include 2-axle, 6-tire trucks and 3+ axle trucks.

3.2 TRAVEL SPEEDS

A travel time data collection program was conducted by Alliance Transportation Group (ATG) in 2014 for the sections of the primary non-tolled routes that compete with the CTTS system, which include IH-35, the non-tolled section of Loop 1, US 183, FM 973, Gattis School Road and US 290. These travel time data were collected via GPS systems and were obtained for multiple trials in both directions for the peak and off-peak periods. Travel times collected in 2012 for earlier studies were also included for further model validations. These routes include SH 130, SH 45N, SH 21, SH 360, US 79, FM 685, RM 620, Parmer Lane, I-10 and SH 123. The travel time data collection program is shown in Figure 3.3.

Table 3.4 summarizes the average speeds across segments of each roadway for both peak periods and the off-peak period. As expected, speeds for SH 130, SH 45 North, and SH 45 SE are well above 65 MPH throughout the day. Loop 1 has slightly slower speeds because the data includes both the tolled and non-tolled sections of Loop 1. In the table, IH-35 is summarized by three segments, each of which includes shorter, more congested portions during particular time periods. While off-peak speeds for IH-35 generally range between 60 to 70mph, the peak period congested speeds in the peak travel direction are reduced to between 47– 50 MPH.

Speeds by smaller, individual sections of these roadways in the primary project area are shown for the AM peak period, PM peak period, and Off-peak period in Figure 3.4, Figure 3.5, and Figure 3.6, respectively. From the figures, is it clear that IH-35 has congestion through central Austin for all periods of the day and that Loop 1 and US 183 within Austin also have significant congestion during the peak periods.

Figure 3.3 Travel Time Run Map

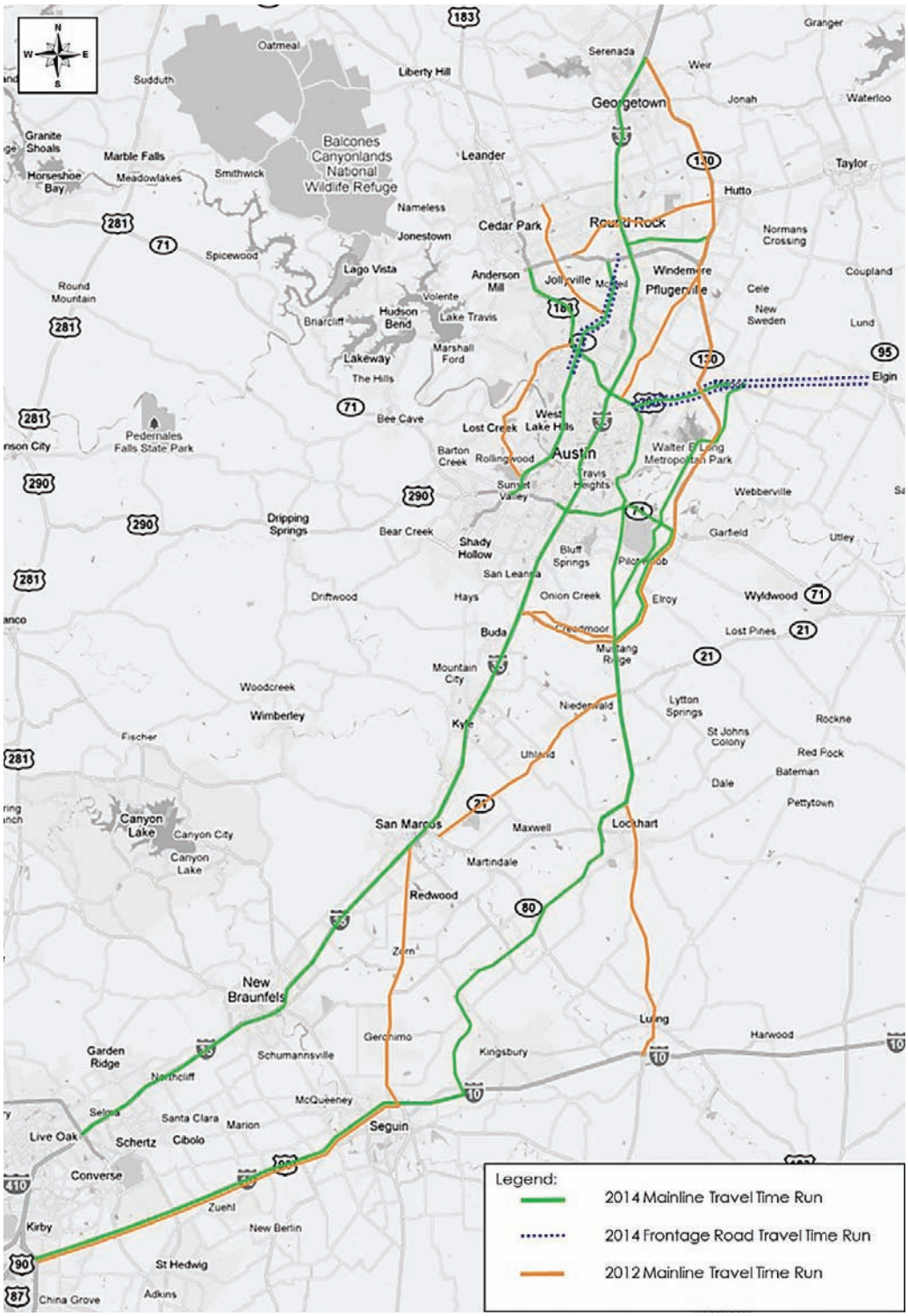


Table 3.4 Observed Speeds – Averages by Segments

Route	Section Limits		Direction	AM	PM	Off-peak
IH 35	SH 130	MLK Blvd.	NB	66	53	65
			SB	50	54	60
	MLK Blvd.	SH 80	NB	53	59	64
			SB	69	47	65
	SH 80 [1]	Loop 1604 [1]	NB	70	67	71
			SB	64	64	70
Loop 1	SH 45 N	US 290 W	NB	53	43	66
			SB	52	43	68
SH 130 [1]	IH 35	US 183	NB	73	72	71
			SB	72	72	71
SH 45 N [1]	US 183	SH 130	EB	66	68	71
			WB	68	66	74
US 183	SH 45 N	Manor Rd.	NB	67	47	67
			SB	56	68	66
	Manor Rd.	SH 130	NB	31	36	45
			SB	42	32	47
	SH 130	IH 10	NB	53	55	54
			SB	52	52	54
SH 21 [1]	US 183	US 80	NB	57	58	60
			SB	60	58	61
SH 360 [1]	US 183	Loop 1	NB	36	24	46
			SB	30	34	45
US 79 [1]	IH 35	SH 130	EB	40	37	40
			WB	31	33	35
FM 973	US 290	US 183	NB	36	38	39
			SB	36	39	42
IH 10 [1]	Loop 410	SH 123	EB	71	72	70
			WB	67	71	72
SH 123 [1]	IH 35	IH 10	NB	54	53	51
			SB	53	52	52
FM 685 [1]	SH 45 N/Kelly Ln.	US 290E	NB	35	27	34
			SB	24	32	37
RM 620 [1]	SH 45 N	IH 35	EB	33	30	36
			WB	30	30	39
Gattis School Rd.	IH 35	SH 130	EB	29	25	30
			WB	29	26	34
Parmer Ln. [1]	FM 1431	Loop 1	NB	38	37	47
			SB	34	35	38
Loop 1 Frontage	SH 45 EB Frontage	US 183	NB	28	25	27
			SB	27	32	30
SH 45 SE [1]	IH 35	SH 130	EB	77	78	76
			WB	78	78	78
FM 1327 [1]	IH 35	US 183	EB	56	52	55
			WB	54	52	55

Note: 1) Travel time runs conducted in 2012. All other runs were conducted in 2014.

Figure 3.4 AM Observed Speeds

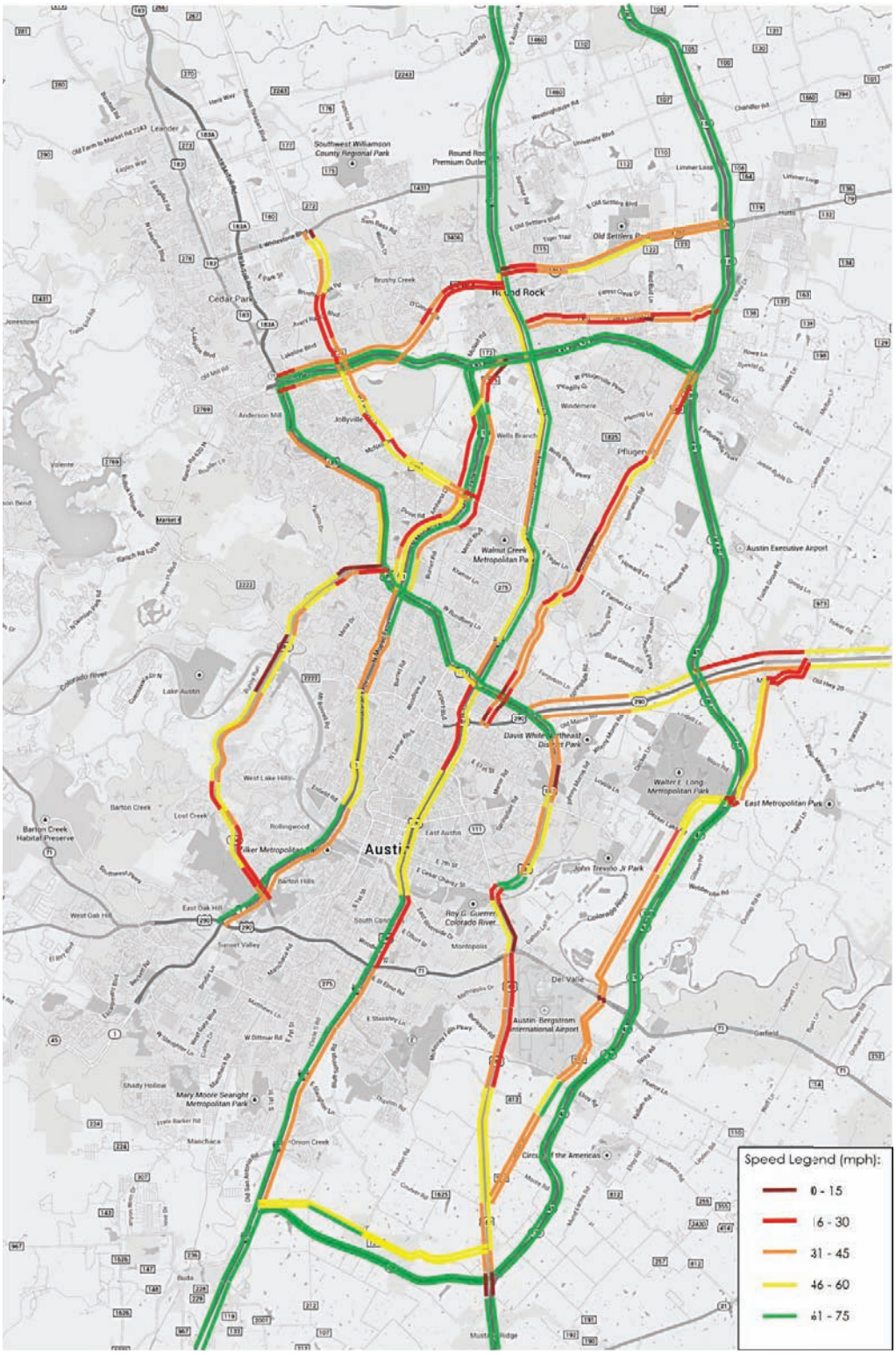


Figure 3.5 PM Observed Speeds

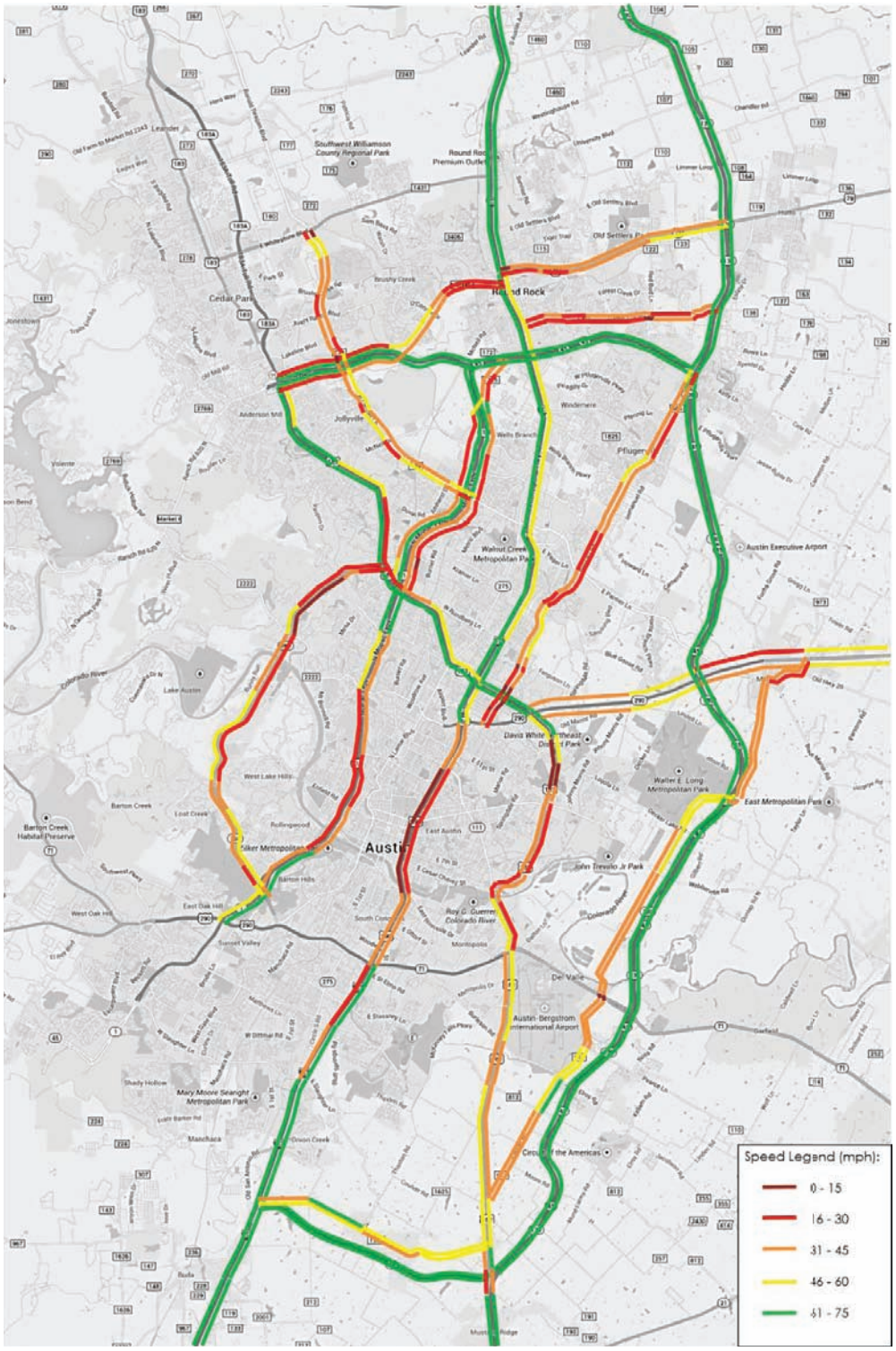
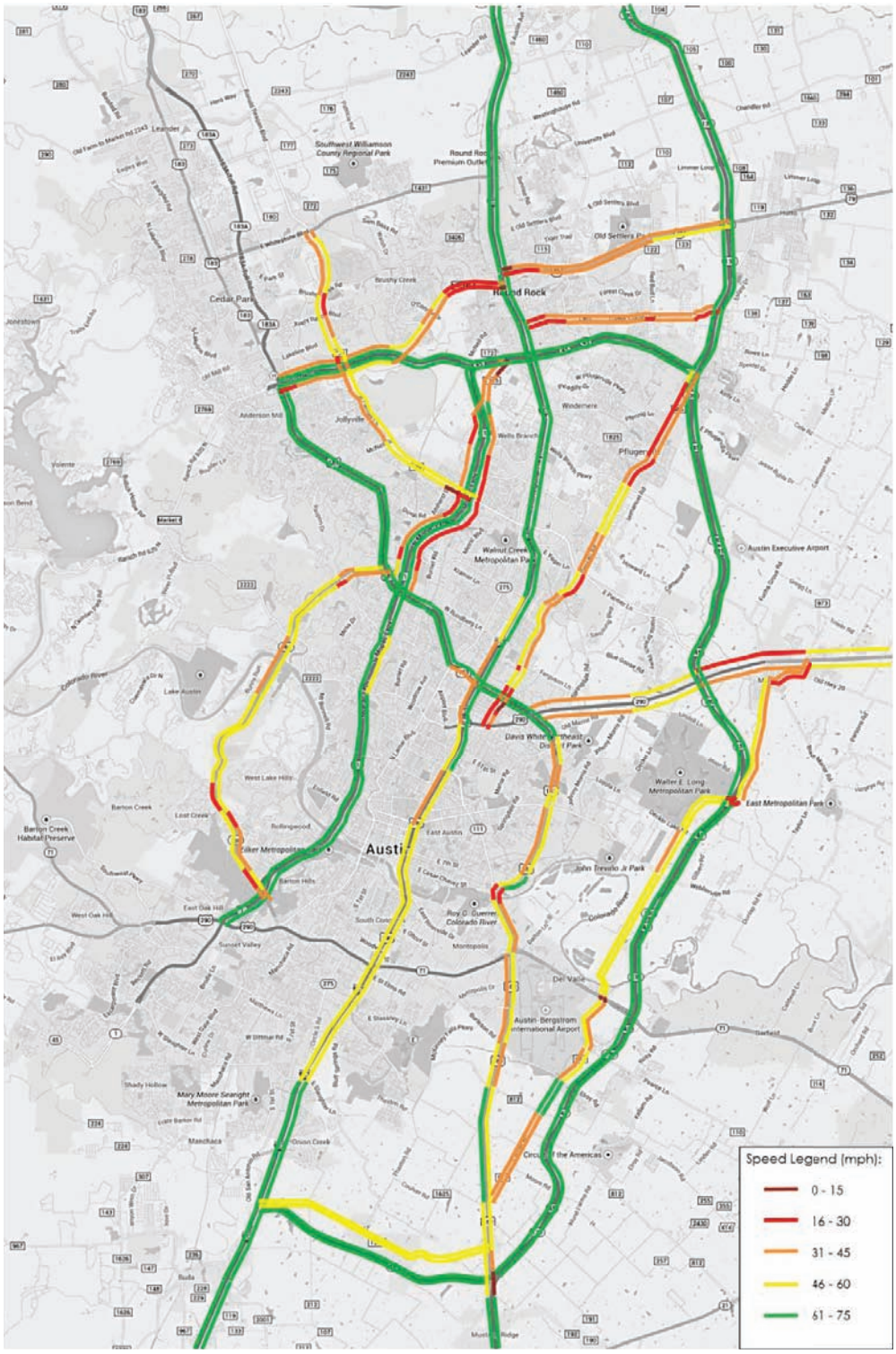


Figure 3.6 Off-Peak Observed Speeds



4.0 TOLL COLLECTION

This chapter presents TxDOT's toll collection policy for the CTTS, including methods of toll collection, toll rates, and violation procedures, as well as the policy regarding future rates. Future toll rates and tolling assumptions used to develop the forecasts for this study are also presented in this chapter.

4.1 METHODS OF TOLL COLLECTION

Since January 2013, TxDOT operates the CTTS as cashless facilities, using only two methods of toll collection: Electronic Toll Collection (ETC) and Pay by Mail (PBM). Drivers using ETC automatically pay the toll with their TxTag, while drivers without a TxTag have their license plate photographed at the pay points. TxDOT then mails a bill to the registered owner of the vehicle to collect payment.

4.2 HISTORICAL AND CURRENT TOLL RATES

The historical toll rates for 2-axle vehicles using SH 45N and Loop 1, SH 130, and SH 45 SE are shown in Table 4.1, Table 4.2, and Table 4.3, respectively. Each facility opened with a phased toll schedule: toll free to half rate to full rate. SH 45 SE was originally constructed as a cashless facility which opened after the other elements of the CTTS were opened; therefore, cash rates are not shown for this roadway.

The toll rates remained the same since each road's opening until the system-wide toll increases were implemented in January 2013 for SH 45 N, Loop 1, and SH 130. In January 2014, another toll increase was implemented across all facilities, including SH 45 SE, as part of the annual toll escalation process adopted in 2013, under which tolls will increase annually based on the prior 12-month Consumer Price Index - Urban (CPI-U Index).

Table 4.1 SH 45 N and Loop 1 Historical Toll Rates, 2-axle vehicles

Dates	SH 45 N and Loop 1					
	Mainline Plazas			Ramps		
	ETC	Pay by Mail	Cash	ETC	Pay by Mail	Cash
Nov-06 to Dec-06	Open Toll Free					
Jan-07	-	-	$0.75	-	-	$0.50
Feb-07	$0.34	-	$0.75	$0.23	-	$0.50
Mar-07 to Dec-12	$0.68	$0.90	$0.75	$0.45	$0.60	$0.50
2013	$1.02	$1.36	-	Varies by Location		
2014	$1.04	$1.38	-	Varies by Location		

Table 4.2 SH 130 Historical Toll Rates, 2-axle vehicles

Dates	SH 130					
	Mainline Plazas			Ramps		
	ETC	Pay by Mail	Cash	ETC	Pay by Mail	Cash
Nov-06 to Dec-06	Open Toll Free					
Jan-07	-	-	$1.50	-	-	$0.50
Feb-07	$0.68	-	$1.50	$0.23	-	$0.50
Mar-07 to Dec-12	$1.35	$1.80	$1.50	$0.45	$0.60	$0.50
2013	$1.69	$2.24	-	Varies by Location		
2014	$1.72	$2.29	-	Varies by Location		

Table 4.3 SH 45 SE Historical Toll Rates, 2-axle vehicles

Dates	SH 45 SE			
	Mainline Plazas		Ramps	
	ETC	Pay by Mail	ETC	Pay by Mail
May-09	Open Toll Free			
Jun-09	$0.50	-	$0.33	-
Jul-09 to Dec-13	$1.00	$1.33	$0.66	$0.88
2014	$1.02	$1.36	$0.67	$0.89

As shown in the tables above, there is a 33 percent surcharge on PBM transactions. Vehicles having more than two axles pay a proportionately higher toll using the (n-1) formula whereby the toll is equal to the passenger car toll times the vehicle's number of axles less one. For instance, a three axle vehicle pays two times the passenger car rate. The maximum truck toll rate for SH 130 and SH 45 SE is capped at the 4-axle rate, which is three times the auto rate. This limitation was implemented to encourage long-distance truck traffic to utilize the CTTS as an alternative to I-35 through Austin. Current 2014 toll rates for 5-axle vehicles are shown for each CTTS element in Table 4.4.

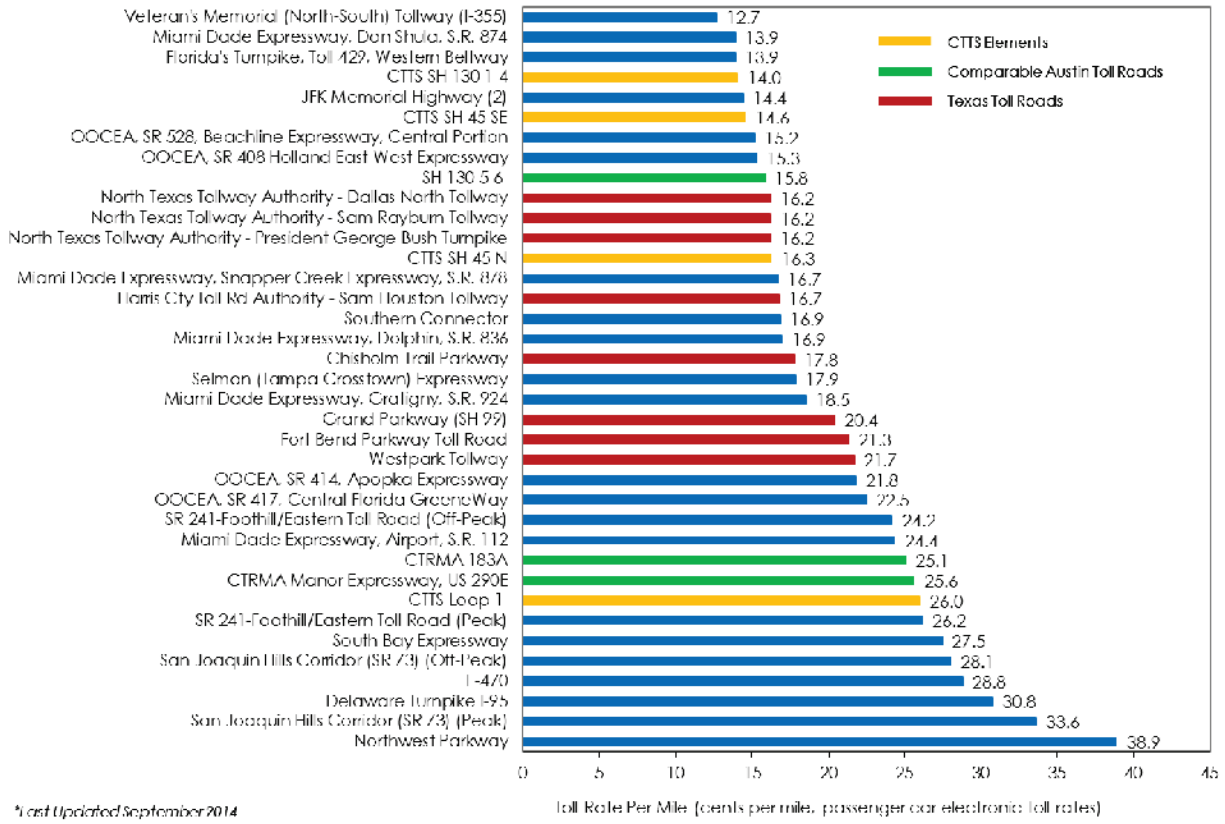
Table 4.4 CTTS 2014 Toll Rates, 5-axle vehicles

CTTS Element	Mainline Plazas	
	ETC	Pay by Mail
SH 45 N	$4.16	$5.53
Loop 1	$4.16	$5.53
SH 130 [1]	$5.16	$6.68
SH 45 SE [1]	$3.06	$4.07

Note: 1) Effective March 2011, truck tolls capped at 4-axle rate on SH 130 and SH 45 SE.

As shown in Figure 4.1, the per-mile ETC toll rates for passenger cars on CTTS facilities are comparable to, or lower than, the rates at various facilities across the United States. The reasonable rate of inflation used for the toll escalation rate will ensure that CTTS toll rates stay within a comparable range assuming similar CPI rate escalation on such other toll facilities.

Figure 4.1 Comparable Passenger Car ETC Toll Rates per Mile



4.3 POLICY REGARDING FUTURE RATES

The future toll rates for the CTTS facilities are based on the current toll rates in 2014, escalated annually at the annual inflation rate. This escalation policy was adopted by the Texas Transportation Commission in 2013 whereby tolls are escalated annually on January 1st based on Toll Rate Escalation Percentage, as calculated on each Toll Escalation Determination Date. The Toll Rate Escalation Percentage is the Consumer Price Index – Urban (CPI-U) on October 1st, the Toll Escalation Determination Date of each year, based on the twelve month period ending August 31st of the current year. The first inflation-based annual escalation was implemented in January 2014 when tolls were increased 1.5 percent.

Per the adopted escalation policy, the actual level of tolls for any future year will be determined based on the actual CPI-U; the resulting toll revenues will be changed by a combination of the change in transactions and the change in the toll level. Table 4.5 shows historical CPI-U annual averages as well as several average annual growth rates depicting long term trends, while Table 4.6 shows more recent CPI-U data and the projected annual escalation rates used for developing future toll rates in the 2014 study. For the 24-year period from 1990 to the present, the average annual growth rate is calculated to be 2.5 percent. For the 34-year period from 1980 to the present, the average annual growth rate is greater, at 3.2 percent.

Table 4.5 Annual Consumer Price Index – Historical since 1970

Year	Annual CPI-U [1] (1982-84=100)	Average Annual Rate of Change
1970	39	
1980	82	7.8%
1990	131	4.7%
2000	172	2.8%
2010	218	2.4%
2014 [2]	237	2.1%
Average Annual Growth Rate		
1970 - 2014		4.2%
1980 - 2014		3.2%
1990 - 2014		2.5%
2000 - 2014		2.3%
2010 - 2014		2.1%

Notes: 1) CPI-U values shown are nominal U.S. city average, all items, seasonally adjusted annual averages.
2) Annual 2014 value shown is average of monthly data through November 2014.

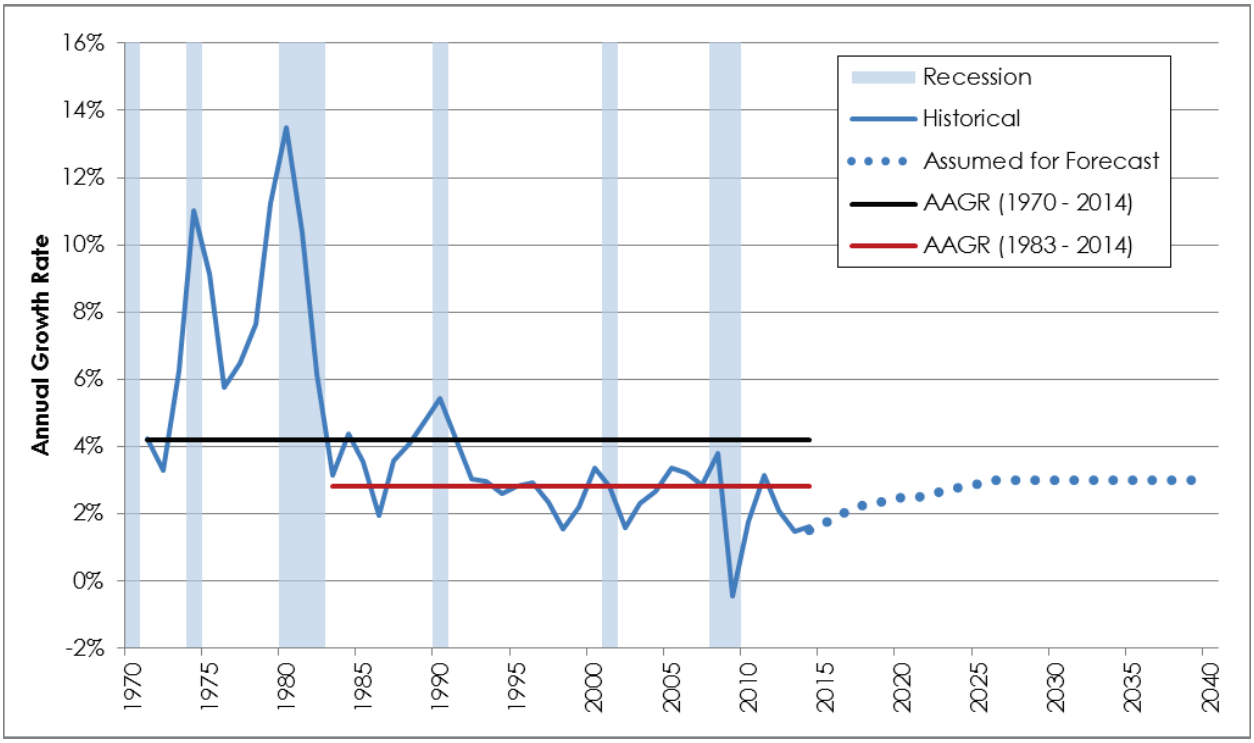
Table 4.6 Annual Consumer Price Index – Recent and Projected

Year	Annual CPI-U [1] (1982-84=100)	Annual Rate of Change
2005	195	
2006	202	3.2%
2007	207	2.9%
2008	215	3.8%
2009	214	-0.4%
2010	218	1.8%
2011	225	3.1%
2012	230	2.1%
2013	233	1.5%
2014 [2]	237	1.6%
Annual Escalation		
2014 (Aug 2012 - Aug 2013)		1.5%
2015 (Aug 2013 - Aug 2014)		1.7%
2016		2.0%
2017		2.2%
2018		2.3%
2019		2.4%
2020		2.5%
2021		2.5%
2022		2.6%
2023		2.7%
2024		2.8%
2025		2.9%
2026 - 2040		3.0%
2014 - 2040		2.8%

Notes: 1) CPI-U values shown are nominal U.S. city average, all items, seasonally adjusted annual averages.
2) Annual 2014 value shown is average of monthly data through November 2014.

Considering these trends, Stantec found it reasonable to escalate inflation as listed in Table 4.6. The assumed annual escalation rates begin close to the more recent data at 1.7 percent in 2015, then gradually increase to 3.0 percent by 2026 and continue at that level through 2040. The historical and projected average annual growth rates are also shown in Figure 4.2 below.

Figure 4.2 Annual Consumer Price Index – Historical and Projected



4.4 FUTURE TOLL RATES

The assumed toll rates on each CTTS facility for each model year, as well as the existing 2014 toll rates, are shown in Table 4.7, Table 4.8, Table 4.9, and Table 4.10 below. The surcharge of 33 percent for PBM transactions is assumed to continue throughout all model years. Vehicles having more than two axles will continue to pay a proportionately higher toll using the (n-1) formula in the same way these vehicle currently do. Consistent with TxDOT's current policy described previously, truck tolls for SH 130 and SH 45 SE are capped at the rate of a 4-axle vehicle.

A full length trip using ETC on SH 45 N currently costs $2.08 in 2014, and by 2040, the toll for the same trip increases to $4.22. The per mile rate for the 12.8 mile full length trip on SH 45 N is $0.16 in 2014, increasing to $0.33 in 2040. On Loop 1, a full length trip costs $1.04 today for ETC transactions, but will increase to $2.11 in 2040. The per mile toll rate on Loop 1 for a full length trip of four miles is currently $0.26 and will increase to $0.53 in 2040.

Table 4.7 SH 45 N Toll Schedule (Autos)

Toll Location	Payment Type	2013*	2014	2015*	2020*	2030*	2040*
Lake Creek ML Plaza	Pay by Mail	$1.36	$1.38	$1.41	$1.57	$2.09	$2.80
	ETC	$1.02	$1.04	$1.06	$1.18	$1.57	$2.11
Parmer Ln (FM 734) Ramps	Pay by Mail	$1.17	$1.18	$1.21	$1.35	$1.78	$2.40
	ETC	$0.88	$0.89	$0.91	$1.01	$1.34	$1.80
RM 620 (Howard Ln) Ramps	Pay by Mail	$1.17	$1.18	$1.21	$1.35	$1.78	$2.40
	ETC	$0.88	$0.89	$0.91	$1.01	$1.34	$1.80
O'Connor Dr (Arterial C) Ramps	Pay by Mail		$1.21	$1.24	$1.38	$1.82	$2.45
	ETC		$0.91	$0.93	$1.04	$1.37	$1.84
Greenlawn Ramps	Pay by Mail	$0.90	$0.92	$0.93	$1.04	$1.38	$1.86
	ETC	$0.68	$0.69	$0.70	$0.79	$1.04	$1.40
AW Grimes Ramps	Pay by Mail	$0.90	$0.92	$0.93	$1.04	$1.38	$1.86
	ETC	$0.68	$0.69	$0.70	$0.79	$1.04	$1.40
Schultz Ln (Arterial A) Ramps	Pay by Mail	$1.36	$1.38	$1.41	$1.57	$2.09	$2.80
	ETC	$1.02	$1.04	$1.06	$1.18	$1.57	$2.11
Wilke Ln (Heatherwilde) Ramps	Pay by Mail	$1.36	$1.38	$1.41	$1.57	$2.09	$2.80
	ETC	$1.02	$1.04	$1.06	$1.18	$1.57	$2.11
Heatherwide ML Plaza	Pay by Mail	$1.36	$1.38	$1.41	$1.57	$2.09	$2.80
	ETC	$1.02	$1.04	$1.06	$1.18	$1.57	$2.11
Full Length Trip	Distance	12.8	12.8	12.8	12.8	12.8	12.8
	Rate per Mile	$0.16	$0.16	$0.17	$0.18	$0.25	$0.33
	Toll Cost (ETC)	$2.04	$2.08	$2.12	$2.36	$3.14	$4.22

Notes: 1) Rate per mile shown for a full length trip is equal to the total toll cost divided by the distance.
2) Toll cost for a full length trip is equal to the sum of the mainline plaza tolls.
3) The assumed annual escalation rates are as shown in Table 4.6.
4) Toll rates shown for 2013 through 2015 are actual; toll rates shown for 2020, 2030 and 2040 are assumed based on the escalation rates shown in Table 4.6.
5) Years shown with an asterisk (*) are model years.

Table 4.8 Loop 1 Toll Schedule (Autos)

Toll Location	Payment Type	2013*	2014	2015*	2020*	2030*	2040*
Howard Ln / Wells Branch Ramps	Pay by Mail	$0.90	$0.92	$0.93	$1.04	$1.38	$1.86
	ETC	$0.68	$0.69	$0.70	$0.79	$1.04	$1.40
Merrilltown ML Plaza	Pay by Mail	$1.36	$1.38	$1.41	$1.57	$2.09	$2.80
	ETC	$1.02	$1.04	$1.06	$1.18	$1.57	$2.11
Shoreline Dr Ramps	Pay by Mail	$0.90	$0.92	$0.93	$1.04	$1.38	$1.86
	ETC	$0.68	$0.69	$0.70	$0.79	$1.04	$1.40
O'Connor Dr Ramps	Pay by Mail		$1.21	$1.24	$1.38	$1.82	$2.45
	ETC		$0.91	$0.93	$1.04	$1.37	$1.84
Full Length Trip	Distance	4	4	4	4	4	4
	Rate per Mile	$0.26	$0.26	$0.27	$0.30	$0.39	$0.53
	Toll Cost (ETC)	$1.02	$1.04	$1.06	$1.18	$1.57	$2.11

Notes: 1) Rate per mile shown for a full length trip is equal to the total toll cost divided by the distance.
2) Toll cost for a full length trip is equal to the sum of the mainline plaza tolls.
3) The assumed annual escalation rates are as shown in Table 4.6.
4) Toll rates shown for 2013 through 2015 are actual; toll rates shown for 2020, 2030 and 2040 are assumed based on the escalation rates shown in Table 4.6.
5) Years shown with an asterisk (*) are model years.

To travel the full length of 49 miles on SH 130 Segments 1-4 today, the toll cost is $6.88 using ETC or $0.14 per mile. By 2040, the same full length trip on this road increases to $13.96 for a per mile rate of $0.28. On SH 45 SE, the current ETC cost for a full length trip is $1.02, and increases to $2.07 by 2040. The per-mile rate for a full length seven mile trip will increase from $0.15 in 2014 to $0.30 in 2040.

Table 4.9 SH 130 Toll Schedule (Autos)

Toll Location	Payment Type	2013*	2014	2015*	2020*	2030*	2040*
Segment 1 ML Plaza	Pay by Mail	$2.24	$2.29	$2.33	$2.60	$3.45	$4.64
	ETC	$1.69	$1.72	$1.75	$1.96	$2.59	$3.49
Segment 2 ML Plaza	Pay by Mail	$2.24	$2.29	$2.33	$2.60	$3.45	$4.64
	ETC	$1.69	$1.72	$1.75	$1.96	$2.59	$3.49
Segment 3 ML Plaza	Pay by Mail	$2.24	$2.29	$2.33	$2.60	$3.45	$4.64
	ETC	$1.69	$1.72	$1.75	$1.96	$2.59	$3.49
Segment 4 ML Plaza	Pay by Mail	$2.24	$2.29	$2.33	$2.60	$3.45	$4.64
	ETC	$1.69	$1.72	$1.75	$1.96	$2.59	$3.49
Cameron Rd Ramps	Pay by Mail	$2.24	$2.29	$2.33	$2.60	$3.45	$4.64
	ETC	$1.69	$1.72	$1.75	$1.96	$2.59	$3.49
FM 104, Pecan St, Gregg Manor, FM 973, FM 969, Pearce Ln, and FM 812 Ramps	Pay by Mail	$0.75	$0.76	$0.77	$0.86	$1.14	$1.54
	ETC	$0.56	$0.57	$0.58	$0.65	$0.86	$1.15
US 79, CR 138, Chandler Rd and Elroy Rd Ramps	Pay by Mail	$0.97	$0.98	$1.00	$1.12	$1.48	$1.99
	ETC	$0.73	$0.74	$0.75	$0.84	$1.12	$1.50
SH 29, Blue Bluff, Harold Green, and Moore Rd Ramps	Pay by Mail	$0.60	$0.61	$0.63	$0.70	$0.92	$1.24
	ETC	$0.45	$0.46	$0.47	$0.52	$0.69	$0.93
Full Length Trip	Distance	49	49	49	49	49	49
	Rate per Mile	$0.14	$0.14	$0.14	$0.16	$0.21	$0.28
	Toll Cost (ETC)	$6.76	$6.88	$7.00	$7.84	$10.36	$13.96

Notes: 1) Rate per mile shown for a full length trip is equal to the total toll cost divided by the distance.
2) Toll cost for a full length trip is equal to the sum of the mainline plaza tolls.
3) The assumed annual escalation rates are as shown in Table 4.6.
4) Toll rates shown for 2013 through 2015 are actual; toll rates shown for 2020, 2030 and 2040 are assumed based on the escalation rates shown in Table 4.6.
5) Years shown with an asterisk (*) are model years.

Table 4.10 SH 45 SE Toll Schedule (Autos)

Toll Location	Payment Type	2013*	2014	2015*	2020*	2030*	2040*
Mainline Plaza	Pay by Mail	$1.33	$1.36	$1.38	$1.54	$2.05	$2.75
	ETC	$1.00	$1.02	$1.04	$1.16	$1.54	$2.07
Ramp to/from west	Pay by Mail	$0.88	$0.89	$0.90	$1.01	$1.34	$1.81
	ETC	$0.66	$0.67	$0.68	$0.76	$1.01	$1.36
Ramp to/from east	Pay by Mail	$0.88	$0.89	$0.90	$1.01	$1.34	$1.81
	ETC	$0.66	$0.67	$0.68	$0.76	$1.01	$1.36
Full Length Trip	Distance	7	7	7	7	7	7
	Rate per Mile	$0.14	$0.15	$0.15	$0.17	$0.22	$0.30
	Toll Cost (ETC)	$1.00	$1.02	$1.04	$1.16	$1.54	$2.07

Notes: 1) Rate per mile shown for a full length trip is equal to the total toll cost divided by the distance.
2) Toll cost for a full length trip is equal to the sum of the mainline plaza tolls.
3) The assumed annual escalation rates are as shown in Table 4.6.
4) Toll rates shown for 2013 through 2015 are actual; toll rates shown for 2020, 2030 and 2040 are assumed based on the escalation rates shown in Table 4.6.
5) Years shown with an asterisk (*) are model years.

4.5 PBM AND VIOLATION PROCEDURES

For drivers without a TxTag and therefore cannot pay the toll using ETC, a PBM option is available. TxDOT's Customer Service Center (CSC) collects these tolls by sending a bill to the registered owner of the vehicle (identified from the photographed license plate). This invoice includes a 33 percent surcharge over the ETC rate plus a nominal statement fee of $1.15 regardless of the number of transactions. All toll payments are required to be paid within 30

days. If payment is not made within 30 days, another invoice is sent including an additional $1.15 statement fee, for a total of $2.30 in statement fees.

4.5.1 Standard Violators

If the payment of the second invoice is not made within 30 days from Statement date, the toll transaction becomes a toll violation in which the two statement fees are retracted, and replaced by an administration fee of $5.00 per transaction. Toll violation payments are required to be paid within 30 days to avoid being forwarded to TxDOT's collection contractor. Once the violation is passed to TxDOT's collection contractor, the $5.00 administration fee is replaced by a collections administration fee of $25.00 per transaction. After a minimum of 30 days in collections, the account is then eligible for court action, where the $25.00 fee is replaced with a $100.00 court administration fee. A summary of these fees in presented in Table 4.11.

Table 4.11 Summary of Violation Fees

No. of 30-day Periods since Transaction	Description	Amount
1	Mailed or Faxed Statement	$1.15 per statement
2	Mailed or Faxed Statement	$1.15 per statement
3	Admin Fee - Violation Notice	$5.00
4	Admin Fee - Violation in Collections	$25.00
5	Admin Fee - Violation Sworn Complaint Issued	$100.00

Source: Minute Order 110816

Although each case varies, TxDOT typically only files one violation transaction per case due to constraints on the number of total cases that a court can handle. The court almost always requires full payment of fees and tolls for the transaction filed, then a negotiated discount on any remaining fees that is contingent on the defendant entering into a payment plan with TxDOT.

According to the latest FY 2014 statistics (September 2013 through February 2014), approximately 50 percent of the image based transactions were collected. Of these, 86 percent were collected during the PBM resolution or invoice stage and the remainder (14 percent) were collected during the violation resolution stage.

4.5.2 Habitual Violators

In June 2013, additional toll enforcement legislation authorized new toll enforcement tools for Habitual Violators (HVs) throughout Texas. Habitual Violators are customers that have accumulated 100 or more unpaid tolls in less than one year and have already been issued two notices of non-payment. In these instances, a Notice of Determination is mailed to the customer, allowing the customer 35 days to request a court hearing.

If no hearing is requested, or the customer is confirmed to be a HV during the court hearing, the HV is prohibited from using the toll roads until payment is made. This Notice of Prohibition is

mailed to the HV, county tax assessor or collector, and law enforcement. HVs affirmed by the court have 30 days to appeal. If the court issues a negative finding for the customer, the HV process is terminated, otherwise the HV status is confirmed. A Notice of Prohibition is mailed to the HV, the county tax assessor or collector and law enforcement. The County Tax Collector or Assessor (TAC) has the option to deny registration renewal for the vehicle registered. If an HV is pulled over by law enforcement using the prohibited toll road, the HV may be subject to having their vehicle impounded.

4.6 CUSTOMER SERVICE CENTER REVENUES

In addition to the toll revenues generated by CTTS, TxDOT also generates revenue from various fees charged to patrons by the Customer Service Center (CSC). These fees consist of charges for TxTags (used for ETC transactions) and for the processing of PBM transactions, as discussed above. A summary of the TxTag fees are listed in Table 4.12.

Table 4.12 Summary of TxTag Fees

Description	Amount
Initial and Replacement Tags (refunded if enrolled in AutoPay)	$13.85 per tag
Bumper and Motorcycle Tags (includes $35 refundable deposit)	$45.00 per tag
Mailed or Faxed Statement	$1.15 per 5 pages of statement
Returned Check (insufficient funds)	$30.00

SOURCE: Minute Orders 112971 and 114073

For FY 2014, the CSC fees equal approximately 11.4 percent of total toll revenue for the corresponding period. On a transaction basis, the average CSC revenue for an ETC transaction is approximately $0.065 and the average CSC revenue for a PBM transaction is $0.306.

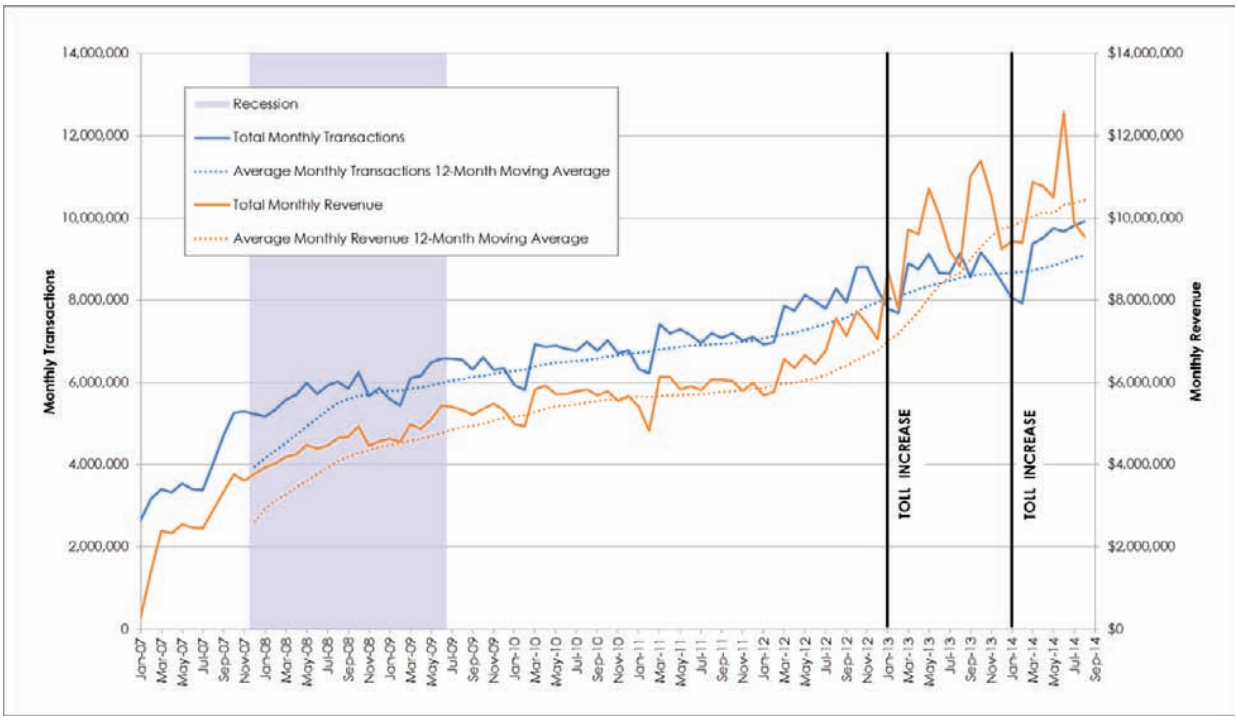
5.0 HISTORICAL CTTS TOLL TRANSACTIONS AND REVENUE

Transactions for CTTS toll facilities have been reviewed since November 2006 when the first phases of SH 45 N, Loop 1, and SH 130 opened to traffic. Historical transaction and revenue data, as presented within this chapter, provide a comprehensive record of the transaction and revenue growth, vehicle distribution, weekday and seasonal patterns, payment methods and transaction payment status. It should also be noted that the recognition of revenue by payment method varies, where ETC and Cash revenue (during the period when available) were recognized at the time of the transaction, whereas PBM revenue was recognized at the time the toll invoices were paid. These historical characteristics are the foundation for the assumptions in this study about future conditions and trends of the facilities.

5.1 MONTHLY AND ANNUAL TRANSACTIONS AND REVENUE

Total transactions and revenue across the CTTS facilities have gradually increased since tolling began in January 2007. Figure 5.1 below shows the historical performance of the CTTS facilities by month and 12-month moving averages for total transactions and revenue.

Figure 5.1 CTTS Historical Transactions and Revenue



As shown in the figure, the facilities opened with strong growth in traffic due to ramp up. An additional factor affecting revenue growth was the toll phasing that occurred during 2007 as part of the introductory marketing period where the facilities opened in a toll free condition and transitioned to half rates and subsequently to full rates over several months. Growth then flattened out somewhat at the start of the recession at the end of 2007. Transaction and

revenue growths have been fairly parallel, progressing at a similar growth rate until January 2013 when revenues increased as a result of a toll increase. In September 2012, SH 45 SE became a part of the CTTS, and the toll road's transactions and revenue were added to the CTTS total. In looking the annual patterns of transactions and revenue across the historical data, there is a clear reduction in traffic and revenue during the winter months. This is due to multiple factors, most notably the inclement weather conditions that tend to suppress travel and construction activity.

The total annual transactions and revenue by calendar year are shown in Table 5.1 and Table 5.2. Annual transactions and revenue by fiscal year are shown in Table 5.3 and Table 5.4, respectively. CTTS's fiscal year runs from September 1 through August 31 of the succeeding calendar year.

The transaction growth of 63.4 percent for SH 45 N in CY 2008 reflects the opening of SH 45 N West in August 2007 and Heatherwilde Ramps in September 2008. Since then, SH 45 N has maintained fairly steady transaction growth until 2013 which showed much lower growth due to the CTTS system-wide toll rate increase implemented in January 2013. Despite the flattened growth in transactions of 0.7 percent in CY 2013, revenue increased 49.1 percent, showing the impact of the toll rate increase. With the subsequent 1.5% toll increase in January 2014, SH 45 N maintains growth for both transactions and revenue of 4.6 percent and 6.0 percent, respectively, when comparing January through August 2013 and 2014 data.

Loop 1 has also sustained its transaction and revenue growth from CY 2007 through CY 2013 with fairly parallel growth rates. In CY 2013, the toll rate increase had an impact on performance, and although there was a 2.2 percent loss of transactions, there was an increase in revenue of 39.3 percent. When comparing the first eight months of data since the toll increase in January 2014 to the same months in 2013, transactions and revenue increased by 1.5 percent and 2.6 percent, respectively.

SH 130 experienced very high transaction growth in the early years due to the phased opening of Segment 3 in November 2007 and Segment 4 in July 2008. In CY 2012, transactions and revenue both increased notably by approximately 19 percent due to the opening of Cameron Road Ramps in January and Segments 5 & 6 in October along with on-going development in this largely rural corridor. Although Segments 5 & 6 are not operated by TxDOT, they interact with the CTTS portion of SH 130 (Segments 1 - 4), as they add continuity as a competing roadway to IH-35 for long distance traffic. Since the January 2014 toll increase, transactions increased by 13.0 percent driven primarily by increased development within the corridor, and revenue increased by 15.7 percent (as compared to the same months in 2013). Note that due to the length of SH 130, the growth rates by segment have varied. From 2009 to 2014, Segment 2 has the highest amount of transactions and has a compounded growth rate of approximately 10 percent. Segments 1 and 3 have compounded growth rates of approximately 14 percent over that period and Segment 4, with the lowest amount of transactions, has a compounded growth rate of approximately 22 percent. The variations in the growth rates are a function of the existing level of development adjacent to each segment and the rate of new development being added each year. Segment 2 is primarily serving the more developed Round Rock and Pflugerville areas, while the areas near Segment 4 are largely undeveloped.

As of September 2012, SH 45 SE is now operated by CTTS and, therefore, contributes to the CTTS total transactions and revenue. Since then, the facility has experienced strong growth similar to SH 130, also driven by increased development nearby. In FY 2014, transactions increased 10.3 percent while revenue increased 9.5 percent. For the first eight months of CY 2014, transactions increased 12.0 percent and revenue increased 25.2 percent.

Table 5.1 Total Annual Calendar Year Transactions by CTTS Element

Calendar Year	SH 45 N	% Change	Loop 1	% Change	SH 130	% Change	SH 45 SE [1]	% Change	Total	% Change
2007	18,495,000		16,506,800		12,378,900		-	-	**47,380,700**	
2008	30,213,200	63.4%	17,315,600	4.9%	21,562,200	74.2%	-	-	**69,091,000**	**45.8%**
2009	31,632,100	4.7%	17,511,400	1.1%	25,879,300	20.0%	-	-	**75,022,800**	**8.6%**
2010	32,602,600	3.1%	18,372,700	4.9%	29,272,300	13.1%	-	-	**80,247,600**	**7.0%**
2011	33,917,100	4.0%	19,100,800	4.0%	31,101,100	6.2%	-	-	**84,119,000**	**4.8%**
2012	36,867,000	8.7%	20,086,700	5.2%	37,094,700	19.3%	1,410,600	-	**95,459,000**	**13.5%**
2013	37,132,540	0.7%	19,636,600	-2.2%	42,574,500	14.8%	4,395,200	211.6%	**103,738,840**	**8.7%**
First 8 Months of Calendar Year (January - August)										
2013	24,666,340		13,122,400		28,022,700		2,889,400		**68,700,840**	
2014 [2]	25,789,600	4.6%	13,324,900	1.5%	31,658,900	13.0%	3,237,200	12.0%	**74,010,600**	**7.7%**

Notes: (1) SH 45 SE opened to traffic in May 2009 but did not become part of the CTTS until September 2012. As a result, the large Increase in 2013 is due to results for 2012 representing only part of year.
(2) Total transaction data was only available up to August 2014 at the time this report; therefore, CY 2014 transactions shown are from only eight months of the calendar year.

Table 5.2 Total Annual Calendar Year Toll Revenue by CTTS Element

Calendar Year	SH 45 N	% Change	Loop 1	% Change	SH 130	% Change	SH 45 SE [1]	% Change	Total	% Change
2007 [2]	-	-	-	-	-	-	-	-	**$31,241,900**	
2008 [2]	-	-	-	-	-	-	-	-	**$53,038,800**	**69.8%**
2009 [2]	-	-	-	-	-	-	-	-	**$61,674,400**	**16.3%**
2010	$19,894,000	-	$12,060,000	-	$35,498,600	-	-	-	**$67,452,600**	**9.4%**
2011	$20,667,900	3.9%	$12,513,700	3.8%	$36,839,900	3.8%	-	-	**$70,021,500**	**3.8%**
2012	$22,503,400	8.9%	$13,101,800	4.7%	$43,902,000	19.2%	$1,643,200	-	**$81,150,400**	**15.9%**
2013	$33,543,600	49.1%	$18,247,200	39.3%	$61,005,700	39.0%	$4,015,900	144.4%	**$116,812,400**	**43.9%**
First 8 Months of Calendar Year (January - August)										
2013	$21,498,500		$11,847,200		$38,652,000		$2,631,100		**$74,628,800**	
2014 [3]	$22,785,700	6.0%	$12,159,800	2.6%	$44,738,600	15.7%	$3,294,900	25.2%	**$82,979,000**	**11.2%**

Notes: (1) SH 45 SE opened to traffic in May 2009 but did not become part of the CTTS until September 2012.
(2) Revenue for PBM patrons was not allocated by each toll facility until September 2009; therefore, only total CTTS revenue is shown for CY 2007 through CY 2009.
(3) Total revenue data was only available up to August 2014 at the time this report; therefore, CY 2014 revenues shown are from only eight months of the calendar year.

Table 5.3 Total Annual Fiscal Year Transactions by CTTS Element

Fiscal Year	SH 45 N	% Change	Loop 1	% Change	SH 130	% Change	SH 45 SE [1]	% Change	Total	% Change
2008	29,458,300		17,194,700		19,287,000		-	-	**65,940,000**	
2009	31,269,500	6.1%	17,381,000	1.1%	24,457,300	26.8%	-	-	**73,107,800**	**10.9%**
2010	32,166,700	2.9%	18,064,100	3.9%	28,298,300	15.7%	-	-	**78,529,100**	**7.4%**
2011	33,543,300	4.3%	18,883,100	4.5%	30,583,200	8.1%	-	-	**83,009,600**	**5.7%**
2012	35,790,100	6.7%	19,889,700	5.3%	34,352,100	12.3%	-	-	**90,031,900**	**8.5%**
2013	37,126,440	3.7%	19,715,300	-0.9%	41,365,500	20.4%	4,300,000	-	**102,507,240**	**13.9%**
2014	38,255,800	3.0%	19,839,100	0.6%	46,210,700	11.7%	4,743,000	10.3%	**109,048,600**	**6.4%**

Notes: (1) SH 45 SE opened to traffic in May 2009 but did not become part of the CTTS until September 2012 (FY 2013).

Table 5.4 Total Annual Fiscal Year Toll Revenue by CTTS Element

Fiscal Year	SH 45 N	% Change	Loop 1	% Change	SH 130	% Change	SH 45 SE [1]	% Change	Total	% Change
2008 [2]	-	-	-	-	-	-	-	-	**$48,905,800**	
2009 [2]	-	-	-	-	-	-	-	-	**$58,913,900**	**20.5%**
2010	$19,798,600	-	$11,936,900	-	$34,408,300	-	-	-	**$66,143,800**	**12.3%**
2011	$20,268,200	2.4%	$12,316,600	3.2%	$36,237,000	5.3%	-	-	**$68,821,800**	**4.0%**
2012	$21,944,600	8.3%	$13,015,100	5.7%	$40,735,000	12.4%	-	-	**$75,694,700**	**10.0%**
2013	$29,075,300	32.5%	$16,142,700	24.0%	$54,492,200	33.8%	$4,274,300	-	**$103,984,500**	**37.4%**
2014	$34,830,800	19.8%	$18,559,800	15.0%	$67,092,300	23.1%	$4,679,700	9.5%	**$125,162,600**	**20.4%**

Notes: (1) SH 45 SE opened to traffic in May 2009 but did not become part of the CTTS until September 2012 (FY 2013).
(2) Revenue for PBM patrons was not allocated by each toll facility until September 2009 (FY 2010); therefore, only total CTTS revenue is shown for FY 2008 and FY 2009.

Table 5.5 shows the average toll per transaction for the CTTS elements by fiscal year. Note that the tolls per transaction for fiscal years 2010 through 2012 are nearly identical since tolls were held constant during this period. The minor variation is likely due to variation in the recognition of the PBM revenue between fiscal years. There is a significant increase in the toll value per transaction for FY 2013 and FY 2014, reflecting the large increase in tolls that was implemented in January 2013.

Table 5.5 Average Toll Per Transaction by CTTS Element

Fiscal Year	SH 45 N	% Change	Loop 1	% Change	SH 130	% Change	SH 45 SE	% Change	Total	% Change
2008	-	-	-	-	-	-	-	-	**$0.74**	
2009	-	-	-	-	-	-	-	-	**$0.81**	**8.7%**
2010	$0.62	-	$0.66	-	$1.22	-	-	-	**$0.84**	**4.5%**
2011	$0.60	-1.8%	$0.65	-1.3%	$1.18	-2.6%	-	-	**$0.83**	**-1.6%**
2012	$0.61	1.5%	$0.65	0.3%	$1.19	0.1%	-	-	**$0.84**	**1.4%**
2013	$0.78	27.7%	$0.82	25.1%	$1.32	11.1%	$0.99	-	**$1.01**	**20.7%**
2014	$0.91	16.3%	$0.94	14.3%	$1.45	10.2%	$0.99	-0.7%	**$1.15**	**13.1%**

Table 5.6 and Table 5.7 set forth the unaudited total System transactions and toll revenue by month for FY 2010 through FY 2014. For ease of comparison, these values include SH 45 SE for all months and years, although it was not actually part of the CTTS until FY 2013.

Table 5.6 Historical System Total Transactions

Month	FY 2010		FY 2011		FY 2012		FY 2013		FY 2014	
	Total Transactions (in 000s)	% Change Over Prior Year	Total Transactions (in 000s)	% Change Over Prior Year	Total Transactions (in 000s)	% Change Over Prior Year	Total Transactions (in 000s)	% Change Over Prior Year	Total Transactions (in 000s)	% Change Over Prior Year
September	6,529	12%	7,016	7%	7,352	5%	7,951	8%	8,573	8%
October	6,834	9%	7,282	7%	7,478	3%	8,797	18%	9,160	4%
November	6,539	15%	6,979	7%	7,310	5%	8,805	20%	8,854	1%
December	6,554	12%	7,040	7%	7,392	5%	8,253	12%	8,452	2%
January	6,135	10%	6,546	7%	7,177	10%	7,798	9%	8,041	3%
February	6,015	11%	6,431	7%	7,248	13%	7,684	6%	7,928	3%
March	7,189	18%	7,730	8%	8,210	6%	8,899	8%	9,376	5%
April	7,104	15%	7,470	5%	8,078	8%	8,759	8%	9,511	9%
May	7,153	6%	7,563	6%	8,467	12%	9,124	8%	9,754	7%
June	7,063	3%	7,426	5%	8,334	12%	8,655	4%	9,664	12%
July	7,028	3%	7,238	3%	8,154	13%	8,648	6%	9,814	13%
August	7,251	7%	7,467	3%	8,674	16%	9,135	5%	9,922	9%
Total	**81,393**	**10%**	**86,188**	**6%**	**93,874**	**9%**	**102,507**	**9%**	**109,049**	**6%**

Notes: (1) System transactions are shown in the month in which they occur. As used herein, System transactions occur when each vehicle crosses a tolling station within the System, including all ETC, PBM and non-invoiced transactions.

(2) Transactions shown include SH 45 N, Loop 1, SH 130 and SH 45 SE, including SH 45 SE transactions while not part of the System. SH 45 SE became part of the System effective FY 2013.

Table 5.7 Historical System Toll Revenue

Month	FY 2010		FY 2011		FY 2012		FY 2013		FY 2014	
	Revenue (in $000s)	% Change Over Prior Year	Revenue (in $000s)	% Change Over Prior Year	Revenue (in $000s)	% Change Over Prior Year	Revenue (in $000s)	% Change Over Prior Year	Revenue (in $000s)	% Change Over Prior Year
September	$5,459	17%	$5,989	10%	$6,408	7%	$7,131	11%	$11,007	54%
October	$5,606	13%	$6,082	9%	$6,361	5%	$7,734	22%	$11,397	47%
November	$5,737	29%	$5,838	2%	$6,106	5%	$7,435	22%	$10,543	42%
December	$5,562	22%	$5,976	7%	$6,319	6%	$7,056	12%	$9,237	31%
January	$5,232	13%	$5,702	9%	$5,978	5%	$8,708	46%	$9,440	8%
February	$5,167	14%	$5,066	-2%	$6,073	20%	$7,773	28%	$9,399	21%
March	$6,115	23%	$6,447	5%	$6,924	7%	$9,722	40%	$10,878	12%
April	$6,220	28%	$6,439	4%	$6,684	4%	$9,615	44%	$10,776	12%
May	$6,006	18%	$6,133	2%	$7,054	15%	$10,711	52%	$10,502	-2%
June	$6,022	11%	$6,228	3%	$6,819	9%	$10,064	48%	$12,559	25%
July	$6,082	8%	$6,117	1%	$7,184	17%	$9,209	28%	$9,877	7%
August	$6,147	10%	$6,401	4%	$8,031	25%	$8,826	10%	$9,549	8%
Total	**$69,354**	**17%**	**$72,418**	**4%**	**$79,941**	**10%**	**$103,985**	**30%**	**$125,163**	**20%**

Notes: (1) Toll revenues from ETC payment method are shown on an accrual basis. Toll revenues from PBM payment method are shown on a cash basis. Total annual revenue differs from results shown in the audited financials of the System due to adjustments to reflect PBM revenues earned but not collected, less allowance for doubtful accounts.

(2) Toll revenues shown include SH 45 N, Loop 1, SH 130 and SH 45 SE, including SH 45 SE toll revenues while not part of the System. SH 45 SE became part of the System effective FY 2013.

5.2 VEHICLE CLASS DISTRIBUTION

The distribution of traffic by vehicle class has also been historically monitored for each CTTS facility. These values are derived from the toll transaction data, which does not identify 2-axle 6-tire trucks as a separate category. Therefore, the auto statistics include all autos as well as 2-axle, 6-tire trucks and the truck statistics include all trucks with 3+ axles. As shown by the tables below, the distribution of trucks and autos for each facility has remained fairly consistent throughout the

years, but the percent of trucks and autos varies between facilities. Table 5.8 displays the historical vehicle distributions for each CTTS facility.

Table 5.8 Historical Fiscal Year Average Vehicle Distributions by CTTS Facility

Fiscal Year	SH 45 N and Loop 1		SH 130		SH 45 SE	
	% Autos	% Trucks	% Autos	% Trucks	% Autos	% Trucks
2007	98.0%	2.0%	94.5%	5.5%	-	-
2008	97.9%	2.1%	93.2%	6.8%	-	-
2009	98.2%	1.8%	93.2%	6.8%	91.1%	8.9%
2010	98.4%	1.6%	93.2%	6.8%	90.9%	9.1%
2011	98.3%	1.7%	93.1%	6.9%	90.2%	9.8%
2012	98.2%	1.8%	92.7%	7.3%	88.2%	11.8%
2013	97.9%	2.1%	92.2%	7.8%	88.8%	11.2%
2014	97.2%	2.8%	91.1%	8.9%	89.4%	10.6%

Note: "Autos" includes 2-axle, 6-tire trucks and "Trucks" incudes all 3+ axle vehicles.

Table 5.9 displays the most recent fiscal year's vehicle distributions for each CTTS facility, by month.

Table 5.9 Fiscal Year 2014 Vehicle Distribution by CTTS Facility

Month-Year	SH 45 N and Loop 1		SH 130		SH 45 SE	
	% Autos	% Trucks	% Autos	% Trucks	% Autos	% Trucks
Sep-13	97.3%	2.7%	90.9%	9.1%	89.2%	10.8%
Oct-13	97.5%	2.5%	91.3%	8.7%	89.7%	10.3%
Nov-13	97.4%	2.6%	91.0%	9.0%	89.6%	10.4%
Dec-13	97.3%	2.7%	90.6%	9.4%	88.8%	11.2%
Jan-14	97.4%	2.6%	91.0%	9.0%	89.1%	10.9%
Feb-14	97.4%	2.6%	91.3%	8.7%	89.3%	10.7%
Mar-14	97.0%	3.0%	91.0%	9.0%	89.3%	10.7%
Apr-14	97.0%	3.0%	91.2%	8.8%	89.6%	10.4%
May-14	97.0%	3.0%	91.4%	8.6%	89.7%	10.3%
Jun-14	96.9%	3.1%	90.9%	9.1%	89.2%	10.8%
Jul-14	96.8%	3.2%	90.8%	9.2%	89.5%	10.5%
Aug-14	97.0%	3.0%	91.4%	8.6%	89.5%	10.5%
FY 2014 Average	**97.2%**	**2.8%**	**91.1%**	**8.9%**	**89.4%**	**10.6%**

SH 45 N and Loop 1 are integrated toll roads since they intersect and many vehicles use both roads for the same trip. As such, their vehicle distribution data is summarized together. The percent of trucks is low, hovering around 2 percent since the roads have opened, and trucks average 2.8 percent of total traffic for FY 2014 to date.

SH 130 has a greater proportion of trucks with an average of 8.9 percent for FY 2014. As shown in Table 5.8, SH 130 opened with approximately 5.5 percent trucks, and has slowly increased to its current level. These statistics have been influenced by a series of temporary truck rate discounts that have been implemented for selected periods during 2012 and 2013. These temporary

discounts encouraged commercial traffic to try SH 130 and improved traffic flow through Austin thus increasing safety for travelers. These discounts were represented in the modeling process for the purposes of replicating traffic for the 2013 calibration year, but the forecasts developed for the 2014 Update use do not use the discounts since they were terminated in January 2104. SH 45 SE has the highest portion of trucks of the CTTS facilities with an average of 10.6 percent for FY 2014. The historical vehicle distribution ranges between 9 and 12 percent, but has been consistently between 10 and 11 percent recently.

5.3 WEEKDAY AND SEASONAL PATTERNS

Seasonal transaction patterns for FY 2014 are summarized in Table 5.10 by showing the monthly and quarterly distributions for each facility. The CTTS fiscal year begins on September 1, making each quarter correlate to typical seasonal months. Across all facilities, the winter months in Quarter 2 have the fewest number of transactions, while the summer (Quarter 4) has the highest number of transactions.

Table 5.10 Monthly and Quarterly Transaction Distribution for FY 2014

Month-Year	SH 45 N and Loop 1	SH 130	SH 45 SE	Total
Sep-13	8.1%	7.6%	7.6%	**7.9%**
Oct-13	8.6%	8.1%	8.1%	**8.4%**
Nov-13	8.0%	8.2%	8.5%	**8.1%**
Dec-13	7.9%	7.6%	7.5%	**7.8%**
Jan-14	7.7%	6.9%	6.8%	**7.4%**
Feb-14	7.5%	7.0%	7.1%	**7.3%**
Mar-14	8.4%	8.8%	8.9%	**8.6%**
Apr-14	8.7%	8.8%	8.8%	**8.7%**
May-14	9.0%	9.0%	9.0%	**8.9%**
Jun-14	8.6%	9.2%	9.1%	**8.9%**
Jul-14	8.7%	9.4%	9.3%	**9.0%**
Aug-14	9.0%	9.3%	9.2%	**9.1%**
Sept - Nov (Q1)	**24.8%**	**23.9%**	**24.2%**	**24.4%**
Dec - Feb (Q2)	**23.2%**	**21.5%**	**21.4%**	**22.4%**
Mar - May (Q3)	**26.0%**	**26.6%**	**26.7%**	**26.3%**
Jun - Aug (Q4)	**26.1%**	**28.0%**	**27.6%**	**27.0%**

The average number of transactions for a weekday, and how it compares to the average number for any day of the year, is summarized for FY 2014 in Table 5.11. For FY 2014, the average weekday traffic was approximately 11 percent greater than the average daily traffic.

Table 5.11 FY 2014 Average Daily and Average Weekday CTTS Traffic Comparison

Month-Year	Average Daily Traffic (ADT)	Average Weekday Daily Traffic (AWDT)	Percent Difference (AWDT/ADT - 1)
Sep-13	285,753	322,226	13%
Oct-13	295,468	322,106	9%
Nov-13	295,130	330,872	12%
Dec-13	272,645	306,871	13%
Jan-14	259,394	290,703	12%
Feb-14	283,139	311,716	10%
Mar-14	302,455	334,545	11%
Apr-14	317,023	344,103	9%
May-14	314,652	348,291	11%
Jun-14	322,127	352,514	9%
Jul-14	316,590	349,556	10%
Aug-14	320,077	353,649	10%
FY 2014	**298,763**	**330,988**	**11%**
		FY 2014 Annualization Factor	***329***

This data was also used to develop annualization factors to be used in the traffic and revenue forecasts by converting weekday traffic volumes into annual volumes for each CTTS facility. The annualization factors vary for each facility depending on the characteristics of the road. For Loop 1 and SH 45 N, the annualization factor is approximately 320, while for SH 130, it is slightly higher at 330, due to higher levels of weekend traffic. SH 45 SE also has an annualization factor of approximately 330, generally consistent with the trends from SH 130.

5.4 PAYMENT METHOD DISTRIBUTION

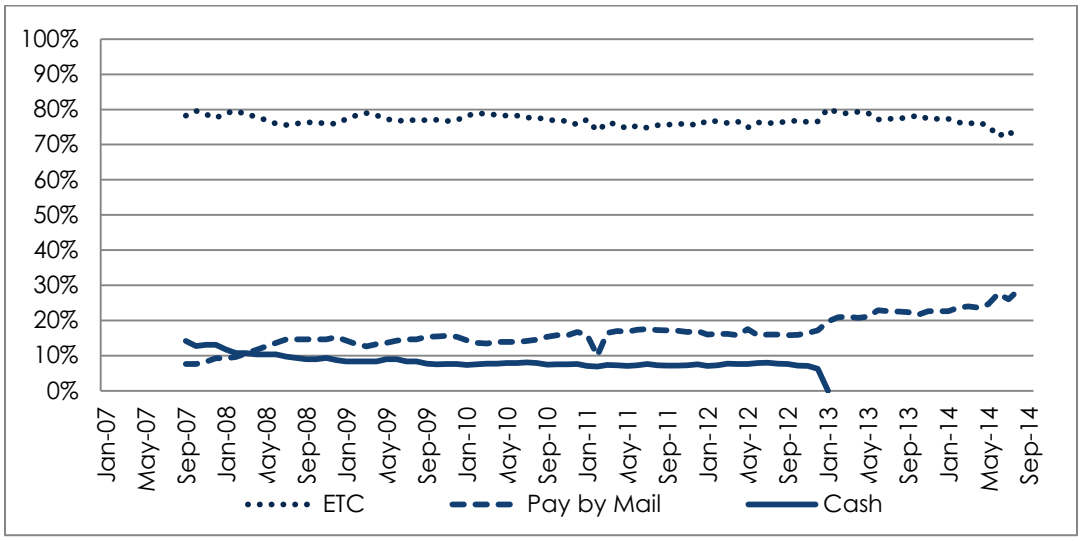
As previously discussed in Chapter 4 of this report, prior to January 2013, CTTS had three methods of toll collection: cash, ETC, and PBM. Since January 2013, all facilities are operated cashless, therefore, the payment method distribution for FY 2014 of the different CTTS facilities shown in Table 5.12 includes only the ETC and PBM methods.

Table 5.12 Fiscal Year 2014 Payment Method Distribution by CTTS Facility

Month-Year	SH 45 N and Loop 1		SH 130		SH 45 SE		Total	
	% ETC	% Pay by Mail	% ETC	% Pay by Mail	% ETC	% Pay by Mail	% ETC	% Pay by Mail
Sep-13	77.7%	22.3%	65.0%	35.0%	63.0%	37.0%	71.7%	28.3%
Oct-13	78.3%	21.7%	66.0%	34.0%	64.0%	36.0%	72.4%	27.6%
Nov-13	77.3%	22.7%	65.0%	35.0%	62.0%	38.0%	71.2%	28.8%
Dec-13	77.3%	22.7%	65.0%	35.0%	63.0%	37.0%	71.4%	28.6%
Jan-14	77.3%	22.7%	66.0%	34.0%	64.0%	36.0%	72.4%	27.6%
Feb-14	76.3%	23.7%	65.0%	35.0%	63.0%	37.0%	71.1%	28.9%
Mar-14	76.0%	24.0%	63.0%	37.0%	61.0%	39.0%	69.7%	30.3%
Apr-14	76.3%	23.7%	64.0%	36.0%	62.0%	38.0%	70.6%	29.4%
May-14	75.3%	24.7%	63.0%	37.0%	61.0%	39.0%	69.2%	30.8%
Jun-14	72.4%	27.6%	61.0%	39.0%	59.0%	41.0%	67.8%	32.2%
Jul-14	74.0%	26.0%	61.0%	39.0%	60.0%	40.0%	67.7%	32.3%
Aug-14	71.3%	28.7%	60.0%	40.0%	59.0%	41.0%	66.0%	34.0%
FY 2014 Average	**75.9%**	**24.1%**	**63.5%**	**36.5%**	**61.4%**	**38.6%**	**70.0%**	**30.0%**

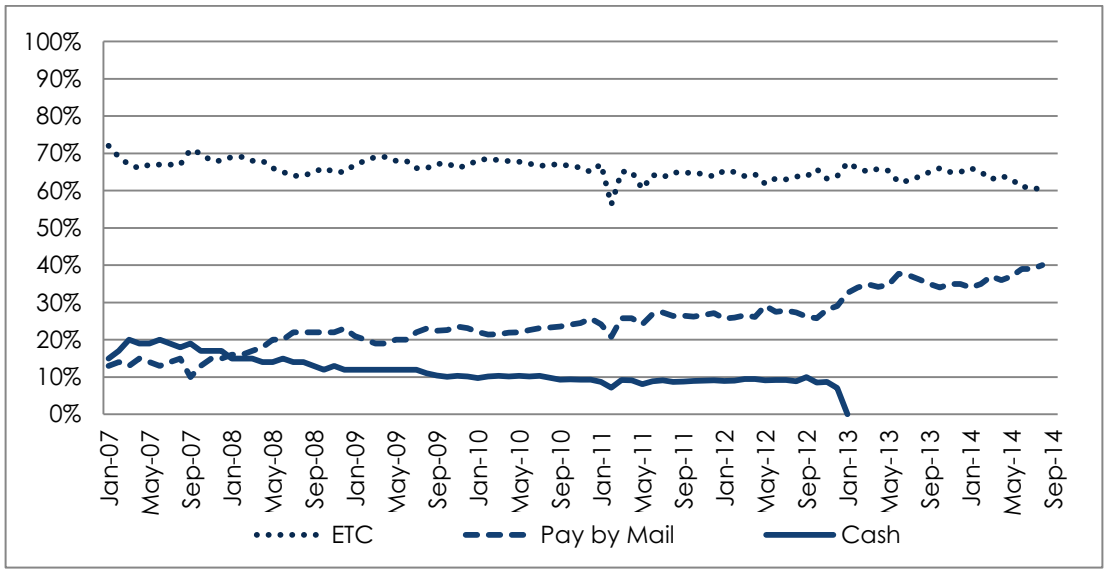
Again, SH 45 N and Loop 1 are summarized together because of their similarities in traffic behavior and relationship to each other. In FY 2014, 75.8 percent of the traffic paid by ETC, the highest rate of ETC usage on the CTTS facilities. The historical distribution is shown in Figure 5.2.

Figure 5.2 SH 45 N and Loop 1 Historical Payment Method Distribution



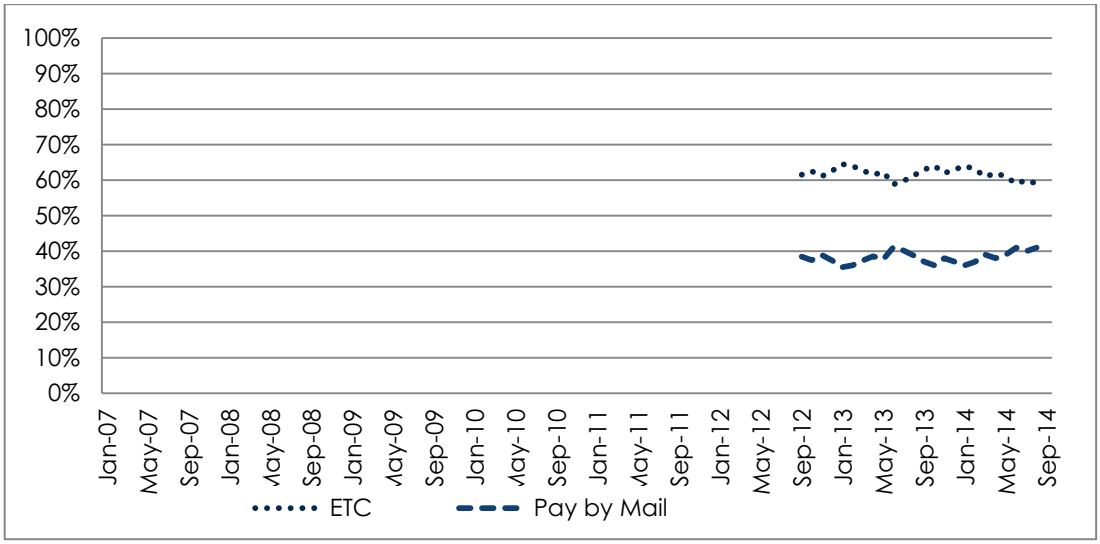
SH 130 currently has ETC and PBM transactions with FY 2014 averages of 63.7 percent and 36.3 percent, respectively. Looking at the historical distribution for this toll road in Figure 5.3, the percent of ETC transactions began at approximately 70 percent, and has slowly decreased since. This is due to the formal adoption of the PBM payment method and the removal of the cash payment option. More recently, the transition to the Xerox system and business rules for delinquent accounts has also caused a temporary increase in transactions identified as PBM.

Figure 5.3 SH 130 Historical Payment Method Distribution



SH 45 SE has always operated as cashless since it began operations as a TxDOT toll road in May 2009. When SH 45 SE became part of CTTS is September 2012, approximately 60 percent of transactions were ETC transactions and has sustained that percentage since. Currently, it has an FY 2014 average payment method distribution of 61.8 percent for ETC and 38.3 percent for PBM. The historical distribution since joining the CTTS is shown in Figure 5.4.

Figure 5.4 SH 45 SE Historical Payment Method Distribution



5.5 TRANSACTION PAYMENT STATUS

With the introduction of cashless toll collection, Stantec has been monitoring the effective collection rates for ETC and PBM transactions. For this report, the collection statistics for FY 2014 through February, which is the latest available data, were obtained from TxDOT.

The FY 2014 data through February are summarized in Table 5.13. These data provide the distribution of FY 2014 transactions for the CTTS by payment type and by payment status (paid/unpaid transactions). The data show that there were 50.6 million transactions through February with approximately 36.1 million ETC-based transactions including interoperable transactions from transponders from other agencies and 14.5 million image-based transactions. As shown in the table, the image-based transactions were approximately 28.7 percent of the total amount.

Paid transactions include both regular payment of the tolls from patrons as well as payments reimbursed from TxDOT for the free passage allowed for selected veteran categories. These veterans' waivers were 1.9 percent of the total transactions. For the non-paying transaction category, the table summarizes both *unbilled* PBM transactions where it was not possible to invoice patrons due to bad images or lack of acceptable vehicle registration information. The *unpaid* category includes both PBM transactions for which payment was not received and non-revenue ETC transactions or invalid ETC tags. For the combined ETC category approximately 99.7 percent of all transactions were paid while the PBM category had only 47.7 percent of transactions paid.

Table 5.13 FY 2014 CTTS Transaction Payment Status

Payment Type	Paid Transactions		Non-Paying Transactions			Total Transactions	Percent Paid
	Regular [1]	Vet. Waiver [2]	Unpaid [3]	Unbilled	Total		
ETC	32,176,432	520,110	83,204		83,204	32,779,746	99.7%
ETC - InterOP	3,327,821	19,989	15,189		15,189	3,362,999	
Image Based (PBM)	6,479,402	448,332	3,711,478	3,872,038	7,583,516	14,511,250	47.7%
Total	41,983,655	988,431	3,809,871	3,872,038	7,681,909	50,653,995	84.8%
Percent of Total Transactions							
ETC	63.5%	1.0%	0.2%	0.0%	0.2%	64.7%	
ETC - InterOP	6.6%	0.0%	0.0%	0.0%	0.0%	6.6%	
Image Based (PBM)	12.8%	0.9%	7.3%	7.6%	15.0%	28.7%	
Total	82.9%	1.9%	7.5%	7.6%	15.2%	100.0%	

Notes:

1) - includes ETC transactions that were Paid by Plate (images that were subsequently linked to transponder accounts)

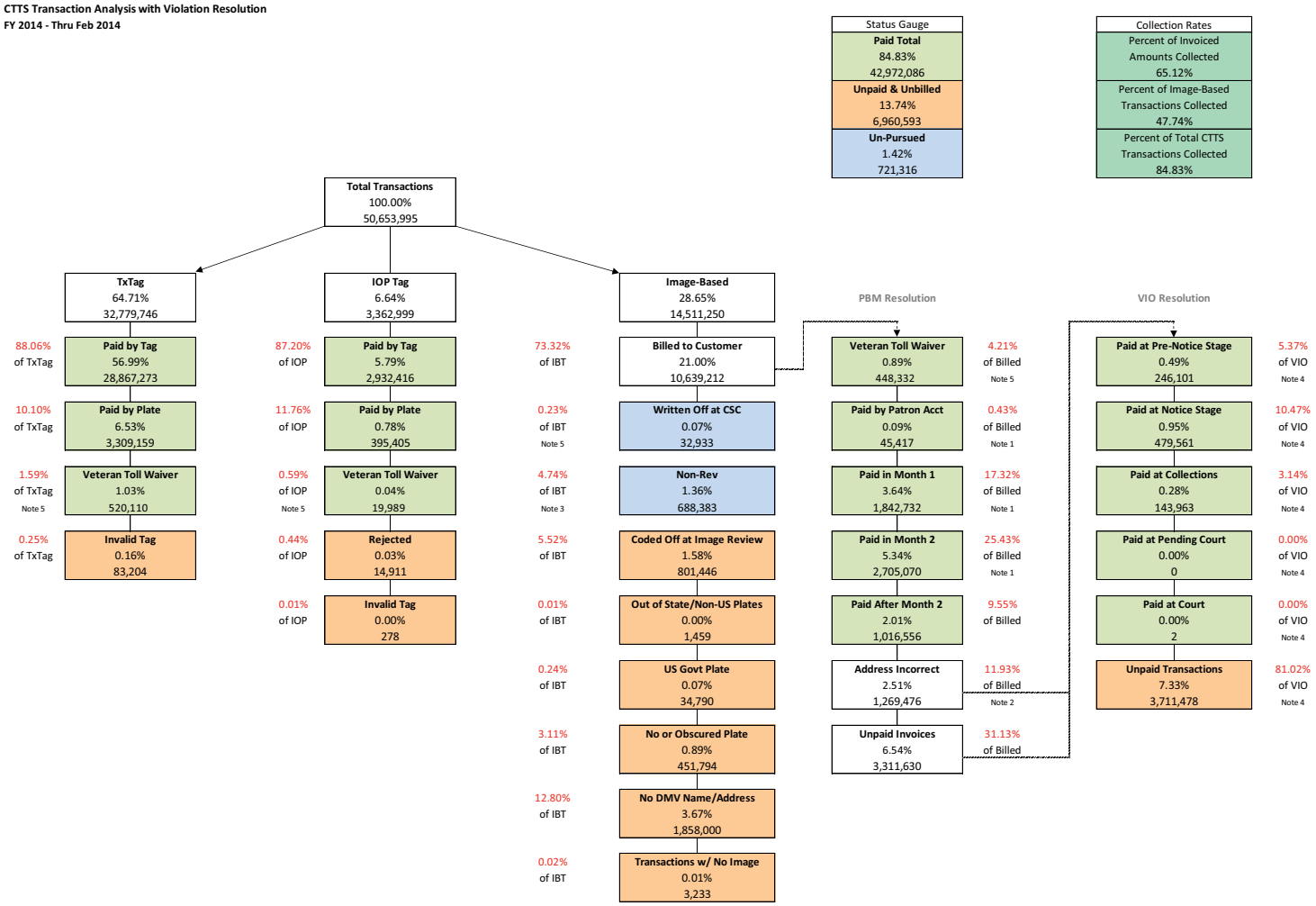
2) - CTTS Revenue Fund reimbursed by TxDOT

3) - Includes ETC & InterOP rejects/Invalid Tag

Figure 5.5 displays a flow chart with a further break down of transactions by payment type for FY 2014 through February. The collection data reflect the collection status based on conditions that have occurred since the adoption of new laws that allow TxDOT to pursue habitual violators, including vehicle registration hold and a dedicated administrative hearing process. Based on the initial results of the Habitual Violator enforcement program, which was focused on the individuals with the largest amounts of unpaid tolls, TxDOT is now expanding the ranges of targeted individuals to include individuals with lower amounts of unpaid tolls to broaden the program's impact and deter more infrequent violators. The data also include the changes in collection procedures that are being implemented by the new toll system operator (Xerox) and other issues associated with that transition.

Improvements are currently ongoing for the CTTS collections program that include recently contracted collection efforts on a performance based payment scale, more robust monthly reporting, performance measures and a collections manual. A change will also be implemented related to the account selection methodology for courts.

Figure 5.5 CTTS Transactions Processing Flow Chart



Note 1: Pay By Mail distribution is based on the Pay By Mail Resolution Report for transactions that occurred thru February 2014.
Note 2: Address Incorrect information represents the percent of invoices mailed compared to the Address Incorrect information provided for the subsequent month.
Note 3: Non-Revenue transactions post as zero-dollar transactions and are authorized free passage per CTTS Bond Indenture.
Note 4: Violation resolution data is as of July 3, 2014.
Note 5: Veteran Toll Waiver Program transactions post as zero-dollar, are authorized free passage per TTC Minute Order 113247 (initiated in December, 2012), and are paid to the CTTS Revenue Fund by TxDOT.

6.0 SOCIOECONOMIC DATA

This chapter discusses socioeconomic indicators that are used to identify growth in the region that encompasses the Austin area toll roads and are included in the regional transportation model. The socioeconomic baseline (2013) and future forecasts were prepared by Dr. Bomba and Stantec for use in the disaggregated traffic analysis zone (TAZ) system used in the individual travel demand models. In this process, the historical data are analyzed, base year data are established, and forecasts are prepared for the entire TAZ system.

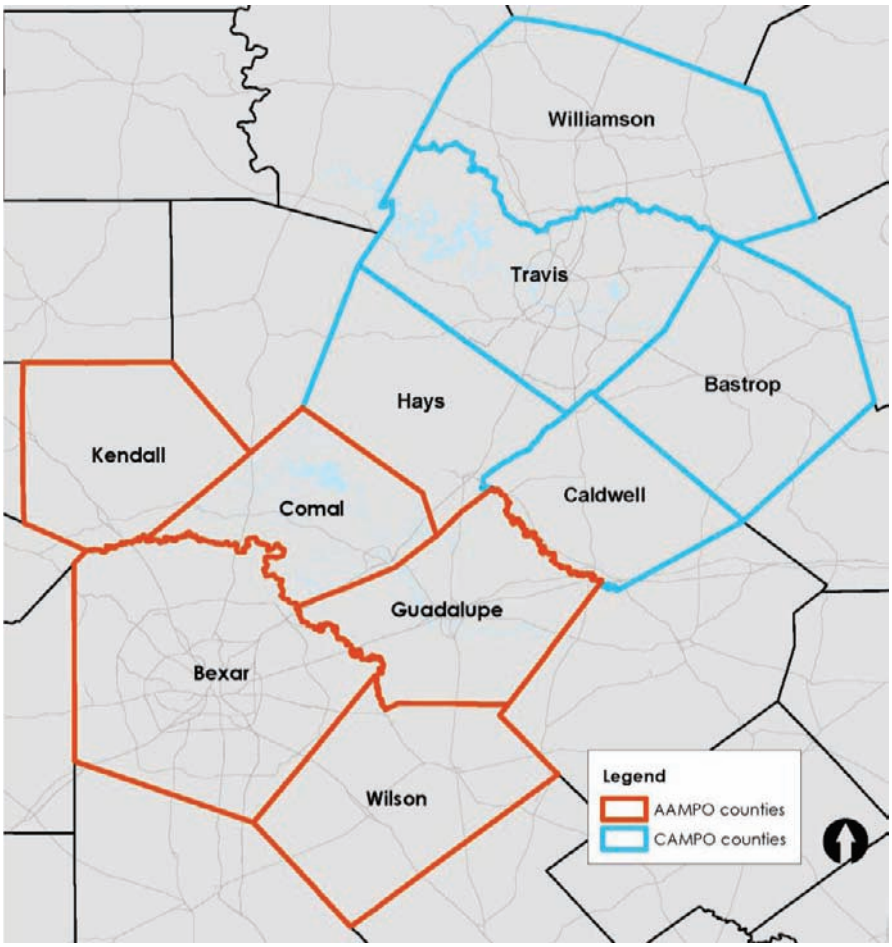
This discussion presents recent demographic and economic trends and projections of future levels of activity in the area, a comparison of revised county control figures for population and employment with previous forecasts, a description of the methodology used to update information on the Transportation Analysis Zone (TAZ) level and a summary of interviews of local government representatives regarding proposed development in the Austin region.

Additional detailed information may be found in Dr. Bomba's Technical Memorandum included as Appendix A.

6.1 REGIONAL TRENDS

The study area included in the regional transportation model used for the CTRMA traffic forecast includes five counties in the CAMPO model area (Travis, Williamson, Hayes, Bastrop and Caldwell) and five counties in the AAMPO model area (Bexar, Guadalupe, Comal, Wilson and Kendall) as shown in Figure 6.1.

Figure 6.1 Counties in Transportation Model



6.1.1 Regional Population

The population of the State of Texas has grown rapidly since 1980, increasing from 14.2 million in 1980 to more than 25.1 million residents in 2010. Between 2000 and 2010, Texas added 4.3 million residents, making it the fastest growing state in terms of total population. Most of this population increase was in the urban areas of the state.

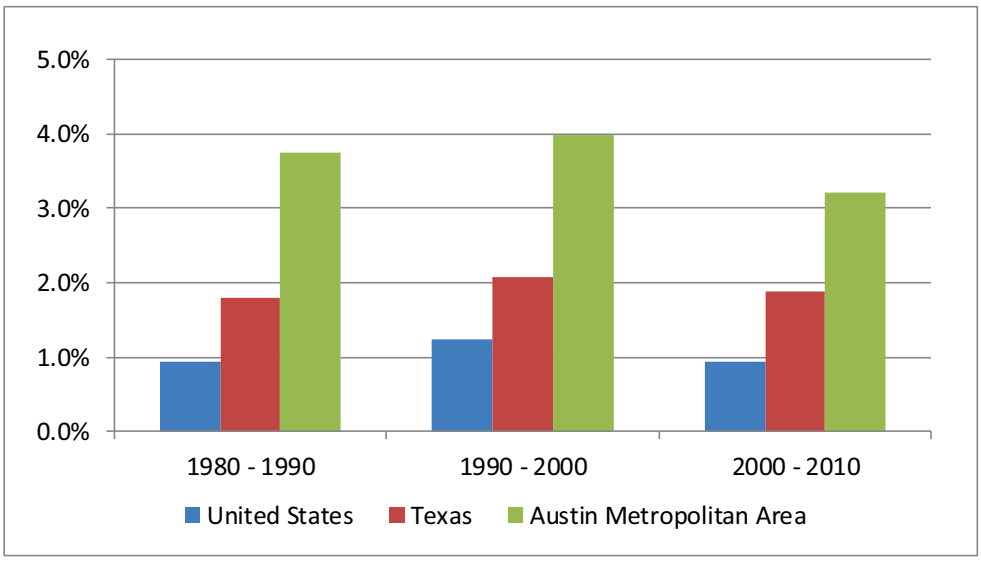
Table 6.1 U.S., Texas and Austin Metropolitan Area Population, 1980 – 2010

Census Year	United States		Texas		Austin Metropolitan Area	
	Population	Average Annual Rate of Growth	Population	Average Annual Rate of Growth	Population	Average Annual Rate of Growth
1980	226,546,000		14,229,000		585,000	
1990	248,710,000	0.9%	16,987,000	1.8%	846,000	3.8%
2000	281,422,000	1.2%	20,852,000	2.1%	1,250,000	4.0%
2010	308,748,000	0.9%	25,146,000	1.9%	1,716,289	3.2%

Sources: United States and Texas, U.S. Bureau of the Census; Austin Metropolitan Area, Department of Planning, City of Austin.

Population growth in the Austin Metropolitan Area since 1980 is compared to growth in the United States and in Texas in Table 6.1. The historical growth rates are shown in Figure 6.2.

Figure 6.2 Average Annual Population Growth - United States, Texas and Austin Metropolitan Area 1980 – 2010



Sources: United States and Texas, U.S. Bureau of the Census; Austin Metropolitan Area, Department of Planning, City of Austin.

Population in the Austin area continues to grow at a rapid rate. The Department of Planning of the City of Austin reports that the Austin Metropolitan Area (which includes the same five counties as included in the CAMPO model) increased 2.3 percent in 2013, making it the fastest growing large (1.0+ million) metropolitan area in the country by percent change. Travis County was the fastest growing large (250,000+) county in the United States between 2010 and 2013 with an increase of more than 90,000 persons.

Population in the five counties included in the CAMPO model increased from 1.7 million in the 2010 Census to an estimated 1.9 million in 2013, an average annual growth rate of 2.6 percent. The population of Travis County, which includes the City of Austin, increased at an average annual rate of 3.1 percent during the same 3-year period.

Total population in the AAMPO region (Bexar, Comal, Guadalupe, Kendall, and Wilson counties) increased at an average annual rate of 2.1 percent between 2010 and 2013. The City of San Antonio is located in Bexar, the largest county in the AAMPO region.

Total population in the ten-county study area increased at an average annual rate of 2.6 percent between 2010 and 2013, increasing from 3.7 million to 4.0 million. The regional growth rate for the region has been relatively steady over the last 33 years and continues to be strong. Population for each county for census years 1980 through 2010 and the latest estimate for 2013 from the U.S. Bureau of the Census are shown in Table 6.2.

Table 6.2 Historical Population in Study Area, 1980-2013

Population							
Region	**County**	**1970**	**1980**	**1990**	**2000**	**2010**	**2013**
CAMPO	Travis	295,516	419,573	576,407	812,280	1,024,266	1,120,954
	Williamson	37,305	76,521	139,551	249,967	422,679	471,014
	Hays	27,642	40,594	65,614	97,589	157,107	176,026
	Bastrop	17,297	24,726	38,263	57,733	74,171	75,825
	Caldwell	21,178	23,637	26,392	32,194	38,066	39,232
	Total	398,938	585,051	846,227	1,249,763	1,716,289	1,883,051
AAMPO	Bexar	830,460	988,800	1,185,394	1,392,931	1,714,773	1,817,610
	Comal	24,165	36,446	51,832	78,021	108,472	118,480
	Guadalupe	33,554	46,708	64,873	89,023	131,533	143,183
	Kendall	6,964	10,635	14,589	23,743	33,410	37,766
	Wilson	13,041	16,756	22,650	32,408	42,918	45,418
	Total	908,184	1,099,345	1,339,338	1,616,126	2,031,106	2,162,457
Study Area Total		**1,307,122**	**1,684,396**	**2,185,565**	**2,865,889**	**3,747,395**	**4,045,508**
Average Annual Growth Rates							
Region	**County**		**1970 - 1980**	**1980 - 1990**	**1990 - 2000**	**2000 - 2010**	**2010 - 2013**
CAMPO	Travis		3.6%	3.2%	3.5%	2.3%	3.1%
	Williamson		7.4%	6.2%	6.0%	5.4%	3.7%
	Hays		3.9%	4.9%	4.0%	4.9%	3.9%
	Bastrop		3.6%	4.5%	4.2%	2.5%	0.7%
	Caldwell		1.1%	1.1%	2.0%	1.7%	1.0%
	Total		3.9%	3.8%	4.0%	3.2%	3.1%
AAMPO	Bexar		1.8%	1.8%	1.6%	2.1%	2.0%
	Comal		4.2%	3.6%	4.2%	3.4%	3.0%
	Guadalupe		3.4%	3.3%	3.2%	4.0%	2.9%
	Kendall		4.3%	3.2%	5.0%	3.5%	4.2%
	Wilson		2.5%	3.1%	3.6%	2.8%	1.9%
	Total		1.9%	2.0%	1.9%	2.3%	2.1%
Study Area Total			**2.6%**	**2.6%**	**2.7%**	**2.7%**	**2.6%**

Source: U.S. Bureau of the Census.

For the 2014 Study, Dr. Bomba prepared an update of the estimates of population included in the CAMPO and AAMPO models to better reflect recent development in the areas served by the toll roads in the Austin region. Population in the counties in the CAMPO area is basically unchanged, while AAMPO regional population is reduced 2.1 percent. Population for the total region is estimated at 1.3 percent less than the Census estimate. As can be seen in Table 6.3, the adjustments were minor. The decline in the baseline population mainly relates to how each MPO addressed group quarters populations. The AAMPO population was adjusted downward to remove the population in group quarters to conform to the estimate for the CAMPO counties. In the CAMPO study area, the Williamson County 2013 population was adjusted downward modestly due to the differing opinions between the U.S. Census Bureau's 2013 population estimate and the Texas State Data Center's (TxSDC) population estimates, which are strongly influenced by net migration.

Table 6.3 Comparison of Census and Adjusted 2013 Population for Study Area

Region	County	2013 Population		Difference	
		Census	Adjusted	Number	Percent
CAMPO	Travis	1,120,954	1,120,892	(62)	0.0%
	Williamson	471,014	465,263	(5,751)	-1.2%
	Hays	176,026	175,837	(189)	-0.1%
	Bastrop	75,825	75,825	-	0.0%
	Caldwell	39,232	39,226	(6)	0.0%
	Total	1,883,051	1,877,043	(6,008)	-0.3%
AAMPO	Bexar	1,817,610	1,775,596	(42,014)	-2.3%
	Comal	118,480	117,419	(1,061)	-0.9%
	Guadalupe	143,183	141,300	(1,883)	-1.3%
	Kendall	37,766	37,246	(520)	-1.4%
	Wilson	45,418	44,869	(549)	-1.2%
	Total	2,162,457	2,116,430	(46,027)	-2.1%
Study Area Total		**4,045,508**	**3,993,473**	**(52,035)**	**-1.3%**

Sources: U.S. Bureau of the Census and Michael Bomba, PhD.

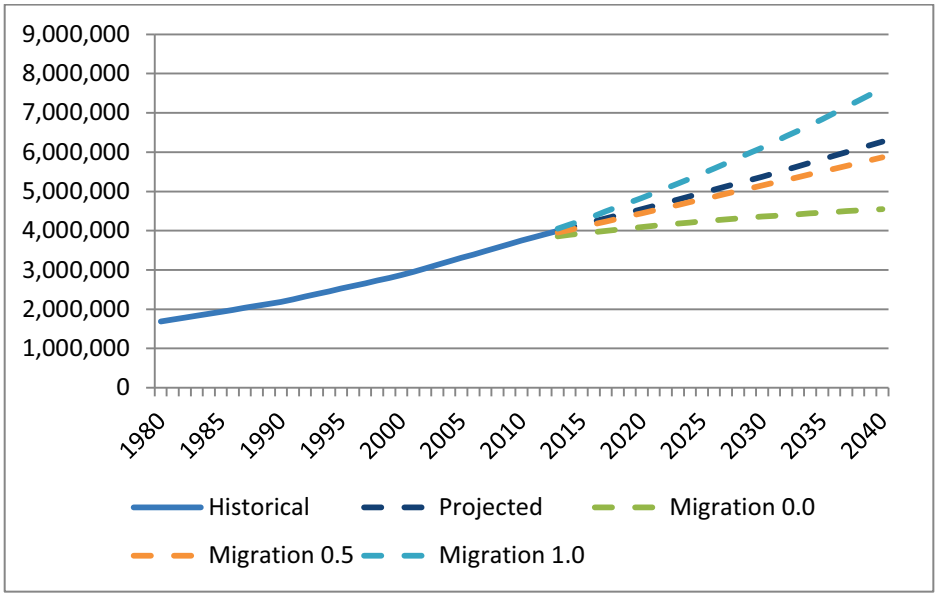
Starting with the adjusted population for 2013 presented above, growth is anticipated to taper down from the annual average rate of 2.6 percent between 2010 and 2013 to 2.0 percent between 2013 and 2015. After that, it continues to slow down, reaching an annual growth rate of 1.5 percent between 2030 and 2040. The forecast of future population and average annual growth rate for the ten counties are presented in Table 6.4. Historical and projected population used for the 2014 Study and average annual growth rate are shown in Figure 6.3.

The projections of population prepared by the TxSDC for three alternative migration scenarios are also shown in Figure 6.3. The high migration scenario, 1.0, is based on future migration at the same rate as 2000 to 2010. The 0.5 scenario reflects half of that rate, and the low migration scenario, 0.0, is based on no migration.

Table 6.4 Population Forecast for the Study Area, 2013 – 2040

Current & Projected Population						
REGION	**County**	**2013**	**2015**	**2020**	**2030**	**2040**
CAMPO	Travis	1,120,892	1,170,298	1,273,336	1,474,365	1,669,612
	Williamson	465,263	492,382	566,298	739,143	952,122
	Hays	175,837	188,375	220,507	288,990	364,369
	Bastrop	75,825	77,898	85,583	103,220	124,358
	Caldwell	39,226	39,969	42,471	48,235	55,111
	Total	1,877,043	1,968,922	2,188,195	2,653,953	3,165,572
AAMPO	Bexar	1,775,596	1,832,203	1,957,968	2,196,665	2,471,362
	Comal	117,419	123,502	138,646	168,731	197,279
	Guadalupe	141,300	147,921	169,057	214,674	265,018
	Kendall	37,246	39,827	45,117	55,789	66,740
	Wilson	44,869	46,215	50,898	60,663	71,049
	Total	2,116,430	2,189,668	2,361,686	2,696,522	3,071,448
Study Area Total		**3,993,473**	**4,158,590**	**4,549,881**	**5,350,475**	**6,237,020**
Average Annual Growth Rates						
REGION	**County**		**2013 - 2015**	**2015 - 2020**	**2020 - 2030**	**2030 - 2040**
CAMPO	Travis		2.2%	1.7%	1.5%	1.3%
	Williamson		2.9%	2.8%	2.7%	2.6%
	Hays		3.5%	3.2%	2.7%	2.3%
	Bastrop		1.4%	1.9%	1.9%	1.9%
	Caldwell		0.9%	1.2%	1.3%	1.3%
	Total		2.4%	2.1%	1.9%	1.8%
AAMPO	Bexar		1.6%	1.3%	1.2%	1.2%
	Comal		2.6%	2.3%	2.0%	1.6%
	Guadalupe		2.3%	2.7%	2.4%	2.1%
	Kendall		3.4%	2.5%	2.1%	1.8%
	Wilson		1.5%	1.9%	1.8%	1.6%
	Total		1.7%	1.5%	1.3%	1.3%
Study Area Total			**2.0%**	**1.8%**	**1.6%**	**1.5%**

Figure 6.3 Historical and Projected Population in Study Region, 1980 – 2040



Sources: U.S. Bureau of the Census; Michael Bomba, PhD; Texas State Data Center

A comparison of the population projections prepared for the 2012 Update and the forecasts used for the 2014 Study indicates that the difference in the CAMPO area is due to actual growth in 2013. As shown in Table 6.5, the 2013 population in the counties in the CAMPO model area is 2.1 percent greater than in the 2012 Update; however, the difference between the two series diminishes over the period included in the forecasts. Regarding growth in the AAMPO counties, higher population projections reflect higher baseline population for Bexar County and a higher forecast due to updated migration data used by TxSDC in preparing their most recent population projections.

Table 6.5 Comparison of 2012 and 2014 Projections of Population

Year	Estimated Population		Difference	
	2012 Update	2014 Study	Number	Percent
CAMPO Counties				
2013	1,838,320	1,877,043	38,723	2.1%
2015	1,926,488	1,968,922	42,434	2.2%
2020	2,149,074	2,188,195	39,121	1.8%
2030	2,650,675	2,653,953	3,278	0.1%
2040	3,208,706	3,165,572	(43,134)	-1.3%
AAMPO Counties				
2013	2,113,121	2,116,430	3,309	0.2%
2015	2,190,936	2,189,668	(1,268)	-0.1%
2020	2,328,180	2,361,686	33,506	1.4%
2030	2,569,577	2,696,522	126,945	4.9%
2040	2,777,887	3,071,448	293,561	10.6%
Total Region				
2013	3,951,441	3,993,473	42,032	1.1%
2015	4,117,424	4,158,590	41,166	1.0%
2020	4,477,254	4,549,881	72,627	1.6%
2030	5,220,252	5,350,475	130,223	2.5%
2040	5,986,593	6,237,020	250,427	4.2%

6.1.2 Regional Employment

In 2013, employment in Texas grew at an annual rate of 2.7 percent, but has since reached the level of 3.7 percent in September 2014. The Austin region's economy is generally recognized as one of the most resilient in the nation, particularly during and following the 2008 - 2009 Recession. As the state capital and home to the University of Texas, Austin adds a degree of stability to the local economy. Employment in the Austin Metropolitan Area has increased from 243,800 in 1980 to 864,000 in 2013, as reported by the U.S. Bureau of Labor Statistics. This is an average annual rate of increase of 3.9 percent.

According to CAMPO, the largest employers in the greater Austin area are in the government, universities, technology, warehouse and distribution and health care sectors. Major employers (over 6,000 employees) include:

- Austin School District;
- City of Austin;
- Federal Government;
- IBM;
- Dell;
- State of Texas;
- University of Texas at Austin; and
- Seton Healthcare Family.

Data for the San Antonio – New Braunfels Metropolitan Area are only available since 1990 and show that employment in that area has increased from 543,300 in 1990 to 906,300 in 2013. Historical employment in the two metropolitan areas is summarized in Table 6.6.

Table 6.6 Historical Employment in Study Area

Employment					
REGION	**1980**	**1990**	**2000**	**2010**	**2013**
CAMPO: Austin-Round Rock-San Marcos Metro Area	243,800	389,000	672,700	770,300	864,200
AAMPO: San Antonio-New Braunfels Metro Area[1]		543,300	745,200	844,200	906,300
Study Area Total		**932,300**	**1,417,900**	**1,614,500**	**1,770,500**
Average Annual Growth Rate					
REGION	**1970 - 1980**	**1980 - 1990**	**1990 - 2000**	**2000 - 2010**	**2010 - 2013**
CAMPO		4.8%	5.6%	1.4%	3.9%
AAMPO			3.2%	1.3%	2.4%
Study Area Total			4.3%	1.3%	3.1%

Note:
[1] San Antonio-New Braunfels Metro Area, as definied by the U.S. Census, includes Bexar, Comal, Guadalupe, Kendall, Wilson, Medina, Atacosta and Bandera counties.

Detailed annual data by county is shown in Table 6.7 for the period 2007 through 2013. With the exception of 2009, when the number of jobs decreased due to the recession, employment has been increasing on a steady basis. According to CAMPO, Austin has had significant increases in health care, professional and management positions, and arts, entertainment and food industries while manufacturing jobs are decreasing. There is a demand for high-tech workers due to the presence of computer and internet firms serving the increasing demand for their products. Growth has been both in suburban areas and in the Austin Central Business District.

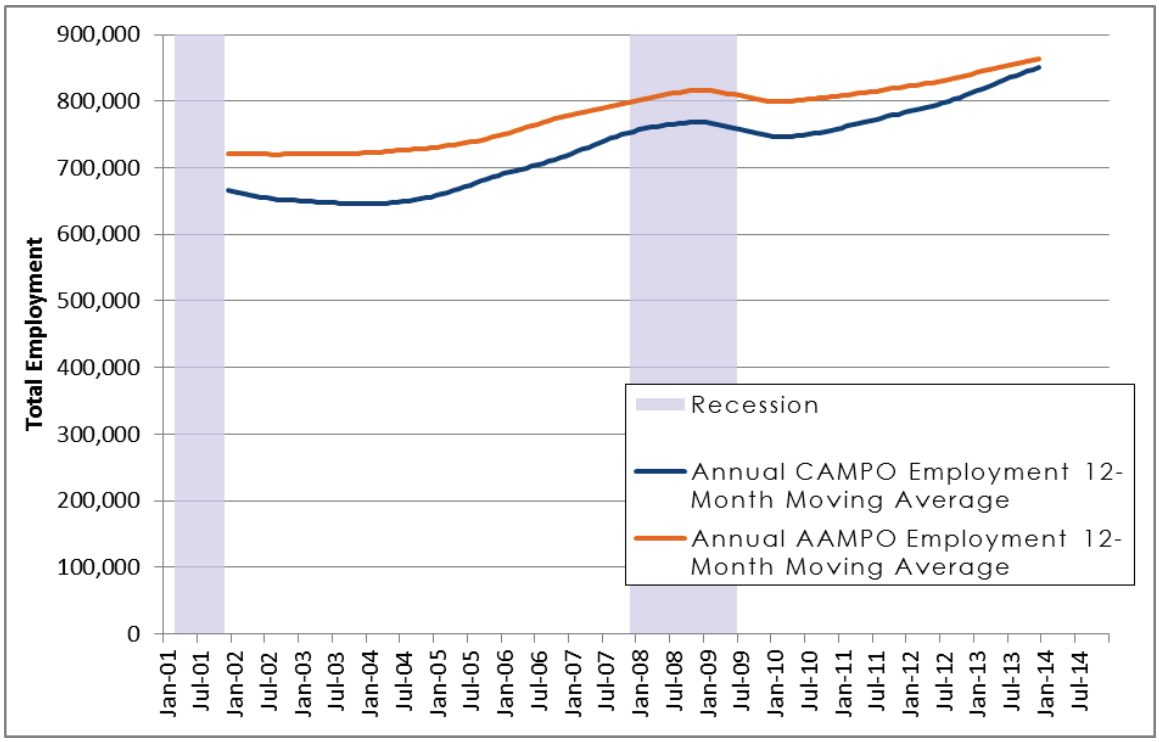
Table 6.7 Employment by County, 2007 - 2013

Employment								
Region	**County**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
CAMPO	Travis	569,200	578,961	559,751	567,693	581,510	604,648	633,471
	Williamson	117,842	121,725	119,984	120,860	128,863	133,518	139,123
	Hays	47,714	46,748	47,510	48,616	50,577	52,585	55,305
	Bastrop	13,335	13,883	14,143	14,283	14,032	14,120	15,081
	Caldwell	6,583	6,871	6,712	6,929	7,441	7,729	8,029
	Total	754,675	768,189	748,101	758,381	782,423	812,600	851,009
AAMPO	Bexar	716,666	730,302	715,292	722,147	732,527	749,534	770,591
	Comal	36,955	39,034	39,173	39,332	41,073	42,249	42,804
	Guadalupe	28,787	29,887	28,825	28,932	29,983	30,602	31,477
	Kendall	10,176	10,674	10,755	10,654	11,243	11,675	12,074
	Wilson	6,400	6,546	6,419	6,490	6,645	6,683	7,064
	Total	798,983	816,442	800,464	807,555	821,471	840,742	864,010
Study Area Total		**1,553,657**	**1,584,631**	**1,548,565**	**1,565,935**	**1,603,894**	**1,653,342**	**1,715,019**
Average Annual Growth Rates								
Region	**County**	**2006 - 2007**	**2007 - 2008**	**2008 - 2009**	**2009 - 2010**	**2010 - 2011**	**2011 - 2012**	**2012 - 2013**
CAMPO	Travis	4.0%	1.7%	-3.3%	1.4%	2.4%	4.0%	4.8%
	Williamson	10.0%	3.3%	-1.4%	0.7%	6.6%	3.6%	4.2%
	Hays	6.4%	-2.0%	1.6%	2.3%	4.0%	4.0%	5.2%
	Bastrop	5.7%	4.1%	1.9%	1.0%	-1.8%	0.6%	6.8%
	Caldwell	2.0%	4.4%	-2.3%	3.2%	7.4%	3.9%	3.9%
	Total	5.1%	1.8%	-2.6%	1.4%	3.2%	3.9%	4.7%
AAMPO	Bexar	2.5%	1.9%	-2.1%	1.0%	1.4%	2.3%	2.8%
	Comal	5.0%	5.6%	0.4%	0.4%	4.4%	2.9%	1.3%
	Guadalupe	4.1%	3.8%	-3.6%	0.4%	3.6%	2.1%	2.9%
	Kendall	3.3%	4.9%	0.8%	-0.9%	5.5%	3.8%	3.4%
	Wilson	2.4%	2.3%	-1.9%	1.1%	2.4%	0.6%	5.7%
	Total	2.7%	2.2%	-2.0%	0.9%	1.7%	2.3%	2.8%
Study Area Total		**3.8%**	**2.0%**	**-2.3%**	**1.1%**	**2.4%**	**3.1%**	**3.7%**

Sources: U.S. Bureau of Labor Statistics; Michael Bomba, PhD.

Employment in the CAMPO and AAMPO areas is shown graphically in Figure 6.4 for the period 2001 through 2014. The effects of the recession can be seen in the downturn in 2009 and the rebound since then. Employment levels are now higher than before the recession and total employment levels for both the CAMPO and AAMPO areas exceed 850,000 in 2013.

Figure 6.4 Employment in Study Area, 2001 - 2014



Starting with the adjusted employment for 2013 presented above, growth is anticipated to taper down from the rate of 3.1 percent in 2012 and 3.7 percent in 2013 to 2.0 percent between 2013 and 2015. After that, it continues to slow down, reaching an annual growth rate of 1.5 percent between 2030 and 2040. The forecast of future employment for the ten counties is presented in Table 6.8.

Table 6.8 Employment Forecast for Study Area, 2013 – 2040

Employment Control Totals						
REGION	**County**	**2013**	**2015**	**2020**	**2030**	**2040**
CAMPO	Travis	635,250	660,559	717,497	839,247	962,917
	Williamson	139,191	147,884	168,721	211,554	254,472
	Hays	54,565	58,102	66,937	86,092	108,533
	Bastrop	15,058	15,797	18,221	24,358	33,126
	Caldwell	7,966	8,373	9,511	12,300	15,958
	Total	852,030	890,715	980,887	1,173,551	1,375,006
AAMPO	Bexar	771,162	796,244	856,370	982,096	1,116,034
	Comal	40,379	43,258	50,662	67,780	88,534
	Guadalupe	31,080	32,728	36,668	45,225	54,802
	Kendall	12,162	12,842	14,517	18,255	22,642
	Wilson	6,930	7,214	8,042	9,592	10,972
	Total	861,713	892,286	966,259	1,122,948	1,292,984
Study Area Total		**1,713,743**	**1,783,001**	**1,947,146**	**2,296,499**	**2,667,990**
Average Annual Growth Rates						
REGION	**County**		**2013 - 2015**	**2015 - 2020**	**2020 - 2030**	**2030 - 2040**
CAMPO	Travis		2.0%	1.7%	1.6%	1.4%
	Williamson		3.1%	2.7%	2.3%	1.9%
	Hays		3.2%	2.9%	2.5%	2.3%
	Bastrop		2.4%	2.9%	2.9%	3.1%
	Caldwell		2.5%	2.6%	2.6%	2.6%
	Total		2.2%	1.9%	1.8%	1.6%
AAMPO	Bexar		1.6%	1.5%	1.4%	1.3%
	Comal		3.5%	3.2%	3.0%	2.7%
	Guadalupe		2.6%	2.3%	2.1%	1.9%
	Kendall		2.8%	2.5%	2.3%	2.2%
	Wilson		2.0%	2.2%	1.8%	1.4%
	Total		1.8%	1.6%	1.5%	1.4%
Study Area Total			**2.0%**	**1.8%**	**1.7%**	**1.5%**

A comparison of the population projections prepared for the 2012 Update and the forecasts used in the 2014 Study, as shown in Table 6.9, indicates that the current projections are higher due to strong employment growth during the last few years. Travis and Bexar counties are the major sources of the additional jobs but most of the other counties contributed positively as well.

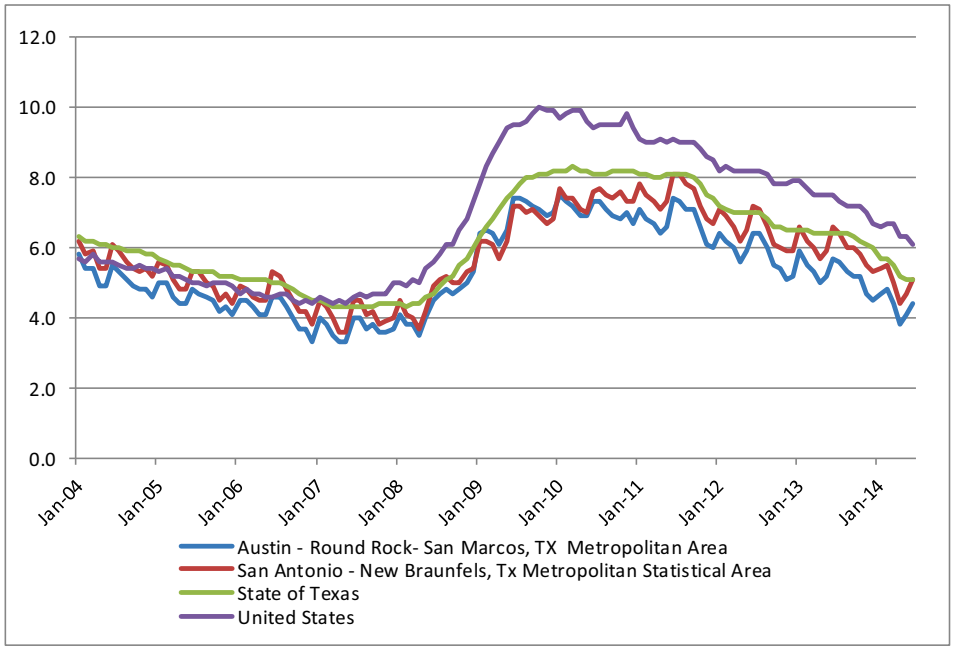
The model's 2015 employment control is in alignment with historical growth trends over the past decade and the period since the recession. The employment would be higher if it was based only on the most recent period, but that assumes that present conditions stay constant, which is not a conservative assumption. There are still some unknowns about oil prices and the effects on domestic production, which could definitely affect the Austin economy.

Table 6.9 Comparison of 2012 and 2014 Projections of Employment

Year	Estimated Employment		Difference	
	2012 Update	2014 Study	Number	Percent
CAMPO Counties				
2013	772,653	852,030	79,377	10.3%
2015	793,232	890,715	97,483	12.3%
2020	891,785	980,887	89,102	10.0%
2030	1,102,293	1,173,551	71,258	6.5%
2040	1,326,205	1,375,006	48,801	3.7%
AAMPO Counties				
2013	839,769	861,713	21,944	2.6%
2015	862,742	892,286	29,544	3.4%
2020	928,900	966,259	37,359	4.0%
2030	1,070,475	1,122,948	52,473	4.9%
2040	1,221,313	1,292,984	71,671	5.9%
Total Region				
2013	1,612,422	1,713,743	101,321	6.3%
2015	1,655,974	1,783,001	127,027	7.7%
2020	1,820,685	1,947,146	126,461	6.9%
2030	2,172,768	2,296,499	123,731	5.7%
2040	2,547,518	2,667,990	120,472	4.7%

Austin has the second lowest unemployment rate among large metropolitan areas (population greater than 1.0 million) in the United States. In July 2014, the unemployment rate in Texas was 5.1 percent and in Austin, 4.1 percent, substantially lower than the national rate of 8.2 percent. The unemployment rates in the Austin and in San Antonio metropolitan areas were lower than the national rate at the start of the recession and were consistently below the national level during the recession. The monthly unemployment rates for the U.S., the State of Texas and the Austin and San Antonio areas are shown for 2004 to date in Figure 6.5.

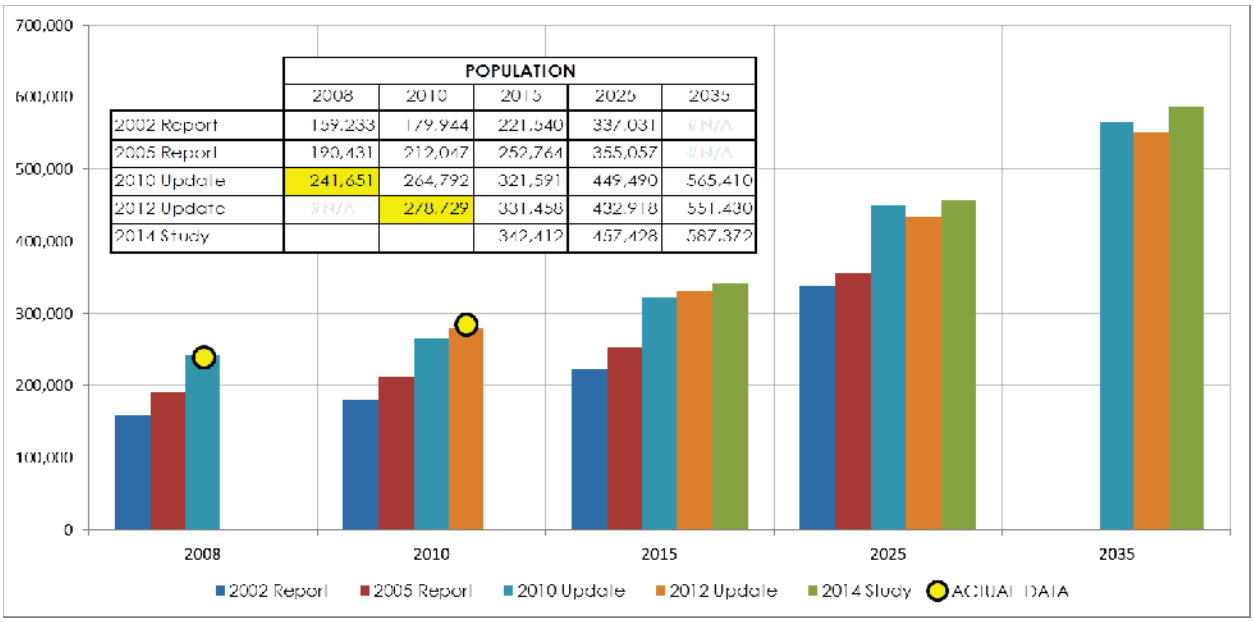
Figure 6.5 Comparison of Unemployment Rates, 2004-2014



An analysis of the forecasting accuracy of estimates used for Previous Reports for selected areas was prepared by comparing the forecasts to actual results, when available. An example of this analysis is shown in Figure 6.6 for the population forecast prepared for the rapidly developing 'greenfield' corridor served by SH 130 Segments 1-4. The estimated population developed for each of the Previous Reports, by horizon year, along with the final observed values for 2008 (completion year of the CTTS) and 2010, are shown in the table in Figure 6.6. Note that the forecasts for 2008 and 2010 were consistently lower than the actual growth within this corridor and the estimated population for 2008 and 2010 were increased in each subsequent study as the actual growth exceeded prior forecasts. Ultimately, the actual population values for 2008 and 2010 (241,651 and 278,729, shown as yellow-shaded cells in the table), exceeded the earlier forecasts. This demonstrates the reasonableness of these forecasts and the conservativeness of methodology used to generate the values.

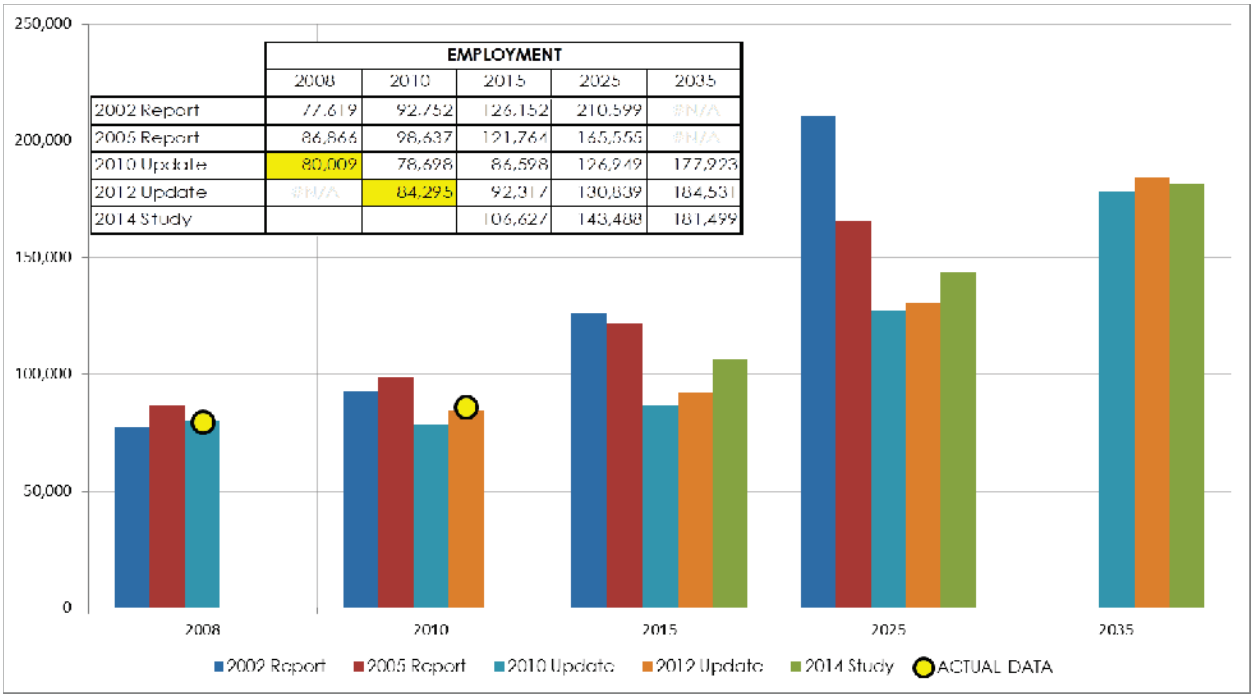
Similarly, the employment forecasts in Figure 6.7 were reviewed for the same corridor. The severe recession condition that occurred in 2008 caused the observed employment of 80,009 for 2008 to be less than the forecast of 86,866. In the subsequent 2010 Update, the employment forecasts were reduced for all horizon years. As the economy recovered, the actual 2010 employment (84,295) exceeded the prior forecast prepared for the 2010 Update.

Figure 6.6 Comparison of SH 130 Corridor Population Forecasts



POPULATION	2008	2010	2015	2025	2035
2002 Report	159,233	179,944	221,540	337,031	#N/A
2005 Report	190,431	212,047	252,764	355,057	#N/A
2010 Update	241,651	264,792	321,591	449,490	565,410
2012 Update	#N/A	278,729	331,458	432,918	551,430
2014 Study			342,412	457,428	587,372

Figure 6.7 Comparison of SH 130 Corridor Employment Forecasts



EMPLOYMENT	2008	2010	2015	2025	2035
2002 Report	77,619	92,752	126,152	210,599	#N/A
2005 Report	86,866	98,637	121,764	165,555	#N/A
2010 Update	80,009	78,698	86,598	126,949	177,923
2012 Update	#N/A	84,295	92,317	130,839	184,531
2014 Study			106,627	143,488	181,499

6.2 UPDATE OF TAZ LEVEL ESTIMATES

The socioeconomic review and employment and population projections used in the traffic model were developed by Michael S. Bomba, Ph.D. Dr. Bomba has extensive experience in the Austin area and has been retained by Stantec to provide socioeconomic data forecast assessment for the Austin area toll roads since the early 2000s. For this project, Stantec staff conducted field reviews and interviews with local government agencies responsible for preparing the current socioeconomic forecasts used as a baseline condition for Dr. Bomba's analysis.

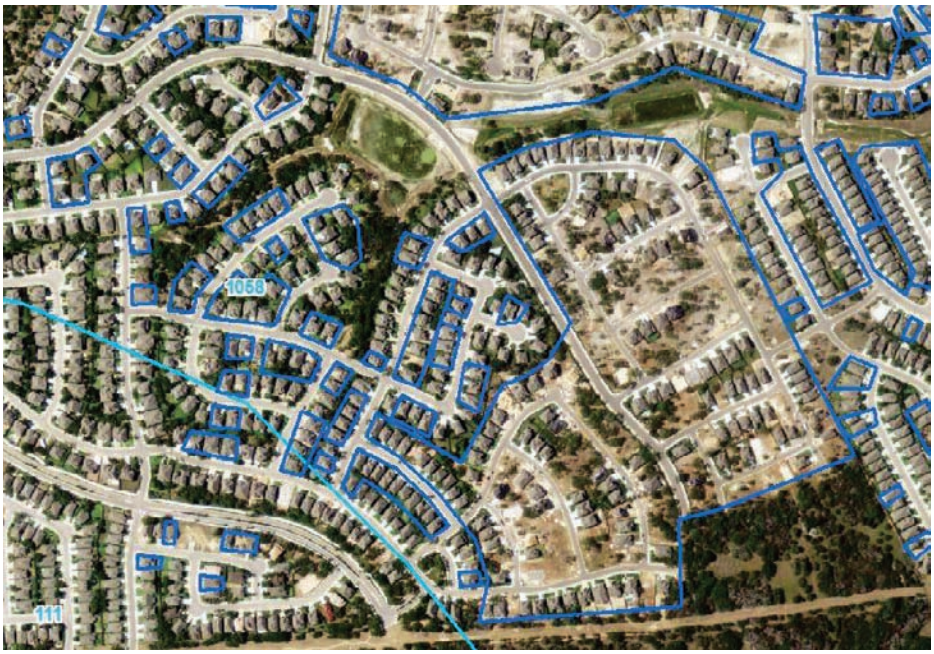
As part of this analysis, Dr. Bomba has reviewed the development trends in the individual markets for residential and commercial development. The review effort also considers the existing utility capacity and plans for expansion in order to confirm the reasonableness of the local development plans. The revised forecasts prepared from this analysis are structured to provide a reasonable estimate of future activity that would be considered as conservative for the purposes of estimating future demand for the region's toll facilities. The report prepared by Dr. Bomba for the 2014 Study is presented in Appendix A of this report and summarized here.

6.2.1 Methodology

Base Year Methodology

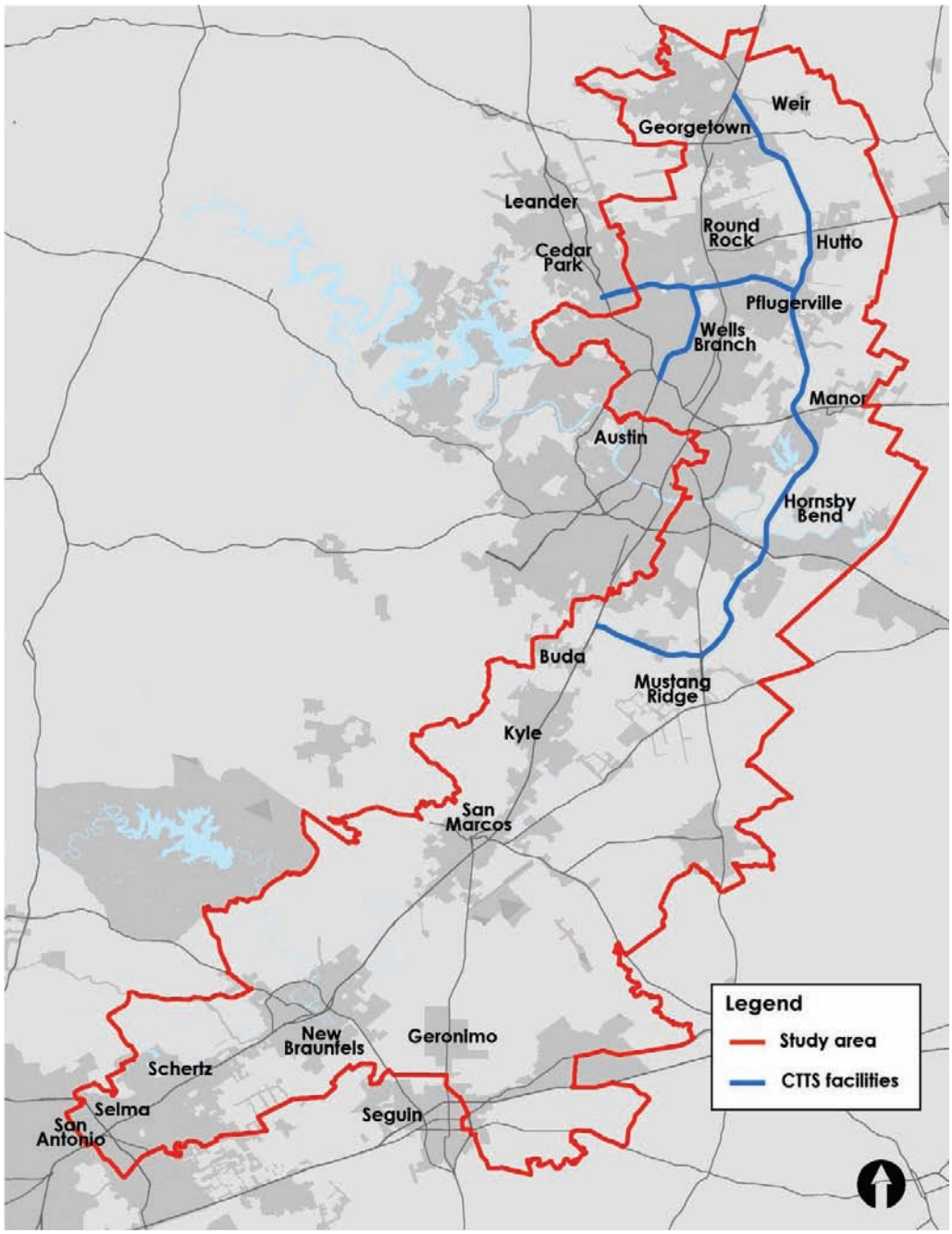
In order to establish base year socioeconomic data, a review of recent development was conducted by comparing orthographic photos from the United States Geologic Survey of the area from 2010 and 2012 using ArcGIS. The previous baseline had been established in 2010, and this review helped to identify changes to the land use between the baseline year for the 2010 Update and the baseline year for the 2014 Study. Development that appeared in the 2012 photos was highlighted, and determined to be either residential (including multi-family) or commercial based on visual inspection of rooftop layout. An example is shown in Figure 6.8. Changes in residential units were quantified, and commercial development activity was researched to approximate the number of jobs generated by each development.

Figure 6.8 Example of Orthographic Review



The rooftop comparison was completed for all of the Austin and San Antonio study areas shown in Figure 6.9. This information was used to generate baseline demographic data for each TAZ in the study area. These data were then reviewed by Stantec staff to ensure internal consistency (e.g., ratio of population to households, check of employment totals against different employment categories, etc.).

Figure 6.9 CTTS Study Area



Future Conditions Methodology

Socioeconomic forecasts were developed using a combination of the MPO's forecasts and a series of interviews with individual municipalities. Socioeconomic interviews were conducted with communities and counties in the study area (see Figure 6.9) to provide an updated assessment of potential future near-term and long-term growth parcels. Municipality representatives were asked to identify parcels that would experience new residential or commercial development; to

quantify the type of development (number of dwelling units for single or multi-family residential, and square footage or employee counts for commercial development); and to specify a development timeframe, if possible. In addition to these quantitative statements about specific development parcels, they were also asked to describe other factors that may influence development in their jurisdiction. These included factors such as the development of new parks, schools, municipal buildings, and other parameters, such as the water and wastewater capacity, the extent of the utility network, and potential environmental constraints. A list of the municipalities that were interviewed is shown in Table 6.10. These comments were recorded directly on a large-scale aerial map during the meeting by municipality representatives and/or Stantec interviewers. The projections were then compared against the MPO baseline forecasts, and an updated socioeconomic forecast for each TAZ in the study area was developed.

Table 6.10 Socioeconomic Interviews Conducted

Cities				Counties
Austin	Hutto	Manor	San Marcos	Caldwell
Buda	Kyle	Mustang Ridge	Schertz	Guadalupe
Cedar Park	Leander	New Braunfels	Seguin	Hays
Cibolo	Liberty Hill	Pflugerville	Selma	Travis
Garden Ridge	Live Oak	Round Rock	Universal City	Williamson
Georgetown	Lockhart	San Antonio		

6.2.2 TAZ Population & Employment

The results of the analysis are shown in Figure 6.10 and Figure 6.11 as the absolute change between 2013 and 2030. For analysis purposes, the data were summarized by sector, which provided a method for analyzing data at a level between individual TAZs and counties. The sectors indicate areas with high growth rates for both population and employment.

The annual average growth rates of the fastest growing sectors for 2013-2015 and 2015-2040 are shown in Table 6.11. High population growth is expected outside of the City of Austin. Fast population growth is expected north and east of Austin, along the SH 130 and SH 45N corridors in Round Rock, Pflugerville, and Leander (Williamson-6, -15, and Travis-8 sectors). High population growth is also expected southwest of Austin, along the I-35 corridor to San Marcos (Hays-10 and -11). This area includes Buda, Kyle, and San Marcos.

The areas with significant increase in population are also expected to see large employment growth rates. The fastest employment growth is expected in Williamson-15, northeast of Austin, but the other sectors are also expected to see a large growth in employment.

Figure 6.10 Population Growth, 2013-2030

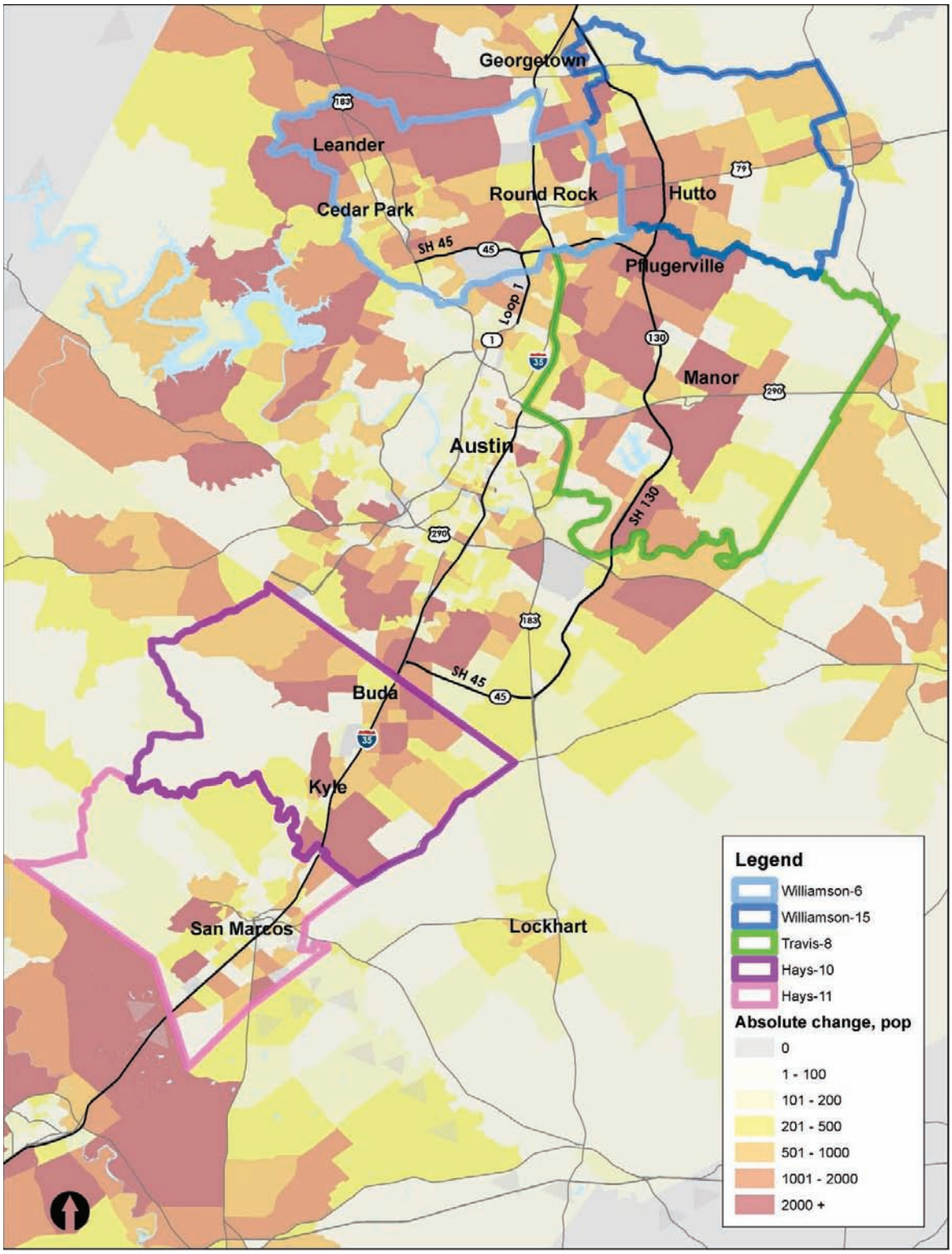


Figure 6.11 Employment Growth, 2013-2030

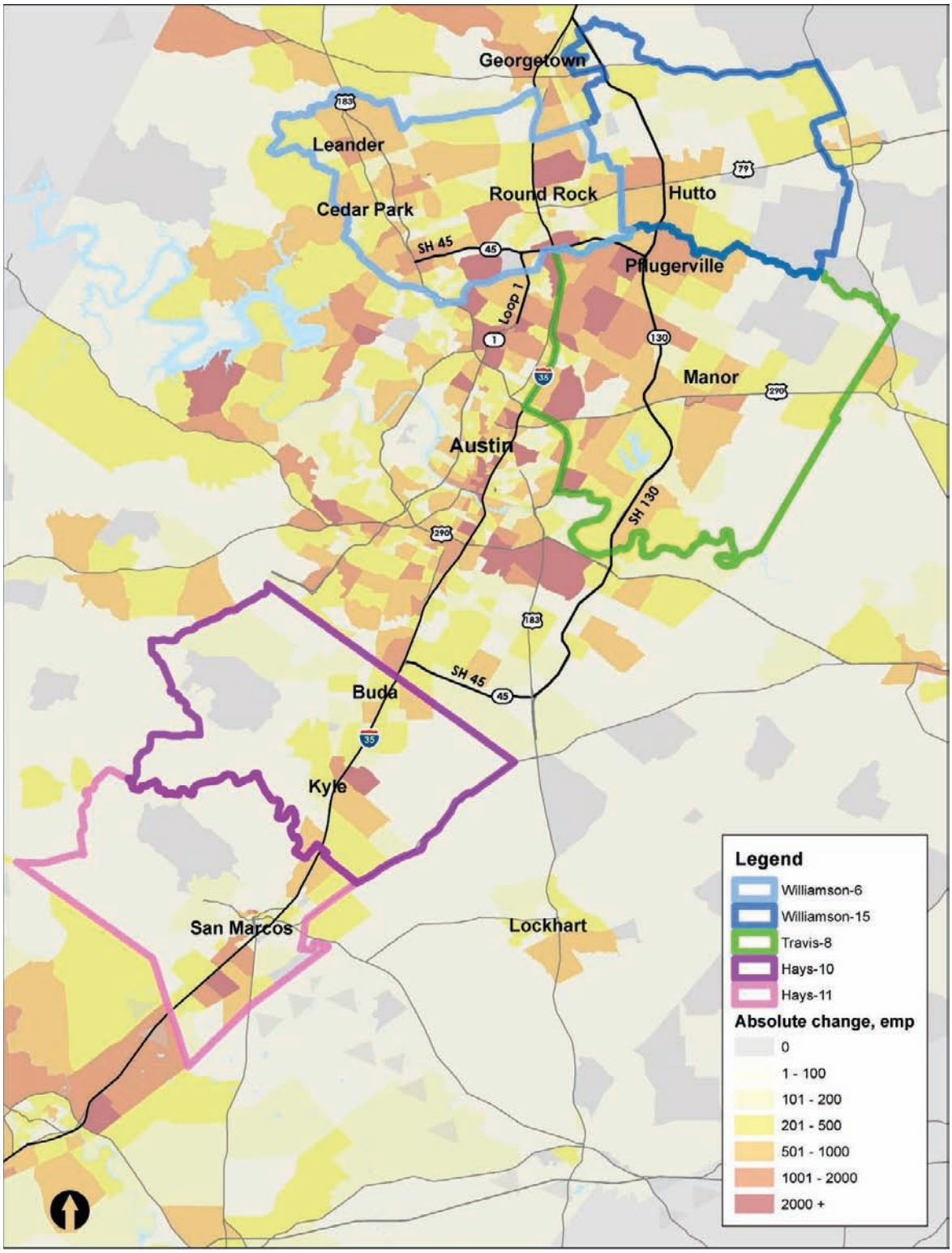


Table 6.11 Forecasted Population & Employment Growth Rates

Sector	2013-2015 Population AAGR	2015-2040 Population AAGR	2013-2015 Employment AAGR	2015-2040 Employment AAGR
Williamson-6	2.5%	1.9%	3.3%	1.8%
Williamson-15	4.9%	3.4%	5.0%	4.3%
Travis-8	3.5%	2.4%	3.3%	2.3%
Hays-10	3.8%	3.0%	4.4%	3.1%
Hays-11	3.9%	2.6%	2.9%	2.2%

6.3 REGIONAL DEVELOPMENT TRENDS

As mentioned above, interviews were conducted with community and county representatives to provide an assessment of near-term and long-term growth. While the interview process identified hundreds of developments in all parts of the map, the following section provides a review of recent permitting trends and a broad overview of the larger-scale developments near the toll roads in the Austin region and along the competitor roads. The Austin and San Antonio regional economies have experienced consistent growth over the past decade, and that economic strength was reflected in the information gathered from the interviews. All of the communities have new developments that are either ongoing or planned; many of them have developed or plan to develop catalysts to growth -- among them, their location along a major arterial, a favorable development environment, a well-managed water supply, and/or a strong utility network. Many communities have zoned certain parcels to encourage new development.

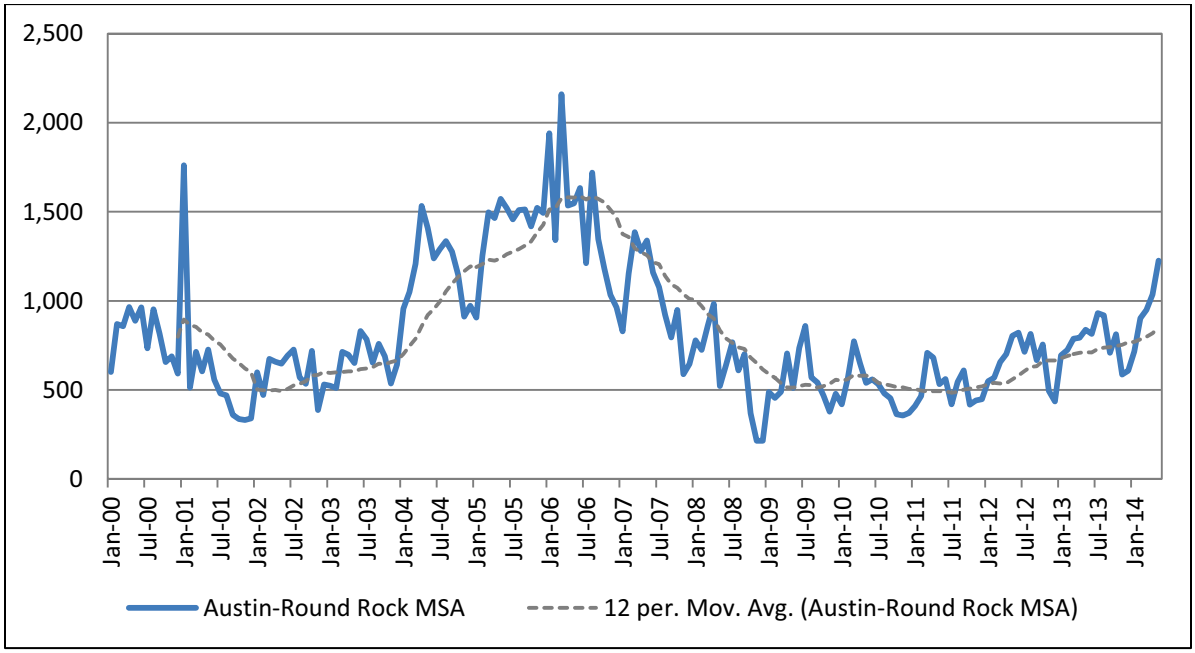
6.3.1 Housing Trends

The 2008-2009 Recession had a profound impact on Austin regional housing real estate due to the curtailment of demand. While the commercial real estate market was affected by the recession, due to tight credit markets or financially stressed tenants, it did not experience the same collapse as the residential market and has been showing a consistently positive movement during the recent past.

The U.S. Census Bureau's single-family building permit data from Real Estate Center at Texas A&M University are shown in Figure 6.12, which shows the number of monthly single-family building permits issued in the Austin-Round Rock MSA. While an issued building permit does not guarantee that a structure was constructed (a certificate of occupancy would provide that proof), it provide a means of gauging builder interest and to compare activity in a region over time. The data generally show that the monthly issuance of building permits in the Austin-Round Rock MSA grew during the "Housing Bubble", reaching a peak in mid-2006 of more than 2,000 permits. Then the number of permits issued began to decline quickly and reached its lowest level during early-2009. Since then, the local housing markets has moved towards recovery with approximately 1,200 building permits issues during mid-2014, it is nowhere near previous levels of

activity. While this recovery could be interpreted as construction industry that is still under pressure from the last recession, the period leading up to 2006 is not a desirable comparison. In general, the 14-year period offers few extended periods of a normally functioning housing construction market.

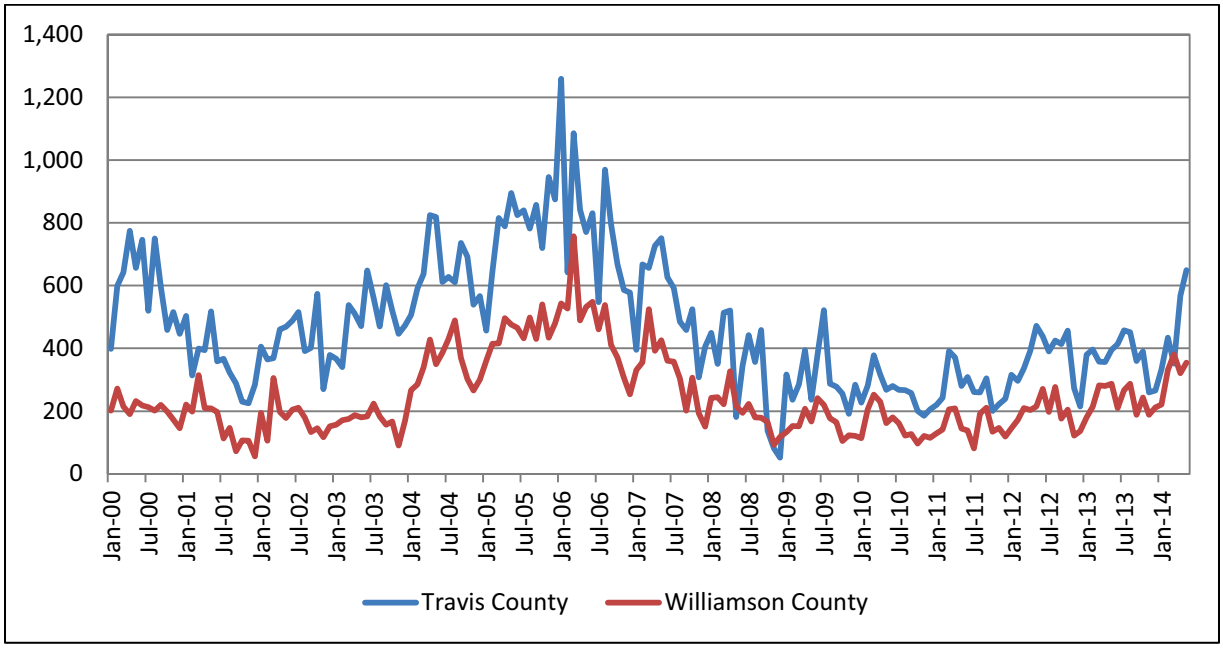
Figure 6.12 Single-Family Building Permits Issued in Austin-Round Rock MSA, January 2000 to May 2014



Note: MSA data based on 2013 core-based statistical area definitions.
Source: Texas A&M Real Estate Center, 2014.

Figure 6.13 provides more detailed showing the number of single-family building permits issued in Travis and Williamson Counties. The data show a pattern similar to the Austin-Round Rock MSA.

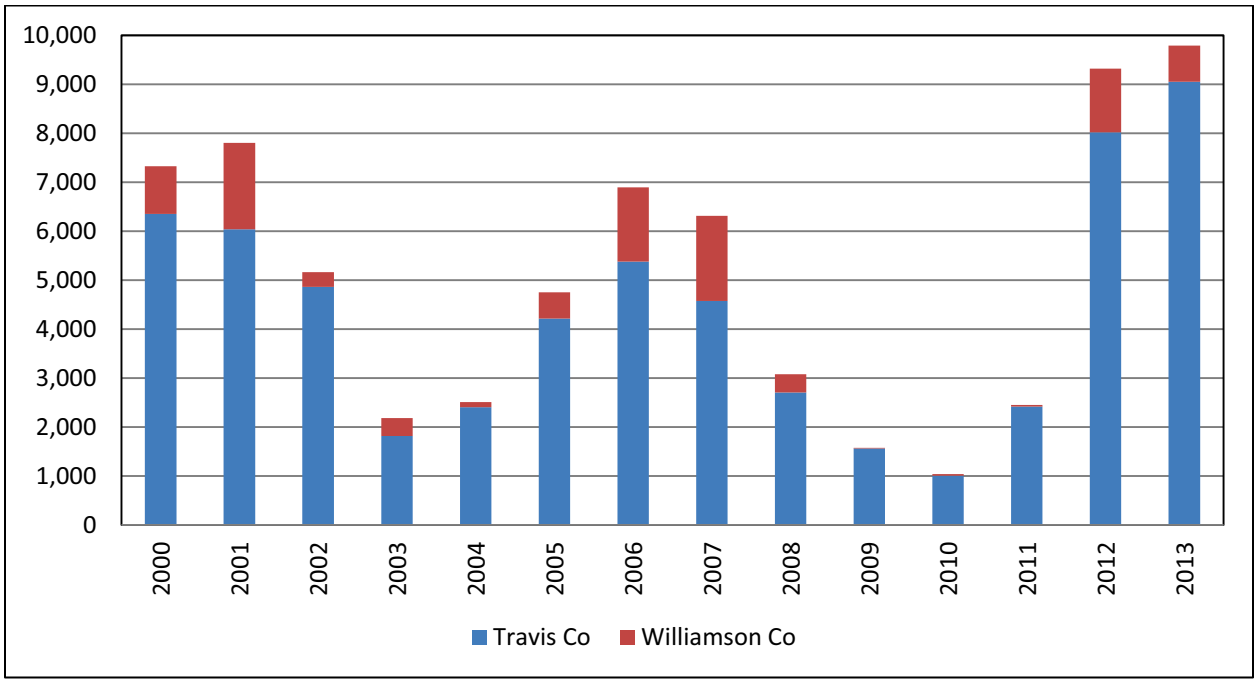
Figure 6.13 Single-Family Building Permits Issued in Travis and Williamson Counties, January 2000 to May 2014



Note: Monthly data for Hays, Bastrop, and Caldwell Counties were not available.
Source: Texas A&M Real Estate Center, 2014.

Figure 6.14 shows the total number of multifamily units permitted in Travis and Williamson Counties. The number of multifamily permits increased sharply during the early-2000s with the technology-fueled expansion; and again during the mid-2000s as a component of the Housing Bubble (at a slightly lower volume). There was a significant increase in the number of multifamily units permitted during 2012 and 2013, likely due to the constrained supply of single-family homes for lower-income households and households with poor credit, as well as decisions by more affluent households to rent their dwelling rather than buy one.

Figure 6.14 Multifamily Units Permitted in Travis and Williamson Counties, 2000-2013



Source: Texas A&M Real Estate Center, 2013.

6.3.2 Austin

During 2013, the city of Austin was the fastest growing city in the nation with a population under one million residents. As a result of its rapid growth (and the relatively modest impact of the 2008-2009 Recession), land development in the region has been generally widespread. The SH 130/Manor Expressway/Bergstrom Expressway corridors, in particular, are benefitting from this growth. Historically, the city's eastern side has not attracted significant development, but attitudes appear to be changing and middle-income households' growing need for affordable housing (as well as gentrification that has attracted young professionals and higher-income households) have encouraged new development projects. Additionally, the linear form of the Austin metropolitan area means that many locations in eastern Travis County currently provide quick commutes to central Austin, which are unavailable from any other direction without paying significantly more for housing. As a result, various residential development projects are planned or underway within the SH 130/Manor Expressway/Bergstrom Expressway corridors.

Most of the new residential growth has occurred within the traditional context of the large single-family subdivision. This type of activity has been especially prolific in Northeast Austin along Parmer Lane, Howard Lane, and Dessau Road, where large vacant tracts are available. However, some of these new developments have been small infill projects of 20 or 30 lots or multifamily projects, while others have been redevelopments, like those currently underway in downtown Austin, at the former Mueller Airport, along Riverside Drive, and The Domain in North Austin, or (at a smaller scale) along Manor Road east of I-35.

South of the Manor Expressway and east of US 183, developments have been slower to come to market. However, there are a number of very large residential projects that, when built, will bring many thousands of new households to the area. Some of the projects in this area include Rio De Vida (6,700 dwelling units; currently pursuing permits), Whisper Valley (6,200 dwelling units; currently under construction), Whitehorse (5,800 dwelling units; permitted but construction has not started), and Eastwood (2,300 dwelling units; permitted). Further south and west of US 183, the proposed Carma development will bring more than 14,000 dwelling units, if it is fully built out.

In the Loop 1/SH 45 study area, much of the recent growth has been infill subdivisions and multifamily projects. However, there are still large tracts of land that will bring new housing units to market, particularly at Robinson Ranch (6,000, mostly undeveloped, acres sandwiched between Austin and Round Rock) and along RM 620, from the Travis County line to RM 2222.

General assumptions about current and planned commercial developments in Austin, some of which are listed in Table 6.12 and highlighted in an example of a proposed toll road corridor shown in Figure 6.15, are that employers will increasingly maximize their utilization of downtown commercial space and that the long-term occupancy rates of downtown commercial space will increase. Additional employment growth is expected as several large hotels are built and mixed use projects come online, such as the Seaholm redevelopment (8 in Figure 6.15 and Table 6.12). There are large parcels of developable land bordering neighborhoods that are transitioning to higher-income households.

Figure 6.15 Selected Commercial Developments in Austin

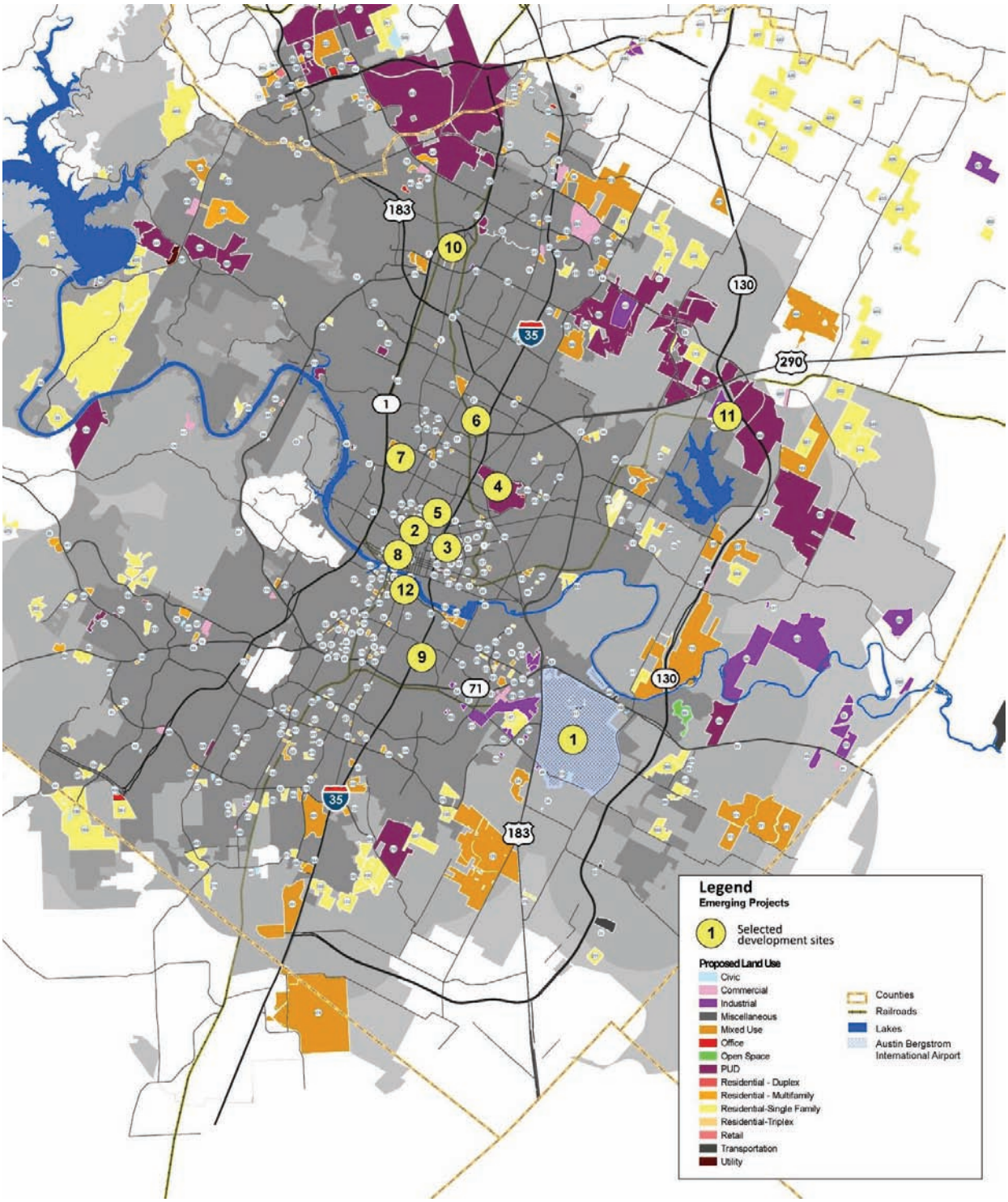


Table 6.12 Selected Commercial Developments in Austin

Number on Figure 6.9	Project
1	Austin-Bergstrom International Airport
2	University of Texas at Austin
3	Dell Medical School at University of Texas at Austin
4	Mueller redevelopment
5	Concordia University development
6	Highland Mall
7	Large parcel in central West Austin
8	Seaholm redevelopment
9	St. Edwards University
10	Domain development
11	Wildhorse planned unit development
12	Rainey Street neighborhood

Much employment growth is anticipated at Austin-Bergstrom International Airport ("ABIA") (1). In addition to growth at the commercial airport facility, this TAZ also contains all of ABIA's freight and general aviation facilities, a large Armed Forces Reserve Complex, and a youth correctional facility. With the exception of the air freight operations, most of these other uses are likely to increase their employment over time.

As mentioned above, the Rainey Street neighborhood (12) is going to eventually be redeveloped, and it will include a 21-story office tower and a 38-story mixed-use tower. Nearby, there are some vacant parcels near St. Edwards University (9) along or in proximity to I-35. This area has ample opportunities for redevelopment as household incomes continue to rise in the surrounding neighborhoods.

The Dell Medical School at University of Texas at Austin (2 & 3) is expected to open in the fall of 2016. The project is expected to be 515,000 square feet consisting of an academic building, a research building, a medical office building and a parking garage. The teaching hospital is about 480,000 square feet. The complex could also include a psychiatric hospital, a cancer center, a second medical office building, additional parking garages and more academic and research buildings in the future. Additional employment growth, aside from that which will result from the medical school, is expected at the university, including daily workers at the Frank Erwin Center.

Stratus Properties has proposed to build a mixed project with residences, offices and shops on a large parcel of high-value property in central West Austin (7). In the same area, the former Concordia University site (5) has plans for development, and the Highland Mall and its surrounding area (6) are being redeveloped. The Mueller neighborhood (4) is also being redeveloped and will include more than 3 million square feet of commercial space and 790,000 square feet of retail at build out.

In the northern part of Austin, the third phase of The Domain development (13) is being completed, and will include more than 3,500,000 square feet of office space and more than 1,100,000 square feet of retail space. The development will also include some 340 hotel rooms.

6.3.3 Cedar Park

The City of Cedar Park has experienced a high rate of population growth over the past two decades and, as a result, expects to reach build-out within the next 20 years. Within the project study area and on the north side of Cedar Park, the Caballo Ranch subdivision is platted for 419 lots and across the road is an 80-unit condominium. Further to the east and west of US 183, a 150-lot development called Cedar Grove is currently in the planning stages and, adjacent to it, a 300-unit multifamily project is also being planned. Moving south, there are several proposed infill projects: the West Park subdivision (55 lots); Thousand Oaks (56 lots); and the Park West Estates (77 lots and currently under construction).

Further south and west of US 183, two condominium projects are being proposed. On the east side of US 183, the Abrantes subdivision will have 88 lots and the Ranch at Brushy Creek has approximately 1,300 single-family completed homes and will contain over 1,700 units when finished.

Recent retail developments include a new Costco that opened in November 2013 at US 183-A and Whitestone Boulevard and a Walmart that opened in May 2014 near Whitestone Boulevard and Ronald Reagan Boulevard. A grocery chain has purchased land north of a quarry along RM 1431 in anticipation of a future store, and a restaurant and retail development will be developed in the vicinity.

Cedar Park's city council is also open to new mixed-use type developments, but they do not necessarily want multifamily projects, which they feel are adequately represented in the city. Their preferred development option would be "executive-style" (i.e. large homes on large lots) housing developments, for which there is currently a demand.

6.3.4 Leander

The City of Leander currently has more than 13,000 lots in various stages of the development process, ranging from proposed to fully-built. There is a large concentration of new residential development along the Ronald Reagan Boulevard corridor, which until recently was fairly undeveloped. The largest of the subdivisions along this corridor are located just south of its intersection with SH 29, which are the Wedemeyer subdivision (2,970 lots) and the Rancho Sienna subdivision (1,242 lots).

Further south along the corridor are the Red Oak Valley subdivision (132 lots), Palmera Ridge subdivision (500 lots), Reagan's Overlook (98 lots), Steward Crossing (225 lots), Marbella (216 lots), Sarita Valley (96 lots), Springwood (100 lots), Crystal Springs (283 lots), a new section of Cold Springs (31 lots), the Hazlewood subdivision (227 lots), Catalina Ranch (110 lots), the Pecan Creek subdivision (189 lots), and the Borho subdivision (268 lots).

Around the Bagdad Road corridor, west of US 183, are the Greatwood subdivision (124 lots); the Savana Ranch subdivision (281 lots); the Oak Creek and Northside Meadow subdivisions (689 and 193 lots, respectively); Hawkes Landing (313 lots); Carnero's Ranch (400 lots); Magnolia Creek subdivision (114 lots); Connelly's Crossing (150 lots); and the Mason Ranch subdivision (803 lots). Outside of the study area and in Travis County, there are several other subdivisions, which include Travisso (3,140 lots), the Bluffs at Crystal Falls (739 lots), a new section of the Grand Mesa subdivision (111 lots), and a new section of the Fairways at Crystal Falls subdivision (739 lots).

The City of Leander is attempting to add more commercial development and has commissioned a study to determine which types of commercial development are lacking in Leander. One issue may be that there are not many commercial lots available in the city. There is a concept plan for a large commercial lot in the southeast quadrant of the city. The construction of schools, on the other hand, has not suffered. There are several new schools proposed for Leander's east and north sides.

Looking toward the future, Leander's planning officials believe the city's strengths are its good ordinances and a receptive council. They also believe that the US 183A project has accelerated new development in the city, particularly along the Ronald Reagan corridor. The city continues to push a proposed transit-oriented development (TOD) area near the proposed Austin Community College (ACC) campus. Both the TOD project and the ACC campus have been favorite projects of the City of Leander for many years but struggled due to the 2008-2009 Recession and need for higher population densities. There will be a bond measure during the next election to expand ACC and build new campuses and, if successful, may allow that project to move forward.

6.3.5 Georgetown

The City of Georgetown's general development trends are currently concentrated in its west and northwest, as well as to the east and southeast of the city towards SH 130. Among Georgetown's largest residential developments, the Sun City retirement community continues to expand, with more than 1,000 dwelling units being built on a 400-acre parcel. There are also a number of other parcels on the northwest side of Georgetown that are expected to be developed during the next 5 to 10 years. Further south, adjacent to the Wolf Ranch retail development, townhome and apartment projects are being planned.

Along SH 29, there are two large projects that are starting construction or expected to start in the near term. The Brownstone development will consists of 2,400 multifamily units with an anticipated 12-year build-out. The Water Oak subdivision has 1,500 acres available for development and up to 3,000 single-family units. On the east side of I-35 and towards the SH 130 corridor, two subdivisions are being proposed that would have 250 lots each. Further south along Sam Houston Boulevard, an 800-900 lot subdivision is being proposed, along with a 200-lot addition to the Pinnacle subdivision. Due east of the Pinnacle subdivision, on the west side of Maple Street, a 300-lot subdivision is also being planned.

Additionally, a 220-unit multifamily project has been proposed at the southwest corner of the Inner Loop and FM 1460. South of Georgetown, in an unincorporated area that is also due north of the city of Round Rock, the Teravista development continues to add a large number of single-family homes.

Georgetown city planners did not identify any recent, ongoing, or planned commercial developments. They also reported that the Georgetown City Council is trying to attract commercial development of any type. The current trend in the city is clearly towards the construction of single-family homes.

While new development in Georgetown is starting to move towards the SH 130 corridor, at present, areas along SH 130 have limited utility infrastructure and there are few pressures to develop in that area. Some of these areas were annexed by the city prior to the 2008-2009 Recession, but have remained vacant. There are also competing development opportunities on the south side of Georgetown, where there is little existing development and easy access to I-35 and SH 130.

6.3.6 Round Rock

Round Rock continues to be one of the primary recipients of suburban growth in the Austin region, although its growth has slowed somewhat over the last decade as other cities compete and as its supply of developable land diminishes. At present, there are a number of residential subdivision projects planned or underway, including: the Freeman Tract, Avery North, Warner Ranch, and Kenney Fort. There will also be expansions of the Paloma and Sienna subdivisions, which fall within the jurisdiction of municipal utility districts (MUDs) and are outside the City of Round Rock's boundaries. All of these projects are located east of I-35 and collectively they will add thousands of new housing units to this portion of the CTRMA study area.

New multifamily development projects are expected at the La Frontera development at the northeast corner of I-35 and SH 45 and along University Boulevard. There are several upcoming commercial projects, which include: a Bass Pro Shop scheduled to open in November 2014 along I-35 north of University Boulevard; a large grocery store that will anchor a large retail development along University Boulevard; and a new hospital near the La Frontera development on the south side of SH 45.

Looking out over the medium to long term, there are various issues or trends that will influence the city's growth patterns. Although city planners reported that there has not been significant demand for development in the SH 130 corridor, they did point out that development patterns in the city are moving to the northeast, which is in the direction of SH 130. Given the distance between the SH 130 corridor and existing development and the amount of vacant land in between, new development adjacent to the corridor is not expected to increase significantly until the periphery of the city shifts closer. The City of Round Rock also sees opportunities for redevelopment and new growth in its downtown, around the I-35/SH 45 interchange, Avery Center (northeast Round Rock), and near Chisholm Trail (which was recently reconfigured).

6.3.7 Hutto

Located east of the SH 130 corridor in Williamson County, the pace of population growth in the City of Hutto has rapidly outpaced the surrounding area. Since the 2000 U.S. Census, when its population was 1,451 residents, Hutto has grown approximately 1,300 percent to its 2013 population of more than 20,000 residents. City officials estimate that 89 percent of Hutto's residents do not work in the city, but instead commute to work locations in Round Rock, Pflugerville, and Austin. Some of the active residential projects in Hutto include: the Hutto Highlands subdivision; a new section of the Hutto Park subdivision (104 lots); the Park at Brush Creek subdivision (98 lots), Phase 6 of the Glenwood subdivision (75 lots); and Phase 3 of the Riverwalk subdivision (389 lots). A 66-unit multifamily project for seniors is also being planned near the SH 130 corridor.

Although Hutto has grown to a sizeable population in a short period of time, commercial development has lagged. However, as the city grows, Hutto planners anticipate that developer demand for commercial plots will increase. Like many of its neighbors, the City of Hutto considers itself very pro-growth and city officials would like to see more commercial projects to increase the sales tax base. Elected officials are in favor of adding multifamily housing, but want it in a desirable context (e.g., as part of a mixed-use development).

6.3.8 Pflugerville

The City of Pflugerville is viewed by many as an attractive location due its affordable housing and its relative proximity to Austin. This interest has extended to developers, who have been attracted to projects along the SH 130 corridor. There is currently strong construction in the Highland Park subdivision (which is expected to be built-out in the next 5 years), the Falcon Pointe subdivision, and the Villages of Hidden Lake subdivision. The Sorrento subdivision is another project that has just started construction and it will eventually consist of 996 lots. In addition to single-family housing, there are also a number of multifamily projects that are currently being planned for Pflugerville.

Two of these projects are being proposed south of SH 45 and east of Schultz Lane. Combined, these projects will bring 650 apartments to market. There are other multifamily projects being proposed near the southwest and southeast corners of SH 130 and SH 45 intersection and along Dessau Road north of Wells Branch Parkway. The Sorrento subdivision will also include approximately 400 condominiums/townhomes.

Along with its robust residential market, Pflugerville is also experiencing considerable commercial development. The City of Pflugerville recently signed an incentives agreement for a new one million square foot data center on the southwest corner of SH 130 and SH 45. The developer has until next summer to advance this project or decline the development rights. Other projects in this area include an assisted living facility, office buildings, retail, and a restaurant. A mixed-use development will be located near Heatherwilde Boulevard and Wells Branch Parkway. This development will include single-family construction in Austin and commercial development in Pflugerville. Other anticipated commercial developments under consideration or construction

include: a cluster of large, light industrial developments at SH 130 and E. Pecan Street; a mix of office, retail, and multi-family near SH 130 and Pflugerville Parkway; and a variety of retail development along the Kelly Lane corridor.

City officials are optimistic about Pflugerville's growth prospects, especially considering its location along the SH 130 corridor.

6.3.9 Manor

Manor is located along the US 290/Manor Expressway corridor, due east of the City of Austin. During the mid-2000s, Manor was a growing rapidly suburb, however, growth was negatively affected by the 2008-2009 Recession. Until recently, its recovery was slow but activity is beginning to accelerate. A number of residential projects are being planned, many as additional phases of existing subdivisions. Among the anticipated residential projects are: Presidential Glen (500 lots); Presidential Heights (599 lots), Stonewater (360 lots); Shadow Glen (1,500 lots); and Bell Farms (125 lots). Manor is surrounded by more than 11,000 lots to the south in the proposed Indian Hill subdivision, Whisper Valley subdivision, and other projects that are anticipated in the future. Wildhorse (14 in Figure 6.15) is another large planned development with a significant amount of retail and commercial development that is being proposed adjacent to Manor's western boundary.

As with Hutto, commercial development has been slow to follow residential growth in Manor. Its relatively close proximity to retail and service facilities in Austin, coupled with lower population densities, has historically resulted in little commercial development. The situation has begun to change when Walmart opened a Manor location in 2014. There are currently several new commercial projects planned for Manor, which include medical offices, strip retail, and a new city hall. Most of the larger residential developments (existing or proposed) have also set aside land for commercial development, where it remains available for development.

6.3.10 Buda

Located due south of Austin in Hays County, Buda is the fastest growing city in Texas with population under 10,000. Buda is expected have a significant number of single-family residential developments over the coming decades. Although Buda's historic center is located west of I-35, recent residential development has been on both sides of the highway. On the west side of I-35, development is currently underway in the Garlic Creek subdivision (200 lots), the Whispering Hollow subdivision (450 lots), and the Meadows at Buda subdivision (125 lots). There are two multifamily projects planned west of I-35, as well.

To the east, the largest project underway is the Sunfield development, which will be a mix of residential, industrial, and commercial land uses. The proposed 2030 build-out for Sunfield is 6,632 lots, with 339 lots currently platted. The project is also planning for 300 multifamily units planned for construction in 2015 or 2016 and a retail development called the Shops at Sunfield. Historically, Sunfield's development has been a slow process, although current market conditions might give the project the boost needed to make its growth more sustainable. Other residential

developments in eastern Buda are the Stonefield subdivision (583 lots at build-out) and the Stone Ridge subdivision (125 lots), which is a proposed greenfield project.

There are a number of commercial projects being proposed around the city. Some of these projects are single-building retail establishments, such as a convenience store or a drugstore. Other projects are multi-tenant strip retail centers. On the north side of Buda, for example, a 150,000 square foot retail redevelopment project is being planned at the intersection of I-35 and Main Street. However, most of the proposed retail projects in Buda are smaller (50,000 square feet or less). Two hotels are being planned, one west of I-35 with 80 rooms and another on the east side of I-35 with 70 rooms. There are also a number of industrial buildings being proposed with activities ranging from warehousing to a brewery.

6.3.11 Kyle

Kyle is a rapidly growing Hays County suburb located between Austin and San Marcos. Bisected by I-35, the city is expecting new residential development on both sides of the roadway. On the west side of I-35 the Plum Creek development continues to add single-family housing, with another 2,000 housing units planned over the next two decades. There are an additional 400 single-family dwelling units planned for a subdivision adjacent to Plum Creek, as well as an expansion of the Hometown Kyle subdivision across CR 150. On the east side of the roadway, new residential projects include additional phases at the Brookside subdivision (150 lots), the Post Oak subdivision (300 lots), Bunton Creek (600 lots), Kensington Trails (400 lots), Woodlands Park (250 lots); Amberwood (200 lots); and a new subdivision called the Meadows at Kyle (400 lots). There are two multifamily developments being proposed in Kyle: development will be at the southwest corner of CR 171 and CR 1626 with 220 units and another along the I-35 frontage in front of the Amberwood subdivision.

New commercial construction underway included a Walmart, a bowling alley, and a medical clinic. Austin Community College recently built a campus in Kyle at the northeast corner of CR 171 and CR 1626. Over the long term, this campus is expected to grow and attract multifamily and retail development. The Village at Kyle retail center is also expected to be a future location of employment growth.

7.0 MODEL VALIDATION AND REFINEMENT

In preparing the estimates of traffic and toll revenue for the 2014 Study, it was necessary to update the existing travel demand modeling process to reflect growth in the Austin region and the expansion of the toll road system. Additional data on the toll road performance after the 2013 toll increase and the initiation of annual toll escalation is also now available. The objective of this model update and refinements is to provide a more robust tool for modeling the CTTS toll roads as well as other local toll roads that influence traffic on the CTTS.

Consistent with the CTTS 2012 Update, the modeled area includes an expanded area south of Austin that covers San Antonio. This expanded area encompasses areas and facilities that could influence traffic volumes on the various CTTS roadways, primarily SH 130 and SH 45 SE. The expanded region includes all of the area in the San Antonio-Bexar County Metropolitan Planning Organization (SABC) regional transportation model which is now being updated by the Alamo Area Metropolitan Planning Organization (AAMPO). The expanded area south of Austin was included primarily to reflect the anticipated growth in the I-35 corridor southward towards San Antonio and the impacts of growing congestion that could influence diversion as a result of the SH 130 Segments 5 & 6 that extend southward towards Seguin.

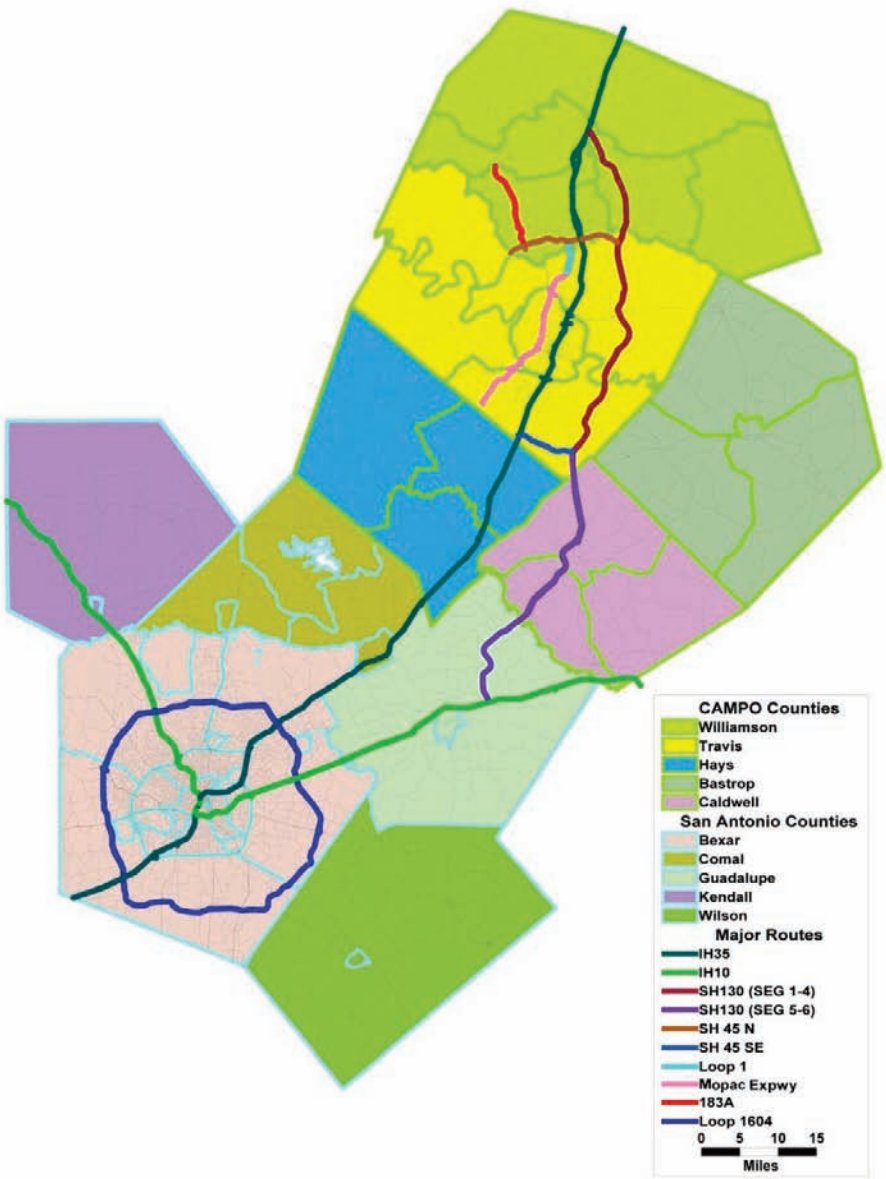
In addition to the expansion of the modeled region, the toll diversion modeling techniques were also updated to reflect new aspects of the tolling policy including PBM video tolling and cashless payment. The toll diversion model was updated to provide for greater flexibility in representing the variations in toll policy utilized by TxDOT and CTRMA, Including several managed lane facilities now under construction or in the planning process. The modeling process was also refined to provide variation in the methods of payments by individual subregions based on assumptions of transponder ownership by household income. Lastly, the toll diversion models were further refined to improve the representation of several planned toll facilities that will be operated as managed lanes with variable pricing.

The effect of all of these enhancements is the creation of an improved modeling process that is capable of supporting forecasts for the growing region surrounding Austin. These enhancements will enable the modeling process to be responsive to a wide range of potential changes in toll policies as well as specific conditions that will influence traffic diversion for the next generation of toll facilities.

7.1 TRAVEL DEMAND MODEL DEVELOPMENT

The model development effort was designed specifically to take advantage of the existing CAMPO and AAMPO regional models that encompass the expanded study area and to refine the toll diversion process originally developed for the 2002 Report. The expanded study area encompassing both the CAMPO and AAMPO regional models is shown in Figure 7.1. The common boundary of these regional models is along the Hays-Comal and Caldwell-Guadalupe county lines.

Figure 7.1 Austin – San-Antonio Integrated Model Region



In order to integrate the individual regional models into a single unified modeling process, it was necessary to merge the network and vehicle trip tables. The regional models are utilized to estimate total vehicle trips in the study area. Each of the regional models is executed from trip generation through trip distribution and mode choice using the revised socioeconomic data described in Chapter 6 to create vehicle trips by trip purpose and vehicle type (SOV, HOV, and Truck). The networks from each regional model were compared and a decision was made to adopt the network facility type–area type definitions as well the speeds and capacities from the CAMPO Model. Similarly, the resulting vehicle trip tables from the execution of both regional models were integrated using the trip purpose designations from the CAMPO Model. The use of

the CAMPO Model network parameters and trip purposes for the final integrated model reflect the fact the CTTS and the CTRMA toll facilities are entirely within the Austin modeled region and the Austin model represents a more advanced modeling process.

As part of the model development, it was recognized that several specific issues would influence the approach to model calibration. In contrast to the model development for the original 2002 Report, the current model calibration would need to replicate volumes across the entire study area and traffic on the recently completed toll facilities. The latest available socioeconomic data available for both regions (2013) was set as the calibration year. As a result, the study utilized a network that reflects the 2013 conditions, and that network is consistent with the speed and travel time data collected for this study as well as for the prior 2012 CTTS Update.

The new model utilized the existing toll diversion process as the basis for estimating tolled traffic. For the 2013 model calibration year, the temporary discounts for trucks using SH 130 and SH 45 SE were included since the discounts were applicable for 11 months of that year. Several refinements were incorporated into the toll diversion modeling to account for new tolling technologies, such as the PBM video tolling program, cashless payment, and dynamic pricing for the managed lane facilities that are planned for the Austin region. In addition to these refinements, the new toll diversion model provides for variation by household income and sub region in setting parameters, such as transponder usage. Similarly, parameters reflecting the tolling policies of each agency (TxDOT, CTRMA, and the SH 130 Concession) and the tolling plans for trucks are now established at each tolling pay point. This enhancement permits variation in the tolling plans for each agency as well the transition to newer toll collection technologies. Finally, the introduction of a generalized cost function, instead of time-based function, for the path-building and highway assignment processes allows the model to react more realistically to the impact of toll changes.

Toll diversion equations were established for each of six trip purposes, including:

- Home Based Work (HBW)
- Home Based Shopping (HBS)
- Home Based School (HBSch)
- Home Based Other (HBO)
- Work Based Other (WBO)
- Other Based Other (OBO)

The current toll diversion process utilizes the existing toll diversion equations as the basis for the forecasts. The formula is a basic binary logit equation and is defined as follows:

$$\text{Toll Share} = 1 / (1 + e^{U})$$

where:

Toll Share	= Probability of selecting a toll road
e	= Base of natural logarithm (ln)
U (work)	$= a * (Time_{TR} - Time_{FR}) + b * (Cost)/\ln(Inc) + C_{TR} + C_{ETC}$
U (nonwork)	$= a * (Time_{TR} - Time_{FR}) + b * (Cost) + C_{TR} + C_{ETC}$
$Time_{TR}$	= Toll road travel time in minutes

$Time_{FR}$ = Nontoll road travel time in minutes
Cost = Toll in dollars
Inc = Annual income / 1000
C_{TR} = Constant for toll road bias
C_{ETC} = Constant for ETC bias
a,b = Coefficients

Several adjustments to the existing procedures were implemented as part of the development process. As an initial step, the value of time for each purpose was adjusted to reflect the increase in household incomes in the Austin region between 1997, calibration year of the original 2002 Report, and the current calibration year 2013. The values of time were increased and the resulting weighted average of all trip purposes for autos ($16.93 per hour) is 59.9 percent of Austin's 2013 median household income of $58,821 per year, nearly identical to the percentage for 1997. Table 7.1 lists the coefficients for each trip purpose as well as the bias terms and equivalent minute values for the toll bias term and ETC bias term applicable to all payment methods. Note that the toll bias term discourages toll choice, but the ETC bias term encourages toll choice due to the ease of payment and the open road tolling aspects of transponder usage.

Table 7.1 Toll Diversion Model Coefficients

TRIP PURPOSE	(ALPHA) TIME (MIN)	(BETA) [1] COST ($)	VOT ($/HR)	BIAS TERMS			
				VALUES		EQUIVALENT MINUTES	
				TOLL	ETC	TOLL	ETC
HBW	0.1053	1.3378	$19.24	0.0000	-0.2960	0.0	-2.8
HBS	0.0754	0.3905	$11.59	0.0936	-0.2423	1.2	-3.2
HBSCH	0.0777	0.4375	$10.66	0.0816	-0.2226	1.1	-2.9
HBO	0.0441	0.1613	$16.40	0.0858	-0.1650	1.9	-3.7
NHBW	0.1396	1.8455	$18.49	0.0000	-0.3400	0.0	-2.4
NHBO	0.0872	0.2323	$22.52	0.1334	-0.2980	1.5	-3.4
TRUCK	0.0575	0.0699	$49.36	0.5063	0.0000	8.8	0.0

Notes: 1) HBW and WBO purposes use toll costs divided by LM (Income/1000).
2) All cost coefficients scaled from 1997 values in the original 2002 Report to the year 2013.
3) All time coefficients were retained as in the original 2002 report, except for truck.

For the 2013 calibration year, the model assumed two payment methods; ETC and PBM which is consistent with the payment options currently available. For the PBM market segment, the relevant surcharge was applied to the base toll at each pay point, and the positive bias term associated with transponder payments was also applied since these trips have the convenience of not needing to stop to pay tolls as they would if paying by cash.

The diversion model was modified to permit toll choice to occur where time savings were minimal or negative based on the observed ETC transactions data that were collected in 2013. Under the revised model, toll choice is permitted for paths where the toll path is up to 3.0 minutes longer than the non-toll path. The diversion model transitions the estimated choice

shares towards zero as the time savings approaches the minimum permitted value to ensure that the toll traffic and revenue stream has a lower contribution from trips with minimal or negative time savings.

Lastly, since the individual toll facilities have now been in operation for more than five years, a general bias against toll roads by those trips that have the highest frequency or are work related are not incorporated into the choice evaluation. These travelers, due to their frequency of travel, are now assumed to elect to use or avoid the toll road based strictly on the time savings and associated costs.

The toll shares for each auto purpose as a function of time savings for $2.00 toll are shown in Figure 7.2 through Figure 7.8. In each graph, two lines are shown depicting the shares for trips paying with ETC and with PBM. Since the PBM option includes a 33 percent toll surcharge, the share of toll traffic is lower than the ETC payment option. The predicted toll shares shown in these figures are also reduced further if the time difference between the tolled and non-tolled paths approaches the minimum time savings value.

For the truck trip purpose shown in Figure 7.8, the ETC toll rate for the example is $6.00, reflecting the higher cost of multi-axle trucks. The truck purpose has similar toll shares by time saving interval as this purpose has a higher value of time which partially offsets the higher toll rates.

Figure 7.2 Toll Diversion for Home Based Work (Auto) Trips - $2.00 Toll

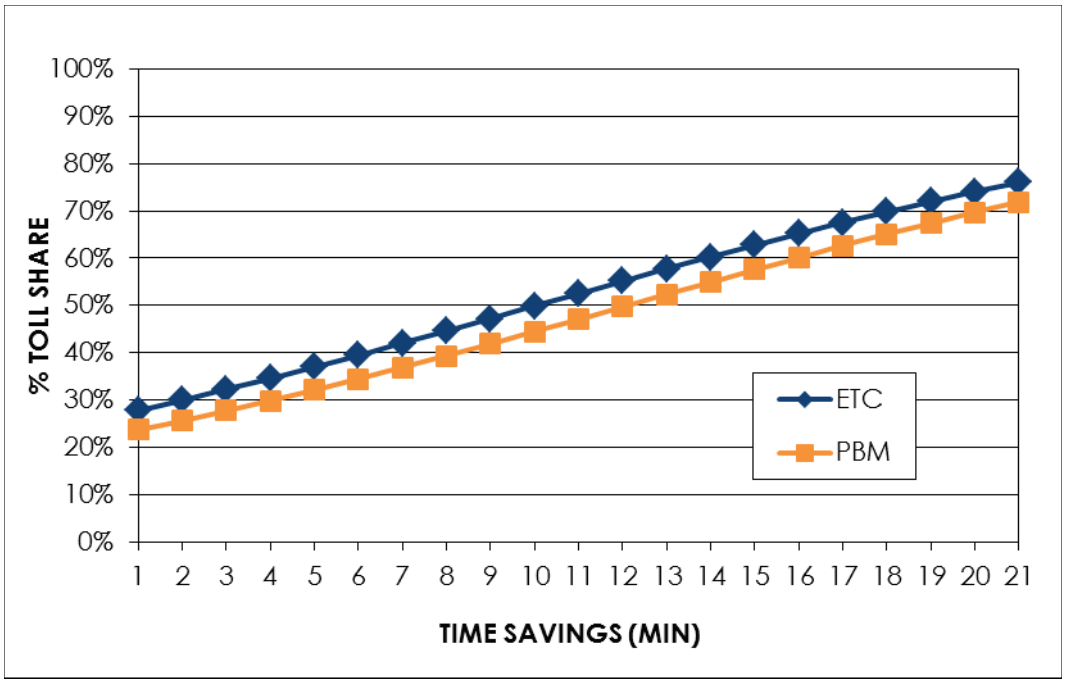


Figure 7.3 Toll Diversion for Home Based Shopping (Auto) Trips - $2.00 Toll

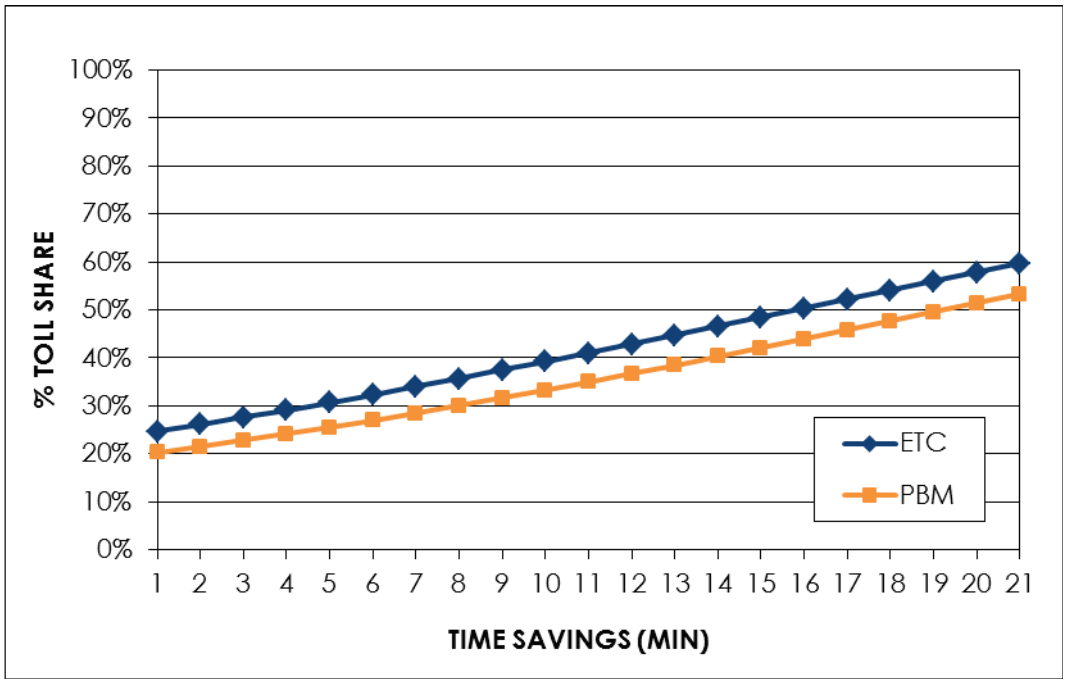


Figure 7.4 Toll Diversion for Home Based School (Auto) - $2.00 Toll

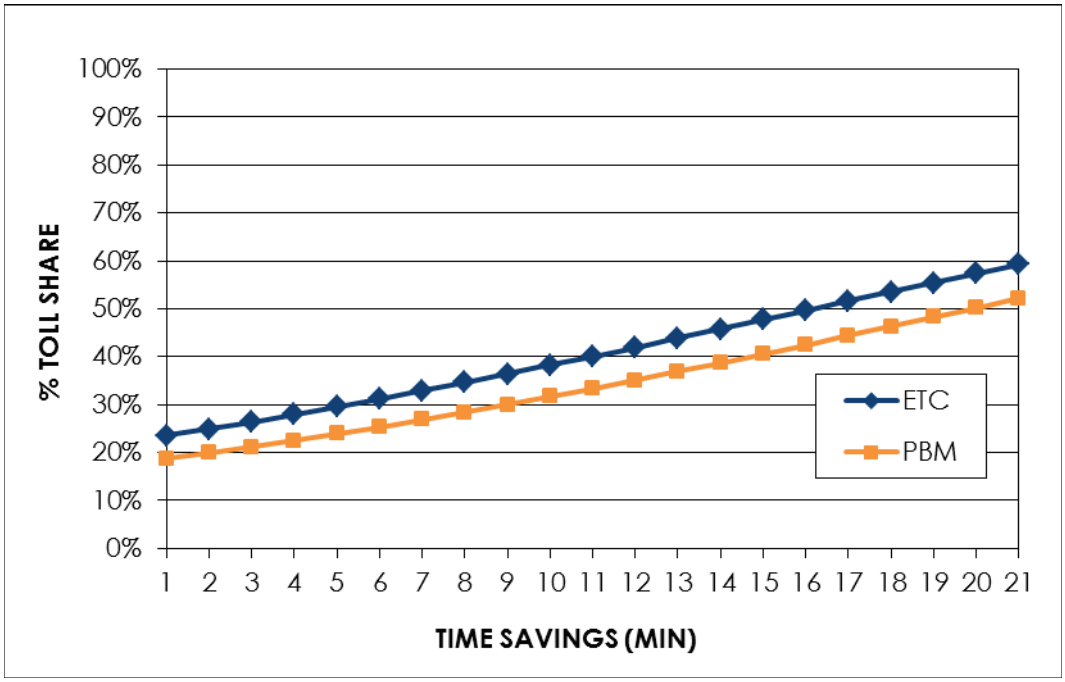


Figure 7.5 Toll Diversion for Home Based Other (Auto) - $2.00 Toll

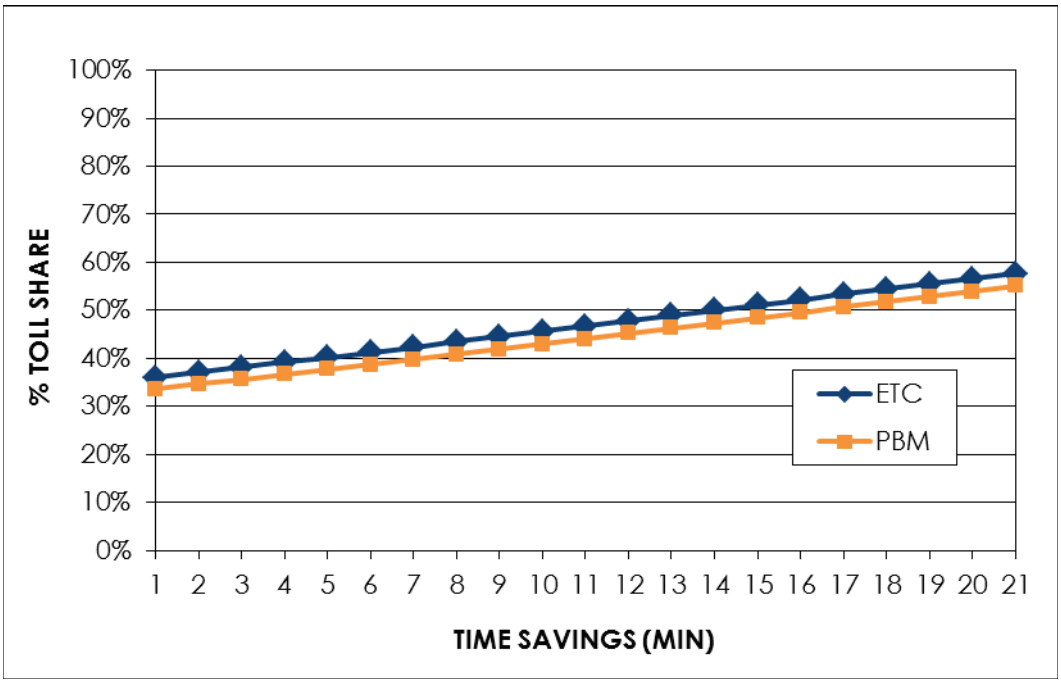


Figure 7.6 Toll Diversion for Work Based Other (Auto) - $2.00 Toll

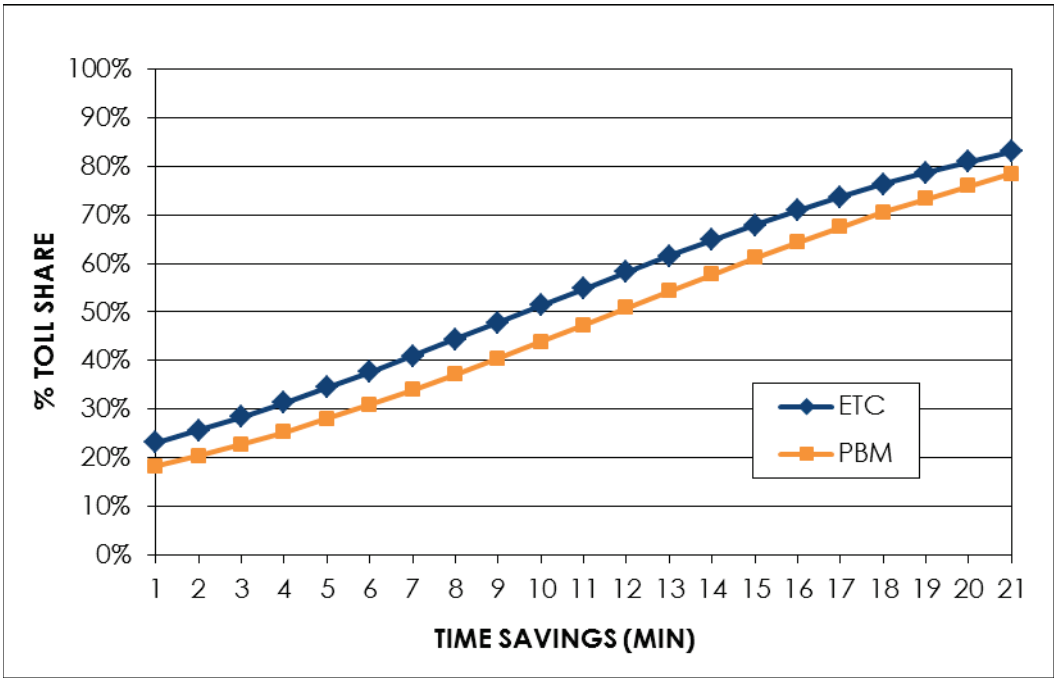


Figure 7.7 Toll Diversion for Other Based Other (Auto) - $2.00 Toll

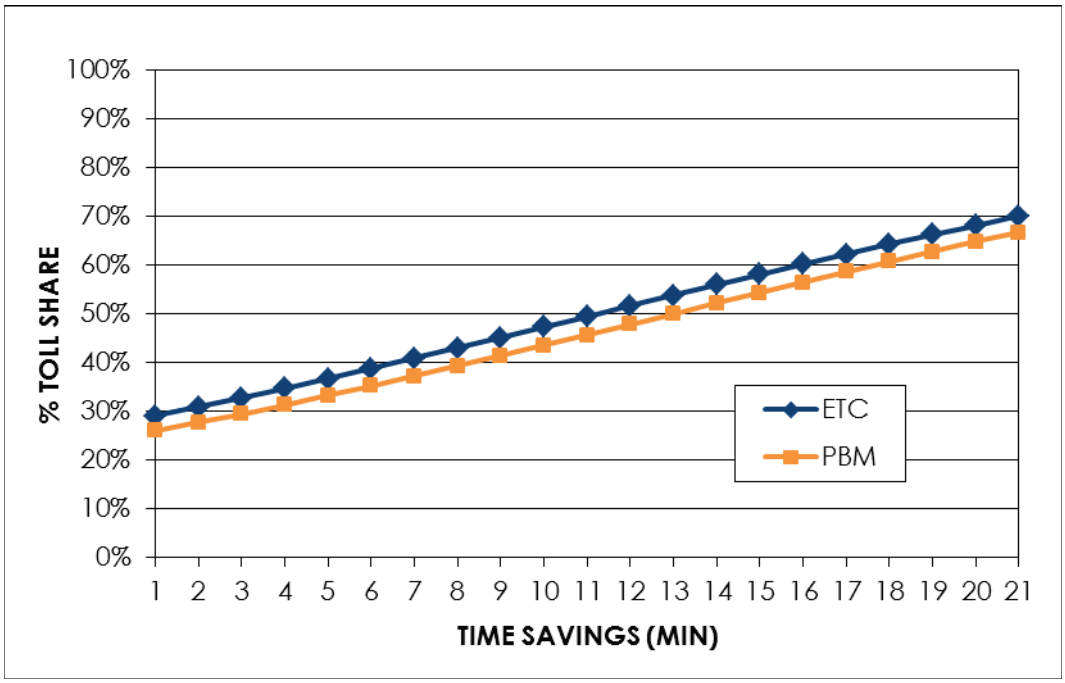
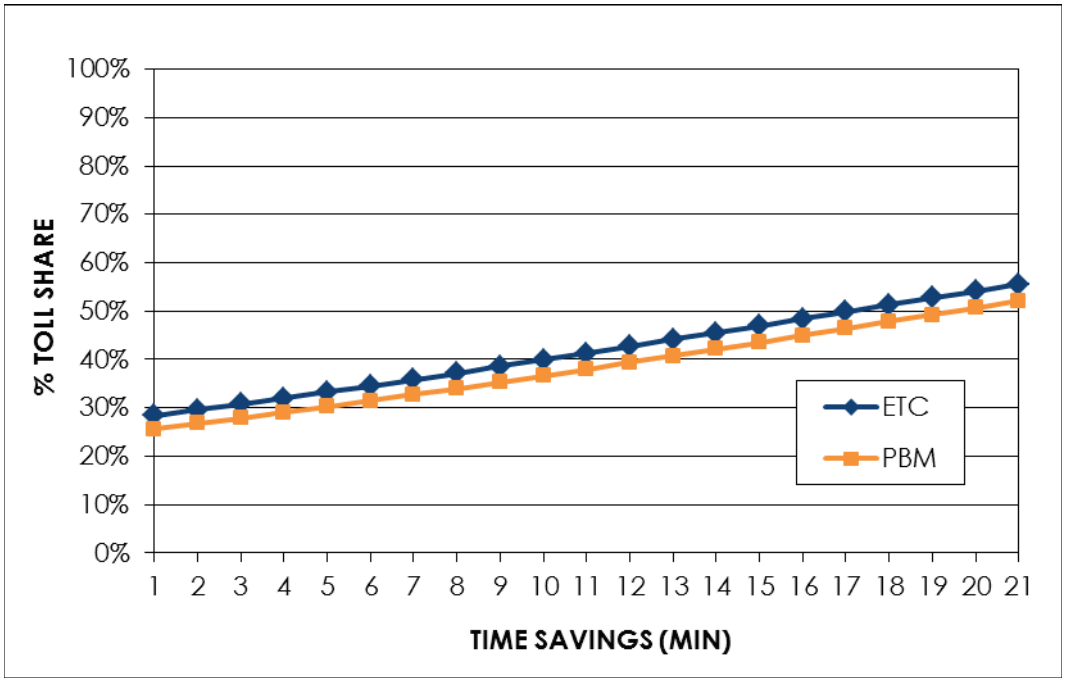


Figure 7.8 Toll Diversion for Trucks - $6.00 Toll



7.1.1 Highway Assignment Process Modifications

Consistent with the existing highway assignment process, trips are assigned to the network for three specific time-of-day conditions. The hours within each of these three periods are as follows:

- AM Peak (3-hour)– 6:00 AM to 9:00 AM
- PM Peak (3-hour)– 3:30 PM to 6:30 PM
- Off Peak (18 hours) – the remaining hours

The CAMPO Regional Model's current volume delay functions (VDFs) were adopted for the assignment and were augmented with a routine to estimate queuing at roadway intersections and merge points on limited access roadways. The queuing formula estimates the additional time encountered when traffic volumes exceed the physical capacity of a roadway segment. This modification is only enabled on a roadway segment if a traffic control device (signals, stop signs, or yield signs) is present and the roadway segment's volume/capacity ratio exceeds a value of 1.0. As part of the model calibration, the 'free flow' speeds, link capacities, and queuing routines were refined as necessary to ensure that the model adequately replicated both peak and off-peak speeds for the primary roadway facilities in each toll road corridor.

7.2 MODEL CALIBRATION

The objective of the model calibration was to ensure that the modeling process adequately replicates both the observed traffic volumes and the observed speeds by time of day for each of the project corridors. The calibration was also structured to replicate the observed traffic and transactions by payment method to the extent feasible for each toll road by pay point. It should be noted that the calibration was performed solely on the integrated model highway assignment process and toll diversion routines and no adjustments were made to the individual regional models.

7.2.1 Speed Calibration

The initial element of the calibration was to adjust the assumed free flow speeds were adjusted as necessary to replicate the off-peak speeds which reflect generally uncongested conditions. Peak speeds were adjusted in an iterative process including refinements to the capacity and the queuing formula to ensure that estimated congested speeds replicated the observed values and that the overall traffic assigned to the roadways replicated the observed volumes on a daily basis. This approach for calibration of peak speeds was adopted since period specific traffic counts were available only at a limited number of locations throughout the region. Volumes and vehicle-miles of travel (VMT) were also summarized on a regional basis to evaluate the assignment process on an aggregate level.

As part of the speed calibration effort, Stantec, assisted by our subconsultant Alliance Transportation Group, collected the observed speed data for corridors across the study region. Speed data were collected for both directions during three different time-of-day periods. Table

7.2 shows the results of the speed calibration in terms of observed an estimated travel time and speed by corridor and by time-of-day. These corridors were depicted earlier in Chapter 3. Note that most of the roadways shown are located primarily in the Austin region within the corridors of the individual roadways. Four roadway segments, as noted in the table, are south of Austin and include facilities that generally parallel the alignment of SH 130 Segments 5 and 6 (which are not part of the CTTS).

Table 7.2 Speed Calibration Summary

Route	Section Limits		Direction	AM [1]		PM [2]		Off-peak [3]	
				Observed	Estimated	Observed	Estimated	Observed	Estimated
IH 35	SH 130	MLK Blvd.	NB	66	62	53	50	65	61
			SB	50	56	54	55	60	61
	MLK Blvd.	SH 80	NB	53	60	59	56	64	65
			SB	69	65	47	46	65	65
	SH 80* [4]	Loop 1604* [4]	NB	70	71	67	64	71	70
			SB	64	63	64	69	70	70
Loop 1	SH 45 N	US 290 W	NB	53	52	43	50	66	62
			SB	52	58	43	46	68	63
SH 130*	IH 35	US 183	NB	73	74	72	74	71	74
			SB	72	73	72	74	71	74
SH 45 N*	US 183	SH 130	EB	66	71	68	71	71	72
			WB	68	69	66	72	74	71
US 183	SH 45 N	Manor Rd.	NB	67	67	47	56	67	65
			SB	56	59	68	63	66	63
	Manor Rd.	SH 130	NB	31	37	36	39	45	43
			SB	42	43	32	42	47	46
	SH 130 [4]	IH 10 [4]	NB	53	53	55	54	54	53
			SB	52	53	52	53	54	53
SH 21*	US 183	US 80	NB	57	56	58	56	60	56
			SB	60	56	58	57	61	56
SH 360*	US 183	Loop 1	NB	36	36	24	31	46	44
			SB	30	37	34	30	45	43
US 79*	IH 35	SH 130	EB	40	38	37	35	40	37
			WB	31	32	33	36	35	37
FM 973	US 290	US 183	NB	36	40	38	39	39	42
			SB	36	38	39	38	42	42
IH 10*	Loop 410 [4]	SH 123 [4]	EB	71	73	72	71	70	73
			WB	67	69	71	73	72	73
SH 123*	IH 35 [4]	IH 10 [4]	NB	54	51	53	51	51	50
			SB	53	51	52	51	52	51
FM 685*	SH 45 N/Kelly Ln.	US 290E	NB	35	36	27	34	34	37
			SB	24	33	32	36	37	36
RM 620*	SH 45 N	IH 35	EB	33	23	30	24	36	35
			WB	30	30	30	28	39	34
Gattis School Rd.	IH 35	SH 130	EB	29	33	25	30	30	33
			WB	29	27	26	32	34	33
Parmer Ln.*	FM 1431	Loop 1	NB	38	40	37	34	47	39
			SB	34	31	35	38	38	41
Loop 1 Frontage	SH 45 EB Frontage	US 183	NB	28	31	25	32	27	32
			SB	27	31	32	30	30	34
SH 45 SE*	IH 35	SH 130	EB	77	75	78	75	76	75
			WB	78	75	78	75	78	75
FM 1327*	IH 35	US 183	EB	56	57	52	57	55	57
			WB	54	56	52	58	55	58

Notes: 1) AM = Morning Peak Period (6AM – 9AM)
2) PM = Afternoon Peak Period (3:30PM – 6:30PM)
3) Off-Peak = Off-Peak Period (remaining hours)
4) Segments noted are south of Austin and include facilities that are generally parallel to the alignment of SH 130 Segments 5 and 6 (which are not part of the CTTS).
5) Travel time runs for segments shown with an asterisk (*) were conducted in 2012.

The results indicated that the estimated speed replicated the observed speed reasonably well in the off-peak period with all corridors have estimated speeds with 5 MPH (+/-) of the observed values. In the peak periods, most of the corridors have speed differences with 5 MPH (+/-) while there are several corridors in each peak period where the differences are with 5-10 MPH (+/-) of the observed values. The level of consistency is acceptable for the purposes of model calibration. The largest difference is on US 183 east of Austin between Manor Road and SH 130, where the PM peak estimated speed in the southbound direction is 10 MPH faster than the observed value.

7.2.2 Aggregate Calibration by Facility Type and Area Type

After the regional calibration analysis of speeds was completed, the calibration of traffic within each corridor was performed. This process included the replication of traffic by screenline total and individual roadways as well as by vehicle type. This analysis included the use of our in-house trip table adjustment routine to ensure that the aggregate travel across each screenline replicated the observed traffic by vehicle type.

The aggregate calibration by facility type and area type was performed for both traffic volumes as well as vehicle-miles travelled (VMT). This calibration utilized more than 2,240 link counts that were collected from several different sources. These data included the TxDOT 2012 AADT Traffic Maps and a limited set of classification counts provided by TxDOT, as well as other existing counts obtained from prior Stantec studies in the Austin region. Classification counts along the screenlines were also performed by Stantec's subconsultant, GRAM Traffic Counting, Inc. to provide current estimates for all roadways intersected by the screenlines. Stantec also obtained the 2013 transactions by paypoint for all toll facilities in the region, including all CTRMA facilities in operation in 2013. In situations where multiple counts were available for an individual roadway segment, the most reliable count data was determined using a hierarchy which used TxDOT transaction data first, then classification counts collected for this project, and then lastly either counts from previous studies or TxDOT counts.

The VMT and volume comparison summaries are listed in Table 7.3 and Table 7.4. Table 7.3 lists the aggregate comparison of volume and VMT by facility for the entire region. The replication of both volume and VMT is acceptable and for the limited-access facility type which includes toll roads, the estimated volume and VMT ratios are slightly less than observed at 0.97 and 0.98 respectively.

Table 7.3 Volume and VMT Comparison by Facility Type

FACILITY TYPE	NUMBER OF COUNTS	VOLUME			VMT		
		OBSERVED	ESTIMATED	EST/OBS	OBSERVED	ESTIMATED	EST/OBS
Limited-Access Facility	285	12,992,567	12,570,141	0.97	6,604,858	6,484,463	0.98
Expressway	16	436,235	423,669	0.97	142,210	133,997	0.94
Principal Arterial Divided	541	7,141,623	7,032,670	0.98	3,069,846	2,973,529	0.97
Principal Arterial Undivided	491	2,594,703	2,761,623	1.06	1,735,682	1,927,958	1.11
Minor Arterial Divided	44	354,698	325,724	0.92	142,401	131,462	0.92
Minor Arterial Undivided	571	1,064,435	978,893	0.92	1,028,427	942,838	0.92
Frontage Road	94	838,737	833,258	0.99	237,333	215,553	0.91
Collector/Local	85	82,141	94,712	1.15	101,268	127,802	1.26
Ramp	116	280,029	292,447	1.04	81,813	86,718	1.06
TOTAL	**2,243**	**25,785,168**	**25,313,137**	**0.98**	**13,143,838**	**13,024,320**	**0.99**

Table 7.4 provides a similar summary by area type. Except for the relatively small area of the region that is defined as CBD, all of the area type classifications are less than 5% different than the observed values.

Table 7.4 Volume and VMT Comparison by Area Type

FACILITY TYPE	NUMBER OF COUNTS	VOLUME			VMT		
		OBSERVED	ESTIMATED	EST/OBS	OBSERVED	ESTIMATED	EST/OBS
CBD	12	841,074	727,486	0.86	226,204	202,684	0.90
CBD Fringe	121	4,195,666	3,971,974	0.95	1,264,872	1,214,496	0.96
Urban	388	8,469,680	8,310,281	0.98	3,117,636	3,037,702	0.97
Suburban	854	9,312,088	9,090,697	0.98	5,408,933	5,191,315	0.96
Rural	868	2,966,660	3,212,699	1.08	3,126,193	3,378,123	1.08
TOTAL	**2,243**	**25,785,168**	**25,313,137**	**0.98**	**13,143,838**	**13,024,320**	**0.99**

While not listed separately in the tables, volumes and VMT for truck traffic by facility type and area type were performed and the level of variation was similar to the aggregate values listed in these tables. Overall truck VMT was with 1% of the observed value for the region.

While this calibration analysis in these tables includes the entire modeled area, the results by facility type and area type are generally consistent with the latest CAMPO model results available to Stantec. The regional ratio of estimated to observed VMT is 0.99, generally equal to CAMPO's results. The ratio of estimated to observed traffic volume is 0.98 compared to 1.00 in Campo's results. Recent calibrations statistics for the existing San Antonio Model are not currently available.

7.2.3 Screenline Calibration

The final element of the calibration was to adjust the toll diversion model equations to replicate the observed traffic by vehicle type and payment method across each of the toll corridors. This analysis resulted in adjustments to the assumed market segments by payment type in each subarea as well as minor adjustments to the toll bias constants and ETC bias constants.

The screenline calibration was performed to ensure that the aggregate demand within each toll road corridor replicates the observed traffic. As part of this calibration, an in-house routine was

applied to minimize any variation between estimated and observed demand across each of the screenlines. The adjustment provides a matrix of 'base year' trip changes (either increases or reductions) that is then retained for application in each of the horizon years. Since these trips are stored as a matrix, these additional trips are not tied to specific roadways and can be diverted to different routes in exactly the same manner as the trips estimated directly by the model. As a result of the screenline calibration, for origin-destination zonal pairs where trip changes were provided by the adjustment routine, the net change in trips was an increase of 1.1 percent with a decrease in autos being offset by an increase in truck trips. Note that since the magnitude of the additional trips is held constant for all future years, their contribution to the overall assignment results are further minimized in each successive horizon year as the underlying model trip tables continue to increase due to growth in the region's population and employment.

A series of screenlines were developed within each of the toll road corridors to intersect each of the mainline toll plazas and parallel locations on the adjacent non-tolled roads. Four screenlines were created for SH 130, two for SH 45 N, one for Loop 1, and one for SH 45 SE. These eight screenlines are a subset of all the screenlines analyzed in the region-wide calibration and are consistent with the CTTS screenlines displayed earlier in Chapter 3. Two additional screenlines were also created to quantify demand for the 183A toll facility for calibration purposes. Figure 7.9 shows the screenline locations within each toll road corridor. Table 7.5 and Table 7.6 list the screenline calibration results for total traffic and by mode. Table 7.5 summarizes the screenlines intercepting SH 130, including the two southernmost segments (Segments 5&6) which are not part of the CTTS system. Table 7.6 summarizes the Loop 1, SH 45 N, SH 45 SE, and 183A screenlines.

Total traffic on each of the CTTS element screenlines is well within acceptable tolerances of the total counts. The total estimated traffic for each screenline is slightly higher than the total observed traffic, except for the screenlines SH 130 A and SH 130 C. For each corridor, the distribution of traffic among competing roadways along the screenlines is also within acceptable tolerances and traffic volumes at the mainline plazas (shown in bold) on the toll facilities are estimated adequately.

The allocation of the traffic by vehicle type (auto and truck), provides an adequate replication of the observed data. At an aggregate level, the estimated truck percentage of total vehicles across screenlines is generally within 1 to 2 percent of the observed percentage for the CTTS elements, except the SH 45 SE screenline where the estimated trucks are 15.2 percent versus an observed value of 11.9 percent. The estimated truck percentages at the toll facilities were also estimated reasonably well. Note that the truck traffic presented in these summaries includes 2-axle 6-tire trucks, consistent with the definition of trucks in the individual regional models.

Figure 7.9 Calibration Screenline Locations

Table 7.5 Screenline Comparison – SH 130 Screenlines

Route		Auto		Truck		% Truck		Total		% of Total	
		Observed	Estimated	Observed	Estimated	Observed	Estimated	Observed	Estimated	Observed	Estimated
SH 130											
Screenline 130-A	IH 35	133,510	131,256	15,255	15,341	10.3%	10.5%	148,765	146,597	75.0%	74.5%
	CR 115	11,098	10,901	755	637	6.4%	5.5%	11,852	11,538	6.0%	5.9%
	FM 1460	11,622	11,795	990	1,082	7.8%	8.4%	12,611	12,878	6.4%	6.5%
	CR 110	3,193	3,047	284	273	8.2%	8.2%	3,476	3,319	1.8%	1.7%
	SH 130	**16,617**	**17,096**	**1,837**	**2,036**	**10.0%**	**10.6%**	**18,453**	**19,133**	**9.3%**	**9.7%**
	CR 100	655	900	85	80	11.5%	8.2%	740	980	0.4%	0.5%
	FM 1660	1,760	1,752	663	664	27.4%	27.5%	2,423	2,416	1.2%	1.2%
	Total	178,453	176,747	19,869	20,113	10.0%	10.2%	198,322	196,860	100.0%	100.0%
Screenline 130-B	IH 35	146,092	146,834	24,105	24,425	14.2%	14.3%	170,197	171,259	69.6%	68.4%
	Heatherwilde Blvd	10,370	9,710	1,405	987	11.9%	9.2%	11,775	10,697	4.8%	4.3%
	Dessau / FM 685	19,137	20,716	2,779	2,874	12.7%	12.2%	21,917	23,590	9.0%	9.4%
	Immanuel	3,963	4,079	347	346	8.1%	7.8%	4,310	4,425	1.8%	1.8%
	SH 130	**29,035**	**29,934**	**2,649**	**3,545**	**8.4%**	**10.6%**	**31,684**	**33,479**	**13.0%**	**13.4%**
	Cameron Rd	2,904	3,487	144	234	4.7%	6.3%	3,048	3,721	1.2%	1.5%
	Fuchs Grove	1,268	2,695	424	406	25.1%	13.1%	1,692	3,101	0.7%	1.2%
	Total	212,770	217,455	31,853	32,816	13.0%	13.1%	244,623	250,271	100.0%	100.0%
Screenline 130-C	IH 35	197,488	192,438	42,255	42,077	17.6%	17.9%	239,743	234,515	59.5%	58.3%
	Cameron Rd.	15,877	19,362	1,183	1,385	6.9%	6.7%	17,060	20,747	4.2%	5.2%
	Berkman Dr.	9,939	9,604	1,260	1,310	11.3%	12.0%	11,200	10,914	2.8%	2.7%
	Manor Rd.	9,746	9,794	277	421	2.8%	4.1%	10,024	10,215	2.5%	2.5%
	Springdale Rd.	8,500	8,576	287	400	3.3%	4.5%	8,787	8,977	2.2%	2.2%
	US 183	50,847	51,088	9,026	8,028	15.1%	13.6%	59,873	59,116	14.9%	14.7%
	Johnny Morris Rd.	4,887	4,941	295	296	5.7%	5.6%	5,182	5,237	1.3%	1.3%
	FM 3177	8,874	10,691	863	988	8.9%	8.5%	9,737	11,679	2.4%	2.9%
	FM 973	5,682	5,661	1,097	530	16.2%	8.6%	6,779	6,191	1.7%	1.5%
	SH 130	**26,011**	**26,206**	**2,444**	**2,455**	**8.6%**	**8.6%**	**28,454**	**28,661**	**7.1%**	**7.1%**
	FM 969	5,379	5,311	546	565	9.2%	9.6%	5,925	5,876	1.5%	1.5%
	Total	343,230	343,673	59,533	58,455	14.8%	14.5%	402,763	402,128	100.0%	100.0%
Screenline 130-D	IH 35	166,144	168,263	20,863	21,183	11.2%	11.2%	187,007	189,446	64.6%	64.9%
	Todd Ln.	10,102	10,670	1,048	1,081	9.4%	9.2%	11,150	11,751	3.9%	4.0%
	Stassney Ln.	18,836	20,278	2,123	2,609	10.1%	11.4%	20,959	22,887	7.2%	7.8%
	US 183	26,725	25,548	4,789	3,389	15.2%	11.7%	31,513	28,937	10.9%	9.9%
	FM 973	6,525	7,354	1,374	1,384	17.4%	15.8%	7,900	8,739	2.7%	3.0%
	SH 130	**16,420**	**15,652**	**2,209**	**2,198**	**11.9%**	**12.3%**	**18,630**	**17,850**	**6.4%**	**6.1%**
	Ross Rd.	11,738	11,851	667	666	5.4%	5.3%	12,405	12,517	4.3%	4.3%
	Total	256,491	259,616	33,073	32,511	11.4%	11.1%	289,563	292,127	100.0%	100.0%
Screenline 130-E	IH 35	122,551	118,719	7,664	9,868	5.9%	7.7%	130,215	128,587	77.4%	76.1%
	Goforth Rd (FM 157)	2,200	2,246	162	163	6.8%	6.8%	2,362	2,409	1.4%	1.4%
	SH 21	10,546	10,576	2,794	2,704	20.9%	20.4%	13,340	13,280	7.9%	7.9%
	FM 2001	1,878	2,357	534	511	22.1%	17.8%	2,412	2,868	1.4%	1.7%
	US 183 - SH130 Frontage	8,403	9,044	509	1,629	5.7%	15.3%	8,913	10,673	5.3%	6.3%
	SH 130 Seg 5 ML	**7,451**	**7,483**	**1,283**	**1,484**	**14.7%**	**16.5%**	**8,733**	**8,967**	**5.2%**	**5.3%**
	FM 1854	2,234	2,223	36	31	1.6%	1.4%	2,271	2,255	1.3%	1.3%
	Total	155,264	152,649	12,982	16,390	7.7%	9.7%	168,246	169,039	100.0%	100.0%
Screenline 130-F	IH 35	82,234	86,472	15,503	12,499	15.9%	12.6%	97,737	98,971	80.0%	79.8%
	SH 21	10,047	10,107	2,328	2,406	18.8%	19.2%	12,375	12,513	10.1%	10.1%
	FM 1984	1,217	1,216	169	133	12.2%	9.9%	1,385	1,349	1.1%	1.1%
	SH 1342	4,590	4,753	469	456	9.3%	8.8%	5,059	5,210	4.1%	4.2%
	SH 130 Seg 6 ML	**3,481**	**3,438**	**919**	**959**	**20.9%**	**21.8%**	**4,400**	**4,397**	**3.6%**	**3.5%**
	State Park Rd (FM 20)	1,024	1,515	129	87	11.2%	5.4%	1,152	1,601	0.9%	1.3%
	Total	102,593	107,501	19,517	16,540	16.0%	13.3%	122,110	124,042	100.0%	100.0%

Table 7.6 Screenline Comparison – SH 45 N, Loop 1, SH 45 SE, and 183A

	Route	Auto		Truck		% Truck		Total		% of Total	
		Observed	Estimated	Observed	Estimated	Observed	Estimated	Observed	Estimated	Observed	Estimated
	SH 45 N										
Screenline 45N-A	FM 1431	35,239	34,681	6,589	6,751	15.8%	16.3%	41,828	41,431	21.0%	19.0%
	Colonial Parkway	5,550	5,603	693	720	11.1%	11.4%	6,243	6,323	3.1%	2.9%
	Brushy Creek Rd.	10,066	11,306	2,091	2,076	17.2%	15.5%	12,156	13,383	6.1%	6.1%
	Avery Ranch Blvd.	11,310	18,793	1,658	1,664	12.8%	8.1%	12,968	20,458	6.5%	9.4%
	Lakeline Blvd.	8,809	10,870	899	868	9.3%	7.4%	9,707	11,739	4.9%	5.4%
	SH 45 NW ML	**36,934**	**40,316**	**1,082**	**2,249**	**2.8%**	**5.3%**	**38,017**	**42,565**	**19.1%**	**19.5%**
	SH 45 NW Frontage	28,893	32,742	1,621	1,700	5.3%	4.9%	30,514	34,441	15.3%	15.8%
	Anderson Mill Rd.	15,531	16,470	3,016	3,205	16.3%	16.3%	18,547	19,675	9.3%	9.0%
	McNeil Dr.	25,896	24,865	3,357	3,061	11.5%	11.0%	29,253	27,925	14.7%	12.8%
	Total	178,229	195,646	21,005	22,294	10.5%	10.2%	199,234	217,940	100.0%	100.0%
Screenline 45N-B	US 79	24,120	24,439	2,651	2,680	9.9%	9.9%	26,771	27,119	17.6%	17.3%
	CR 168/Gattis School Rd.	14,472	14,904	1,228	2,628	7.8%	15.0%	15,700	17,531	10.3%	11.2%
	SH 45 NE ML	**30,696**	**30,522**	**1,226**	**1,629**	**3.8%**	**5.1%**	**31,922**	**32,151**	**20.9%**	**20.5%**
	SH 45 NE Frontage	7,872	8,341	967	2,372	10.9%	22.1%	8,839	10,713	5.8%	6.8%
	Pflugerville Loop Rd.	10,265	12,012	1,597	1,739	13.5%	12.6%	11,862	13,751	7.8%	8.8%
	FM 1825/Pecan St.	18,400	18,237	3,527	3,496	16.1%	16.1%	21,928	21,733	14.4%	13.8%
	Wells Branch Pkwy	13,974	12,709	1,111	1,252	7.4%	9.0%	15,085	13,961	9.9%	8.9%
	Howard Lane	17,788	17,526	2,599	2,515	12.7%	12.6%	20,387	20,042	13.4%	12.8%
	Total	137,588	138,689	14,906	18,311	9.8%	11.7%	152,494	157,000	100.0%	100.0%
	Loop 1										
Screenline Loop 1-A	US 183	144,620	154,961	10,915	12,286	7.0%	7.3%	155,535	167,247	28.6%	29.6%
	Parmer Lane	35,782	36,531	4,748	5,625	11.7%	13.3%	40,529	42,156	7.4%	7.5%
	Howard Lane	12,720	13,305	1,929	2,079	13.2%	13.5%	14,650	15,384	2.7%	2.7%
	FM 1325/Loop 1 SR	21,092	20,701	867	873	3.9%	4.0%	21,958	21,574	4.0%	3.8%
	Loop 1 Mainline Plaza	**55,775**	**55,763**	**796**	**1,655**	**1.4%**	**2.9%**	**56,571**	**57,418**	**10.4%**	**10.2%**
	Bratton Lane	6,766	7,586	562	748	7.7%	9.0%	7,328	8,334	1.3%	1.5%
	IH 35	146,092	146,834	24,105	24,425	14.2%	14.3%	170,197	171,259	31.2%	30.3%
	Heatherwilde	15,211	15,341	551	1,047	3.5%	6.4%	15,762	16,388	2.9%	2.9%
	N Railroad Rd	6,134	6,169	137	564	2.2%	8.4%	6,272	6,733	1.2%	1.2%
	FM 685	21,750	22,442	2,437	2,758	10.1%	10.9%	24,186	25,200	4.4%	4.5%
	SH 130	29,035	29,934	2,649	3,545	8.4%	10.6%	31,684	33,479	5.8%	5.9%
	Total	494,977	509,568	49,696	55,605	9.1%	9.8%	544,673	565,173	100.0%	100.0%
	SH 45 SE										
Screenline 45SE-A	FM 1327	8,993	9,155	1,488	2,083	14.2%	18.5%	10,481	11,238	43.6%	44.2%
	SH 45 SE ML	**11,548**	**11,541**	**1,296**	**1,344**	**10.1%**	**10.4%**	**12,844**	**12,885**	**53.4%**	**50.6%**
	Turnersville Rd.	648	873	79	446	10.9%	33.8%	726	1,319	3.0%	5.2%
	Total	21,189	21,568	2,863	3,873	11.9%	15.2%	24,051	25,442	100.0%	100.0%
	183A										
Screenline 183A-A	Lakeline Blvd	22,231	21,023	2,165	1,992	8.9%	8.7%	24,396	23,015	16.1%	14.2%
	US 183	32,810	45,322	9,372	9,387	22.2%	17.2%	42,182	54,708	27.8%	33.8%
	183A ML	**38,545**	**39,023**	**1,471**	**1,662**	**3.7%**	**4.1%**	**40,016**	**40,685**	**26.4%**	**25.1%**
	Vista Ridge Blvd	6,851	6,068	481	539	6.6%	8.2%	7,332	6,607	4.8%	4.1%
	Parmer Ln	32,815	32,028	4,796	4,982	12.8%	13.5%	37,610	37,010	24.8%	22.8%
	Total	133,252	143,464	18,284	18,561	12.1%	11.5%	151,536	162,025	100.0%	100.0%
Screenline 183A-B	Pecan Park Blvd	6,792	10,228	738	638	9.8%	5.9%	7,530	10,866	3.7%	4.5%
	US 183	67,467	67,362	5,649	5,891	7.7%	8.0%	73,115	73,253	35.5%	30.6%
	183A ML	**35,799**	**37,763**	**970**	**994**	**2.6%**	**2.6%**	**36,769**	**38,757**	**17.8%**	**16.2%**
	US 183 SB On-Ramp	25,188	45,104	2,109	3,535	7.7%	7.3%	27,297	48,639	13.2%	20.3%
	US 183/SH 45 DC	10,798	10,113	2,225	1,323	17.1%	11.6%	13,024	11,436	6.3%	4.8%
	Lake Creek Pkwy	11,656	17,920	1,186	1,379	9.2%	7.1%	12,843	19,299	6.2%	8.1%
	Parmer Ln	30,613	32,241	5,011	4,878	14.1%	13.1%	35,624	37,119	17.3%	15.5%
	Total	188,313	220,732	17,888	18,637	8.7%	7.8%	206,201	239,370	100.0%	100.0%

7.2.4 Calibration of Toll Transactions by Mode and by Payment Method

The final element of the calibration was focused on replicating toll transactions by both vehicle type and payment method. For this analysis, Stantec utilized the model-estimated number of transactions by paypoint, vehicle type, and payment method and compared these estimates to observed transaction data provided by TxDOT and CTRMA.

Table 7.7 and Table 7.8 provide a comparison of the estimated (EST) and observed (OBS) transactions by vehicle type at each CTTS element and all CTRMA facilities by paypoint. The estimated total transactions along SH 130 and SH 45N are approximately 4.2 percent and 7.2 percent higher respectively. SH 45 SE and Loop 1 total transaction are within 1 percent of the observed values. The allocation of auto and truck shares for SH 130 and SH 45 SE are close to the observed values, with trucks accounting for approximately 10 percent of the transactions. For Loop 1, SH 45 N and CTRMA's 183A toll road, estimated truck shares are approximately within 1-2 percent of the observed truck shares. While the total transactions for each toll road vary from the observed totals, the transactions by vehicle type on a percentage basis demonstrate a good replication of the observed data.

A summary of the shares total transactions by payment method and a separate summary by vehicle type are shown in Table 7.9 through Table 7.11. As shown in the tables, the model generally provides an adequate share of transactions by payment type for the total on each facility, as well as separately for autos and trucks. The largest difference is overestimation of PBM shares for trucks on SH 45 SE.

While the model estimates show some variation against the observed values by paypoint location and payment method for each CTTS elements, the resulting average toll per transaction for each roadway is relatively close to the observed values. The comparison for each CTTS element by vehicle type is shown in Table 7.12. The values for SH 130 and SH 45 SE reflect the temporary truck toll discount program that was in place during the 2013 calibration year. Note that the values are unadjusted model outputs and do not include any modifications for collection efficiency.

Table 7.7 Comparison of 2013 Average Weekday Toll Transactions by Pay Point and Vehicle Type

	CROSSROAD	TYPE	VEHICLE TYPE						TOTAL		
			AUTO			TRUCK					
			OBS	EST	%DIFF	OBS	EST	%DIFF	OBS	EST	%DIFF
SH 130	SH 29	Ramp	1,236	1,267	2.5%	101	86	-15.0%	1,337	1,353	1.2%
	FM 104	Ramp	124	153	23.3%	6	5	-22.1%	130	158	21.2%
	Chandler Rd	Ramp	634	635	0.1%	71	59	-16.6%	705	694	-1.6%
	N. of CR 109	**Mainline**	**16,401**	**17,096**	**4.2%**	**2,052**	**2,036**	**-0.8%**	**18,453**	**19,133**	**3.7%**
	US 79	Ramp	9,571	11,533	20.5%	657	1,137	73.0%	10,228	12,670	23.9%
	CR 138	Ramp	7,297	7,168	-1.8%	384	354	-7.9%	7,681	7,522	-2.1%
	Pecan St	Ramp	1,840	2,351	27.8%	105	209	99.3%	1,945	2,559	31.6%
	N. of Cameron Rd	**Mainline**	**28,658**	**29,934**	**4.5%**	**3,026**	**3,545**	**17.1%**	**31,684**	**33,479**	**5.7%**
	Cameron Rd	Ramp	323	402	24.4%	59	109	83.0%	382	511	33.5%
	Howard Ln / Gregg Manor	Ramp	461	596	29.3%	33	12	-62.5%	494	608	23.2%
	Blue Bluff Rd.	Ramp	151	143	-5.4%	12	6	-55.0%	163	148	-9.2%
	Bloor Rd / FM 973	Ramp	444	608	37.0%	39	33	-14.8%	483	641	32.9%
	N. of FM 969	**Mainline**	**25,672**	**26,206**	**2.1%**	**2,782**	**2,455**	**-11.8%**	**28,454**	**28,661**	**0.7%**
	FM 969	Ramp	3,134	3,083	-1.6%	261	421	61.3%	3,395	3,504	3.2%
	Harold Green Rd	Ramp	161	169	4.9%	232	273	17.8%	393	442	12.5%
	Pearce Ln.	Ramp	1,038	930	-10.4%	65	39	-40.1%	1,103	969	-12.2%
	N. of Elroy Rd	**Mainline**	**16,207**	**15,652**	**-3.4%**	**2,423**	**2,198**	**-9.3%**	**18,630**	**17,850**	**-4.2%**
	Elroy Rd	Ramp	403	350	-13.2%	33	49	46.5%	436	399	-8.6%
	FM 812	Ramp	401	569	41.8%	41	41	-0.4%	442	609	37.9%
	Moore Rd	Ramp	122	51	-58.2%	16	0	-99.9%	138	51	-63.1%
	TOTAL MAINLINE		**86,938**	**88,889**	**2.2%**	**10,283**	**10,234**	**-0.5%**	**97,221**	**99,123**	**2.0%**
	% Share MAINLINE		**89.4%**	**89.7%**		**10.6%**	**10.3%**				
	TOTAL RAMPS		**27,017**	**29,607**	**9.6%**	**2,056**	**2,723**	**32.4%**	**29,073**	**32,329**	**11.2%**
	% Share RAMPS		**92.9%**	**91.6%**		**7.1%**	**8.4%**				
	TOTAL		**114,278**	**118,897**	**4.0%**	**12,399**	**13,065**	**5.4%**	**126,677**	**131,963**	**4.2%**
	% Share TOTAL		**90.2%**	**90.1%**		**9.8%**	**9.9%**				
SH 45 SE	Turnersville Rd	Ramp	132	145	9.8%	11	13	21.4%	143	158	10.7%
	ML Plaza	**Mainline**	**11,398**	**11,541**	**1.3%**	**1,446**	**1,344**	**-7.0%**	**12,844**	**12,885**	**0.3%**
	FM 1625	Ramp	325	407	25.2%	137	21	-84.7%	462	428	-7.3%
	TOTAL MAINLINE		**11,398**	**11,541**	**1.3%**	**1,446**	**1,344**	**-7.0%**	**12,844**	**12,885**	**0.3%**
	% Share TOTAL		**88.7%**	**89.6%**		**11.3%**	**10.4%**				
	TOTAL RAMPS		**457**	**552**	**20.8%**	**148**	**34**	**-76.8%**	**605**	**586**	**-3.0%**
	% Share TOTAL		**75.6%**	**94.1%**		**24.4%**	**5.9%**				
	TOTAL		**11,855**	**12,093**	**2.0%**	**1,593**	**1,378**	**-13.5%**	**13,448**	**13,471**	**0.2%**
	% Share TOTAL		**88.2%**	**89.8%**		**11.8%**	**10.2%**				

Note: % SHARE = % of total by vehicle type

Table 7.8 Comparison of 2013 Average Weekday Toll Transactions by Pay Point and Vehicle Type (continued)

	CROSSROAD	TYPE	VEHICLE TYPE						TOTAL		
			AUTO			TRUCK					
			OBS	EST	%DIFF	OBS	EST	%DIFF	OBS	EST	%DIFF
SH 45 N	**W. ML Plaza**	**Mainline**	**36,454**	**40,316**	**10.6%**	**1,563**	**2,249**	**43.9%**	**38,017**	**42,565**	**12.0%**
	Parmer Ln.	Ramp	7,824	8,950	14.4%	263	558	111.8%	8,087	9,507	17.6%
	Howard Ln.	Ramp	7,337	7,564	3.1%	178	181	1.7%	7,515	7,746	3.1%
	Greenlawn	Ramp	7,242	6,667	-7.9%	196	347	76.8%	7,438	7,013	-5.7%
	CR 170	Ramp	8,397	9,145	8.9%	214	466	117.8%	8,611	9,611	11.6%
	Arterial A	Ramp	4,212	4,847	15.1%	104	355	240.9%	4,316	5,202	20.5%
	Heatherwilde	Ramp	7,770	7,824	0.7%	202	506	150.4%	7,972	8,331	4.5%
	E. ML Plaza	**Mainline**	**30,297**	**30,522**	**0.7%**	**1,625**	**1,629**	**0.2%**	**31,922**	**32,151**	**0.7%**
	TOTAL MAINLINE		**66,751**	**70,838**	**6.1%**	**3,188**	**3,878**	**21.6%**	**69,939**	**74,715**	**6.8%**
	% Share TOTAL		**95.4%**	**94.8%**		**4.6%**	**5.2%**				
	TOTAL RAMPS		**42,782**	**44,996**	**5.2%**	**1,158**	**2,413**	**108.4%**	**43,940**	**47,410**	**7.9%**
	% Share TOTAL		**97.4%**	**94.9%**		**2.6%**	**5.1%**				
	TOTAL		**109,533**	**115,834**	**5.8%**	**4,346**	**6,291**	**44.7%**	**113,879**	**122,125**	**7.2%**
	% Share TOTAL		**96.2%**	**94.8%**		**3.8%**	**5.2%**				
Loop 1 N	Shoreline Dr	Ramp	590	874	48.1%	18	44	144.5%	608	918	51.0%
	ML Plaza	**Mainline**	**55,050**	**55,763**	**1.3%**	**1,521**	**1,655**	**8.8%**	**56,571**	**57,418**	**1.5%**
	Howard	Ramp	4,359	2,990	-31.4%	165	137	-16.9%	4,524	3,127	-30.9%
	TOTAL MAINLINE		**55,050**	**55,763**	**1.3%**	**1,521**	**1,655**	**8.8%**	**56,571**	**57,418**	**1.5%**
	% Share TOTAL		**97.3%**	**97.1%**		**2.7%**	**2.9%**				
	TOTAL RAMPS		**4,949**	**3,864**	**-21.9%**	**183**	**181**	**-0.9%**	**5,132**	**4,045**	**-21.2%**
	% Share TOTAL		**96.4%**	**95.5%**		**3.6%**	**4.5%**				
	TOTAL		**59,999**	**59,626**	**-0.6%**	**1,704**	**1,836**	**7.8%**	**61,703**	**61,463**	**-0.4%**
	% Share TOTAL		**97.2%**	**97.0%**		**2.8%**	**3.0%**				
183 A	Crystal Falls Pkwy	Ramp	325	402	23.7%	29	109	274.6%	354	511	44.2%
	Crystal Falls ML	**Mainline**	**17,353**	**17,872**	**3.0%**	**1,301**	**1,019**	**-21.7%**	**18,654**	**18,891**	**1.3%**
	Scottsdale Dr	Ramp	995	696	-30.0%	27	9	-66.0%	1,022	705	-31.0%
	Park St. ML	**Mainline**	**38,044**	**39,023**	**2.6%**	**1,972**	**1,662**	**-15.7%**	**40,016**	**40,685**	**1.7%**
	Brushy Creek	Ramp	8,677	9,707	11.9%	228	311	36.6%	8,905	10,018	12.5%
	Lakeline ML	**Mainline**	**35,334**	**37,763**	**6.9%**	**1,435**	**994**	**-30.8%**	**36,769**	**38,757**	**5.4%**
	TOTAL MAINLINE		**90,731**	**94,659**	**4.3%**	**4,708**	**3,675**	**-22.0%**	**95,439**	**98,333**	**3.0%**
	% Share TOTAL		**95.1%**	**96.3%**		**4.9%**	**3.7%**				
	TOTAL RAMPS		**9,997**	**10,805**	**8.1%**	**284**	**429**	**51.1%**	**10,281**	**11,234**	**9.3%**
	% Share TOTAL		**97.2%**	**96.2%**		**2.8%**	**3.8%**				
	TOTAL		**100,728**	**105,464**	**4.7%**	**4,992**	**4,104**	**-17.8%**	**105,720**	**109,567**	**3.6%**
	% Share TOTAL		**95.3%**	**96.3%**		**4.7%**	**3.7%**				

Note: % SHARE = % of total by vehicle type

Table 7.9 Comparison of 2013 Average Weekday Toll Transactions by Payment Method Total Transactions

	CROSSROAD	TYPE	PAYMENT METHODS					
			ETC			PAY BY MAIL		
			OBS	EST	%DIFF	OBS	EST	%DIFF
SH 130	MAINLINE	Total	62,645	62,420	-0.4%	34,576	36,703	6.2%
		% Share	64.4%	63.0%		35.6%	37.0%	
	RAMPS	Total	20,242	23,856	17.9%	8,831	8,473	-4.1%
		% Share	69.6%	73.8%		30.4%	26.2%	
	TOTAL	**Total**	**83,139**	**86,642**	**4.2%**	**43,538**	**45,320**	**4.1%**
		% Share	**65.6%**	**65.7%**		**34.4%**	**34.3%**	
SH 45 SE	MAINLINE	Total	8,025	7,850	-2.2%	4,818	5,035	4.5%
		% Share	62.5%	60.9%		37.5%	39.1%	
	RAMPS	Total	376	327	-13.1%	228	259	13.5%
		% Share	62.2%	55.8%		37.8%	44.2%	
	TOTAL	**Total**	**8,402**	**8,177**	**-2.7%**	**5,047**	**5,294**	**4.9%**
		% Share	**62.5%**	**60.7%**		**37.5%**	**39.3%**	
SH 45 N	MAINLINE	Total	54,332	60,572	11.5%	15,607	14,143	-9.4%
		% Share	77.7%	81.1%		22.3%	18.9%	
	RAMPS	Total	35,049	38,701	10.4%	8,891	8,708	-2.1%
		% Share	79.8%	81.6%		20.2%	18.4%	
	TOTAL	**Total**	**89,381**	**99,274**	**11.1%**	**24,498**	**22,851**	**-6.7%**
		% Share	**78.5%**	**81.3%**		**21.5%**	**18.7%**	
Loop 1	MAINLINE	Total	45,199	45,588	0.9%	11,372	11,830	4.0%
		% Share	79.9%	79.4%		20.1%	20.6%	
	RAMPS	Total	3,825	3,367	-12.0%	1,307	679	-48.1%
		% Share	74.5%	83.2%		25.5%	16.8%	
	TOTAL	**Total**	**49,024**	**48,955**	**-0.1%**	**12,679**	**12,508**	**-1.3%**
		% Share	**79.5%**	**79.6%**		**20.5%**	**20.4%**	
183A	MAINLINE	Total	64,646	71,688	10.9%	30,793	26,645	-13.5%
		% Share	67.7%	72.9%		32.3%	27.1%	
	RAMPS	Total	7,666	8,374	9.2%	2,615	2,860	9.4%
		% Share	74.6%	74.5%		25.4%	25.5%	
	TOTAL	**Total**	**72,312**	**80,062**	**10.7%**	**33,408**	**29,505**	**-11.7%**
		% Share	**68.4%**	**73.1%**		**31.6%**	**26.9%**	

Table 7.10 Comparison of 2013 Average Weekday Toll Transactions by Payment Method Auto Transactions

	CROSSROAD	TYPE	PAYMENT METHODS					
			ETC			PAY BY MAIL		
			OBS	EST	%DIFF	OBS	EST	%DIFF
SH 130	MAINLINE	Total	56,090	55,912	-0.3%	30,848	32,977	6.9%
		% Share	64.5%	62.9%		35.5%	37.1%	
	RAMPS	Total	18,829	21,832	16.0%	8,188	7,775	-5.1%
		% Share	69.7%	73.7%		30.3%	26.3%	
	TOTAL	**Total**	**75,131**	**78,041**	**3.9%**	**39,147**	**40,856**	**4.4%**
		% Share	**65.7%**	**65.6%**		**34.3%**	**34.4%**	
SH 45 SE	MAINLINE	Total	7,124	7,265	2.0%	4,274	4,275	0.0%
		% Share	62.5%	63.0%		37.5%	37.0%	
	RAMPS	Total	282	308	9.1%	175	244	39.5%
		% Share	61.7%	55.8%		38.3%	44.2%	
	TOTAL	**Total**	**7,406**	**7,573**	**2.3%**	**4,449**	**4,520**	**1.6%**
		% Share	**62.5%**	**62.6%**		**37.5%**	**37.4%**	
SH 45 N	MAINLINE	Total	51,869	57,573	11.0%	14,882	13,265	-10.9%
		% Share	77.7%	81.3%		22.3%	18.7%	
	RAMPS	Total	34,133	36,741	7.6%	8,649	8,255	-4.6%
		% Share	79.8%	81.7%		20.2%	18.3%	
	TOTAL	**Total**	**86,001**	**94,314**	**9.7%**	**23,532**	**21,520**	**-8.5%**
		% Share	**78.5%**	**81.4%**		**21.5%**	**18.6%**	
Loop 1	MAINLINE	Total	43,990	44,283	0.7%	11,060	11,479	3.8%
		% Share	79.9%	79.4%		20.1%	20.6%	
	RAMPS	Total	3,689	3,286	-10.9%	1,260	578	-54.1%
		% Share	74.5%	85.0%		25.5%	15.0%	
	TOTAL	**Total**	**47,679**	**47,569**	**-0.2%**	**12,320**	**12,057**	**-2.1%**
		% Share	**79.5%**	**79.8%**		**20.5%**	**20.2%**	
183A	MAINLINE	Total	62,040	69,613	12.2%	28,691	25,046	-12.7%
		% Share	68.4%	73.5%		31.6%	26.5%	
	RAMPS	Total	7,473	8,104	8.4%	2,524	2,701	7.0%
		% Share	74.8%	75.0%		25.2%	25.0%	
	TOTAL	**Total**	**69,513**	**77,717**	**11.8%**	**31,215**	**27,747**	**-11.1%**
		% Share	**69.0%**	**73.7%**		**31.0%**	**26.3%**	

Table 7.11 Comparison of 2013 Average Weekday Toll Transactions by Payment Method Truck Transactions

	CROSSROAD	TYPE	PAYMENT METHODS					
			ETC			PAY BY MAIL		
			OBS	EST	%DIFF	OBS	EST	%DIFF
SH 130	MAINLINE	Total	6,555	6,508	-0.7%	3,728	3,726	-0.1%
		% Share	63.7%	63.6%		36.3%	36.4%	
	RAMPS	Total	1,413	2,025	43.2%	643	698	8.5%
		% Share	68.7%	74.4%		31.3%	25.6%	
	TOTAL	**Total**	**8,007**	**8,601**	**7.4%**	**4,392**	**4,464**	**1.6%**
		% Share	**64.6%**	**65.8%**		**35.4%**	**34.2%**	
SH 45 SE	MAINLINE	Total	902	585	-35.1%	544	759	39.5%
		% Share	62.4%	43.5%		37.6%	56.5%	
	RAMPS	Total	94	19	-79.6%	53	15	-71.8%
		% Share	63.9%	56.2%		36.1%	43.8%	
	TOTAL	**Total**	**996**	**604**	**-39.4%**	**597**	**774**	**29.6%**
		% Share	**62.5%**	**43.8%**		**37.5%**	**56.2%**	
SH 45 N	MAINLINE	Total	2,464	3,000	21.8%	724	878	21.2%
		% Share	77.3%	77.4%		22.7%	22.6%	
	RAMPS	Total	916	1,960	113.9%	242	453	87.4%
		% Share	79.1%	81.2%		20.9%	18.8%	
	TOTAL	**Total**	**3,380**	**4,960**	**46.7%**	**966**	**1,331**	**37.7%**
		% Share	**77.8%**	**78.8%**		**22.2%**	**21.2%**	
Loop 1	MAINLINE	Total	1,209	1,305	7.9%	312	350	12.3%
		% Share	79.5%	78.8%		20.5%	21.2%	
	RAMPS	Total	135	81	-40.3%	48	101	111.2%
		% Share	74.0%	44.5%		26.0%	55.5%	
	TOTAL	**Total**	**1,344**	**1,386**	**3.1%**	**359**	**451**	**25.4%**
		% Share	**78.9%**	**75.5%**		**21.1%**	**24.5%**	
183A	MAINLINE	Total	2,606	2,075	-20.4%	2,102	1,599	-23.9%
		% Share	55.4%	56.5%		44.6%	43.5%	
	RAMPS	Total	193	270	40.0%	91	159	74.8%
		% Share	68.0%	63.0%		32.0%	37.0%	
	TOTAL	**Total**	**2,799**	**2,346**	**-16.2%**	**2,193**	**1,758**	**-19.8%**
		% Share	**56.1%**	**57.2%**		**43.9%**	**42.8%**	

Table 7.12 Comparison of Observed and Estimated Toll Cost Per Transaction

Roadway	AUTO		TRUCK		TOTAL	
	OBS	EST	OBS	EST	OBS	EST
SH 130	$1.62	$1.60	$1.70	$1.65	$1.62	$1.61
SH 45 SE	$1.11	$1.11	$1.09	$1.18	$1.11	$1.11
SH 45 N	$1.02	$1.01	$2.61	$2.57	$1.08	$1.09
Loop 1 N	$1.06	$1.07	$2.63	$2.66	$1.10	$1.11

7.3 ELASTICITY ANALYSIS

In order to develop toll elasticity curves for the CTTS Project, the transportation model was run using the final adjusted toll coefficients listed in Table 7.1 and a range of toll values above and below the existing toll rates for the 2013 calibration year as well with the future toll rates and networks for the year 2030. As a check on the reasonableness of the model outputs, tests were conducted on the CTTS elements separately and due to the length of the SH 130 element, elasticity was estimated for each of the four segments. These elasticity estimates for each year are a function of both the overall travel demand and network conditions, in terms of competing roadways and congestion that exist for both years. For this analysis, a number of alternative toll rates were expressed as multiples of the base tolls. The multiples range from 0.25 to 6.0 and reveal how traffic and revenues change at different toll levels. The results were plotted for the four facilities as shown in Figure 7.10 through Figure 7.13 Within each of these figures, the transactions and revenues for 2013 are shown in solid lines while the dashed lines represent the same values in 2030 horizon year.

Elasticity, as used herein, is the relationship between traffic volume and toll rate change, and represents the relative decrease in traffic corresponding to a given increase in toll. Elasticity is expressed as a negative value and the higher the absolute value, the more apt a facility is to lose traffic, which can be due to diversions to competing facilities, switches in travel modes, consolidation of trips and elimination of trips.

For 2013 Stantec performed elasticity analysis using the 2013 toll rates, which included the toll rate increases effective January 1, 2013 along with the discounted truck toll values for SH 130 and SH 45 SE that were active at that time. For that 2013 increase, three of the CTTS elements (SH 130, SH 45 N, and Loop 1) had toll rates increases for the first time since these roadways opened to traffic. Toll rates for SH 130 were increased 25 percent while Loop 1 and SH 45 N had toll rates increased 50 percent. Truck toll discounts in place during 2013 were terminated in January 2014. For the future year 2030, the auto and truck tolls are the values are derived from the assumed rates applied with the annual escalation policy over the period from 2015 to 2030.

Similar to our analysis in the prior 2012 Update, in 2013 Loop 1 has the lowest elasticity at approximately -0.27, while SH 130 is the most elastic with a value at approximately -0.50. The elasticity factor for SH 45 N is -0.32 and for SH 45 SE, the elasticity factor is -0.46. With respect to estimating the optimum point for future revenue forecasts, it is prudent to define points on the revenue curves that are less than the maximum revenue point in order to provide a degree of flexibility which allows for additional revenue to be generated if circumstances require that consideration. The SH 45 SE elasticity curves suggest that the roadway is already close to its optimal revenue, indicating that an increase in tolls would not produce higher revenue in the near term if tolls were increased substantially. Similarly, for 2013 the model estimates that SH 130 revenue is also close to its optimum revenue. In contrast, the model predicts that the SH 45 N optimum revenue is approximately 1.50 times the base toll. Loop 1, being the most inelastic among the four facilities, has optimum toll levels at approximately 2.0 times the base toll. The inelasticity of Loop 1 can be attributed primarily to the level of congestion on the competing roads, such as US 183 North, Parmer Lane, and I-35.

Figure 7.10 SH 130 Toll Sensitivity

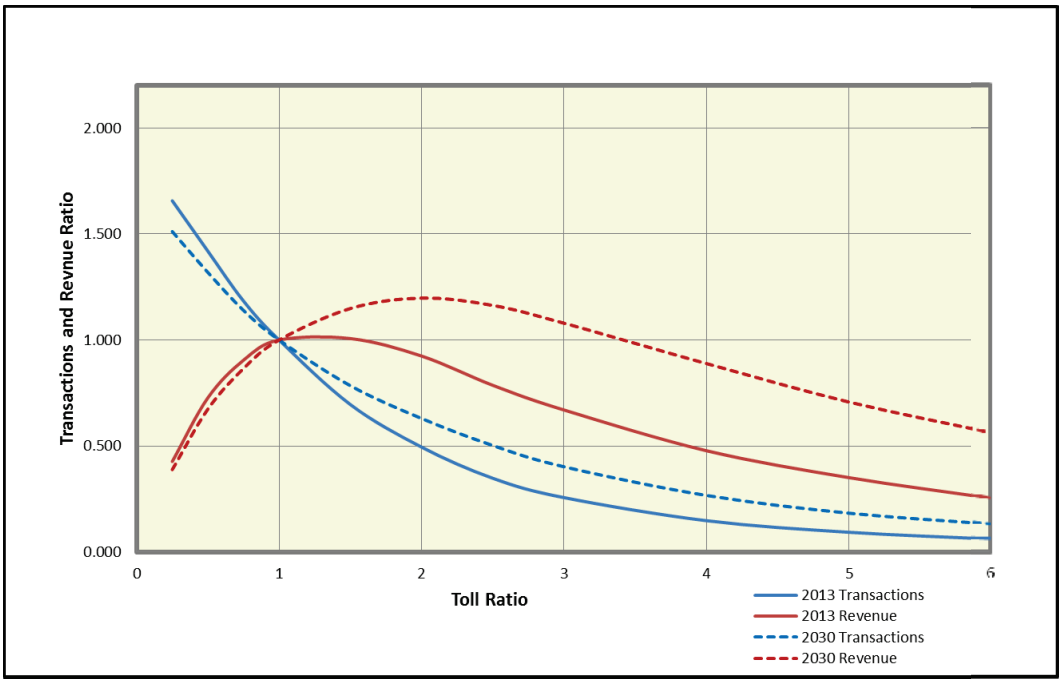


Figure 7.11 SH 45 N Toll Sensitivity

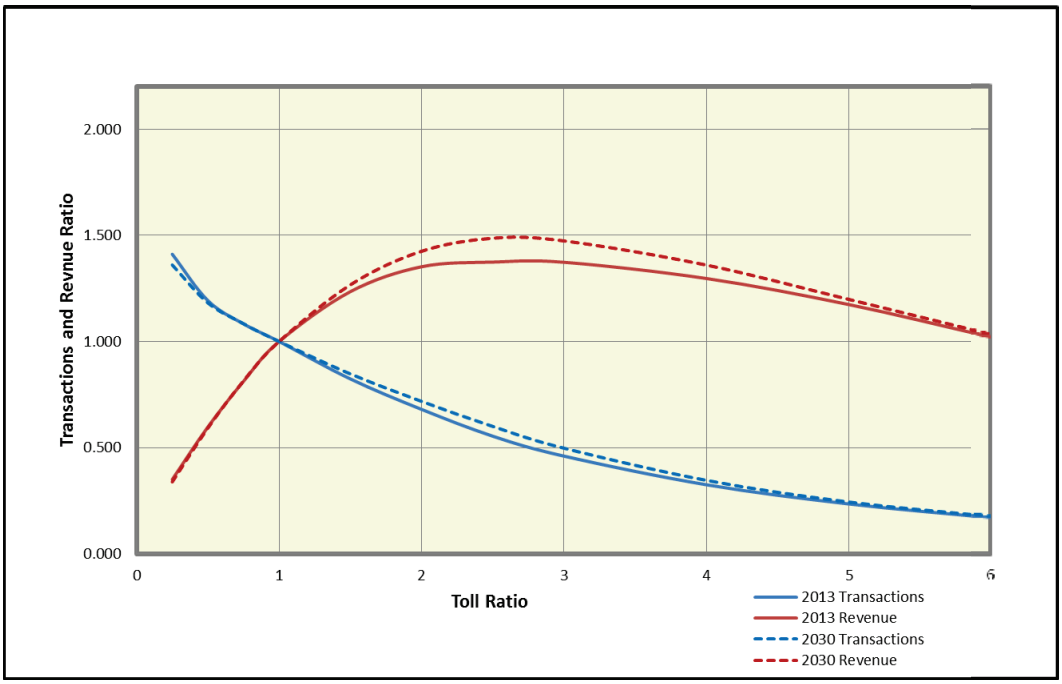


Figure 7.12 Loop 1 Toll Sensitivity

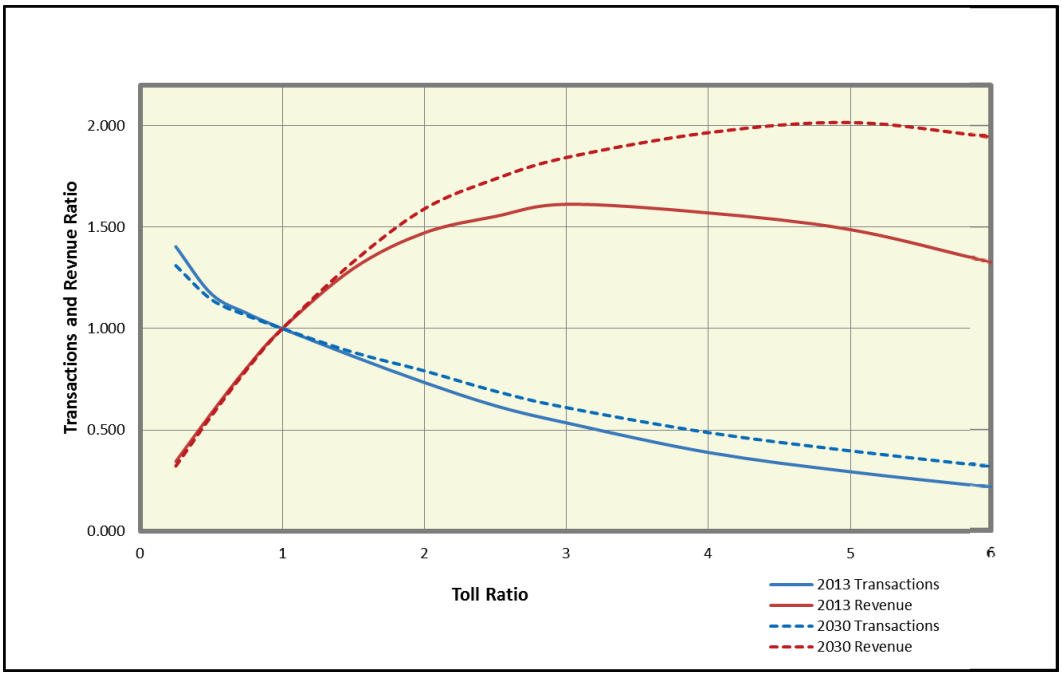
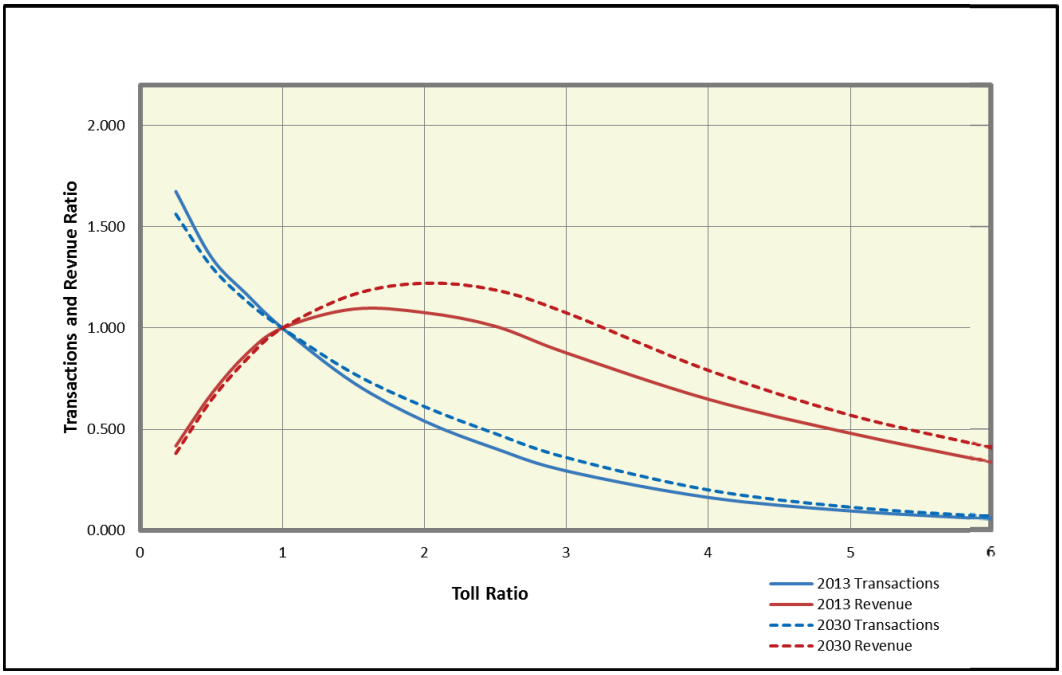


Figure 7.13 SH 45 SE Toll Sensitivity



For the future year 2030 conditions, the elasticity values decline indicating that the roadways become less elastic, due primarily due to increasing congestion on the competing roadways as a result of on-going development and growth in traffic. The elasticity for SH 130 is reduced significantly to -0.37 as the adjacent arterial roadways become congested with traffic from

development in what is currently a largely rural corridor. Elasticity for Loop 1, SH 45 North, and SH 45 SE will also decline to -0.21, -0.28, and -0.39 respectively. These reductions in elasticity indicate that under the future conditions, there will be more flexibility to increase tolls beyond the planned toll escalation assumed in the forecasts, particularly for SH 130. As shown in these figures, the optimum revenue points for each roadway increase most notably for SH 130 and Loop 1.

Due to the length of the SH 130 element and the varying degrees of competition in each of its four segments, separate elasticity calculations were performed to examine the sensitivity to toll rates in each segment for both 2013 and 2030. Figure 7.14 through Figure 7.17 display the transactions and revenue relationships for each segment. Segment 1 at the northern end of SH 130 has the lowest elasticity, ranging from -0.44 in 2013 to -0.33 in2030. This is likely due to the orientation of this segment and lack of adjacent arterials that would compete with it. In contrast, Segment 4 at the southern end of SH 130 has the most elastic with values ranging from -0.62 in 2013 to -0.50 in 2030. The higher level of elasticity is likely due to the competition provided by US 183, which intersects SH 130 at the interchange with SH 45 SE and provides a direct route into southeastern Austin. The elasticity values for Segments 2 and 3 are similar with 2013 values of -0.48 and -0.52 respectively. By 2030 these two segments have elasticity values of -0.36 and -0.33, respectively.

Figure 7.14 SH 130 Segment 1 Toll Sensitivity

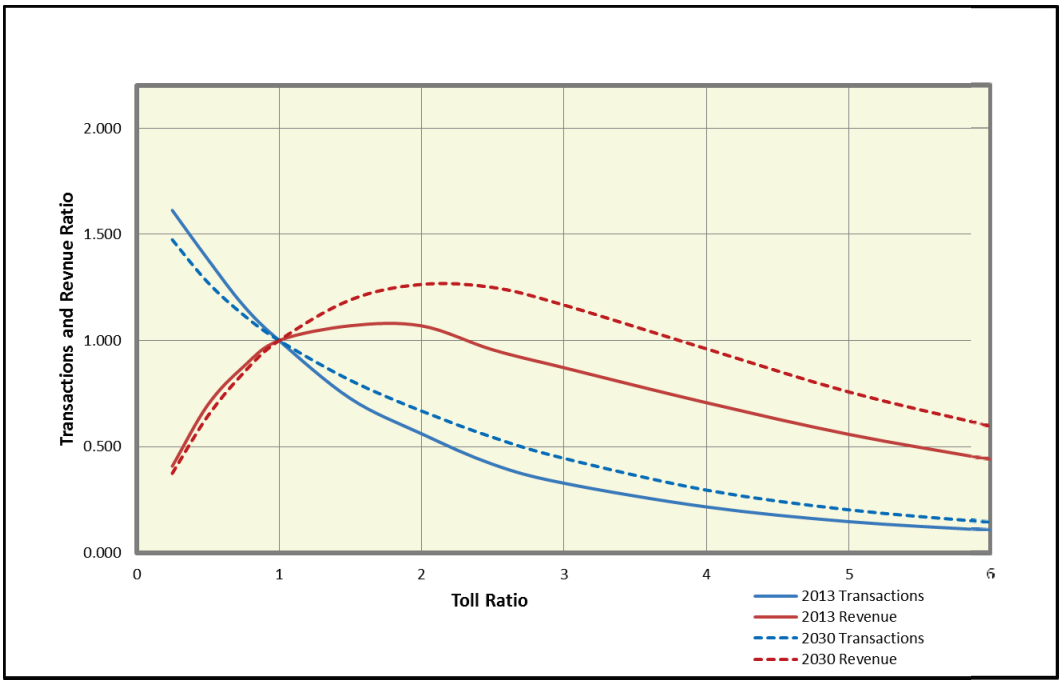


Figure 7.15 SH 130 Segment 2 Toll Sensitivity

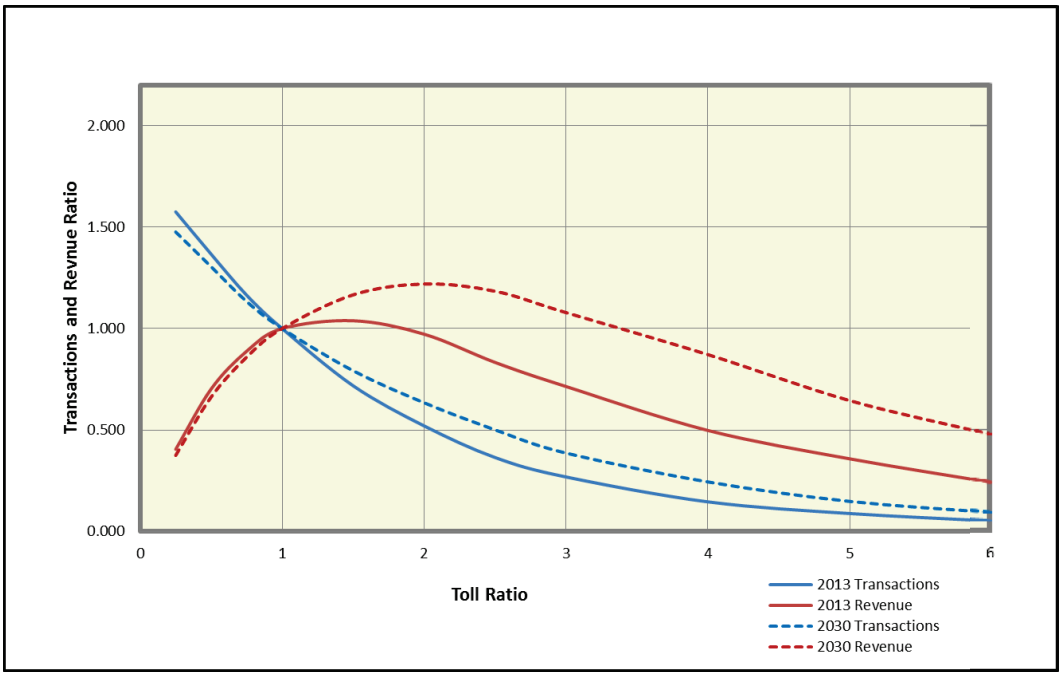


Figure 7.16 SH 130 Segment 3 Toll Sensitivity

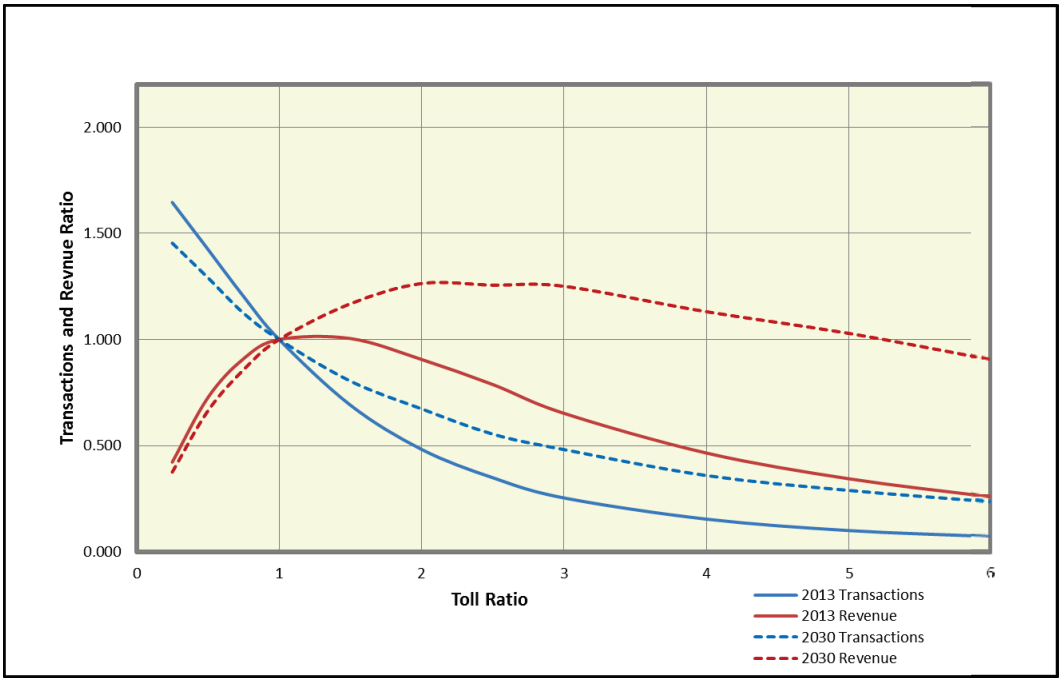
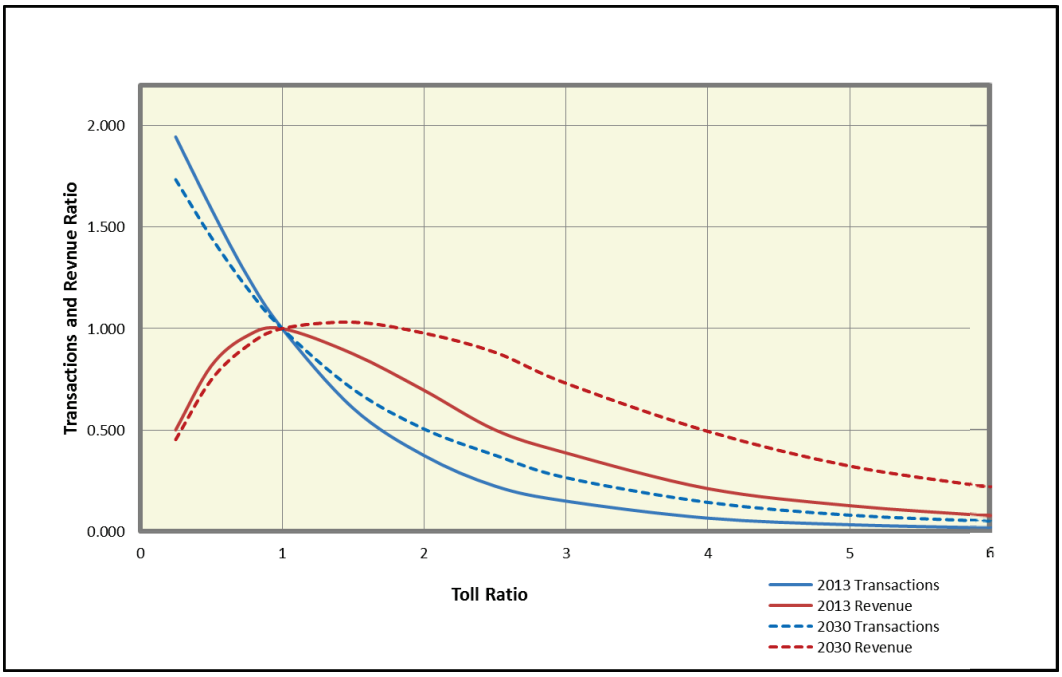


Figure 7.17 SH 130 Segment 4 Toll Sensitivity



8.0 TRAFFIC & REVENUE FORECASTS

Stantec developed traffic and toll revenue forecasts for each of the CTTS elements based on the travel demand model which incorporated the future year network assumptions discussed in Chapter 2 and the revised socioeconomic forecasts discussed in Chapter 6. The travel demand modeling process, including the application of the individual MPO models and the toll diversion model, were applied to selected horizon years (2015, 2020, 2030, and 2040) to create annual traffic estimates from 2015 to 2042. Intermediate year estimates were developed via interpolation techniques and the years beyond 2040 were estimated via extrapolation.

Stantec reviewed the model-based forecasts, summarized the estimated traffic for each of the corridor screenlines and reviewed the detailed schematic diagrams for each horizon year. In order to prepare the final transaction and revenue streams by vehicle type and payment type, the model-based forecasts were reviewed and adjusted as necessary to account for any unacceptable model variation. Transaction and revenue streams were then prepared for each CTTS roadway which include the key metrics related to payment type and vehicle type, along with both average weekday and annual estimates for total transactions and paying transactions using collection statistics provided by TxDOT.

The remaining sections of this chapter provide a separate summary of the model forecasts and transaction and revenue summary for each CTTS element. A combined forecast summing all roadways is provided along with a comparison to the 2012 Update. Also presented are the estimated Customer Service Center revenues which were prepared based on historical data provided by TxDOT. The estimated monthly transactions and revenue for FY 2015 are also provided for use in the CTTS quarterly and annual reports.

The final sections of this chapter discuss the general forecast assumptions and the disclaimers associated with these forecasts.

8.1 SH 45 N AND LOOP 1

SH 45 N and Loop 1 are integrated toll roads since they intersect and many vehicles use both roads for the same trip. As such, the model-produced traffic on these roadways was reviewed and analyzed together, rather than as separate elements, in order to develop the transaction and revenue forecasts for SH 45 N and Loop 1.

The toll diversion model produces traffic estimates for several model years including: 2015, 2020, 2030, and 2040. The initial model forecasts for SH 45 N and Loop 1 have been adjusted by post-processing to account for variations in the base year model calibration estimates and other minor variations in future trends. Specifically, adjustments were made to appropriately reflect the impacts of the recently constructed O'Connor Drive ramps which only just opened to traffic on August 21, 2014. Gross revenue estimates were then prepared by multiplying the traffic, in terms of transactions, at the toll locations by the effective toll structure by vehicle type and payment type for each year. Adjustments were also included to reflect the effective collection rates for both ETC and PBM transactions. Annual estimates of transactions and revenue for both SH 45 N and Loop 1 were generated using an annualization factor of 320.

8.1.1 SH 45 N and Loop 1 Schematic Traffic Diagrams

The schematic diagrams shown in Figure 8.1 through Figure 8.5 below show average weekday traffic along the individual segments of SH 45 N and Loop 1 for the model (calendar) years 2013, 2015, 2020, 2030, and 2040. These diagrams represent the unadjusted model outputs and are intended to provide the reader a sense of the scale of the traffic volumes across the entire facility as well as the entry/exit points. An approximation of the estimated growth for various segments of the roadway can be determined by reviewing these diagrams across the individual horizon years. The O'Connor Drive toll ramps, which have only recently opened on August 21, 2014, are first shown in the 2015 schematic in Figure 8.2.

Figure 8.1 SH 45 N and Loop 1 Average Weekday Traffic – 2013 Model Calibration Year

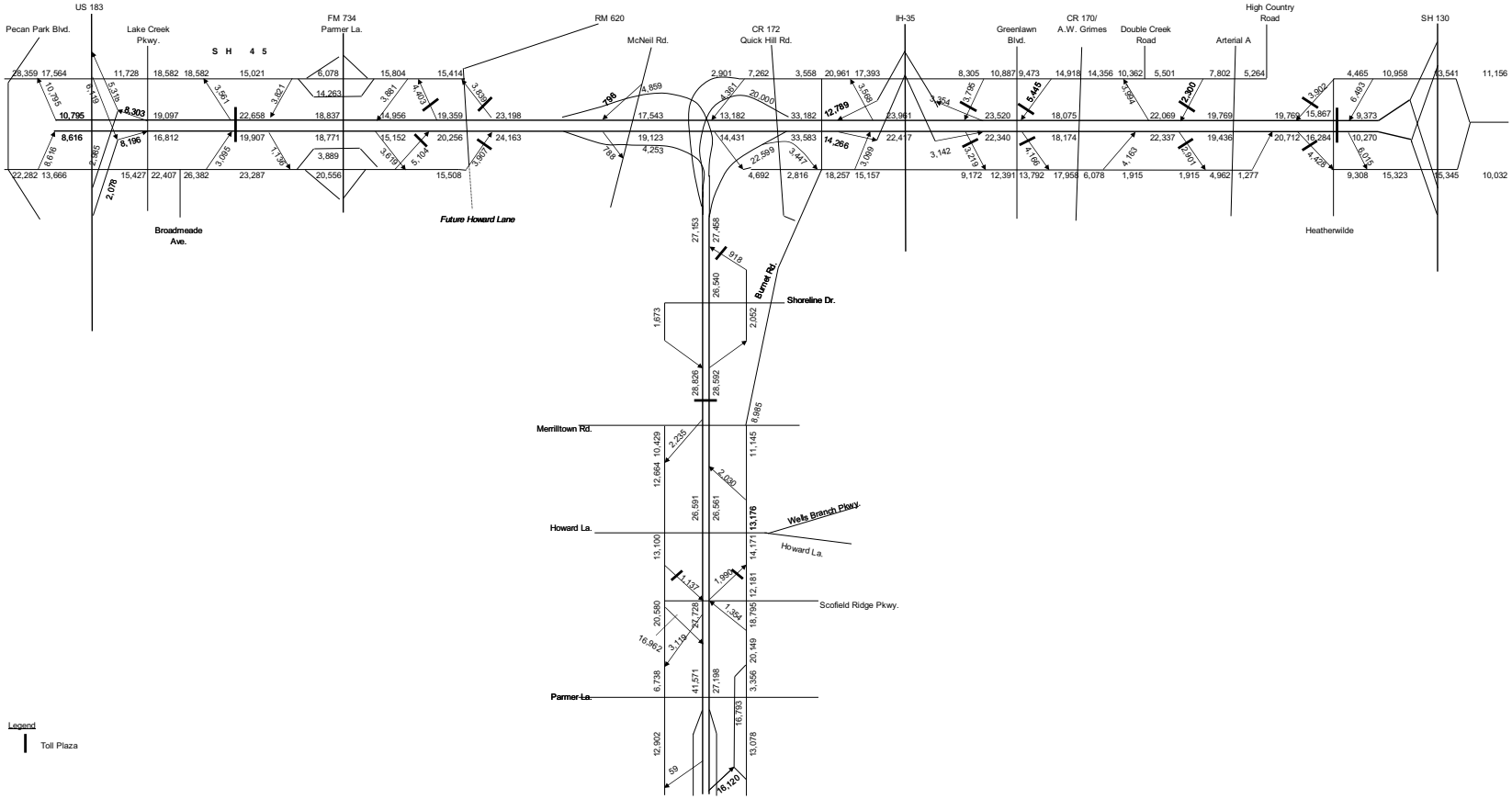


Figure 8.2 SH 45 N and Loop 1 Average Weekday Traffic – 2015 Model Year

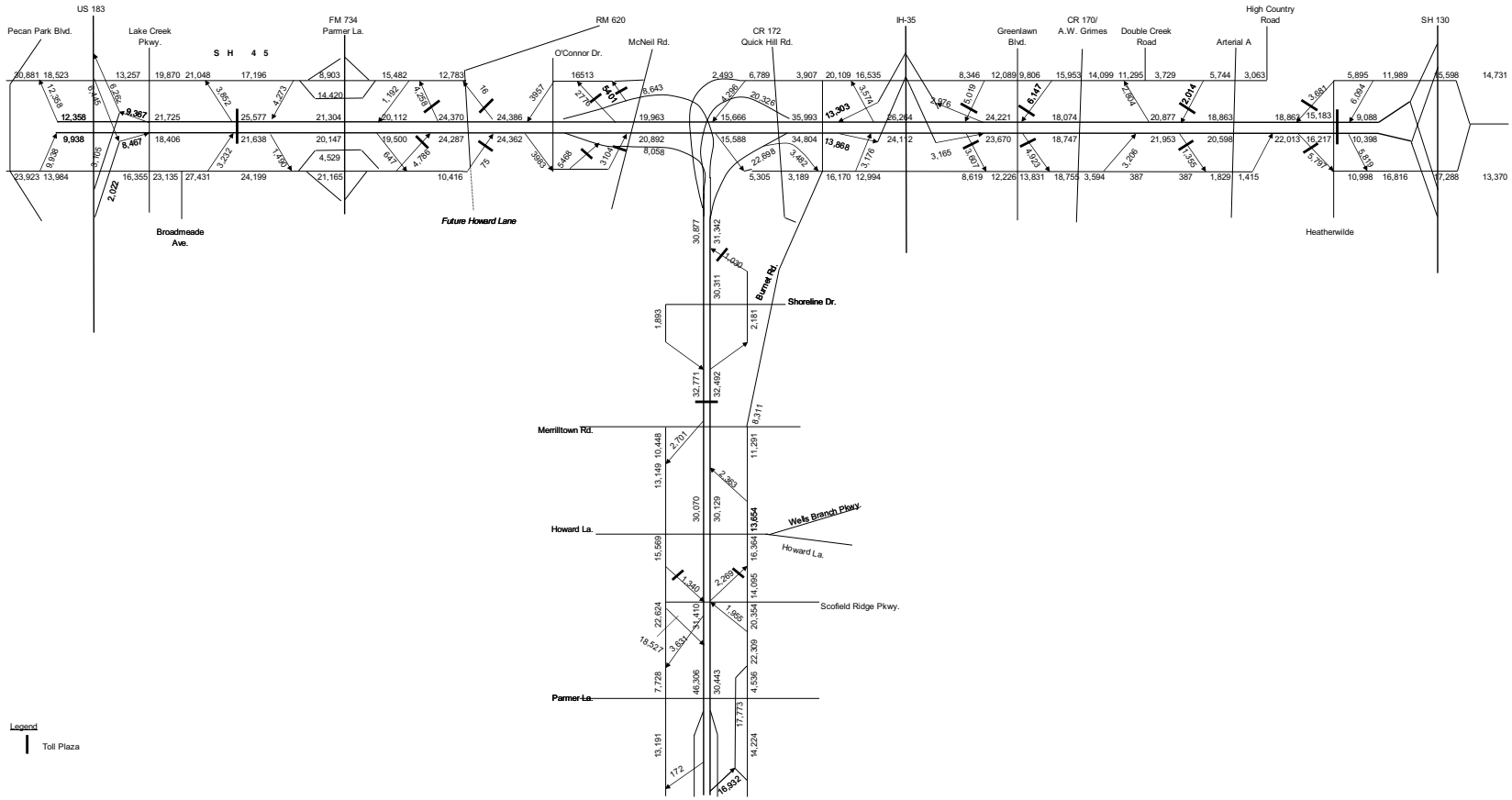


Figure 8.3 SH 45 N and Loop 1 Average Weekday Traffic – 2020 Model Year

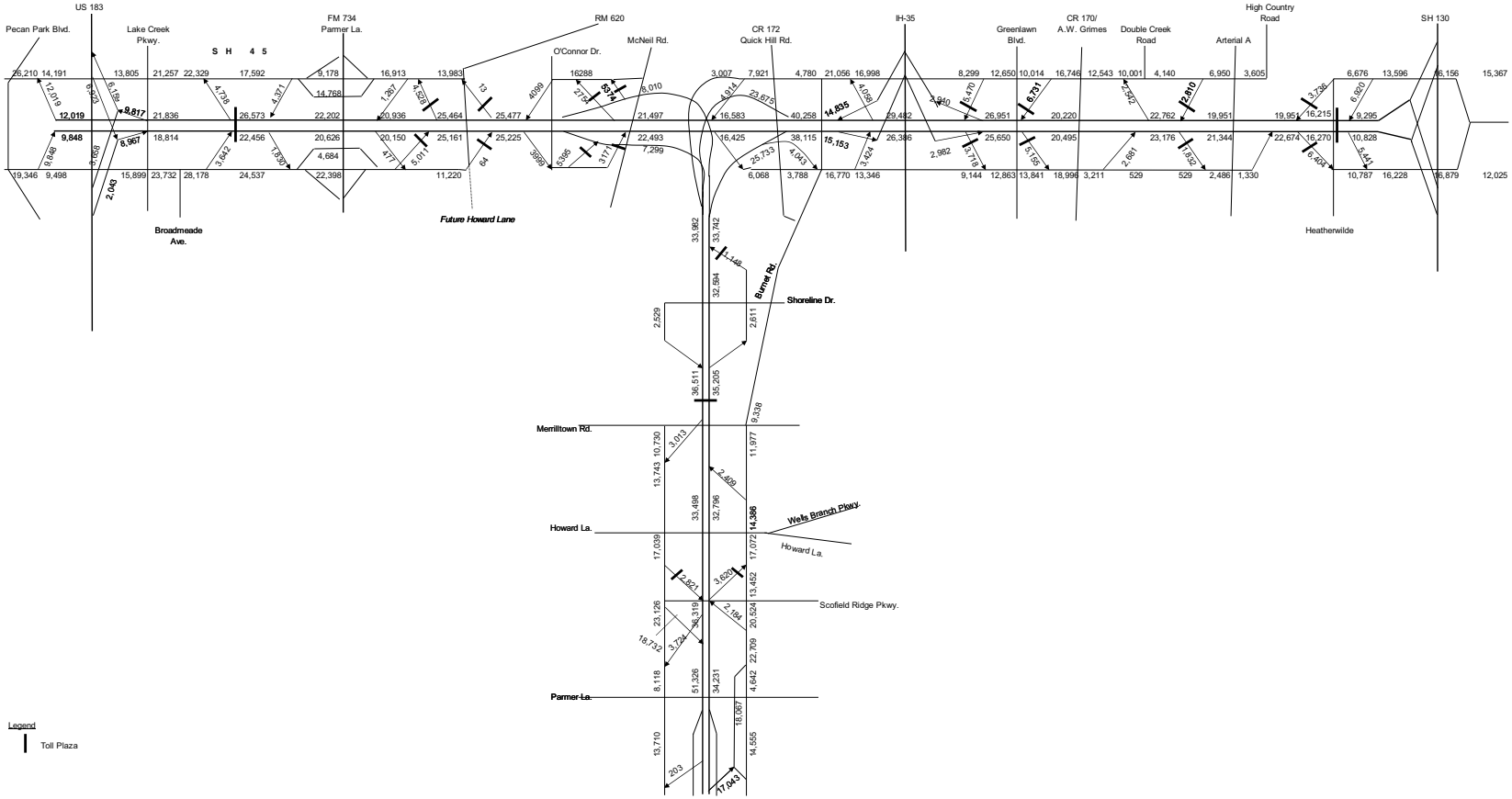


Figure 8.4 SH 45 N and Loop 1 Average Weekday Traffic – 2030 Model Year

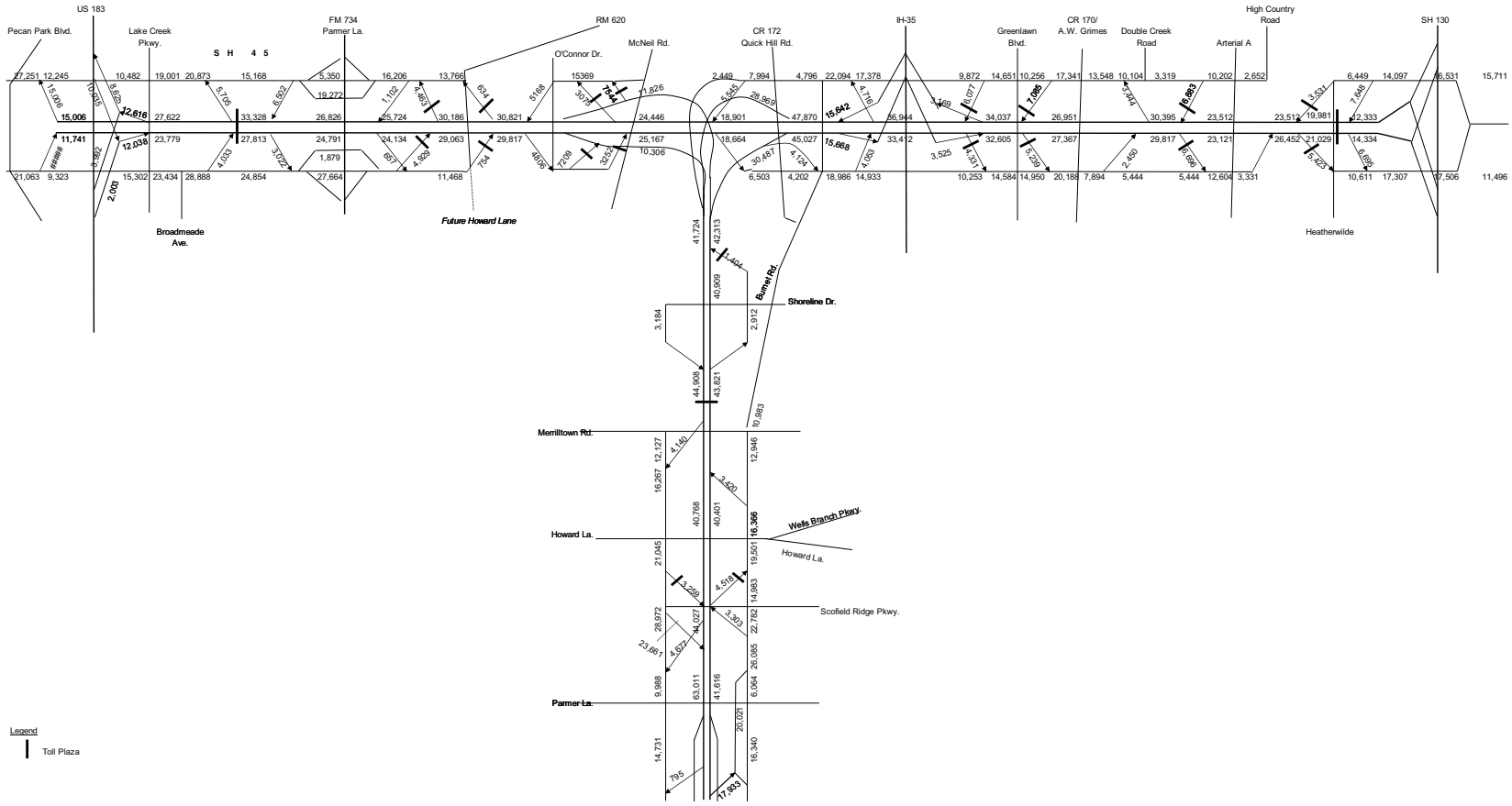
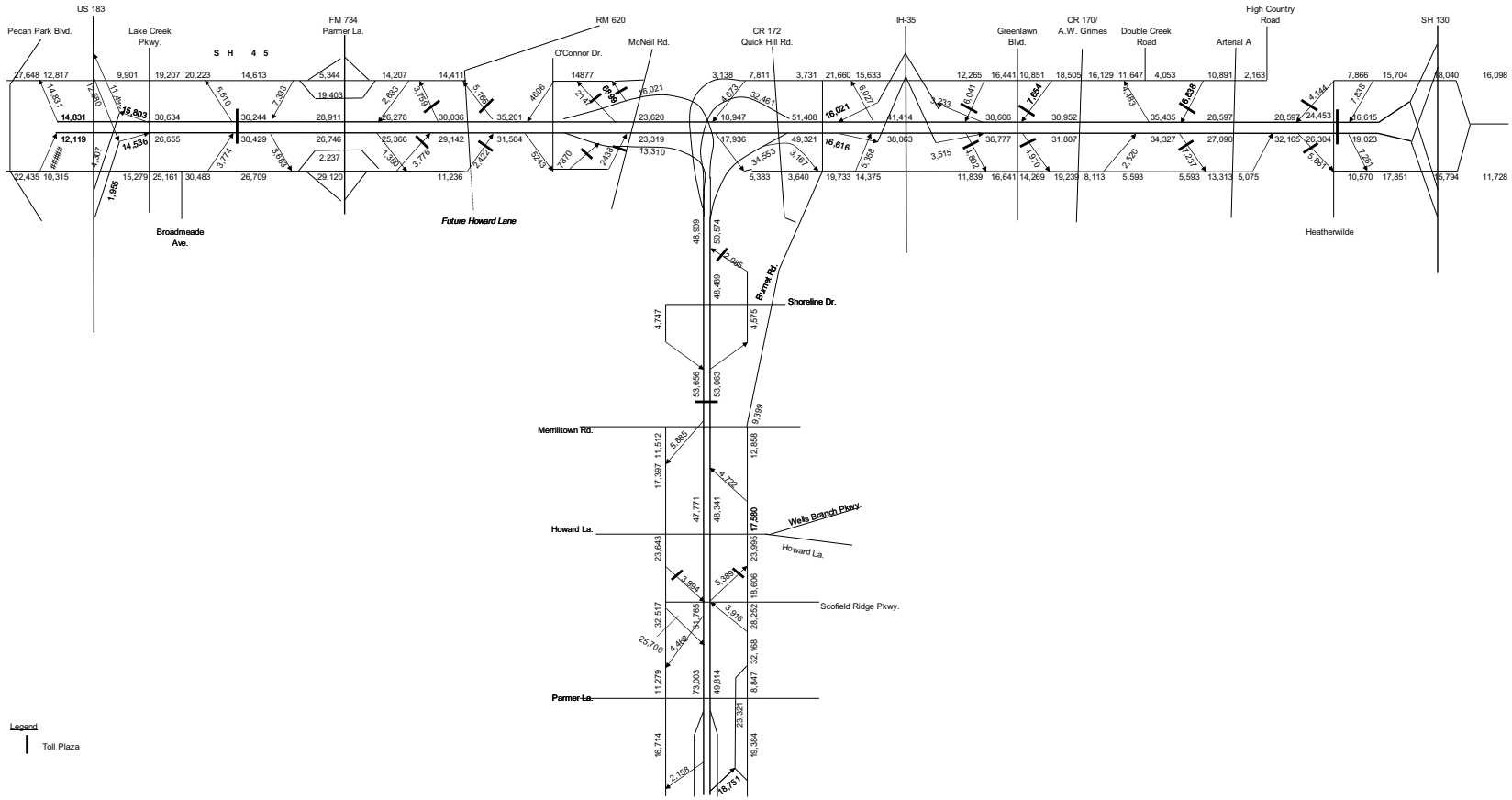


Figure 8.5 SH 45 N and Loop 1 Average Weekday Traffic – 2040 Model Year



8.1.2 SH 45 N and Loop 1 Screenline Analysis

As discussed previously in Chapter 7, a series of screenlines were developed within each of the toll road corridors to intersect each of the mainline toll plazas and parallel locations on the adjacent non-tolled roads. Four screenlines were created for SH 130, two for SH 45 N, one for Loop 1, and one for SH 45 SE. These eight screenlines were used during the model validation process, but also provide insight to how each CTTS element's share of screenline traffic changes throughout the forecast period. The location of these screenlines is shown in Figure 8.6.

As shown in Table 8.1, Screenline 45N-A crosses SH 45 N at its western toll plaza and has a total screenline volume of approximately 218,000 in 2013 and grows to approximately 362,000 in 2040, or about 1.9 percent annually. SH 45 N maintains a fairly constant share of this screenline with 19.5 percent in 2013 and 18.4 percent in 2040. When New Hope Drive opens by 2020, it draws 11 percent of the total screenline traffic off of the other roadways, including about 2 percent from SH 45 N. Another primary non toll road competitor is FM 1431. FM 1431 also sees a drop in screenline share in 2020 with the opening of New Hope Drive, but later increases its share due to a roadway expansion in 2040. Additional capacity improvements to Parmer Lane in 2020, a feeder to Avery Ranch Boulevard, and to Lakeline Boulevard in 2030 also impact the screenline distribution throughout the forecast.

As shown in Table 8.2, Screenline 45N-B crosses SH 45 N at its eastern toll plaza and carries much less traffic than the western end. In 2013, the total screenline traffic was approximately 157,000 and grows to approximately 270,000 in 2040, or about 2.0 percent compounded annually. SH 45 North's share of this screenline is currently the highest with 20.5 percent in 2013. The share of traffic then declines to 16.8 percent in 2020, then grows back to 18.8 percent by 2040. The drop in screenline share in 2020 is due to capacity improvements on or near Gattis School Road, Pflugerville Loop Road, and Howard Lane.

Figure 8.6 CTTS Facility Screenline Locations

Table 8.1 Screenline 45N-A Unadjusted Model Output

Locations	2013	% of Screenline	2015	% of Screenline	2020	% of Screenline	2030	% of Screenline	2040	% of Screenline
New Hope Drive	NA		NA		29,228	11.0%	35,114	11.0%	35,865	9.9%
FM 1431	41,431	19.0%	41,797	18.0%	29,899	11.3%	30,231	9.5%	45,057	12.4%
Colonial Parkway	6,323	2.9%	7,094	3.0%	7,479	2.8%	9,836	3.1%	11,511	3.2%
Brushy Creek Rd.	13,383	6.1%	15,400	6.6%	14,900	5.6%	23,025	7.2%	26,529	7.3%
Avery Ranch Blvd.	20,458	9.4%	20,490	8.8%	28,391	10.7%	31,245	9.8%	32,267	8.9%
Lakeline Blvd.	11,739	5.4%	12,930	5.6%	14,112	5.3%	29,294	9.2%	33,217	9.2%
SH 45 NW ML	**42,565**	**19.5%**	**47,215**	**20.3%**	**49,029**	**18.5%**	**61,140**	**19.2%**	**66,673**	**18.4%**
SH 45 NW Frontage	34,441	15.8%	36,870	15.8%	38,160	14.4%	39,811	12.5%	40,049	11.1%
Anderson Mill Rd.	19,675	9.0%	21,896	9.4%	23,635	8.9%	27,727	8.7%	30,941	8.5%
McNeil Dr.	27,925	12.8%	29,126	12.5%	30,461	11.5%	31,198	9.8%	39,890	11.0%
TOTAL	**217,940**	**100.0%**	**232,819**	**100.0%**	**265,293**	**100.0%**	**318,622**	**100.0%**	**361,999**	**100.0%**

Table 8.2 Screenline 45N-B Unadjusted Model Output

Locations	2013	% of Screenline	2015	% of Screenline	2020	% of Screenline	2030	% of Screenline	2040	% of Screenline
US 79	27,119	17.3%	29,388	17.6%	34,271	17.7%	42,237	17.8%	47,089	17.4%
CR 168/Gattis School Rd.	17,531	11.2%	25,590	15.3%	31,574	16.3%	33,163	14.0%	35,543	13.2%
SH 45 NE ML	**32,151**	**20.5%**	**31,399**	**18.8%**	**32,484**	**16.8%**	**41,010**	**17.3%**	**50,758**	**18.8%**
SH 45 NE Frontage	10,713	6.8%	15,146	9.1%	16,986	8.8%	16,723	7.0%	19,539	7.2%
Pflugerville Loop Rd.	13,751	8.8%	15,923	9.5%	19,916	10.3%	27,290	11.5%	31,483	11.7%
FM 1825/Pecan St.	21,733	13.8%	22,238	13.3%	21,669	11.2%	24,400	10.3%	26,850	9.9%
Wells Branch Pkwy	13,961	8.9%	12,615	7.5%	15,082	7.8%	25,187	10.6%	31,641	11.7%
Howard Lane	20,042	12.8%	14,973	9.0%	21,439	11.1%	27,283	11.5%	27,114	10.0%
TOTAL	**157,000**	**100.0%**	**167,271**	**100.0%**	**193,423**	**100.0%**	**237,293**	**100.0%**	**270,017**	**100.0%**

As shown in Table 8.3, Screenline Loop 1-A crosses Loop 1 at the mainline plaza south of McNeil Drive as well as other major roadways including US 183, I-35, and SH 130 with total traffic of approximately 565,000 in 2013 and growing at 1.6 percent annually to approximately 868,000 in 2040. IH-35 and US 183 have the highest share of traffic of about 30 percent each in 2013, then decreasing to 28.1 and 23.1 percent, respectively, in 2020 with the opening of the US 183 Express Lanes. Loop 1's traffic share of this screenline is nearly constant through 2020, most likely because the impact of the competing US 183 Express Lanes is offset by the opening of the MoPac Express Lanes by 2020, a feeder to Loop 1. Loop 1's share of traffic then gradually increases from 10.6 in 2020 to 12.3 in 2040. SH 130 also experiences similar growth across the forecast period at this screenline.

Table 8.3 Screenline Loop 1-A Unadjusted Model Output

Locations	2013	% of Screenline	2015	% of Screenline	2020	% of Screenline	2030	% of Screenline	2040	% of Screenline
US 183	167,247	29.6%	180,423	29.5%	156,075	23.1%	167,586	21.4%	194,707	22.4%
US 183 Express Lanes	NA		NA		50,511	7.5%	62,623	8.0%	64,391	7.4%
Parmer Lane	42,157	7.5%	41,473	6.8%	42,280	6.3%	47,255	6.0%	49,376	5.7%
Howard Lane	15,384	2.7%	20,872	3.4%	23,088	3.4%	28,750	3.7%	24,345	2.8%
FM 1325/Loop 1 SR	21,574	3.8%	21,739	3.5%	22,708	3.4%	25,074	3.2%	24,370	2.8%
Loop 1 Mainline Plaza	**57,418**	**10.2%**	**65,263**	**10.7%**	**71,715**	**10.6%**	**88,729**	**11.3%**	**106,719**	**12.3%**
Bratton Lane	8,334	1.5%	11,908	1.9%	12,808	1.9%	14,471	1.9%	10,754	1.2%
IH 35	171,259	30.3%	178,889	29.2%	189,809	28.1%	217,244	27.8%	241,785	27.8%
Heatherwilde	16,388	2.9%	18,975	3.1%	30,734	4.6%	34,781	4.4%	40,260	4.6%
N Railroad Rd	6,733	1.2%	7,338	1.2%	8,328	1.2%	9,676	1.2%	11,727	1.4%
FM 685	25,200	4.5%	27,514	4.5%	27,545	4.1%	35,391	4.5%	37,012	4.3%
SH 130	33,479	5.9%	38,104	6.2%	38,801	5.8%	50,194	6.4%	62,723	7.2%
TOTAL	**565,173**	**100.0%**	**612,498**	**100.0%**	**674,401**	**100.0%**	**781,773**	**100.0%**	**868,171**	**100.0%**

8.1.3 SH 45 N and Loop 1 Traffic and Revenue Assumptions

Table 8.4 and Table 8.5 provide concise summaries of the underlying assumptions in the transaction and revenue forecasts for SH 45 N and Loop 1, respectively. All truck-related values in the table relate to trucks defined as 3+axle vehicles, consistent with the transaction reports generated for each toll road by TxDOT. On both roadways, estimated truck transactions increase from approximately 3.8 percent in 2015 to 6.0 percent in 2040. While auto ETC payment shares are assumed to gradually increase, truck ETC share are assumed to remain relatively constant. The average truck toll multiplier is approximately 2.75 times the auto rate, which reflects the observed distribution of trucks by axle group. The PBM toll surcharge is assumed to remain at 33 percent of the ETC rate. The collection rates for PBM and ETC transactions reflect the latest available collection data provided by TxDOT and are held constant over the forecast period.

A full length trip using ETC on SH 45 N will cost $2.12 in 2015, and by 2040, the toll for the same trip increases to $4.22. The per mile rate for the 12.8 mile full length trip is $0.17 in 2015, increasing to $0.33 in 2040. On Loop 1, a full length trip would cost $1.06 in 2015 for ETC transactions, but will increase to $2.11 in 2040. The toll rate on Loop 1 for a full length trip of four miles is $0.26 in 2015 and will increase to $0.53 in 2040.

Table 8.4 SH 45 N Tolling and Traffic Characteristic Assumptions by Model Year

Model Year	2015	2020	2030	2040
Vehicle Type Distribution				
Autos	96.2%	95.4%	94.5%	94.0%
Trucks	3.8%	4.6%	5.5%	6.0%
Payment Type Distribution - Passenger Cars				
PBM	21.3%	18.0%	18.7%	18.6%
ETC	78.7%	82.0%	81.3%	81.4%
Payment Type Distribution - Trucks				
PBM	21.2%	21.2%	21.2%	21.2%
ETC	78.8%	78.8%	78.8%	78.8%
Toll Ratios				
Truck/Auto Ratio	2.75	2.75	2.75	2.75
PBM/ETC Toll Rate	1.33	1.33	1.33	1.33
Collection Rates				
PBM	47.7%	47.7%	47.7%	47.7%
ETC	99.7%	99.7%	99.7%	99.7%
Full Length Trip				
Distance	12.8	12.8	12.8	12.8
Rate per Mile	$0.17	$0.18	$0.25	$0.33
Toll Cost (ETC)	$2.12	$2.36	$3.14	$4.22
Annualization Factor	320	320	320	320

Table 8.5 Loop 1 Tolling and Traffic Characteristic Assumptions by Model Year

Model Year	2015	2020	2030	2040
Vehicle Type Distribution				
Autos	96.2%	95.4%	94.5%	94.0%
Trucks	3.8%	4.6%	5.5%	6.0%
Payment Type Distribution - Passenger Cars				
PBM	22.4%	17.2%	17.9%	17.8%
ETC	77.6%	82.8%	82.1%	82.2%
Payment Type Distribution - Trucks				
PBM	24.5%	24.5%	24.5%	24.5%
ETC	75.5%	75.5%	75.5%	75.5%
Toll Ratios				
Truck/Auto Ratio	2.75	2.75	2.75	2.75
PBM/ETC Toll Rate	1.33	1.33	1.33	1.33
Collection Rates				
PBM	47.7%	47.7%	47.7%	47.7%
ETC	99.7%	99.7%	99.7%	99.7%
Full Length Trip				
Distance	4.0	4.0	4.0	4.0
Rate per Mile	$0.27	$0.30	$0.39	$0.53
Toll Cost (ETC)	$1.06	$1.18	$1.57	$2.11
Annualization Factor	320	320	320	320

8.1.4 SH 45 N and Loop1 Transactions and Revenue by Paypoint

The SH 45 N and Loop 1 transaction and revenue statistics by paypoint and horizon year are listed in Table 8.6. Both total and paying transactions are provided, where paying transactions reflect the assumptions for collection efficiency for each payment type discussed above. The average toll rates represent a blend of the individual rates by payment type and vehicle type. These blended values include a 33 percent surcharge over the ETC rates for PBM patrons. The values shown are calendar year values, rather than the blended estimates created for each fiscal year shown in the next section.

Total transactions on SH 45 N range from 122,000 in 2013 to 201,000 in 2040 for an average weekday, representing an average annual growth rate of 1.9 percent. During the same time period, average weekday revenues range from $113,000 to $405,000, for a growth rate of 4.8 percent, representing transaction growth as well as annual toll rate escalation.

Loop 1 total transactions range from 61,000 in 2013 to 127,000 in 2040, representing an average annual growth rate of 2.7 percent. During the same timeframe, average weekday revenue range from $59,000 to $260,000 for a growth rate of 5.6 percent.

Table 8.6 SH 45 N and Loop 1 Average Weekday Transactions and Toll Revenue (Adjusted for Calibration)

Toll Location	2013				2015				2020				2030				2040			
	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue
	Total	Paying			Total	Paying			Total	Paying			Total	Paying			Total	Paying		
SH 45 N																				
Lake Creek ML Plaza	**42,565**	**38,308**	**$1.11**	**$42,438**	**49,183**	**43,598**	**$1.17**	**$51,141**	**51,073**	**46,108**	**$1.31**	**$60,581**	**63,689**	**57,263**	**$1.78**	**$101,797**	**69,453**	**62,458**	**$2.40**	**$150,170**
Parmer/FM 734	9,507	8,556	$0.96	$8,178	9,210	8,164	$1.01	$8,221	9,714	8,770	$1.12	$9,862	9,564	8,599	$1.52	$13,047	7,672	6,900	$2.05	$14,152
RM 620 (Howard Ln)	7,746	6,971	$0.96	$6,663	3,120	2,765	$1.01	$2,785	3,271	2,953	$1.12	$3,321	4,571	4,110	$1.52	$6,235	10,571	9,506	$2.05	$19,498
SH 45 N - O'Connor Dr					2,258	2,002	$1.03	$2,060	2,276	2,054	$1.16	$2,379	2,430	2,185	$1.55	$3,389	1,761	1,584	$2.10	$3,320
Loop 1 - O'Connor Dr					5,935	5,262	$1.03	$5,415	5,881	5,309	$1.16	$6,148	8,057	7,244	$1.55	$11,238	8,066	7,253	$2.10	$15,208
Greenlawn	7,013	6,312	$0.74	$4,662	7,970	7,065	$0.77	$5,473	8,489	7,664	$0.88	$6,742	9,616	8,646	$1.18	$10,181	10,017	9,008	$1.60	$14,371
AW Grimes (CR 170)	9,611	8,650	$0.74	$6,388	10,814	9,586	$0.77	$7,425	11,611	10,482	$0.88	$9,220	12,038	10,824	$1.18	$12,746	12,331	11,089	$1.60	$17,691
Schultz Ln (Arterial A)	5,202	4,681	$1.11	$5,186	2,858	2,534	$1.17	$2,972	3,939	3,556	$1.31	$4,672	11,521	10,358	$1.78	$18,414	11,941	10,739	$2.40	$25,820
Heatherwilde Ramps	8,331	7,497	$1.11	$8,306	9,804	8,691	$1.17	$10,194	10,490	9,470	$1.31	$12,443	9,262	8,328	$1.78	$14,804	10,350	9,307	$2.40	$22,378
Heatherwilde ML Plaza	**32,151**	**28,935**	**$1.11**	**$32,055**	**36,161**	**32,055**	**$1.17**	**$37,600**	**37,411**	**33,774**	**$1.31**	**$44,375**	**47,229**	**42,464**	**$1.78**	**$75,489**	**58,455**	**52,568**	**$2.40**	**$126,391**
SH 45 N Subtotal	**122,125**	**109,911**		**$113,875**	**137,313**	**121,721**		**$133,286**	**144,154**	**130,141**		**$159,743**	**177,977**	**160,020**		**$267,341**	**200,617**	**180,412**		**$409,000**
Annual Revenue in millions				**$36.4**				**$42.7**				**$51.1**				**$85.5**				**$130.9**
Loop 1																				
Shoreline Dr	918	818	$0.74	$606	1,008	887	$0.78	$688	1,123	1,017	$0.88	$893	1,373	1,239	$1.17	$1,455	2,039	1,840	$1.59	$2,928
Merrilltown ML Plaza	**57,418**	**51,169**	**$1.11**	**$56,849**	**67,079**	**59,037**	**$1.18**	**$69,376**	**73,711**	**66,780**	**$1.31**	**$87,541**	**91,198**	**82,253**	**$1.77**	**$145,877**	**109,689**	**98,966**	**$2.40**	**$237,350**
Howard/Wells Branch	3,127	2,787	$0.74	$2,064	5,968	5,252	$0.78	$4,076	10,652	9,650	$0.88	$8,469	12,862	11,600	$1.17	$13,628	15,517	14,000	$1.59	$22,278
Loop 1 Subtotal	**61,463**	**54,774**		**$59,519**	**74,054**	**65,175**		**$74,140**	**85,486**	**77,448**		**$96,902**	**105,433**	**95,092**		**$160,960**	**127,245**	**114,806**		**$262,556**
Annual Revenue in millions				**$19.0**				**$23.7**				**$31.0**				**$51.5**				**$84.0**
TOTAL (SH 45 N and Loop 1)																				
Total	**183,587**	**164,685**		**$173,395**	**211,366**	**186,896**		**$207,427**	**229,640**	**207,588**		**$256,646**	**283,410**	**255,112**		**$428,301**	**327,862**	**295,218**		**$671,555**
Annual Revenue in millions				**$55.5**				**$66.4**				**$82.1**				**$137.1**				**$214.9**

Note: The average toll is calculated by Revenue divided by Paying Transactions.

8.1.5 SH 45 N and Loop 1 Traffic and Revenue Forecasts

Table 8.7 and Table 8.8 provide the forecasted transactions and revenue for the entire 35-year forecast period on a fiscal year basis for SH 45 N and Loop 1, respectively. Average Weekday Traffic (AWT) statistics are provided on the left side of the table, and annual values are provided on the right side along with statistics related to truck traffic. The values for FY 2008 to FY 2014 are the observed transactions and reported revenue for the first seven years of operation. While TxDOT reports transactions in the fiscal year in which they occur, annual revenue is based on the fiscal year in which it is collected. The revenue collected in each fiscal year varies due to the delay in receipt of PBM tolls, the collection efficiency of the PBM transactions as well as other adjustments implemented by TxDOT. In contrast, the model forecasts assume that transactions and revenue occur simultaneously and therefore do not reflect the lagging pattern of receiving PBM toll revenue.

As shown in Table 8.7, SH 45 N shows an initially high transaction growth of 16.5 percent and revenue growth of 20.4 percent in FY 2015 due to the recent opening of the O'Connor Drive ramps in mid-August 2014. For the rest of the forecast period, the road shows steady transaction growth between 1.0 and 2.1 percent for most years which is consistent with the more recently slowing growth in FY 2014 of 2.8 percent. SH 45 N also shows steady revenue growth throughout the forecast between 3.7 and 5.3 percent. The assumed share of paying transactions is relatively constant at approximately 90 percent, as is the combined ETC share (autos and trucks) at approximately 81 percent. Trucks are approximately 3.6 percent of transactions in FY 2015 but increase to 5.9 percent over the forecast period. Truck revenue increases from 9.4 percent of the total revenue to 14.7 percent by FY 2042.

As shown in Table 8.8, and similar to SH 45 N, the recent opening of the O'Connor Drive ramps had an impact on Loop 1 as well. In FY 2015, Loop 1 shows an initially high transaction growth of 17.6 percent and revenue growth of 24.6 percent. For the rest of the forecast period, the road shows steady transaction growth between 1.9 and 2.9 percent for most years. Loop 1 also shows steady revenue growth throughout the forecast between 5.0 and 5.5 percent. The combined ETC share increases slightly from 77.5 in FY 2015 to 81.8 percent in 2042. The assumed share of paying transactions is relatively constant at approximately 90 percent. Trucks are approximately 3.6 percent of transactions in FY 2015 but increase to 5.7 percent over the forecast period. Truck revenue increases from 9.4 percent of the total revenue to 14.5 percent by FY 2042.

Table 8.7 SH 45 N Transaction and Revenue Forecasts

Fiscal Year	Average Weekday Transactions (AWT)					Annual Transactions & Revenue					
										3+ Axle Truck Percentage	
	Total Transactions	YOY Growth	Total Transactions ETC Share	Paying Transactions	Paying Percentage	Annual Total Transactions (in 000s)	Annual Paying Transactions (in 000s)	Annual Revenue (in $000s)	YOY Growth	Paying Transactions	Revenue
2008	***91,057***			*84,058*	*92%*	***29,458***	*27,194*	*$17,987*			
2009	***96,071***	***5.5%***	***77.0%***	*88,687*	*92%*	***31,270***	*28,866*	*$19,882*	***10.5%***		
2010	***98,446***	***2.5%***	***77.8%***	*90,879*	*92%*	***32,167***	*29,694*	***$19,799***	***-0.4%***		
2011	***102,344***	***4.0%***	***75.5%***	*94,478*	*92%*	***33,543***	*30,965*	***$20,268***	***2.4%***		
2012	***109,179***	***6.7%***	***75.9%***	*100,302*	*92%*	***35,790***	*32,880*	***$21,945***	***8.3%***		
2013	***113,674***	***4.1%***	***77.6%***	*100,665*	*89%*	***37,126***	*32,878*	***$29,075***	***32.5%***		
2014	***116,802***	***2.8%***	***75.6%***	*101,640*	*87%*	***38,256***	*33,290*	***$34,831***	***19.8%***		
2015	136,047	16.5%	78.7%	120,606	89%	43,535	38,594	$41,922	20.4%	3.6%	9.4%
2016	138,207	1.6%	79.2%	122,816	89%	44,226	39,301	$43,700	4.2%	3.9%	10.0%
2017	139,558	1.0%	79.8%	124,472	89%	44,658	39,831	$45,312	3.7%	4.0%	10.4%
2018	140,921	1.0%	80.4%	126,149	90%	45,095	40,368	$46,983	3.7%	4.2%	10.7%
2019	142,298	1.0%	81.0%	127,847	90%	45,535	40,911	$48,715	3.7%	4.3%	11.1%
2020	143,689	1.0%	81.7%	129,566	90%	45,980	41,461	$50,512	3.7%	4.5%	11.4%
2021	146,201	1.7%	81.8%	131,953	90%	46,784	42,225	$52,919	4.8%	4.6%	11.7%
2022	149,315	2.1%	81.8%	134,708	90%	47,781	43,107	$55,715	5.3%	4.7%	11.9%
2023	152,496	2.1%	81.7%	137,522	90%	48,799	44,007	$58,659	5.3%	4.8%	12.2%
2024	155,744	2.1%	81.6%	140,393	90%	49,838	44,926	$61,759	5.3%	4.9%	12.4%
2025	159,062	2.1%	81.6%	143,325	90%	50,900	45,864	$65,023	5.3%	5.0%	12.6%
2026	162,450	2.1%	81.5%	146,318	90%	51,984	46,822	$68,459	5.3%	5.1%	12.8%
2027	165,910	2.1%	81.4%	149,374	90%	53,091	47,800	$72,077	5.3%	5.2%	13.0%
2028	169,444	2.1%	81.3%	152,493	90%	54,222	48,798	$75,886	5.3%	5.2%	13.3%
2029	173,054	2.1%	81.3%	155,678	90%	55,377	49,817	$79,896	5.3%	5.3%	13.5%
2030	176,740	2.1%	81.2%	158,929	90%	56,557	50,857	$84,118	5.3%	5.4%	13.7%
2031	179,406	1.5%	81.2%	161,307	90%	57,410	51,618	$88,026	4.6%	5.5%	13.8%
2032	181,568	1.2%	81.2%	163,254	90%	58,102	52,241	$91,850	4.3%	5.5%	13.9%
2033	183,755	1.2%	81.2%	165,224	90%	58,802	52,872	$95,839	4.3%	5.6%	14.0%
2034	185,968	1.2%	81.2%	167,217	90%	59,510	53,510	$100,002	4.3%	5.6%	14.1%
2035	188,208	1.2%	81.2%	169,235	90%	60,227	54,155	$104,346	4.3%	5.7%	14.2%
2036	190,476	1.2%	81.2%	171,277	90%	60,952	54,809	$108,878	4.3%	5.7%	14.3%
2037	192,770	1.2%	81.2%	173,344	90%	61,686	55,470	$113,608	4.3%	5.7%	14.4%
2038	195,092	1.2%	81.2%	175,436	90%	62,430	56,139	$118,542	4.3%	5.8%	14.5%
2039	197,442	1.2%	81.2%	177,553	90%	63,182	56,817	$123,691	4.3%	5.8%	14.6%
2040	199,821	1.2%	81.2%	179,695	90%	63,943	57,502	$129,064	4.3%	5.9%	14.7%
2041	202,222	1.2%	81.2%	181,856	90%	64,711	58,194	$134,664	4.3%	5.9%	14.7%
2042	204,648	1.2%	81.2%	184,038	90%	65,488	58,892	$140,505	4.3%	5.9%	14.7%

Revenue for PBM patrons was not allocated by each toll facility until September 2009; therefore, annual revenues shown for FY 2008 - FY 2009 are estimated.

Actual Average Weekday Transactions and Annual Revenue

Table 8.8 Loop 1 Transaction and Revenue Forecasts

Fiscal Year	Average Weekday Transactions (AWT)					Annual Transactions & Revenue					
										3+ Axle Truck Percentage	
	Total Transactions	YOY Growth	Total Transactions ETC Share	Paying Transactions	Paying Percentage	Annual Total Transactions (in 000s)	Annual Paying Transactions (in 000s)	Annual Revenue (in $000s)	YOY Growth	Paying Transactions	Revenue
2008	***54,770***			*50,560*	*92%*	***17,195***	*15,873*	*$11,463*			
2009	***55,106***	***0.6%***	***78.0%***	*50,871*	*92%*	***17,381***	*16,045*	*$11,918*	***4.0%***		
2010	***56,900***	***3.3%***	***78.0%***	*52,527*	*92%*	***18,064***	*16,676*	***$11,937***	***0.2%***		
2011	***59,132***	***3.9%***	***76.4%***	*54,587*	*92%*	***18,883***	*17,432*	***$12,317***	***3.2%***		
2012	***62,275***	***5.3%***	***76.2%***	*57,291*	*92%*	***19,890***	*18,298*	***$13,015***	***5.7%***		
2013	***61,885***	***-0.6%***	***78.4%***	*55,032*	*89%*	***19,715***	*17,532*	***$16,143***	***24.0%***		
2014	***61,894***	***0.0%***	***76.4%***	*54,116*	*87%*	***19,839***	*17,346*	***$18,560***	***15.0%***		
2015	72,784	17.6%	77.5%	64,037	88%	23,291	20,492	$23,123	24.6%	3.6%	9.4%
2016	75,492	3.7%	78.2%	66,704	88%	24,157	21,345	$24,595	6.4%	3.8%	9.9%
2017	77,691	2.9%	79.2%	69,049	89%	24,861	22,096	$25,948	5.5%	4.0%	10.3%
2018	79,954	2.9%	80.2%	71,473	89%	25,585	22,871	$27,375	5.5%	4.1%	10.6%
2019	82,283	2.9%	81.2%	73,981	90%	26,330	23,674	$28,881	5.5%	4.2%	10.9%
2020	84,679	2.9%	82.2%	76,574	90%	27,097	24,504	$30,470	5.5%	4.4%	11.3%
2021	86,694	2.4%	82.4%	78,518	91%	27,742	25,126	$32,085	5.3%	4.5%	11.5%
2022	88,531	2.1%	82.4%	80,147	91%	28,330	25,647	$33,755	5.2%	4.6%	11.8%
2023	90,407	2.1%	82.3%	81,809	90%	28,930	26,179	$35,512	5.2%	4.7%	12.0%
2024	92,323	2.1%	82.2%	83,505	90%	29,543	26,722	$37,361	5.2%	4.7%	12.2%
2025	94,280	2.1%	82.1%	85,237	90%	30,170	27,276	$39,306	5.2%	4.8%	12.4%
2026	96,278	2.1%	82.1%	87,004	90%	30,809	27,841	$41,352	5.2%	4.9%	12.6%
2027	98,319	2.1%	82.0%	88,808	90%	31,462	28,419	$43,504	5.2%	5.0%	12.9%
2028	100,403	2.1%	81.9%	90,650	90%	32,129	29,008	$45,769	5.2%	5.1%	13.1%
2029	102,531	2.1%	81.8%	92,529	90%	32,810	29,609	$48,151	5.2%	5.2%	13.3%
2030	104,704	2.1%	81.7%	94,448	90%	33,505	30,223	$50,658	5.2%	5.3%	13.5%
2031	106,767	2.0%	81.7%	96,298	90%	34,166	30,815	$53,229	5.1%	5.4%	13.7%
2032	108,794	1.9%	81.7%	98,129	90%	34,814	31,401	$55,898	5.0%	5.4%	13.7%
2033	110,859	1.9%	81.7%	99,995	90%	35,475	31,999	$58,702	5.0%	5.5%	13.8%
2034	112,963	1.9%	81.7%	101,897	90%	36,148	32,607	$61,645	5.0%	5.5%	13.9%
2035	115,108	1.9%	81.7%	103,835	90%	36,834	33,227	$64,737	5.0%	5.5%	14.0%
2036	117,293	1.9%	81.8%	105,810	90%	37,534	33,859	$67,983	5.0%	5.6%	14.1%
2037	119,519	1.9%	81.8%	107,822	90%	38,246	34,503	$71,392	5.0%	5.6%	14.2%
2038	121,788	1.9%	81.8%	109,873	90%	38,972	35,159	$74,973	5.0%	5.6%	14.3%
2039	124,100	1.9%	81.8%	111,962	90%	39,712	35,828	$78,732	5.0%	5.7%	14.4%
2040	126,455	1.9%	81.8%	114,092	90%	40,466	36,509	$82,680	5.0%	5.7%	14.5%
2041	128,857	1.9%	81.8%	116,260	90%	41,234	37,203	$86,851	5.0%	5.7%	14.5%
2042	131,305	1.9%	81.8%	118,469	90%	42,018	37,910	$91,245	5.1%	5.7%	14.5%

Revenue for PBM patrons was not allocated by each toll facility until September 2009; therefore, annual revenues shown for FY 2008 - FY 2009 are estimated.

Actual Average Weekday Transactions and Annual Revenue

8.2 SH 130

As noted in the discussion of SH 45 N and Loop 1, the toll diversion model produces traffic estimates for several model years including: 2015, 2020, 2030, and 2040. The initial model forecasts for the SH 130 have been adjusted by post-processing to account for variations in the base year model calibration estimates and other minor variations in future trends. The model forecasts were also adjusted to transition from the current high levels of annual growth observed in recent years to a more logical trend of future growth predicted by the model. Gross revenue estimates were then prepared by multiplying the traffic, in terms of transactions, at the toll locations by the effective toll structure by vehicle type and payment type for each year. Adjustments were included to reflect the effective collection rates for both ETC and PBM transactions. Annual estimates of transactions and revenue for SH 130 were generated using an annualization factor of 330.

8.2.1 SH 130 Schematic Traffic Diagrams

Figure 8.7 through Figure 8.11 display the traffic along the individual segments of SH 130 for the model (calendar) years 2013, 2015, 2020, 2030, and 2040. These diagrams represent the unadjusted model outputs for average weekday transactions and are intended to provide the reader a sense of the scale of the traffic volumes across the entire facility as well as the entry/exit points. An approximation of the estimated growth for various segments of the roadway can be determined by reviewing these diagrams across the individual horizon years.

Figure 8.7 SH 130 Average Weekday Traffic – 2013 Model Calibration Year

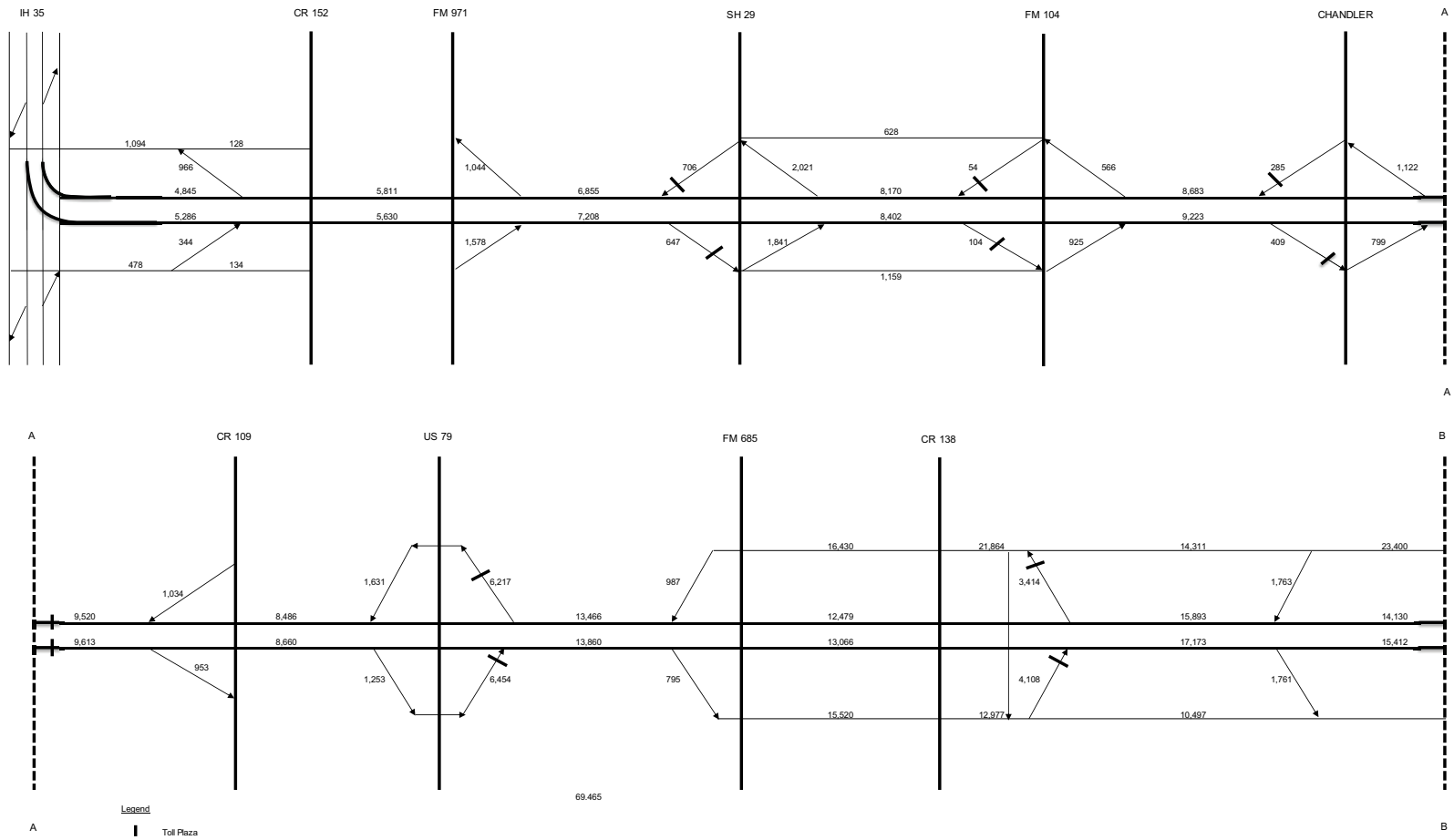


Figure 8.7 SH 130 Average Weekday Traffic – 2013 Model Calibration Year (continued)

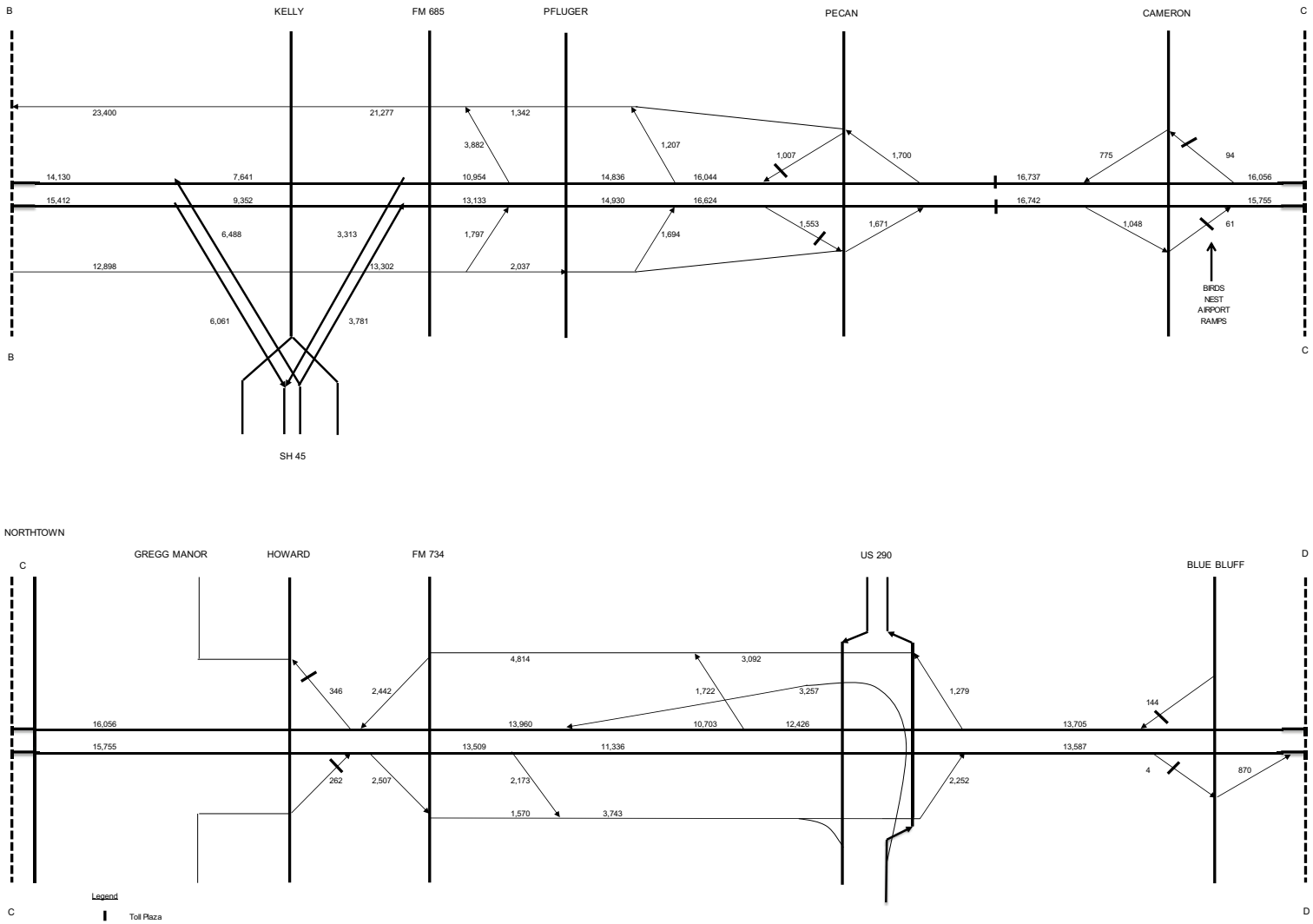


Figure 8.7 SH 130 Average Weekday Traffic – 2013 Model Calibration Year (continued)

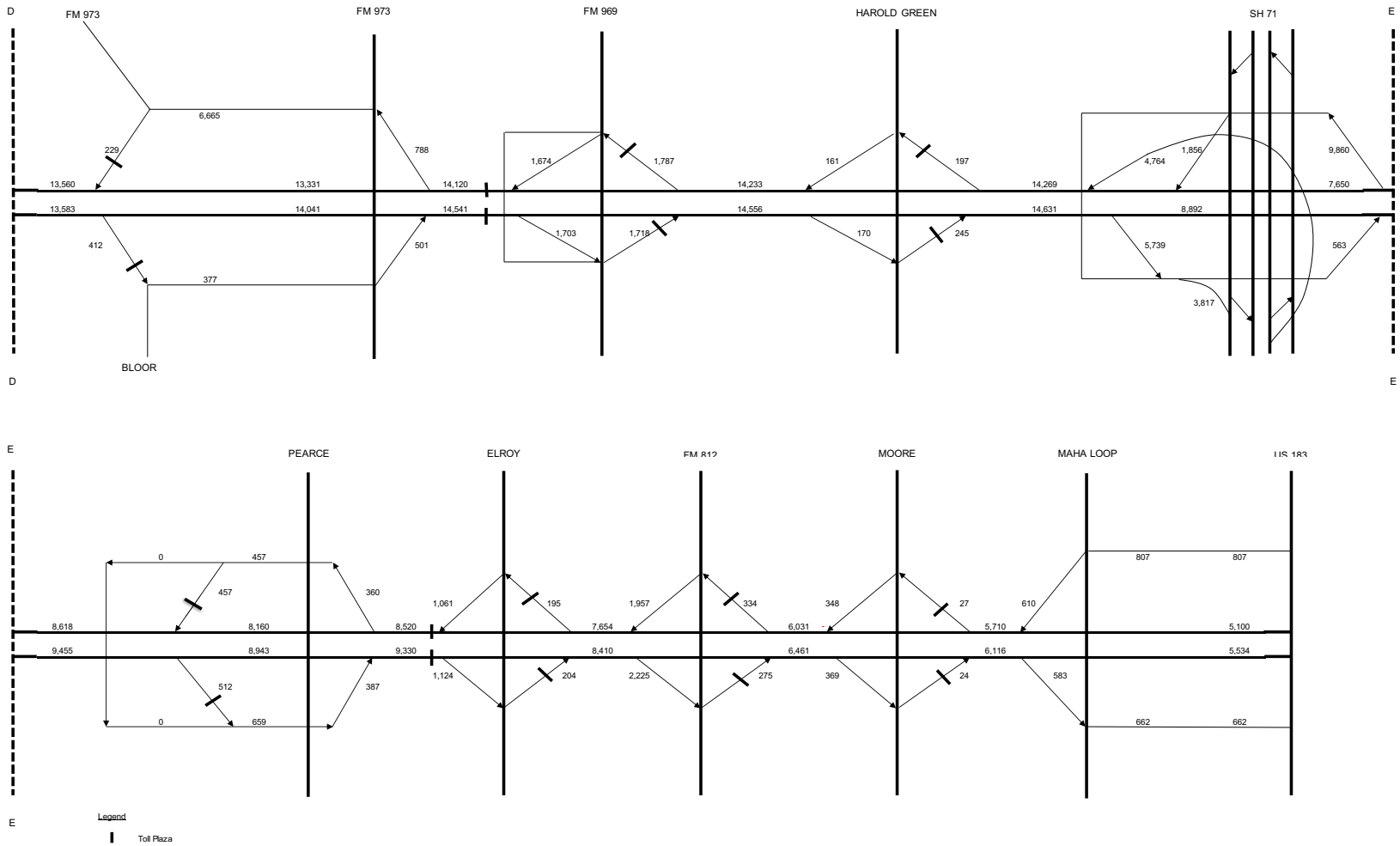


Figure 8.8 SH 130 Average Weekday Traffic – 2015 Model Year

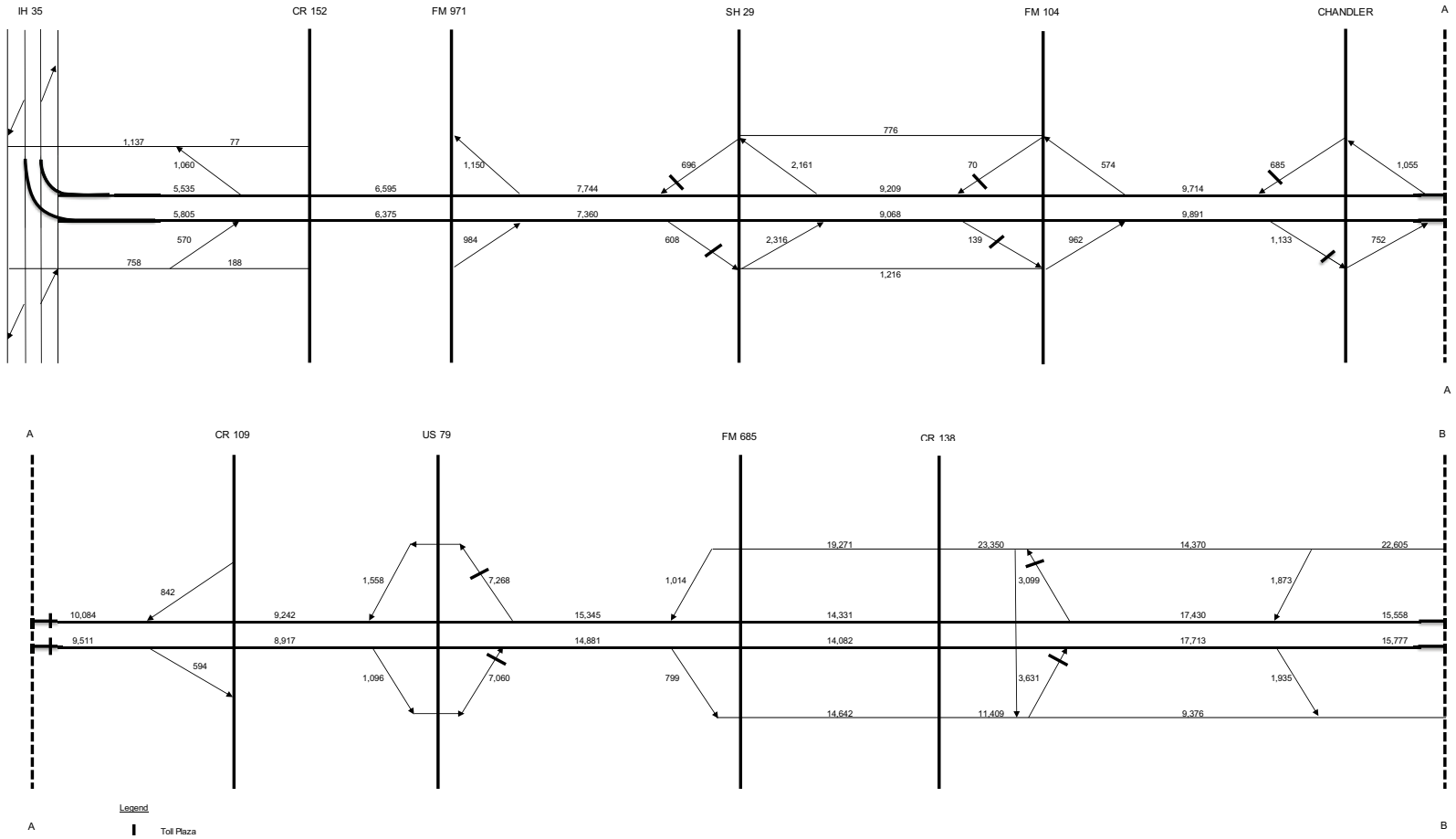


Figure 8.8 SH 130 Average Weekday Traffic – 2015 Model Year (continued)

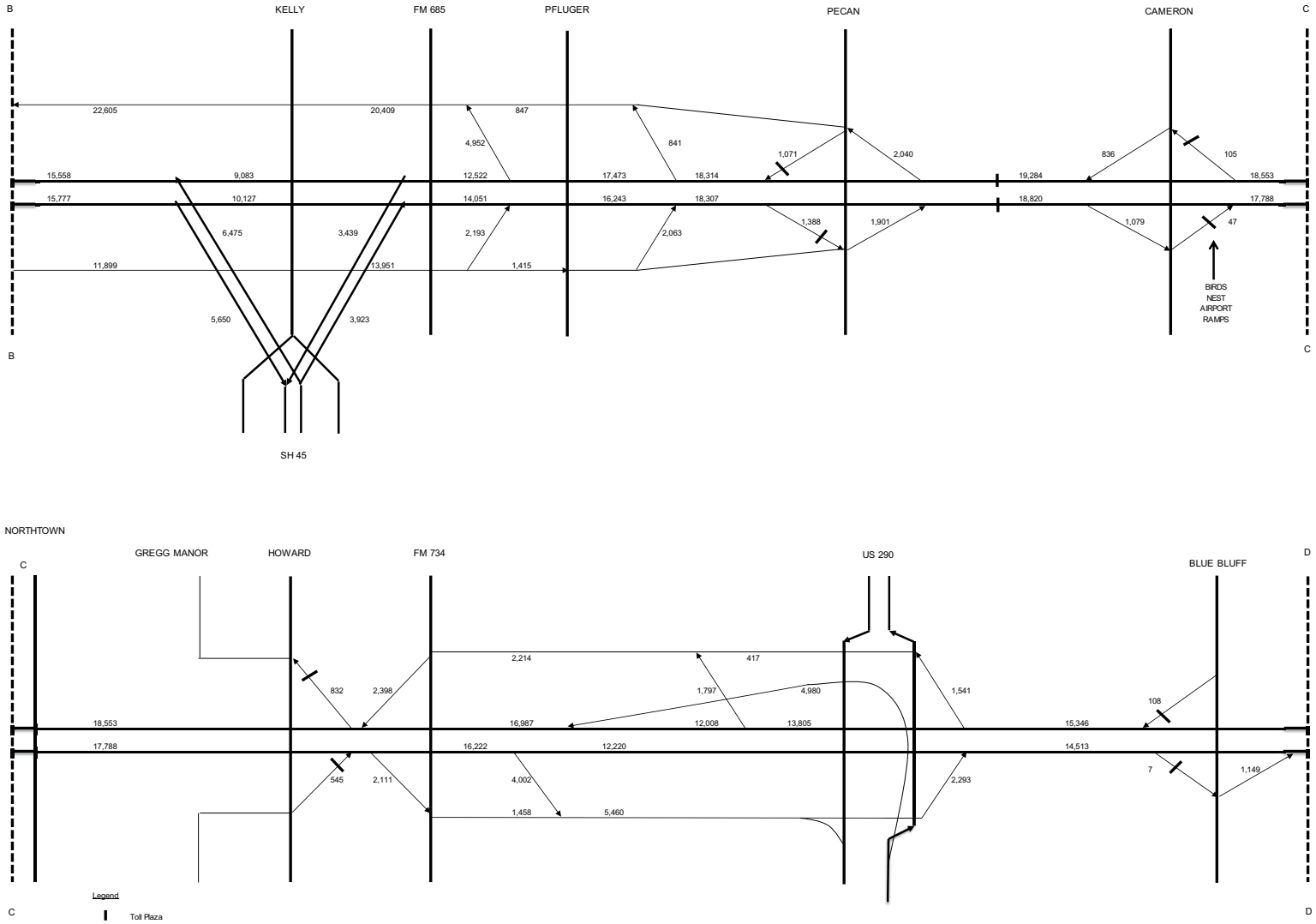


Figure 8.8 SH 130 Average Weekday Traffic – 2015 Model Year (continued)

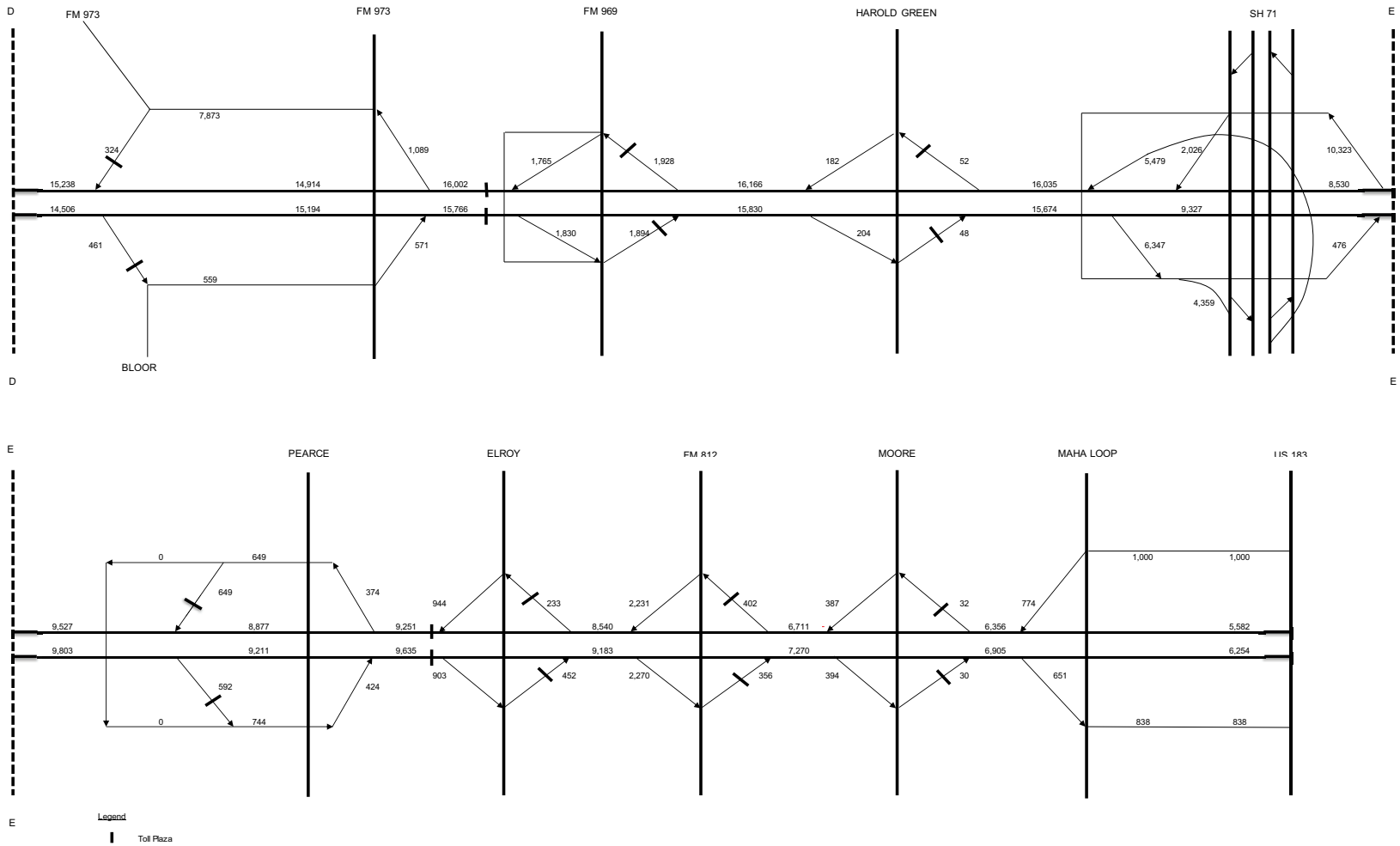


Figure 8.9 SH 130 Average Weekday Traffic – 2020 Model Year

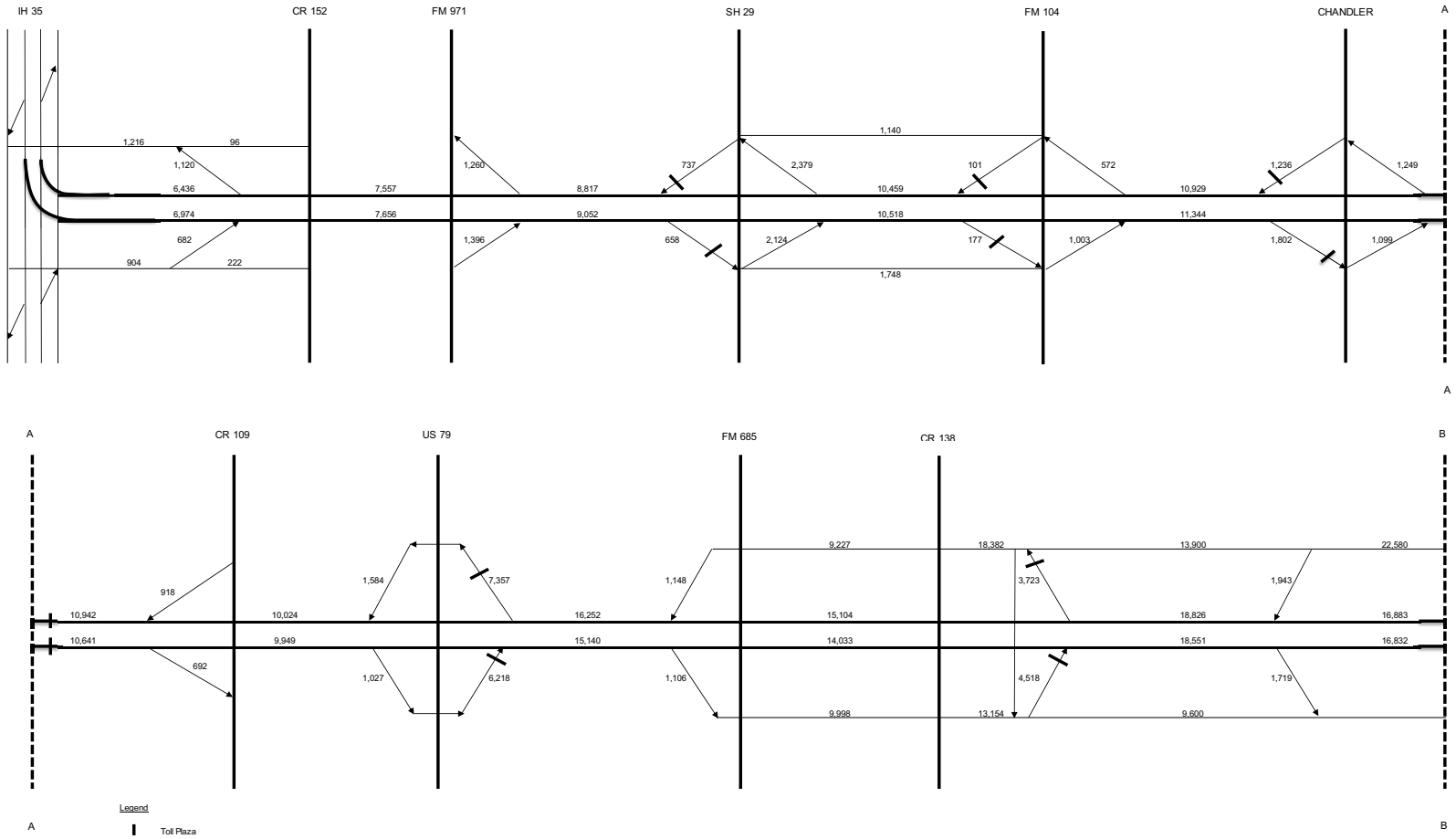


Figure 8.9 SH 130 Average Weekday Traffic – 2020 Model Year (continued)

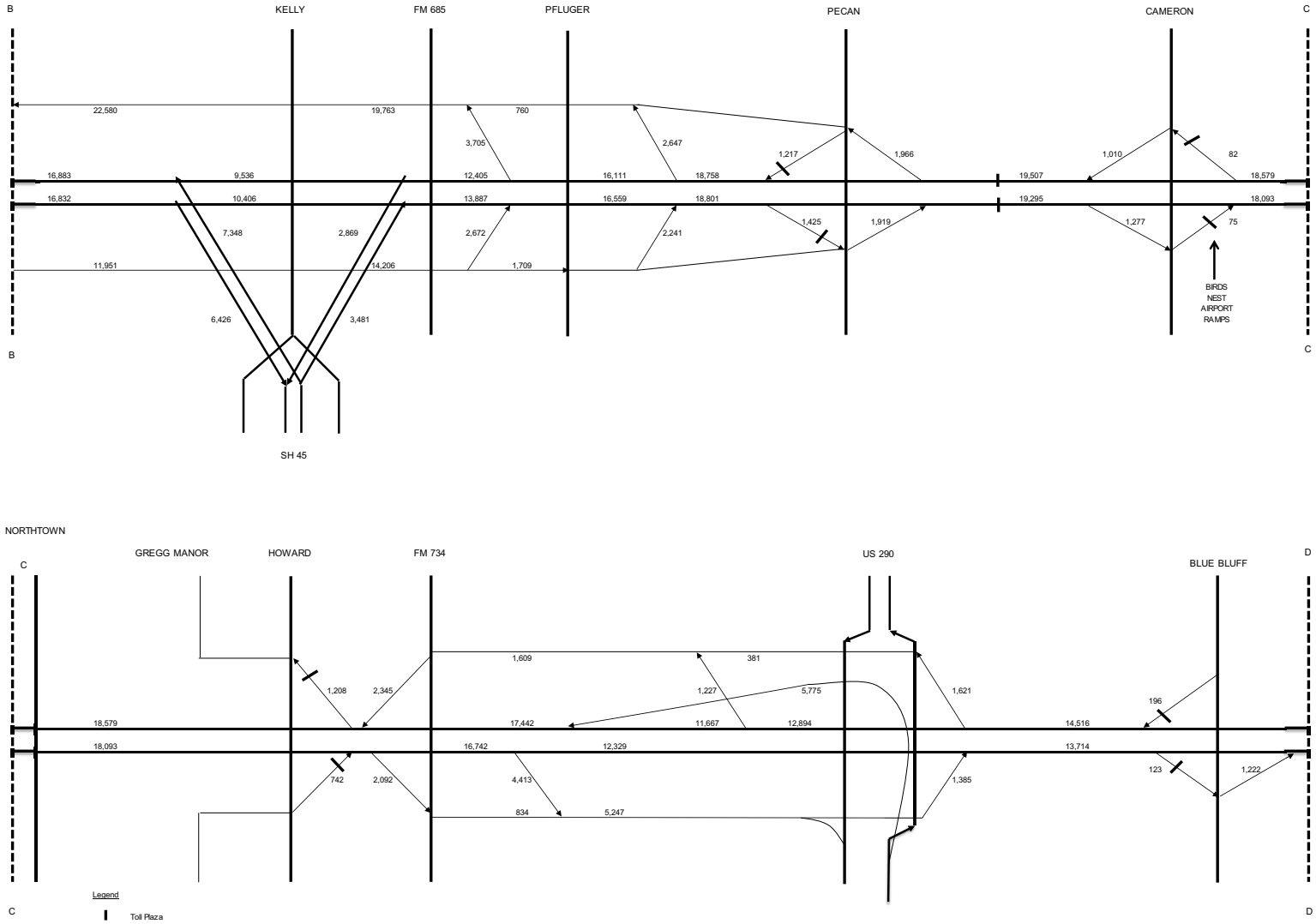


Figure 8.9 SH 130 Average Weekday Traffic – 2020 Model Year (continued)

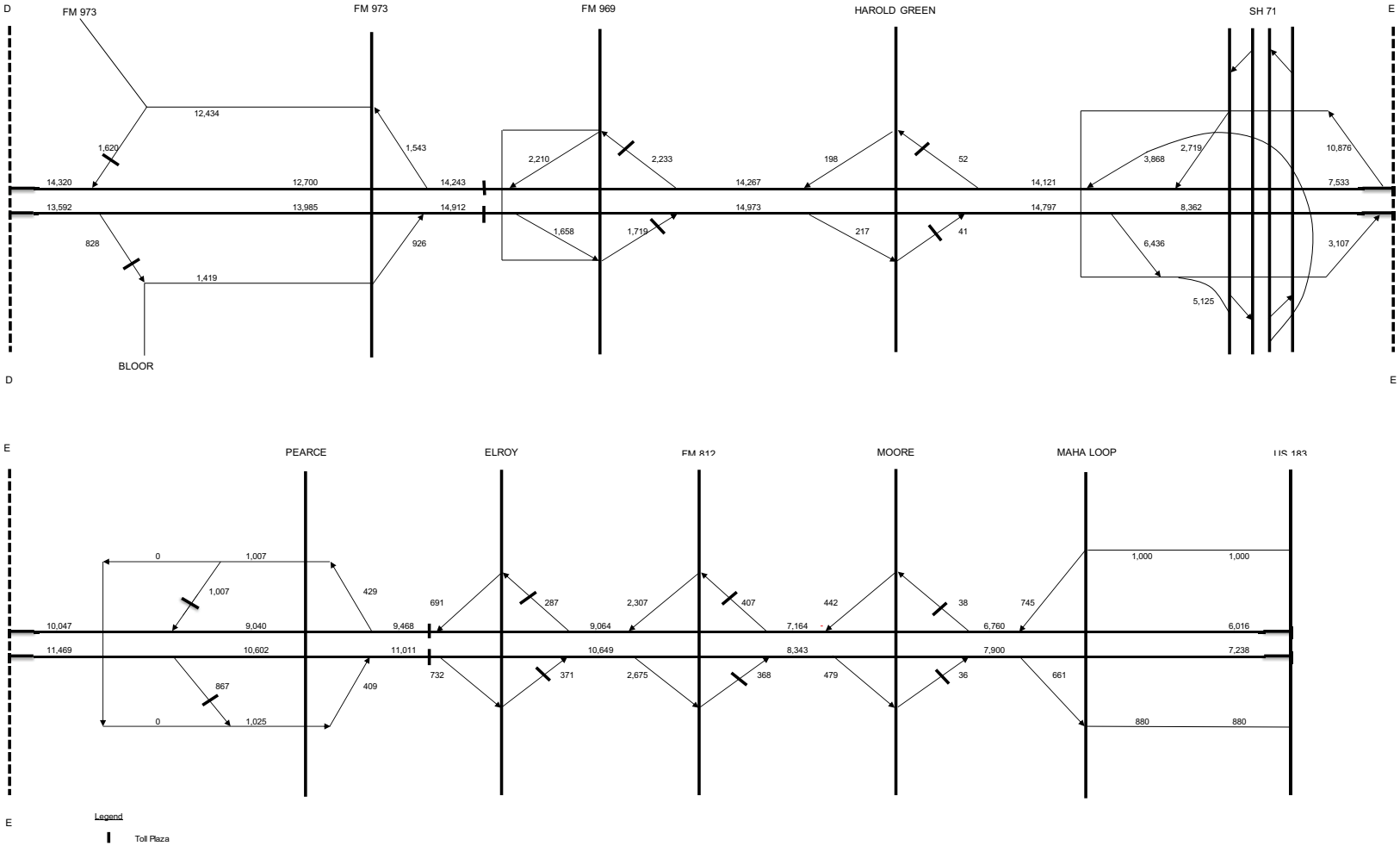


Figure 8.10 SH 130 Average Weekday Traffic – 2030 Model Year

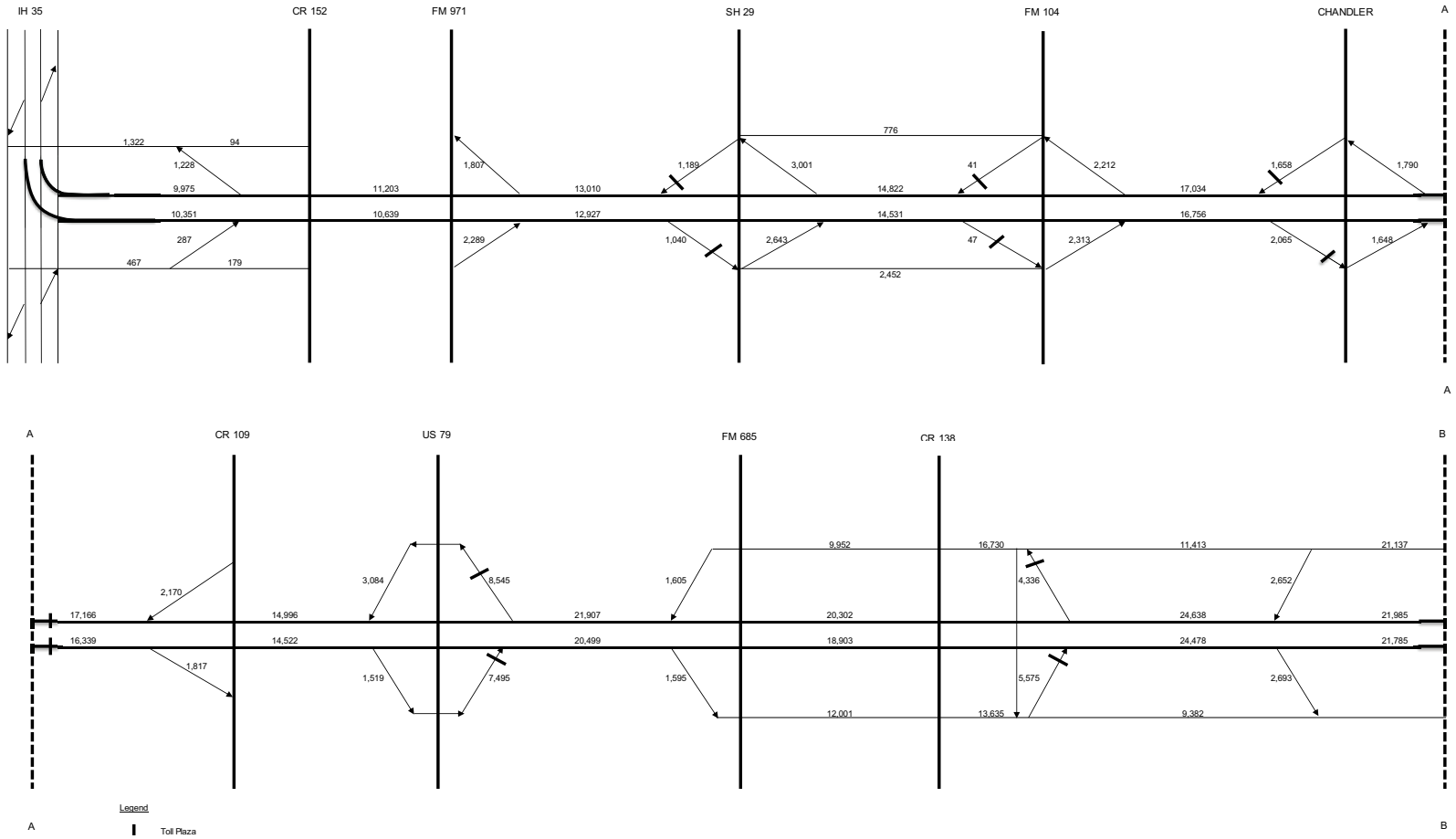


Figure 8.10 SH 130 Average Weekday Traffic – 2030 Model Year (continued)

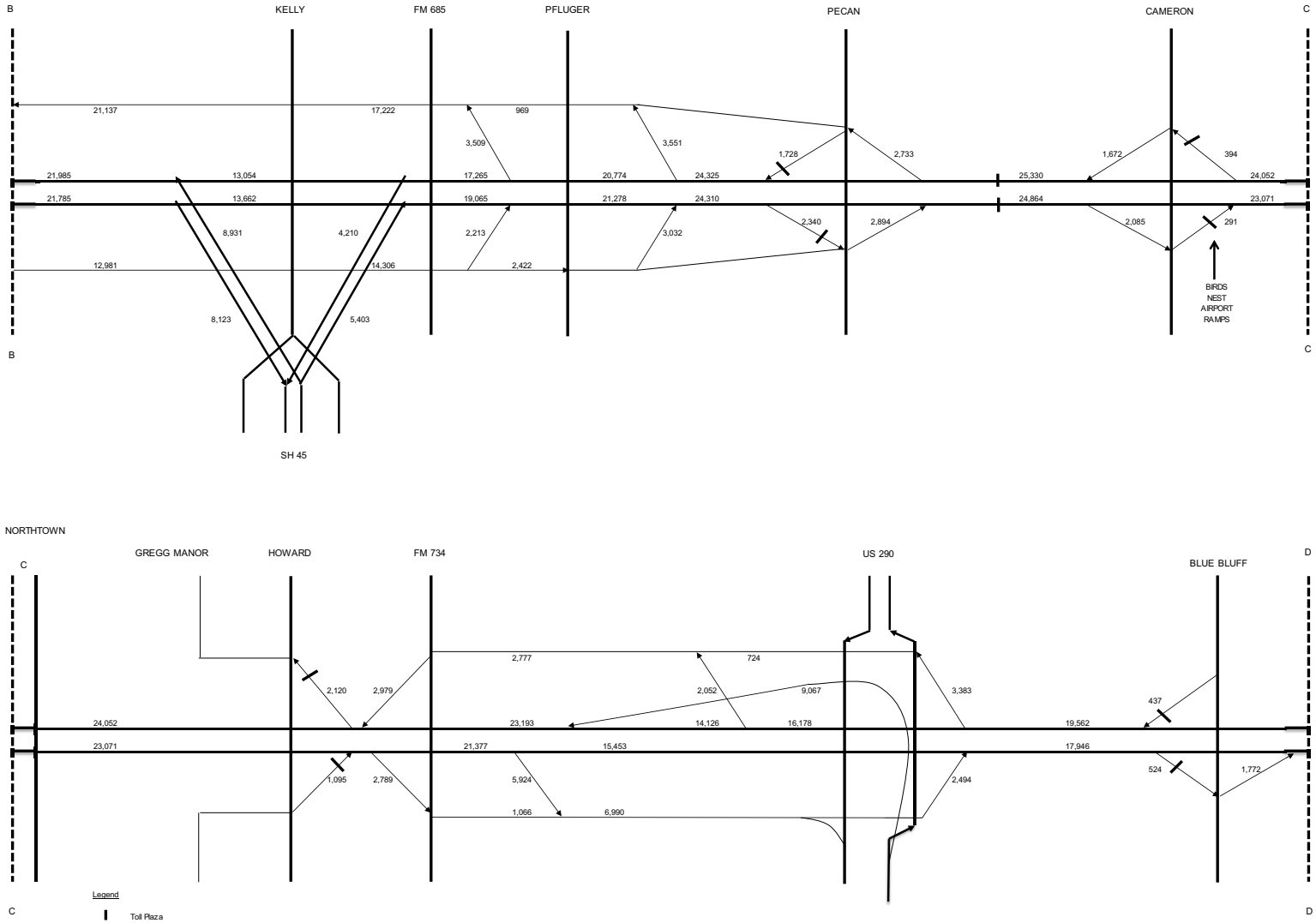


Figure 8.10 SH 130 Average Weekday Traffic – 2030 Model Year (continued)

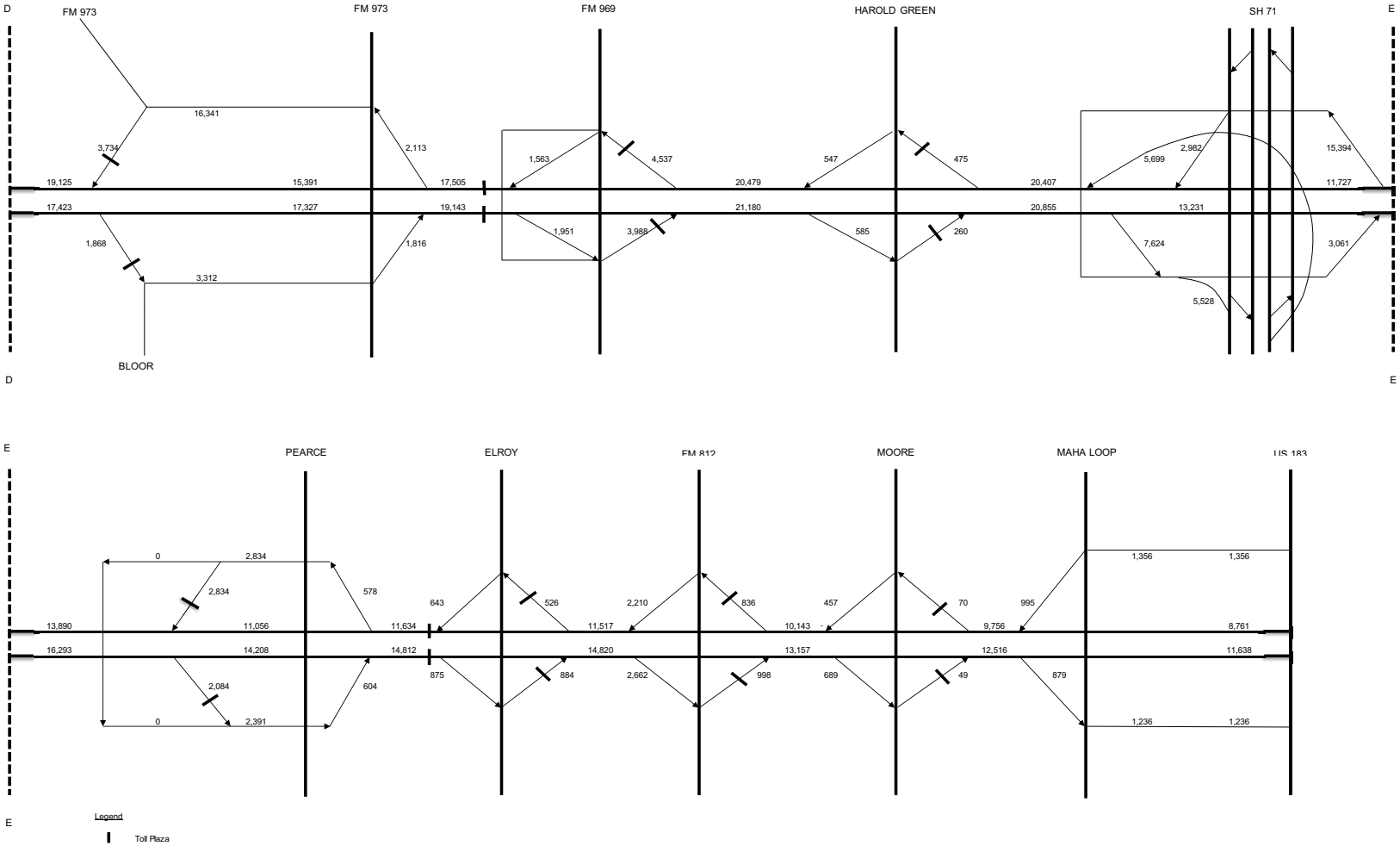


Figure 8.11 SH 130 Average Weekday Traffic – 2040 Model Year

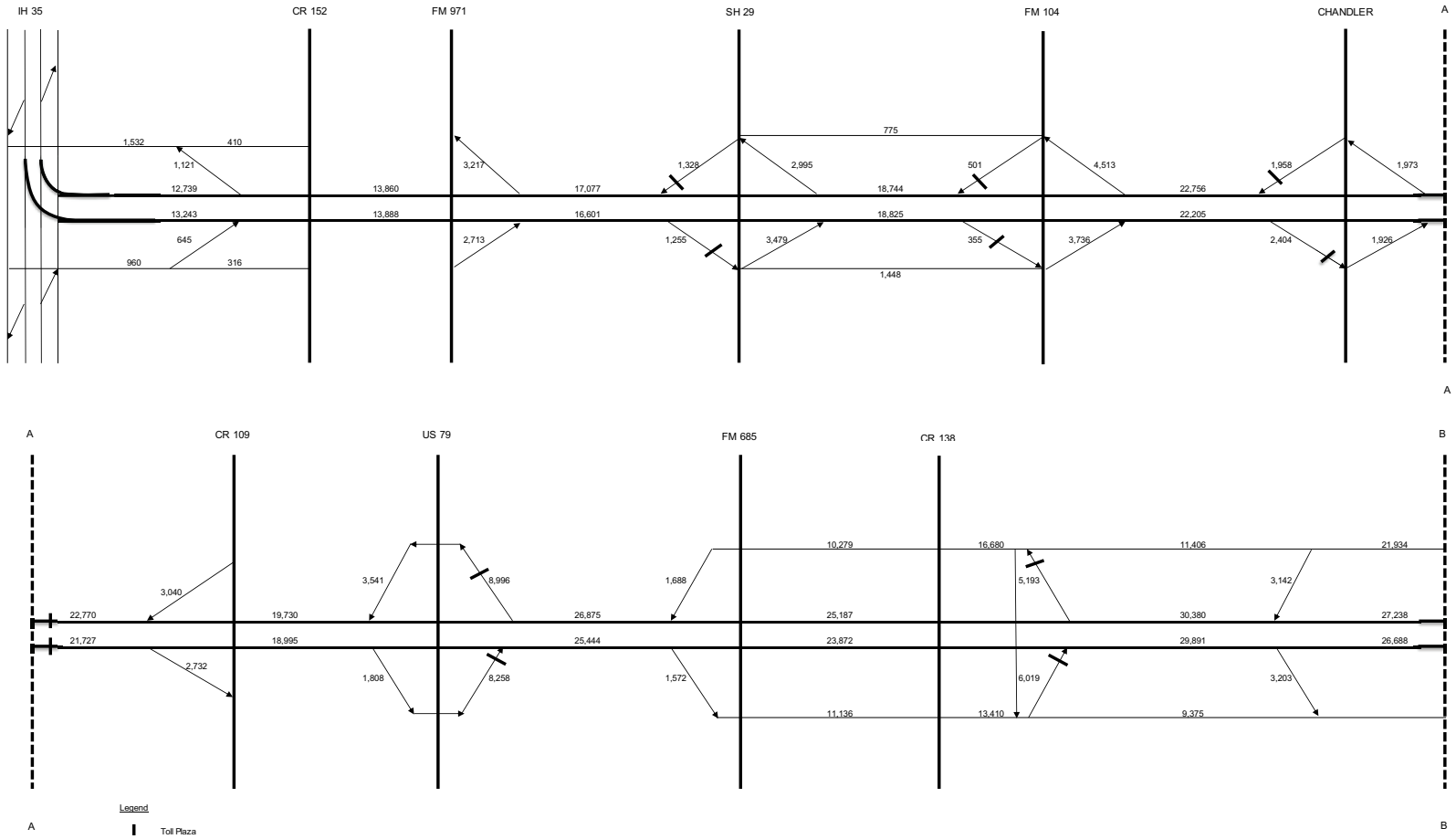


Figure 8.11 SH 130 Average Weekday Traffic – 2040 Model Year (continued)

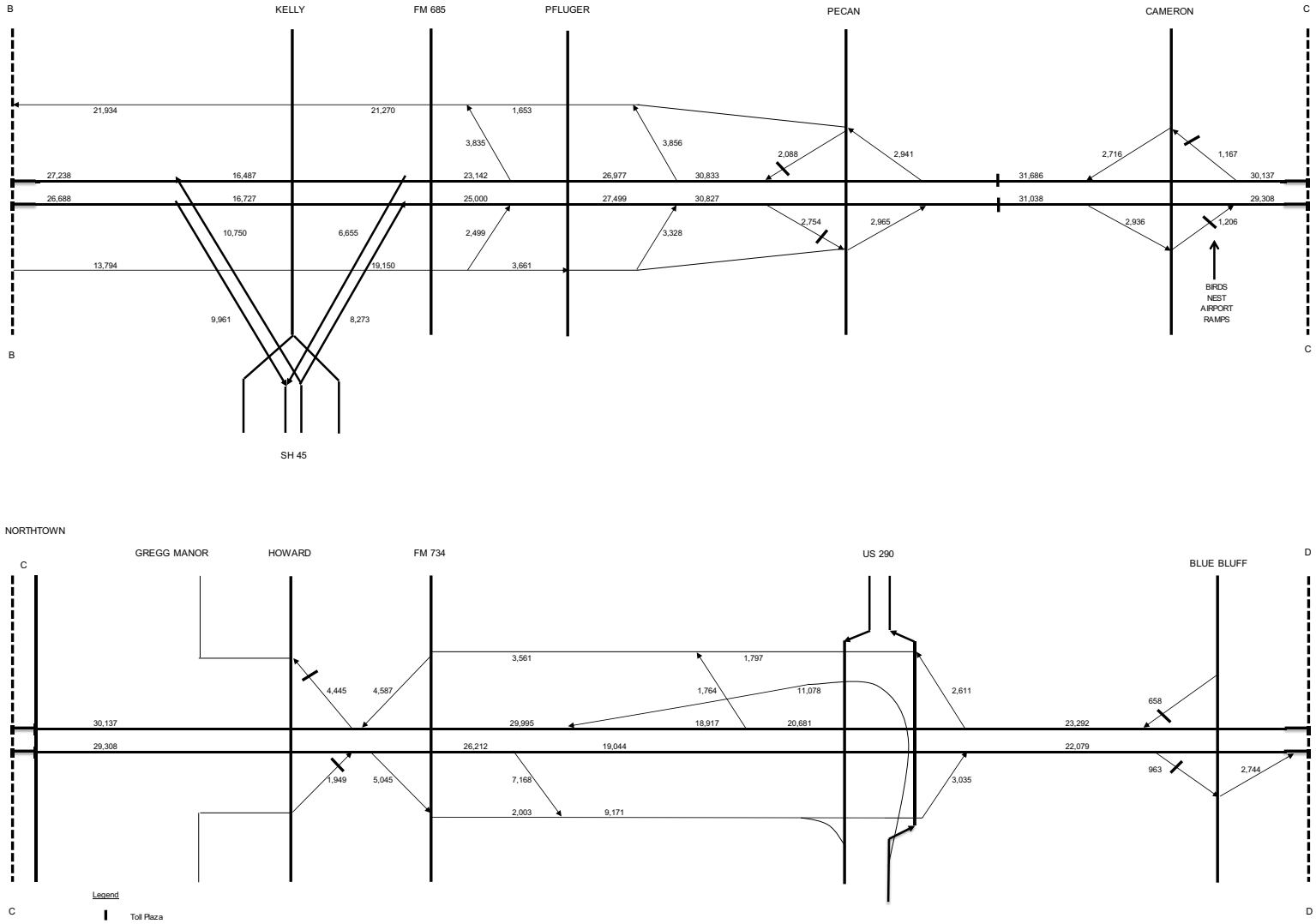
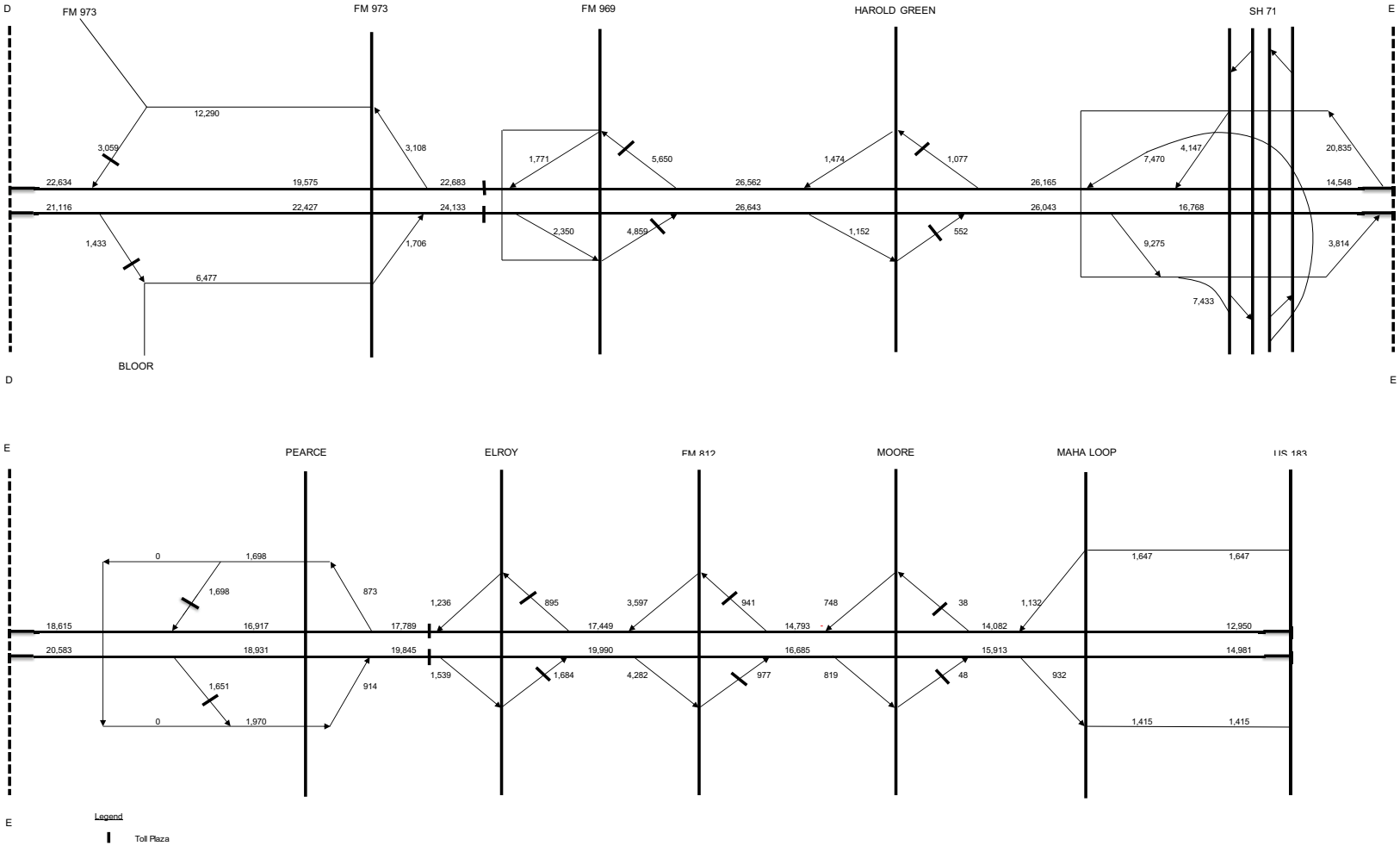


Figure 8.11 SH 130 Average Weekday Traffic – 2040 Model Year (continued)



8.2.2 SH 130 Screenline Analysis

Table 8.9, Table 8.10, Table 8.11, and Table 8.12 show the SH 130 corridor screenlines by horizon year. These screenlines are depicted earlier in this chapter as part of Figure 8.6. Note that these values are unadjusted model estimates for the model's calendar year forecasts and are intended to indicate the future demand of traffic in the corridor as estimated by the model as well as the share of traffic using SH 130.

In reviewing these tables, it is evident that IH-35 has the dominant share of traffic on each of the four screenlines, although SH 130 gradually increases its share of screenline traffic over the forecast period. The total traffic on Screenline 130-A increases from approximately 196,900 in 2013 to 342,600 in 2040, which implies an annual compounded growth rate of 2.1 percent over the 28-year period. SH 130 traffic is approximately 9.7 percent of the screenline in 2013 and eventually increases to approximately 13.0 percent in 2040. Screenline 130-B, which intersects roadways in the Round Rock area, increases from 250,300 in 2013 to 409,500 in 2040, compounding annually at approximately 1.8 percent. Traffic on SH 130 generally trends from 13 to 14 percent of the screenline total over the forecast period. Note that between 2015 and 2020, the traffic growth on SH 130 on screenline B is relatively flat. This is due to the completion of the Bergstrom Expressway within the US 183 alignment between US 290 and SH 71, which acts a competitor facility.

Table 8.9 Screenline 130-A Unadjusted Model Output

Locations	2013	% of Screenline	2015	% of Screenline	2020	% of Screenline	2030	% of Screenline	2040	% of Screenline
IH 35	146,597	74.5%	153,605	72.9%	163,734	70.2%	185,126	67.0%	212,059	61.9%
CR 115	11,538	5.9%	12,649	6.0%	13,523	5.8%	16,311	5.9%	19,796	5.8%
FM 1460	12,878	6.5%	11,746	5.6%	15,861	6.8%	17,852	6.5%	18,506	5.4%
Arterial A (Round Rock)	NA		NA		NA		NA		23,893	7.0%
CR 110	3,319	1.7%	2,969	1.4%	6,326	2.7%	9,755	3.5%	7,083	2.1%
SH 130	**19,133**	**9.7%**	**19,594**	**9.3%**	**21,583**	**9.3%**	**33,505**	**12.1%**	**44,497**	**13.0%**
CR 100	980	0.5%	8,177	3.9%	9,948	4.3%	10,947	4.0%	4,501	1.3%
FM 1660	2,416	1.2%	2,022	1.0%	2,342	1.0%	2,940	1.1%	12,231	3.6%
TOTAL	**196,860**	**100.0%**	**210,761**	**100.0%**	**233,317**	**100.0%**	**276,436**	**100.0%**	**342,566**	**100.0%**

Table 8.10 Screenline 130-B Unadjusted Model Output

Locations	2013	% of Screenline	2015	% of Screenline	2020	% of Screenline	2030	% of Screenline	2040	% of Screenline
IH 35	171,259	68.4%	178,889	66.4%	189,809	65.4%	217,244	62.8%	241,785	59.0%
Heatherwilde Blvd	10,697	4.3%	12,989	4.8%	18,785	6.5%	20,328	5.9%	20,600	5.0%
Dessau / FM 685	23,590	9.4%	27,039	10.0%	26,721	9.2%	36,757	10.6%	45,494	11.1%
Immanuel	4,425	1.8%	4,773	1.8%	6,381	2.2%	9,698	2.8%	11,009	2.7%
SH 130	**33,479**	**13.4%**	**38,104**	**14.1%**	**38,801**	**13.4%**	**50,194**	**14.5%**	**62,723**	**15.3%**
Cameron Rd	3,721	1.5%	3,914	1.5%	5,283	1.8%	6,438	1.9%	21,615	5.3%
Fuchs Grove	3,101	1.2%	3,687	1.4%	4,293	1.5%	5,301	1.5%	6,298	1.5%
TOTAL	**250,271**	**100.0%**	**269,396**	**100.0%**	**290,073**	**100.0%**	**345,959**	**100.0%**	**409,525**	**100.0%**

Table 8.11 Screenline 130-C Unadjusted Model Output

Locations	2013	% of Screenline	2015	% of Screenline	2020	% of Screenline	2030	% of Screenline	2040	% of Screenline
IH 35	234,515	58.3%	254,934	58.0%	270,391	56.4%	307,984	56.1%	335,360	53.0%
Cameron Rd.	20,747	5.2%	20,427	4.6%	20,723	4.3%	20,738	3.8%	21,173	3.3%
Berkman Dr.	10,914	2.7%	11,599	2.6%	13,360	2.8%	13,228	2.4%	15,752	2.5%
Manor Rd.	10,215	2.5%	11,470	2.6%	12,153	2.5%	18,186	3.3%	20,595	3.3%
Springdale Rd.	8,977	2.2%	10,406	2.4%	12,933	2.7%	10,977	2.0%	12,751	2.0%
US 183	59,116	14.7%	64,871	14.8%	41,822	8.7%	36,270	6.6%	42,913	6.8%
US 183 Express Lanes	NA		NA		36,309	7.6%	48,432	8.8%	62,583	9.9%
Johnny Morris Rd.	5,237	1.3%	5,013	1.1%	5,109	1.1%	6,108	1.1%	7,118	1.1%
FM 3177	11,679	2.9%	13,727	3.1%	18,070	3.8%	27,275	5.0%	28,934	4.6%
FM 973	6,191	1.5%	7,042	1.6%	8,887	1.9%	7,431	1.4%	8,962	1.4%
SH 130	**28,661**	**7.1%**	**31,768**	**7.2%**	**29,155**	**6.1%**	**36,648**	**6.7%**	**46,817**	**7.4%**
FM 969	5,876	1.5%	8,053	1.8%	10,638	2.2%	16,158	2.9%	29,341	4.6%
TOTAL	**402,128**	**100.0%**	**439,308**	**100.0%**	**479,549**	**100.0%**	**549,434**	**100.0%**	**632,298**	**100.0%**

Table 8.12 Screenline 130-D Unadjusted Model Output

Locations	2013	% of Screenline	2015	% of Screenline	2020	% of Screenline	2030	% of Screenline	2040	% of Screenline
IH 35	189,446	64.9%	208,740	65.8%	224,420	63.9%	257,066	62.5%	281,106	61.1%
Todd Ln.	11,751	4.0%	12,166	3.8%	20,166	5.7%	22,098	5.4%	24,594	5.3%
Stassney Ln.	22,887	7.8%	24,043	7.6%	25,568	7.3%	31,402	7.6%	34,776	7.6%
US 183	28,937	9.9%	31,181	9.8%	33,202	9.4%	38,698	9.4%	38,704	8.4%
FM 973	8,739	3.0%	10,658	3.4%	16,213	4.6%	19,412	4.7%	23,833	5.2%
SH 130	**17,850**	**6.1%**	**18,886**	**6.0%**	**20,479**	**5.8%**	**26,446**	**6.4%**	**37,635**	**8.2%**
Ross Rd.	12,517	4.3%	11,623	3.7%	11,326	3.2%	15,989	3.9%	19,648	4.3%
TOTAL	**292,127**	**100.0%**	**317,296**	**100.0%**	**351,375**	**100.0%**	**411,111**	**100.0%**	**460,296**	**100.0%**

Traffic along Screenline 130-C that encompasses Segment 3 increases from 402,100 in 2013 to 632,300 in 2040 at a rate of 1.7% annually, with SH 130 traffic remaining near 7 percent of the screenline total. With the completion of the Bergstrom Expressway in 2020, SH 130 Segment 3 has a decline in traffic, but the overall development in the corridor indicates that Segment 3 will resume the long term trend of growth by 2035. The southernmost screenline (Screenline 130-D) increases from 292,100 in 2013 to 460,300 in 2040 at a rate of 1.7 percent annually. SH 130 has approximately 6 to 8 percent share of this screenline's traffic.

8.2.3 SH 130 Traffic and Revenue Assumptions

Table 8.13 provides a concise summary of the underlying assumptions in the transaction and revenue forecasts for SH 130. All truck-related values in the table relate to the truck defined as 3+axle vehicles, consistent with the transaction reports generated for each toll road by TxDOT. Estimated truck transactions increase from approximately 8.6 percent in 2015 to 11.1 percent by 2040. While auto ETC payment shares are assumed to gradually increase to nearly 70 percent by 2040, truck ETC shares are assumed to remain relatively constant. The gradual increase of transponder shares is consistent with the near-term TxDOT policy objectives and resolution of issues related to the conversion to the Xerox system along with other isolated problems related to ETC billing of credit card accounts. Due to the limited data regarding trends in truck ETC usage, a decision was made to hold the truck ETC shares constant over the forecast period.

The average truck toll multiplier is approximately 2.67 times the auto rate, which reflects the observed distribution of trucks by axle group, and TxDOT's policy of capping truck tolls at the rate of a 4-axle vehicle for SH 130. There are no truck discounts similar to the temporary discounts provided during periods in 2012 and 2013 assumed during the forecast period. The PBM toll surcharge is assumed to remain at 33 percent of the ETC rate. The collection rates for PBM and ETC transactions reflect the latest available collection data provided by TxDOT and are held constant over the forecast period. Over the forecast period, the cost to traverse the full length of SH 130 Segments 1-4 will increase from $7.00 in 2015 to approximately 14.00 in 2040. This implies a rate of $0.14 per mile in 2015 which is increased to $0.28 by 2040.

Table 8.13 SH 130 Tolling and Traffic Characteristic Assumptions by Model Year

Model Year	2015	2020	2030	2040
Vehicle Type Distribution				
Autos	91.4%	91.4%	90.8%	88.9%
Trucks	8.6%	8.6%	9.2%	11.1%
Payment Type Distribution - Passenger Cars				
PBM	33.5%	30.9%	31.1%	30.5%
ETC	66.5%	69.1%	68.9%	69.5%
Payment Type Distribution - Trucks				
PBM	35.5%	35.5%	35.5%	35.5%
ETC	64.5%	64.5%	64.5%	64.5%
Toll Ratios				
Truck/Auto Ratio	2.67	2.67	2.67	2.67
PBM/ETC Toll Rate	1.33	1.33	1.33	1.33
Collection Rates				
PBM	47.7%	47.7%	47.7%	47.7%
ETC	99.7%	99.7%	99.7%	99.7%
Full Length Trip				
Distance	49.0	49.0	49.0	49.0
Rate per Mile	$0.14	$0.16	$0.21	$0.28
Toll Cost (ETC)	$7.00	$7.84	$10.36	$13.96
Annualization Factor	330	330	330	330

8.2.4 SH 130 Transactions and Revenue by Paypoint

The SH 130 transaction and revenue statistics by paypoint and horizon year are listed in Table 8.14. Both total and paying transactions are provided, where paying transactions reflect the assumptions for collection efficiency for each payment type. The average toll rate represents a blend of the individual rates by payment type and vehicle type. This blended value includes a 33 percent surcharge over the ETC rates for PBM patrons. The values shown are calendar year values, rather than the blended estimates created for each fiscal year shown in the next section.

Average weekday total transactions on SH 130 range from 127,700 in 2013 to 388,800 in 2040, representing a compounded annual growth rate of 4.2 percent. During the same timeframe, average weekday revenues range from $159,200 to $1,114,100 and exhibit a compounded annual growth rate of 7.5 percent.

Table 8.14 SH 130 Average Weekday Total Transactions and Toll Revenue (Adjusted for Calibration)

Toll Location	2013				2015				2020				2030				2040			
	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue
	Total	Paying			Total	Paying			Total	Paying			Total	Paying			Total	Paying		
SH 29	1,313	1,139	$0.47	$536	1,410	1,205	$0.52	$632	2,026	1,743	$0.58	$1,004	3,236	2,734	$0.77	$2,098	3,751	3,167	$1.03	$3,267
FM 104	153	126	$0.59	$75	226	182	$0.65	$118	404	323	$0.73	$236	128	101	$0.97	$98	1,244	1,020	$1.33	$1,352
Chandler Rd.	673	554	$0.78	$430	1,965	1,629	$0.86	$1,399	4,411	3,667	$0.98	$3,600	5,406	4,501	$1.30	$5,863	6,334	5,273	$1.71	$9,034
N of CR 109 (ML Plaza)	**18,559**	**15,335**	**$1.80**	**$27,537**	**21,183**	**17,211**	**$2.07**	**$35,622**	**31,340**	**25,913**	**$2.31**	**$59,819**	**48,651**	**40,377**	**$3.04**	**$122,574**	**64,611**	**53,950**	**$4.12**	**$222,156**
US 79	12,290	10,762	$0.76	$8,186	15,490	13,624	$0.86	$11,755	19,711	17,664	$0.96	$16,895	23,291	20,914	$1.28	$26,834	25,053	22,720	$1.75	$39,671
CR 138	7,296	6,474	$0.76	$4,903	7,276	6,423	$0.82	$5,259	11,965	10,695	$0.92	$9,816	14,391	12,787	$1.23	$15,694	16,280	14,522	$1.64	$23,811
Pecan St.	2,483	2,206	$0.58	$1,281	2,658	2,331	$0.64	$1,495	3,836	3,380	$0.72	$2,445	5,907	5,138	$0.97	$4,978	7,030	6,126	$1.30	$7,945
N. of Cameron Rd. (ML Plaza)	**32,475**	**26,861**	**$1.80**	**$48,217**	**41,194**	**34,244**	**$2.05**	**$70,208**	**56,341**	**47,516**	**$2.28**	**$108,354**	**72,883**	**61,612**	**$3.03**	**$186,911**	**91,076**	**77,186**	**$4.14**	**$319,402**
Birds' Nest Airport	150	118	$1.83	$216	164	136	$2.44	$332	227	192	$2.72	$522	996	873	$3.04	$2,656	3,446	3,083	$3.86	$11,906
Howard Ln/Gregg Manor	590	480	$0.60	$287	1,489	1,240	$0.66	$824	2,831	2,351	$0.75	$1,755	4,669	3,866	$0.98	$3,801	9,283	7,747	$1.32	$10,252
Blue Bluff Rd.	144	131	$0.46	$61	124	111	$0.51	$57	462	415	$0.56	$231	1,394	1,259	$0.75	$941	2,354	2,133	$1.01	$2,156
Bloor Rd/FM 973	622	564	$0.58	$325	849	761	$0.64	$487	3,555	3,206	$0.73	$2,348	8,134	7,218	$0.96	$6,899	6,522	5,747	$1.41	$8,110
N. of FM 969 (ML Plaza)	**27,801**	**21,750**	**$1.83**	**$39,811**	**34,344**	**27,178**	**$2.07**	**$56,161**	**42,333**	**33,789**	**$2.31**	**$78,032**	**53,214**	**42,532**	**$3.09**	**$131,564**	**67,979**	**54,593**	**$4.23**	**$230,972**
FM 969	3,399	2,570	$0.61	$1,578	4,132	3,165	$0.70	$2,220	5,739	4,572	$0.75	$3,427	12,379	9,820	$1.00	$9,826	15,260	12,183	$1.34	$16,312
Harold Green Rd.	428	380	$0.47	$177	108	81	$0.54	$44	135	106	$0.61	$65	1,067	854	$0.91	$775	2,365	1,901	$1.20	$2,284
Pearce Ln.	940	688	$0.62	$428	1,342	1,015	$0.67	$676	2,721	2,072	$0.75	$1,546	7,142	5,313	$0.99	$5,279	4,863	3,698	$1.32	$4,889
N. of Elroy Rd (ML Plaza)	**17,314**	**13,402**	**$1.84**	**$24,625**	**20,418**	**16,169**	**$2.09**	**$33,779**	**29,736**	**23,900**	**$2.35**	**$56,204**	**38,400**	**30,803**	**$3.16**	**$97,447**	**54,647**	**43,851**	**$4.37**	**$191,572**
Elroy Rd.	387	348	$0.75	$262	740	668	$0.88	$588	955	877	$0.97	$850	2,047	1,850	$1.26	$2,335	3,746	3,288	$1.73	$5,689
FM 812	591	525	$0.58	$305	820	764	$0.64	$485	1,125	1,056	$0.71	$751	2,664	2,389	$0.98	$2,330	2,785	2,452	$1.32	$3,247
Moore Rd.	50	44	$0.47	$21	66	63	$0.49	$31	107	101	$0.54	$55	172	162	$0.73	$118	124	116	$0.99	$115
SH 130 Total	**127,659**	**104,458**		**$159,259**	**156,000**	**128,201**		**$222,174**	**219,963**	**183,538**		**$347,954**	**306,169**	**255,105**		**$629,021**	**388,752**	**324,757**		**$1,114,141**
Annual Revenue in Millions				**$52.6**				**$73.3**				**$114.8**				**$207.6**				**$367.7**

Note: The average toll is calculated by Revenue divided by Paying Transactions.

8.2.5 SH 130 Traffic and Revenue Forecasts

Table 8.15 provides the forecasted transactions and revenue for the entire 35-year forecast period on a fiscal year basis. Average Weekday Traffic (AWT) statistics are provided on the left side of the table, and annual values are provided on the right side along with statistics related to truck traffic. The values for FY 2008 to FY 2014 are the observed transactions and reported revenue for the first seven years of operation. While TxDOT reports transactions in the fiscal year in which they occur, annual revenue is based on the fiscal year in which it is collected. The revenue collected in each fiscal year varies due to the delay in receipt of PBM tolls, the collection efficiency of the PBM transactions as well as other adjustments implemented by TxDOT. In contrast, the model forecasts assume that transactions and revenue occur simultaneously and therefore do not reflect the lagging pattern of receiving PBM toll revenue. Note that the forecasted revenue does account for the loss of revenue from uncollected transactions.

As shown in Table 8.15, SH 130 continues to show significant growth, reflecting the on-going development in the corridor. Transaction growth of 20.1 percent occurred in FY 2013 which included the implementation of the 25 percent increase in toll rates. Similarly, FY 2014 also demonstrated transaction growth of approximately 13 percent that occurred during the first year of the CPI-based annual toll escalation of 1.5 percent. From 2009 to 2014, SH 130 has a compounded annual growth rate of nearly 14 percent despite the effects of the 2008 recession and the 25 percent toll increase in 2013. This growth rate is likely related to the significant development that is occurring in the corridor.

In the forecast period beginning in FY 2015, Stantec adjusted that growth trend downward to intercept the model-based forecasts by FY 2021. The forecasted transaction growth then transitions downward to approximately 2.0 percent per year by 2042. The assumed share of paying transactions is relatively constant at approximately 83 percent, and the combined ETC share (autos and trucks) increases gradually to nearly 70 percent by 2042 from 66 percent in 2015. For FY 2015, revenue growth is estimated at 5.2 percent due to the difference in the reporting basis of revenue between TxDOT and the assumptions in the modeling process, as described above. Beyond FY 2015, revenue growth generally follows a trend established by a sum of transaction growth and the annual toll escalation assumed for each year. The truck percentage share of paying transactions and revenue is shown in the last two columns of the table. Trucks are approximately 8 percent of transactions in FY 2015 but increase to 11 percent over the forecast period. Truck revenue increases from 17 percent of the total revenue to 21 percent by FY 2042.

Table 8.15 SH 130 Transaction and Revenue Forecasts

Fiscal Year	Average Weekday Transactions (AWT)					Annual Transactions & Revenue					
	Total Transactions	YOY Growth	Total Transactions ETC Share	Paying Transactions	Paying Percentage	Annual Total Transactions (in 000s)	Annual Paying Transactions (in 000s)	Annual Revenue (in $000s)	YOY Growth	3+ Axle Truck Percentage	
										Paying Transactions	Revenue
2008	***58,306***		***67.0%***	*51,747*	*89%*	***19,287***	*17,117*	*$19,456*			
2009	***73,099***	***25.4%***	***67.0%***	*64,875*	*89%*	***24,457***	*21,706*	*$27,114*	***39.4%***		
2010	***83,997***	***14.9%***	***67.4%***	*74,547*	*89%*	***28,298***	*25,115*	***$34,408***	***26.9%***		
2011	***89,961***	***7.1%***	***64.3%***	*79,840*	*89%*	***30,583***	*27,142*	***$36,237***	***5.3%***		
2012	***101,957***	***13.3%***	***64.0%***	*89,000*	*87%*	***34,352***	*29,986*	***$40,735***	***12.4%***		
2013	***122,476***	***20.1%***	***64.5%***	*100,861*	*82%*	***41,366***	*34,065*	***$54,492***	***33.8%***		
2014	***138,223***	***12.9%***	***63.0%***	*111,557*	*81%*	***46,211***	*37,296*	***$67,092***	***23.1%***		
2015	151,253	9.4%	65.9%	123,955	82%	49,913	40,905	$70,573	5.2%	8.5%	17.1%
2016	165,488	9.4%	66.7%	136,297	82%	54,611	44,978	$78,930	11.8%	8.5%	17.2%
2017	179,452	8.4%	67.1%	148,256	83%	59,219	48,924	$87,431	10.8%	8.5%	17.2%
2018	192,802	7.4%	67.6%	159,756	83%	63,625	52,719	$95,948	9.7%	8.5%	17.2%
2019	205,220	6.4%	68.1%	170,526	83%	67,723	56,273	$104,280	8.7%	8.4%	17.2%
2020	216,390	5.4%	68.6%	180,367	83%	71,409	59,521	$112,226	7.6%	8.4%	17.3%
2021	225,743	4.3%	68.7%	188,340	83%	74,495	62,152	$119,705	6.7%	8.4%	17.3%
2022	234,406	3.8%	68.7%	195,538	83%	77,354	64,527	$127,186	6.2%	8.4%	17.3%
2023	243,059	3.7%	68.7%	202,722	83%	80,209	66,898	$135,042	6.2%	8.4%	17.4%
2024	251,700	3.6%	68.6%	209,894	83%	83,061	69,265	$143,245	6.1%	8.5%	17.6%
2025	260,329	3.4%	68.6%	217,057	83%	85,909	71,629	$151,753	5.9%	8.6%	17.8%
2026	268,948	3.3%	68.6%	224,211	83%	88,753	73,990	$161,100	6.2%	8.7%	17.9%
2027	277,556	3.2%	68.6%	231,355	83%	91,593	76,347	$171,097	6.2%	8.8%	18.1%
2028	286,152	3.1%	68.5%	238,491	83%	94,430	78,702	$181,525	6.1%	8.8%	18.2%
2029	294,738	3.0%	68.5%	245,617	83%	97,263	81,054	$192,402	6.0%	8.9%	18.4%
2030	303,312	2.9%	68.5%	252,733	83%	100,093	83,402	$203,744	5.9%	9.0%	18.5%
2031	311,674	2.8%	68.5%	259,748	83%	102,853	85,717	$216,195	6.1%	9.1%	18.8%
2032	319,933	2.6%	68.6%	266,713	83%	105,578	88,015	$229,529	6.2%	9.3%	19.1%
2033	328,191	2.6%	68.6%	273,679	83%	108,303	90,314	$243,491	6.1%	9.5%	19.5%
2034	336,449	2.5%	68.7%	280,644	83%	111,028	92,613	$258,109	6.0%	9.7%	19.8%
2035	344,708	2.5%	68.7%	287,609	83%	113,754	94,911	$273,409	5.9%	9.9%	20.0%
2036	352,966	2.4%	68.8%	294,574	83%	116,479	97,210	$289,419	5.9%	10.1%	20.3%
2037	361,224	2.3%	68.8%	301,540	83%	119,204	99,508	$306,171	5.8%	10.3%	20.6%
2038	369,483	2.3%	68.8%	308,505	83%	121,929	101,807	$323,694	5.7%	10.4%	20.8%
2039	377,741	2.2%	68.9%	315,470	84%	124,654	104,105	$342,021	5.7%	10.6%	21.0%
2040	385,999	2.2%	68.9%	322,435	84%	127,380	106,404	$361,184	5.6%	10.7%	21.3%
2041	393,806	2.0%	68.9%	328,979	84%	129,956	108,563	$379,943	5.2%	10.7%	21.3%
2042	401,353	1.9%	68.9%	335,284	84%	132,446	110,644	$398,840	5.0%	10.7%	21.3%

Revenue for PBM patrons was not allocated by each toll facility until September 2009; therefore, annual revenues shown for FY 2008 - FY 2009 are estimated.

Actual Average Weekday Transactions and Annual Revenue

8.3 SH 45 SE

Similar to the other roadways, the toll diversion model produces traffic estimates for several model years including: 2015, 2020, 2030, and 2040. The initial model forecasts for the SH 45 SE have been adjusted by post-processing to account for variations in the base year model calibration estimates and other minor variations in future trends. The model forecasts were also adjusted to transition from the current high levels of annual growth observed in recent years to a more logical trend of future growth predicted by the model. Gross revenue estimates were then prepared by multiplying the traffic, in terms of transactions, at the toll locations by the effective toll structure by vehicle type and payment type for each year. Adjustments were included to reflect the effective collection rates for both ETC and PBM transactions. Similar to SH 130, annual estimates of transactions and revenue for were generated using an annualization factor of 330.

8.3.1 SH 45 SE Schematic Traffic Diagrams

Figure 8.12 through Figure 8.16 display the traffic along SH 45 SE for the model (calendar) years 2013, 2015, 2020, 2030, and 2040. These diagrams represent the unadjusted model outputs for average weekday transactions and are intended to provide the reader a sense of the scale of the traffic volumes across the facility as well as the interchange areas.

Figure 8.12 SH 45 SE Average Weekday Traffic – 2013 Model Calibration Year

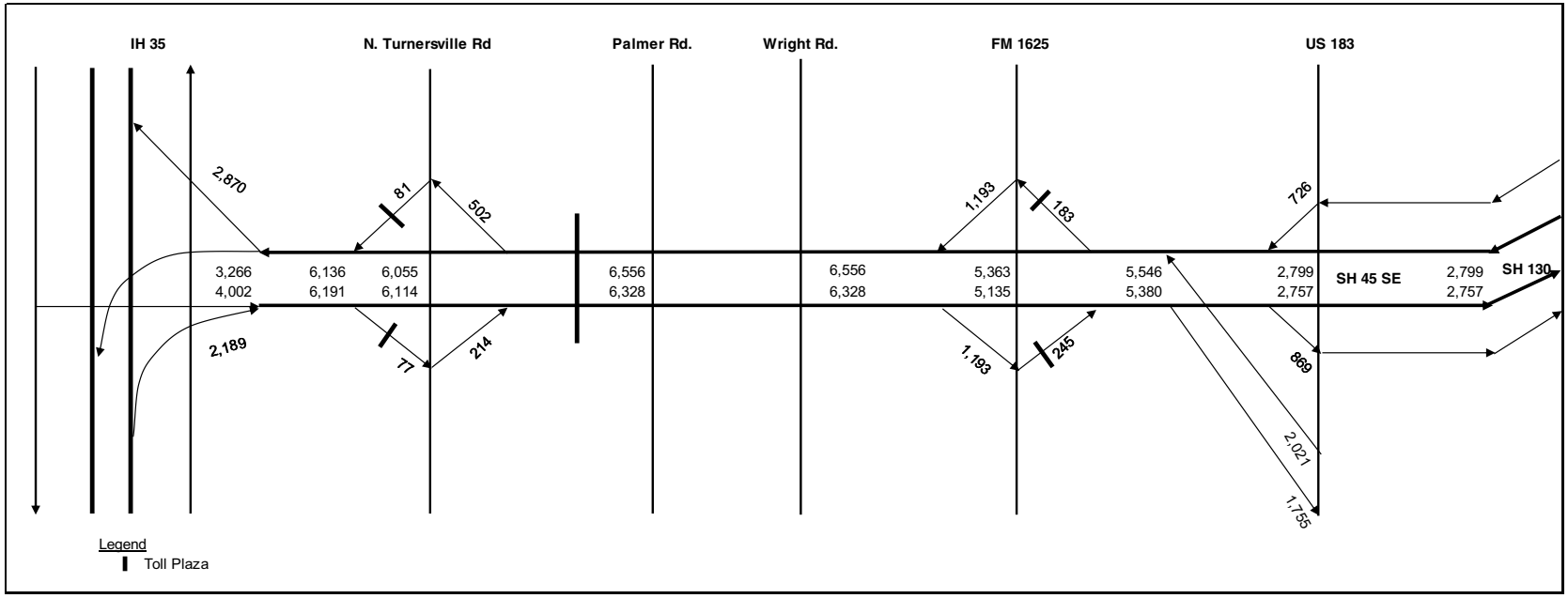


Figure 8.13 SH 45 SE Average Weekday Traffic – 2015 Model Year

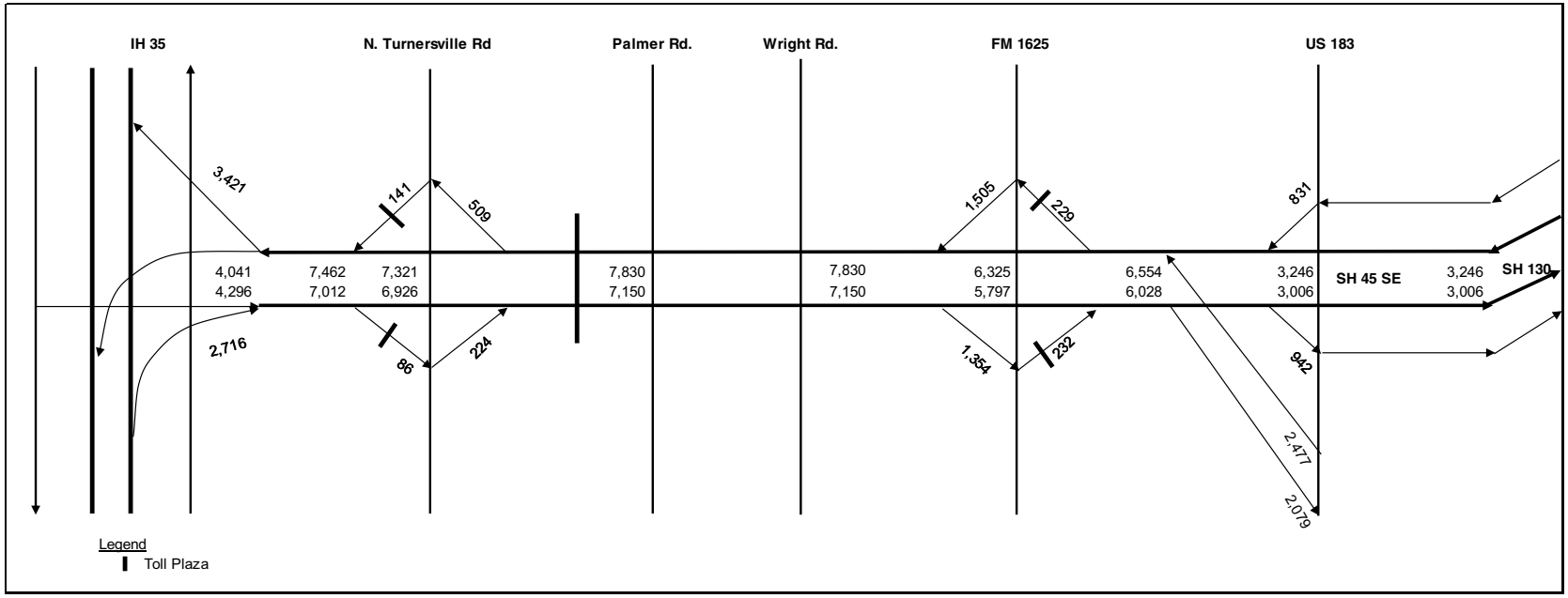


Figure 8.14 SH 45 SE Average Weekday Traffic – 2020 Model Year

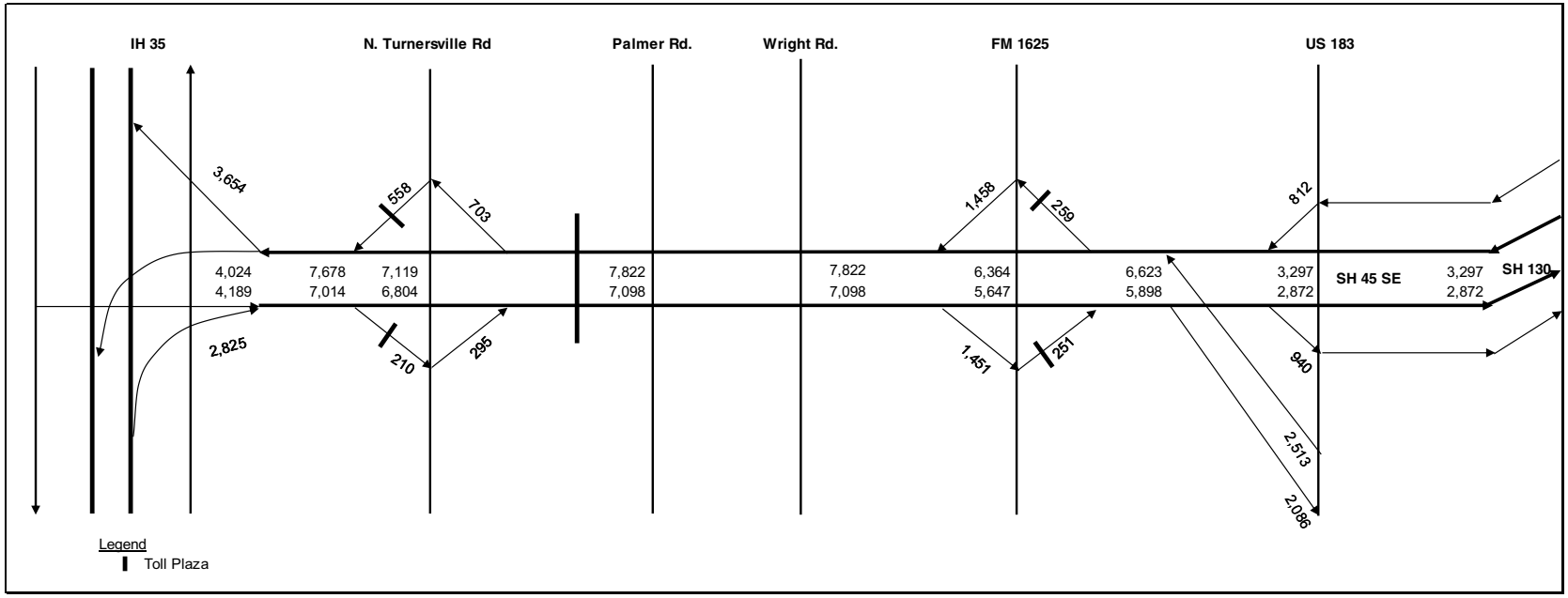


Figure 8.15 SH 45 SE Average Weekday Traffic – 2030 Model Year

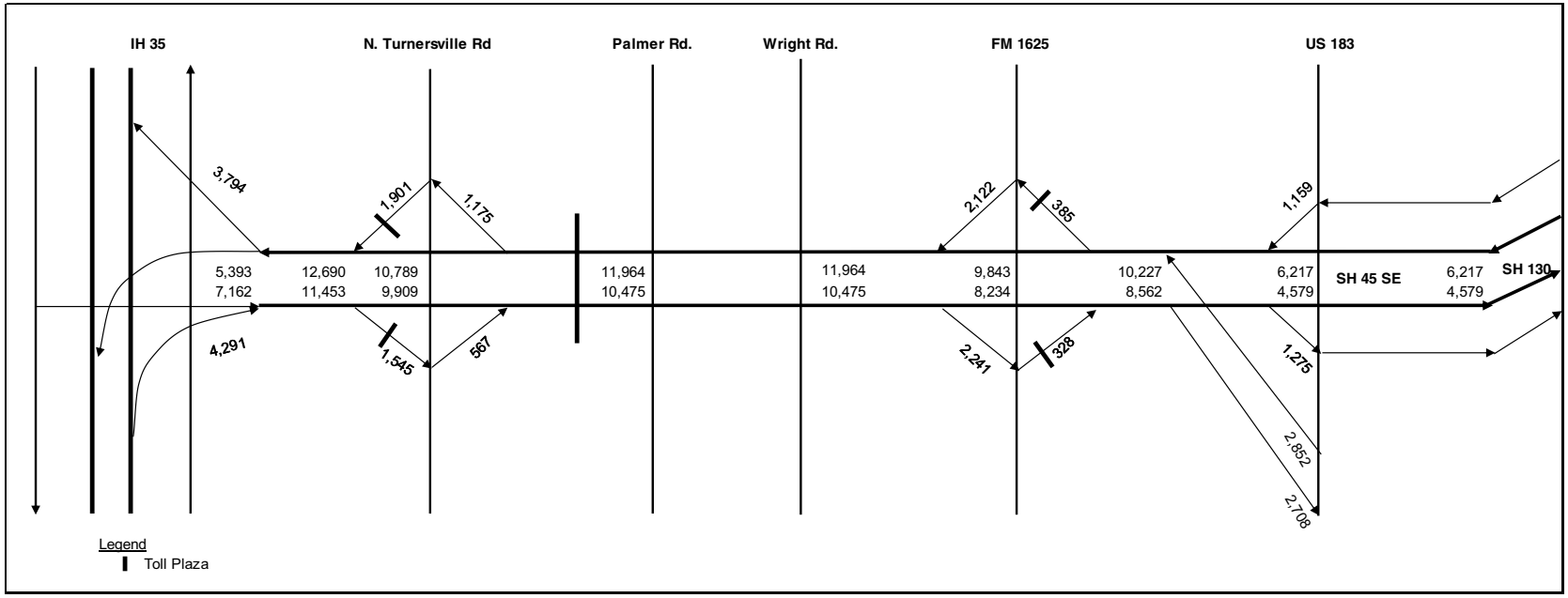
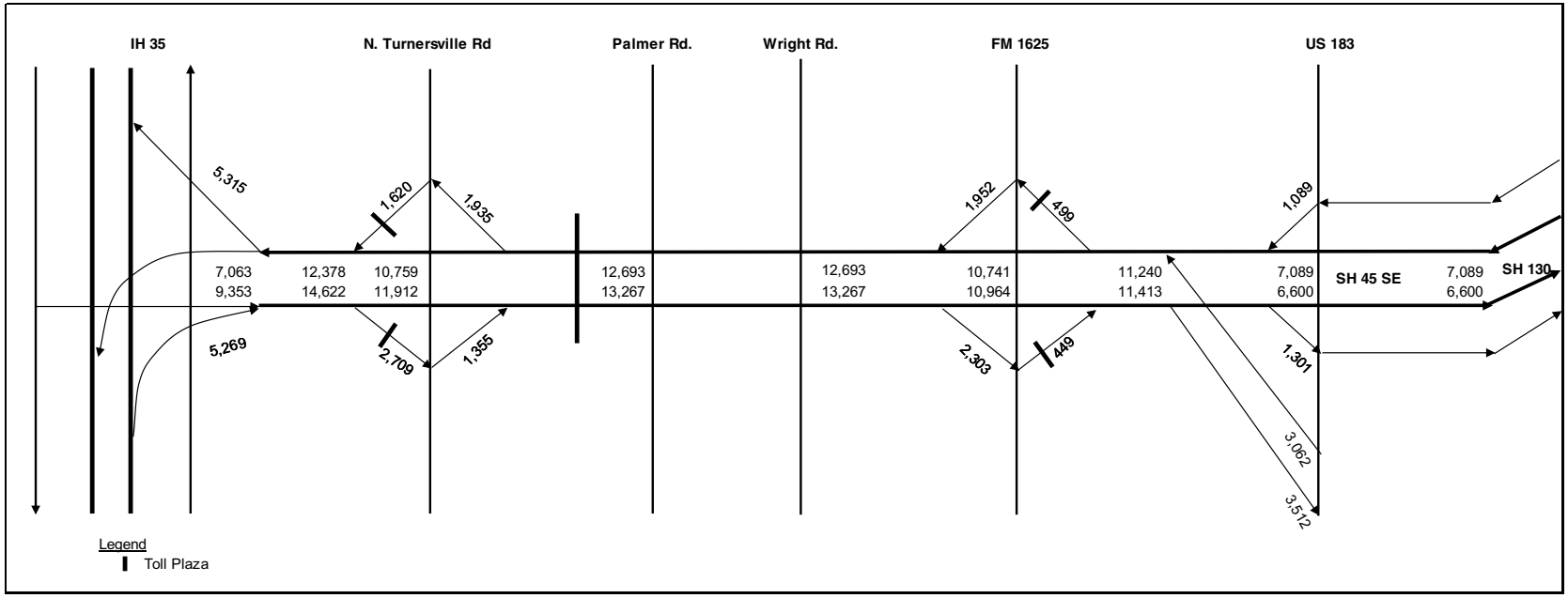


Figure 8.16 SH 45 SE Average Weekday Traffic – 2040 Model Year



8.3.2 SH 45 SE Screenline Analysis

Table 8.16 provides a listing of the traffic for the SH 45 SE corridor screenline by horizon year. This screenline is depicted earlier in this chapter as part of Figure 8.6. Note that these values are unadjusted model estimates for the model's calendar year forecasts and are intended to indicate the future demand of traffic in the corridor as estimated by the model as well as the share of traffic using SH 45 SE. From this table, SH 45 SE is the dominant roadway in this largely rural and undeveloped corridor. SH 45 SE gradually increases its share of traffic from 50 percent to 56 percent over the forecast period. Total screenline traffic increases from approximately 25,400 in 2013 to 46,300 in 2040, which implies an annual compounded growth rate of 2.2 percent over the 28-year period.

Table 8.16 Screenline 45SE-A Unadjusted Model Output

Locations	2013	% of Screenline	2015	% of Screenline	2020	% of Screenline	2030	% of Screenline	2040	% of Screenline
FM 1327	11,238	44.2%	13,277	44.7%	13,382	43.8%	13,503	34.2%	12,959	28.0%
SH 45 SE ML	**12,885**	**50.6%**	**14,980**	**50.5%**	**14,920**	**48.8%**	**22,440**	**56.8%**	**25,960**	**56.1%**
Turnersville Rd.	1,319	5.2%	1,423	4.8%	2,260	7.4%	3,596	9.1%	7,396	16.0%
TOTAL	**25,442**	**100.0%**	**29,680**	**100.0%**	**30,562**	**100.0%**	**39,539**	**100.0%**	**46,316**	**100.0%**

8.3.3 SH 45 SE Traffic and Revenue Assumptions

Table 8.17 provides a brief summary of the underlying assumptions in the transaction and revenue forecasts for SH 45 SE. All truck-related values in the table relate to the truck defined as 3+axle vehicles, consistent with TxDOT's transaction reports. Total estimated truck transactions increase from approximately 10.9 percent in 2015 to 12.9 percent by 2040. While auto ETC payment shares are assumed to gradually increase to nearly 70 percent by 2040, truck ETC share are assumed to remain relatively constant at approximately 59 percent. The average truck toll multiplier is approximately 2.72 times the auto rate, which reflects the observed distribution of trucks by axle group and current limitation for truck tolls capped at the rate of a 4-axle vehicle for SH 45 SE. The PBM toll surcharge is assumed to remain at 33 percent of the ETC rate. Similar to the other CTTS toll roads, the collection rates for PBM and ETC transactions are held constant over the forecast period. Over the forecast period the cost to traverse the full length of SH 45 SE will increase from $1.04 in 2015 to approximately $2.07 in 2040. This implies a rate of $0.15 per mile in 2015 which is increased to $0.30 by 2040. For the 2012 Update, Stantec had assumed an annualization factor of 300, given the limited amount of detailed data by vehicle type due to the shaped-based toll plan in place at that time, whereby vehicles are tolled based on their shape (such as single unit truck, one-trailer, etc.). For the 2014 Study, adequate data were available to justify an annualization factor of 330, consistent with the value used for SH 130.

Table 8.17 SH 45 SE Tolling and Traffic Characteristic Assumptions by Model Year

Model Year	2015	2020	2030	2040
Vehicle Type Distribution				
Autos	89.1%	89.1%	88.6%	87.1%
Trucks	10.9%	10.9%	11.4%	12.9%
Payment Type Distribution - Passenger Cars				
PBM	35.4%	34.4%	32.3%	30.2%
ETC	64.6%	65.6%	67.7%	69.8%
Payment Type Distribution - Trucks				
PBM	40.6%	40.6%	40.6%	40.6%
ETC	59.4%	59.4%	59.4%	59.4%
Toll Ratios				
Truck/Auto Ratio	2.72	2.72	2.72	2.72
PBM/ETC Toll Rate	1.33	1.33	1.33	1.33
Collection Rates				
PBM	47.7%	47.7%	47.7%	47.7%
ETC	99.7%	99.7%	99.7%	99.7%
Full Length Trip				
Distance	7.0	7.0	7.0	7.0
Rate per Mile	$0.15	$0.17	$0.22	$0.30
Toll Cost (ETC)	$1.04	$1.16	$1.54	$2.07
Annualization Factor	330	330	330	330

8.3.4 SH 45 SE Transactions and Revenue by Paypoint

SH 45 SE transaction and revenue statistics by paypoint and horizon year are listed in Table 8.18. Both total and paying transactions are provided, where paying transactions reflect the assumptions for collection efficiency for each payment type. The average toll rate represents a blend of the individual rates by payment type and vehicle type. This blended value includes a 33 percent surcharge over the ETC rates for PBM patrons. These values are calendar year values, rather than the blended estimates created for each fiscal year shown in the next section.

Average weekday total transactions on SH 45 SE range from 13,100 in 2013 to 45,860 in 2040, representing a compounded annual growth rate of 4.8 percent. During the same timeframe, average weekday revenues range from $11,000 to $91,000 and exhibit a compounded annual growth rate of 8.1 percent.

Table 8.18 SH 45 SE Average Weekday Total Transactions and Toll Revenue (Adjusted for Calibration)

Toll Location	2013				2015				2020				2030				2040			
	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue	Transactions		Avg. Toll	Revenue
	Total	Paying			Total	Paying			Total	Paying			Total	Paying			Total	Paying		
Turnersville Rd	154	123	$0.71	$87	230	197	$0.78	$154	1,129	957	$0.90	$859	5,058	4,423	$1.11	$4,911	6,356	5,533	$1.53	$8,464
Mainline Plaza - 45 SE	**12,498**	**9,921**	**$1.08**	**$10,690**	**15,176**	**12,289**	**$1.26**	**$15,484**	**21,905**	**17,823**	**$1.40**	**$24,983**	**32,945**	**26,943**	**$1.89**	**$50,945**	**38,113**	**31,551**	**$2.57**	**$80,930**
FM 1625	415	313	$0.72	$227	466	372	$0.78	$291	748	597	$0.87	$517	1,046	815	$1.17	$954	1,392	1,108	$1.58	$1,752
SH 45 SE Total	**13,067**	**10,357**		**$11,004**	**15,873**	**12,858**		**$15,929**	**23,781**	**19,377**		**$26,359**	**39,048**	**32,180**		**$56,810**	**45,860**	**38,192**		**$91,146**
Annual Revenue in Millions				**$3.6**				**$5.3**				**$8.7**				**$18.7**				**$30.1**

Note: The average toll is calculated by Revenue divided by Paying Transactions.

8.3.5 SH 45 SE Traffic and Revenue Forecasts

Table 8.19 provides the forecasted transactions and revenue for the entire 35-year forecast period on a fiscal year basis. Average weekday traffic statistics are provided on the left side of the table and annual values are provided on the right side along with statistics related to truck traffic. The values for the years FY 2008 to FY 2014 are the observed transactions and reported revenue for the first seven years of operation.

As shown in the table, SH 45 SE continues to show significant growth, reflecting the development potential in this corridor. Transaction growth of 11.8 percent occurred in FY 2013, and FY 2014 also demonstrated growth of approximately 11.3 percent. In the forecast period beginning in FY 2015, Stantec adjusted the growth trend downward to intercept the model-based forecasts by FY 2021. Following the assumed completion of SH 45 SW in 2030, the forecasted transaction growth then transitions downward to approximately 1.5 percent per year by FY 2042. The assumed share of paying transactions is relatively consistent ranging from 80 to 83 percent, and the combined ETC share (autos and trucks) increases gradually to 68 percent by FY 2042. For FY 2015, revenue growth is estimated at 7.8 percent due to the difference in the reporting basis of revenue between TxDOT and the assumptions in the modeling process, as described in the SH 130 discussion, regarding revenue recognition differences. Beyond FY 2015, revenue growth generally follows a trend established by a sum of transaction growth and the annual toll escalation assumed for each year. The truck percentage share of paying transactions and revenue is shown in the last two columns of the table. Paying truck transactions are approximately 11 percent of total paying transactions in FY 2015 but increase to 12 percent over the forecast period. Truck revenue increases from 21 percent of the total revenue to 25 percent by FY 2042.

Table 8.19 SH 45 SE Transaction and Revenue Forecasts

Fiscal Year	Average Weekday Transactions (AWT)					Annual Transactions & Revenue					
										3+ Axle Truck Percentage	
	Total Transactions	YOY Growth	Total Transactions ETC Share	Paying Transactions	Paying Percentage	Annual Total Transactions (in 000s)	Annual Paying Transactions (in 000s)	Annual Revenue (in $000s)	YOY Growth	Paying Transactions	Revenue
2008											
2009				*6,609*				***$475***			
2010	***8,553***		***63.6%***	*6,952*	*81%*	***2,864***	*2,328*	***$3,210***			
2011	***9,423***	***10.2%***	***62.7%***	*7,659*	*81%*	***3,178***	*2,583*	***$3,596***	***12.0%***		
2012	***11,302***	***19.9%***	***56.6%***	*9,037*	*80%*	***3,842***	*3,072*	***$4,246***	***18.1%***		
2013	***12,636***	***11.8%***	***61.8%***	*10,061*	*80%*	***4,300***	*3,424*	***$4,274***	***0.7%***		
2014	***14,069***	***11.3%***	***61.0%***	*11,203*	*80%*	***4,743***	*3,777*	***$4,680***	***9.5%***		
2015	15,395	9.4%	63.0%	12,385	80%	5,080	4,087	$5,046	7.8%	10.6%	21.1%
2016	16,882	9.7%	64.2%	13,686	81%	5,571	4,516	$5,675	12.4%	10.6%	21.2%
2017	18,427	9.2%	64.4%	14,956	81%	6,081	4,935	$6,329	11.5%	10.7%	21.3%
2018	20,011	8.6%	64.5%	16,260	81%	6,604	5,366	$7,024	11.0%	10.7%	21.5%
2019	21,621	8.0%	64.7%	17,588	81%	7,135	5,804	$7,744	10.3%	10.7%	21.5%
2020	23,241	7.5%	64.9%	18,929	81%	7,669	6,247	$8,461	9.3%	10.6%	21.1%
2021	24,808	6.7%	65.1%	20,229	82%	8,187	6,676	$9,231	9.1%	10.6%	21.1%
2022	26,346	6.2%	65.3%	21,508	82%	8,694	7,098	$10,051	8.9%	10.6%	21.3%
2023	27,881	5.8%	65.4%	22,787	82%	9,201	7,520	$10,905	8.5%	10.7%	21.4%
2024	29,413	5.5%	65.6%	24,066	82%	9,706	7,942	$11,794	8.2%	10.7%	21.6%
2025	30,942	5.2%	65.8%	25,346	82%	10,211	8,364	$12,719	7.8%	10.7%	21.7%
2026	32,469	4.9%	66.0%	26,627	82%	10,715	8,787	$13,726	7.9%	10.8%	21.8%
2027	33,992	4.7%	66.2%	27,908	82%	11,217	9,210	$14,800	7.8%	10.8%	22.0%
2028	35,512	4.5%	66.3%	29,189	82%	11,719	9,632	$15,924	7.6%	10.8%	22.1%
2029	37,029	4.3%	66.5%	30,471	82%	12,220	10,055	$17,100	7.4%	10.9%	22.2%
2030	38,544	4.1%	66.7%	31,753	82%	12,719	10,478	$18,331	7.2%	10.9%	22.3%
2031	39,502	2.5%	66.9%	32,578	82%	13,036	10,751	$19,372	5.7%	11.0%	22.5%
2032	40,184	1.7%	67.0%	33,175	83%	13,261	10,948	$20,334	5.0%	11.1%	22.8%
2033	40,865	1.7%	67.2%	33,772	83%	13,485	11,145	$21,337	4.9%	11.3%	23.0%
2034	41,546	1.7%	67.4%	34,371	83%	13,710	11,343	$22,382	4.9%	11.4%	23.3%
2035	42,227	1.6%	67.5%	34,972	83%	13,935	11,541	$23,471	4.9%	11.5%	23.5%
2036	42,908	1.6%	67.7%	35,573	83%	14,160	11,739	$24,605	4.8%	11.7%	23.7%
2037	43,590	1.6%	67.9%	36,175	83%	14,385	11,938	$25,785	4.8%	11.8%	23.9%
2038	44,271	1.6%	68.0%	36,779	83%	14,609	12,137	$27,015	4.8%	11.9%	24.1%
2039	44,952	1.5%	68.2%	37,384	83%	14,834	12,337	$28,295	4.7%	12.0%	24.3%
2040	45,633	1.5%	68.4%	37,990	83%	15,059	12,537	$29,628	4.7%	12.1%	24.5%
2041	46,319	1.5%	68.4%	38,574	83%	15,285	12,729	$30,990	4.6%	12.2%	24.6%
2042	47,014	1.5%	68.4%	39,152	83%	15,515	12,920	$32,398	4.5%	12.2%	24.6%

Revenue for PBM patrons was not allocated by each toll facility until September 2009; therefore, annual revenues shown for FY 2008 - FY 2009 are estimated.

Actual Average Weekday Transactions and Annual Revenue

8.4 TOTAL CTTS TRAFFIC & REVENUE FORECASTS

Table 8.20 lists the paying AWT transactions and revenue by CTTS roadway, along with a grand total for the system. The growth rate for each estimate is provided as well.

Table 8.21 lists the total transactions and annual revenue for the combined CTTS. This table provides all of the statistics is the same format shown for the individual elements and provides system-wide statistics for total and paying transactions as well as ETC share and truck usage estimates.

Table 8.22 provides a comparison of the paying AWT transactions and annual revenue between the 2012 Update and the current forecasts. As shown in the table, the system-wide value of paying transactions is approximately 16 percent higher in the early years of the forecast due primarily to the higher level of recent growth in both SH 130 and SH 45 SE. The difference in paying transactions does decrease to about 12 percent by FY 2030 and generally is about 9 to 10 percent higher thereafter to 2042. In contrast, revenue is approximately 11 percent higher in FY 2015 and then gradually declines to equal the values from the 2012 Update by FY 2025. This gradual decline towards the prior forecast values is due to several changes in the forecasting assumptions from the conditions used in the prior forecasts. These changes include:

- Lower toll escalation rates in the early forecast years. In the 2012 Update it was assumed that the annual toll escalation would be approximately 3.0 percent per year. The 2014 Study assumes starting values at 1.7 percent per year with a gradual escalation up to 3.0 percent by the year 2030, as discussed previously in Chapter 4.

- Lower share of ETC transactions. The 2012 Update had assumed that the ETC share of transactions would increase towards approximately 80 percent over the forecast period, except for SH 45 SE. Recent trends indicate that ETC shares are stable or declining slightly. As a result, the 2014 Study assumed that ETC shares will gradually increase towards 75 percent by 2020 and then remain relatively constant over the remainder of the forecast period.

- Lower level of collected PBM transactions. Analysis of the PBM collections data for the 2012 Update indicated that approximately 55 percent of the PBM transactions were collected, while the latest data for the first 6 months of FY 2014 indicate that collection for PBM transactions is approximately 48 percent. For the 2014 Study, Stantec assumed the PBM collection percent would remain at approximately 48 percent.

- Reduced share of SH 130 truck traffic in the current forecast. Stantec reviewed the estimation of truck trips in the CAMPO regional model and determined that this model is likely over-predicting truck traffic in the future and reduced the truck trip generation to be consistent with the overall trip generation of the non-commercial trip purposes.

Table 8.20 Paying Transactions and Revenue Forecasts by CTTS Roadway

Fiscal Year	Average Weekday Paying Transactions						Annual Revenue (in $000s)					
	SH 45 N	Loop 1	SH 130	45 SE	CTTS Total	YOY Growth	SH 45 N	Loop 1	SH 130	45 SE	CTTS Total	YOY Growth
2008	*84,058*	*50,560*	*51,747*		*186,366*		***$17,987***	***$11,463***	***$19,456***		***$48,906***	
2009	*88,687*	*50,871*	*64,875*	*6,609*	*204,433*	*9.7%*	***$19,882***	***$11,918***	***$27,114***	***$475***	***$58,914***	***20.5%***
2010	*90,879*	*52,527*	*74,547*	*6,952*	*217,953*	*6.6%*	***$19,799***	***$11,937***	***$34,408***	***$3,210***	***$66,144***	***12.3%***
2011	*94,478*	*54,587*	*79,840*	*7,659*	*228,905*	*5.0%*	***$20,268***	***$12,317***	***$36,237***	***$3,596***	***$68,822***	***4.0%***
2012	*100,302*	*57,291*	*89,000*	*9,037*	*246,593*	*7.7%*	***$21,945***	***$13,015***	***$40,735***	***$4,246***	***$75,695***	***10.0%***
2013	*100,665*	*55,032*	*100,861*	*10,061*	*266,619*	*8.1%*	***$29,075***	***$16,143***	***$54,492***	***$4,274***	***$103,985***	***37.4%***
2014	*101,640*	*54,116*	*111,557*	*11,203*	*278,516*	*4.5%*	***$34,831***	***$18,560***	***$67,092***	***$4,680***	***$125,163***	***20.4%***
2015	120,606	64,037	123,955	12,385	320,983	15.2%	$41,922	$23,123	$70,573	$5,046	$140,665	12.4%
2016	122,816	66,704	136,297	13,686	339,503	5.8%	$43,700	$24,595	$78,930	$5,675	$152,900	8.7%
2017	124,472	69,049	148,256	14,956	356,732	5.1%	$45,312	$25,948	$87,431	$6,329	$165,020	7.9%
2018	126,149	71,473	159,756	16,260	373,638	4.7%	$46,983	$27,375	$95,948	$7,024	$177,330	7.5%
2019	127,847	73,981	170,526	17,588	389,942	4.4%	$48,715	$28,881	$104,280	$7,744	$189,621	6.9%
2020	129,566	76,574	180,367	18,929	405,435	4.0%	$50,512	$30,470	$112,226	$8,461	$201,669	6.4%
2021	131,953	78,518	188,340	20,229	419,040	3.4%	$52,919	$32,085	$119,705	$9,231	$213,939	6.1%
2022	134,708	80,147	195,538	21,508	431,900	3.1%	$55,715	$33,755	$127,186	$10,051	$226,707	6.0%
2023	137,522	81,809	202,722	22,787	444,839	3.0%	$58,659	$35,512	$135,042	$10,905	$240,119	5.9%
2024	140,393	83,505	209,894	24,066	457,859	2.9%	$61,759	$37,361	$143,245	$11,794	$254,159	5.8%
2025	143,325	85,237	217,057	25,346	470,965	2.9%	$65,023	$39,306	$151,753	$12,719	$268,800	5.8%
2026	146,318	87,004	224,211	26,627	484,160	2.8%	$68,459	$41,352	$161,100	$13,726	$284,637	5.9%
2027	149,374	88,808	231,355	27,908	497,445	2.7%	$72,077	$43,504	$171,097	$14,800	$301,477	5.9%
2028	152,493	90,650	238,491	29,189	510,823	2.7%	$75,886	$45,769	$181,525	$15,924	$319,104	5.8%
2029	155,678	92,529	245,617	30,471	524,295	2.6%	$79,896	$48,151	$192,402	$17,100	$337,549	5.8%
2030	158,929	94,448	252,733	31,753	537,863	2.6%	$84,118	$50,658	$203,744	$18,331	$356,850	5.7%
2031	161,307	96,298	259,748	32,578	549,931	2.2%	$88,026	$53,229	$216,195	$19,372	$376,822	5.6%
2032	163,254	98,129	266,713	33,175	561,271	2.1%	$91,850	$55,898	$229,529	$20,334	$397,611	5.5%
2033	165,224	99,995	273,679	33,772	572,670	2.0%	$95,839	$58,702	$243,491	$21,337	$419,370	5.5%
2034	167,217	101,897	280,644	34,371	584,130	2.0%	$100,002	$61,645	$258,109	$22,382	$442,139	5.4%
2035	169,235	103,835	287,609	34,972	595,651	2.0%	$104,346	$64,737	$273,409	$23,471	$465,962	5.4%
2036	171,277	105,810	294,574	35,573	607,234	1.9%	$108,878	$67,983	$289,419	$24,605	$490,885	5.3%
2037	173,344	107,822	301,540	36,175	618,881	1.9%	$113,608	$71,392	$306,171	$25,785	$516,956	5.3%
2038	175,436	109,873	308,505	36,779	630,592	1.9%	$118,542	$74,973	$323,694	$27,015	$544,224	5.3%
2039	177,553	111,962	315,470	37,384	642,369	1.9%	$123,691	$78,732	$342,021	$28,295	$572,739	5.2%
2040	179,695	114,092	322,435	37,990	654,212	1.8%	$129,064	$82,680	$361,184	$29,628	$602,557	5.2%
2041	181,856	116,260	328,979	38,574	665,668	1.8%	$134,664	$86,851	$379,943	$30,990	$632,448	5.0%
2042	184,038	118,469	335,284	39,152	676,943	1.7%	$140,505	$91,245	$398,840	$32,398	$662,988	4.8%

Notes: 1) SH 45 SE opened in May 2009 but did not become part of the CTTS until September 2012; therefore, it is not included in CTTS totals until FY 2013.
2) Revenue includes PBM surcharge (33 percent of ETC toll).
3) ***Actual Annual Revenue***

Table 8.21 Total CTTS Transaction and Revenue Forecasts

Fiscal Year	Average Weekday Transactions (AWT)					Annual Transactions & Revenue					
										3+ Axle Truck Percentage	
	Total Transactions	YOY Growth	Total Transactions ETC Share	Paying Transactions	Paying Percentage	Annual Total Transactions (in 000s)	Annual Paying Transactions (in 000s)	Annual Revenue (in $000s)	YOY Growth	Paying Transactions	Revenue
2008	***204,133***			*186,366*	*91%*	***65,940***	*60,185*	***$48,906***			
2009	***224,276***	***9.9%***	***73.7%***	*204,433*	*91%*	***73,108***	*66,617*	***$58,914***	***20.5%***		
2010	***239,343***	***6.7%***	***74.1%***	*217,953*	*91%*	***78,529***	*71,485*	***$66,144***	***12.3%***		
2011	***251,437***	***5.1%***	***71.6%***	*228,905*	*91%*	***83,010***	*75,539*	***$68,822***	***4.0%***		
2012	***273,411***	***8.7%***	***71.4%***	*246,593*	*90%*	***90,032***	*81,164*	***$75,695***	***10.0%***		
2013	***310,671***	***13.6%***	***71.8%***	*266,619*	*86%*	***102,507***	*87,898*	***$103,985***	***37.4%***		
2014	***330,988***	***6.5%***	***70.0%***	*278,516*	*84%*	***109,049***	*91,708*	***$125,163***	***20.4%***		
2015	375,479	13.4%	72.7%	320,983	85%	121,820	104,078	$140,665	12.4%	5.8%	13.7%
2016	396,069	5.5%	73.1%	339,503	86%	128,566	110,141	$152,900	8.7%	6.0%	14.1%
2017	415,127	4.8%	73.5%	356,732	86%	134,819	115,786	$165,020	7.9%	6.1%	14.4%
2018	433,688	4.5%	73.9%	373,638	86%	140,908	121,324	$177,330	7.5%	6.3%	14.6%
2019	451,422	4.1%	74.4%	389,942	86%	146,723	126,662	$189,621	6.9%	6.4%	14.9%
2020	467,999	3.7%	74.9%	405,435	87%	152,156	131,732	$201,669	6.4%	6.5%	15.1%
2021	483,445	3.3%	75.0%	419,040	87%	157,208	136,179	$213,939	6.1%	6.6%	15.2%
2022	498,598	3.1%	74.9%	431,900	87%	162,159	140,379	$226,707	6.0%	6.6%	15.3%
2023	513,843	3.1%	74.8%	444,839	87%	167,139	144,603	$240,119	5.9%	6.7%	15.5%
2024	529,180	3.0%	74.7%	457,859	87%	172,149	148,854	$254,159	5.8%	6.8%	15.7%
2025	544,613	2.9%	74.6%	470,965	86%	177,189	153,133	$268,800	5.8%	6.9%	15.9%
2026	560,145	2.9%	74.5%	484,160	86%	182,261	157,440	$284,637	5.9%	7.0%	16.1%
2027	575,777	2.8%	74.4%	497,445	86%	187,364	161,775	$301,477	5.9%	7.1%	16.3%
2028	591,511	2.7%	74.3%	510,823	86%	192,500	166,140	$319,104	5.8%	7.2%	16.5%
2029	607,351	2.7%	74.3%	524,295	86%	197,670	170,535	$337,549	5.8%	7.3%	16.7%
2030	623,299	2.6%	74.2%	537,863	86%	202,874	174,961	$356,850	5.7%	7.4%	16.9%
2031	637,351	2.3%	74.2%	549,931	86%	207,464	178,901	$376,822	5.6%	7.5%	17.1%
2032	650,478	2.1%	74.2%	561,271	86%	211,754	182,605	$397,611	5.5%	7.7%	17.4%
2033	663,670	2.0%	74.2%	572,670	86%	216,065	186,329	$419,370	5.5%	7.8%	17.6%
2034	676,927	2.0%	74.2%	584,130	86%	220,397	190,072	$442,139	5.4%	7.9%	17.8%
2035	690,251	2.0%	74.2%	595,651	86%	224,750	193,834	$465,962	5.4%	8.0%	18.1%
2036	703,643	1.9%	74.2%	607,234	86%	229,124	197,616	$490,885	5.3%	8.2%	18.3%
2037	717,103	1.9%	74.2%	618,881	86%	233,521	201,419	$516,956	5.3%	8.3%	18.5%
2038	730,634	1.9%	74.2%	630,592	86%	237,940	205,242	$544,224	5.3%	8.4%	18.7%
2039	744,235	1.9%	74.3%	642,369	86%	242,382	209,087	$572,739	5.2%	8.5%	18.9%
2040	757,909	1.8%	74.3%	654,212	86%	246,847	212,952	$602,557	5.2%	8.6%	19.1%
2041	771,204	1.8%	74.3%	665,668	86%	251,186	216,689	$632,448	5.0%	8.6%	19.1%
2042	784,320	1.7%	74.2%	676,943	86%	255,466	220,366	$662,988	4.8%	8.6%	19.1%

Notes: 1) SH 45 SE opened in May 2009 but did not become part of the CTTS until September 2012; therefore, it is not included in CTTS totals until FY 2013.
2) Revenue includes PBM surcharge (33 percent of ETC toll).
3) ***Actual Average Weekday Transactions and Annual Revenue***

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Table 8.22 Comparison of 2012 and 2014 CTTS Transaction and Toll Revenue Forecasts

Fiscal Year	Average Weekday Paying Transactions			Annual Toll Revenue (in $000s)		
	2012 Update	2014 Study	% Difference	2012 Update	2014 Study	% Difference
2008	*186,366*	*186,366*	0%	***$48,906***	***$48,906***	0%
2009	*204,433*	*204,433*	0%	***$58,914***	***$58,914***	0%
2010	*217,953*	*217,953*	0%	***$66,144***	***$66,144***	0%
2011	*228,905*	*228,905*	0%	***$68,822***	***$68,822***	0%
2012	247,917	*246,593*	-1%	$74,229	***$75,695***	2%
2013	247,592	*266,619*	8%	$96,685	***$103,985***	8%
2014	258,034	*278,516*	8%	$115,359	***$125,163***	8%
2015	276,119	320,983	16%	$127,138	$140,665	11%
2016	290,229	339,503	17%	$138,980	$152,900	10%
2017	303,647	356,732	17%	$151,984	$165,020	9%
2018	317,267	373,638	18%	$165,261	$177,330	7%
2019	331,096	389,942	18%	$178,827	$189,621	6%
2020	345,142	405,435	17%	$192,703	$201,669	5%
2021	359,413	419,040	17%	$206,909	$213,939	3%
2022	373,917	431,900	16%	$221,468	$226,707	2%
2023	388,663	444,839	14%	$236,403	$240,119	2%
2024	403,659	457,859	13%	$251,740	$254,159	1%
2025	418,917	470,965	12%	$267,506	$268,800	0%
2026	431,392	484,160	12%	$285,323	$284,637	0%
2027	443,670	497,445	12%	$303,395	$301,477	-1%
2028	456,124	510,823	12%	$321,892	$319,104	-1%
2029	468,761	524,295	12%	$340,839	$337,549	-1%
2030	481,585	537,863	12%	$360,263	$356,850	-1%
2031	494,601	549,931	11%	$380,193	$376,822	-1%
2032	507,815	561,271	11%	$400,659	$397,611	-1%
2033	521,233	572,670	10%	$421,693	$419,370	-1%
2034	534,860	584,130	9%	$443,329	$442,139	0%
2035	548,701	595,651	9%	$465,605	$465,962	0%
2036	558,849	607,234	9%	$485,554	$490,885	1%
2037	567,769	618,881	9%	$504,918	$516,956	2%
2038	576,720	630,592	9%	$524,617	$544,224	4%
2039	585,702	642,369	10%	$544,666	$572,739	5%
2040	594,716	654,212	10%	$565,077	$602,557	7%
2041	603,761	665,668	10%	$585,867	$632,448	8%
2042	612,837	676,943	10%	$607,049	$662,988	9%

Notes: 1) SH 45 SE opened in May 2009 but did not become part of the CTTS until September 2012; therefore, it is not included in CTTS totals until FY 2013.
2) Revenue includes PBM surcharge (33 percent of ETC toll).
3) ***Actual Annual Revenue***

Table 8.23 provides a comparison of the total annual transactions by payment method between the 2012 Update and the current forecasts. Since cash was eliminated as a payment option in January 2013, only the historical breakdown of ETC and PBM transactions for FY 2014 is comparable to the forecasted distribution. As shown in the table, FY 2013 total transactions (including cash transactions) were 15.4 percent higher, and FY 2014 total transactions were 17.6 percent higher than forecasted in the 2012 Update. FY 2014 ETC transactions are approximately 3.4 percent greater than forecasted in the 2012 Update. The 2014 Study estimates that ETC transactions will be 12.0 percent greater in 2015 and 6.6 percent greater in 2042 than the 2012 Update. PBM transactions are 64.1 percent greater in 2015 and 59.9 percent greater in 2042.

Table 8.23 Comparison of 2012 and 2014 CTTS Total Annual Transactions Forecasts

Fiscal Year	Total Annual Transactions (in 000's)								
	ETC			PBM			Total		
	2012 Update	2014 Study	% Difference	2012 Update	2014 Study	% Difference	2012 Update	2014 Study	% Difference
2013	68,547	***76,109***	11.0%	20,258	***26,398***	30.3%	88,805	***102,507***	15.4%
2014	73,803	***76,331***	3.4%	18,927	***32,717***	72.9%	92,730	***109,049***	17.6%
2015	78,898	88,404	12.0%	20,368	33,416	64.1%	99,266	121,820	22.7%
2016	82,968	93,875	13.1%	21,360	34,691	62.4%	104,328	128,566	23.2%
2017	86,850	98,995	14.0%	22,286	35,824	60.7%	109,136	134,819	23.5%
2018	90,801	104,060	14.6%	23,212	36,848	58.7%	114,013	140,908	23.6%
2019	94,824	108,991	14.9%	24,137	37,732	56.3%	118,961	146,723	23.3%
2020	98,921	113,757	15.0%	25,063	38,398	53.2%	123,984	152,156	22.7%
2021	103,094	117,674	14.1%	25,989	39,534	52.1%	129,083	157,208	21.8%
2022	107,346	121,209	12.9%	26,916	40,950	52.1%	134,262	162,159	20.8%
2023	111,680	124,766	11.7%	27,845	42,373	52.2%	139,525	167,139	19.8%
2024	116,098	128,345	10.5%	28,777	43,804	52.2%	144,875	172,149	18.8%
2025	120,603	131,950	9.4%	29,711	45,239	52.3%	150,314	177,189	17.9%
2026	124,267	135,580	9.1%	30,429	46,681	53.4%	154,696	182,261	17.8%
2027	127,873	139,236	8.9%	31,126	48,128	54.6%	158,999	187,364	17.8%
2028	131,543	142,918	8.6%	31,827	49,582	55.8%	163,369	192,500	17.8%
2029	135,276	146,628	8.4%	32,531	51,042	56.9%	167,807	197,670	17.8%
2030	139,075	150,365	8.1%	33,240	52,509	58.0%	172,314	202,874	17.7%
2031	142,940	153,732	7.6%	33,952	53,732	58.3%	176,892	207,464	17.3%
2032	146,873	156,921	6.8%	34,670	54,833	58.2%	181,542	211,754	16.6%
2033	150,874	160,127	6.1%	35,392	55,938	58.1%	186,266	216,065	16.0%
2034	154,946	163,351	5.4%	36,119	57,046	57.9%	191,065	220,397	15.4%
2035	159,090	166,593	4.7%	36,851	58,156	57.8%	195,941	224,750	14.7%
2036	162,024	169,854	4.8%	37,547	59,270	57.9%	199,571	229,124	14.8%
2037	164,621	173,134	5.2%	38,165	60,387	58.2%	202,786	233,521	15.2%
2038	167,227	176,432	5.5%	38,785	61,508	58.6%	206,012	237,940	15.5%
2039	169,842	179,751	5.8%	39,407	62,632	58.9%	209,249	242,382	15.8%
2040	172,467	183,088	6.2%	40,031	63,759	59.3%	212,498	246,847	16.2%
2041	175,100	186,295	6.4%	40,657	64,891	59.6%	215,758	251,186	16.4%
2042	177,743	189,440	6.6%	41,285	66,026	59.9%	219,029	255,466	16.6%

Notes: 1) Cash payment option was eliminated in January 2013. ETC transactions shown for FY 2013 include cash transactions.
2) ***Actual Annual Transactions***
3) Transactions shown for the 2012 Update are estimated from data shown in the 2012 Update.

8.5 CUSTOMER SERVICE CENTER REVENUE FORECASTS

In addition to the toll revenues generated by CTTS, TxDOT also generates revenue from various fees charged to patrons by the CSC, as discussed previously in Chapter 4 of this report. This

additional revenue includes various fees and charges associated with the acquisition and use of the transponders for the ETC payment option and the use of PBM payment option[1].

Table 8.24 shows the estimated Toll plus Customer Service Center (CSC) revenues prepared for this report and how they compare to the 2012 Update. The latest fee information for FY 2014 indicates that CSC revenue was approximately $0.065 per ETC transaction and $0.305 per PBM transaction. The CSC forecasts held these values constant during the forecast period, as TxDOT has not yet established a policy to escalate these fees over time.

Table 8.24 Estimated Toll plus Customer Service Center Revenue

Fiscal Year	Toll Revenue		CSC Revenue		Total Revenue			Annual Revenue Growth	
	2012 Update	2014 Study	2012 Update	2014 Study	2012 Update	2014 Study	% Diff.	2012 Update	2014 Study
2008	***$48,906***	***$48,906***			***$48,906***	***$48,906***	***0.0%***		
2009	***$58,914***	***$58,914***	***$5,320***	***$5,320***	***$64,234***	***$64,234***	***0.0%***	***31.3%***	***31.3%***
2010	***$66,144***	***$66,144***	***$7,172***	***$7,172***	***$73,316***	***$73,316***	***0.0%***	***14.1%***	***14.1%***
2011	***$68,822***	***$68,822***	***$6,562***	***$6,562***	***$75,384***	***$75,384***	***0.0%***	***2.8%***	***2.8%***
2012	$74,229	***$75,695***	$10,800	***$10,800***	$85,029	***$86,495***	1.7%	12.8%	***14.7%***
2013	$96,685	***$103,985***	$10,429	***$13,290***	$107,114	***$117,275***	9.5%	26.0%	***35.6%***
2014	$115,359	***$125,163***	$10,869	***$12,710***	$126,227	***$137,873***	9.2%	17.8%	***17.6%***
2015	$127,138	$140,665	$11,631	$15,961	$138,768	$156,626	12.9%	9.9%	13.6%
2016	$138,980	$152,900	$12,225	$16,707	$151,205	$169,607	12.2%	9.0%	8.3%
2017	$151,984	$165,020	$12,790	$17,386	$164,774	$182,406	10.7%	9.0%	7.5%
2018	$165,261	$177,330	$13,364	$18,028	$178,624	$195,358	9.4%	8.4%	7.1%
2019	$178,827	$189,621	$13,946	$18,619	$192,773	$208,240	8.0%	7.9%	6.6%
2020	$192,703	$201,669	$14,538	$19,132	$207,241	$220,801	6.5%	7.5%	6.0%
2021	$206,909	$213,939	$15,139	$19,734	$222,048	$233,673	5.2%	7.1%	5.8%
2022	$221,468	$226,707	$15,750	$20,397	$237,218	$247,104	4.2%	6.8%	5.7%
2023	$236,403	$240,119	$16,371	$21,063	$252,774	$261,182	3.3%	6.6%	5.7%
2024	$251,740	$254,159	$17,003	$21,733	$268,743	$275,892	2.7%	6.3%	5.6%
2025	$267,506	$268,800	$17,645	$22,406	$285,151	$291,206	2.1%	6.1%	5.6%
2026	$285,323	$284,637	$18,171	$23,083	$303,494	$307,720	1.4%	6.4%	5.7%
2027	$303,395	$301,477	$18,688	$23,763	$322,083	$325,240	1.0%	6.1%	5.7%
2028	$321,892	$319,104	$19,213	$24,446	$341,105	$343,550	0.7%	5.9%	5.6%
2029	$340,839	$337,549	$19,745	$25,134	$360,584	$362,683	0.6%	5.7%	5.6%
2030	$360,263	$356,850	$20,285	$25,825	$380,548	$382,675	0.6%	5.5%	5.5%
2031	$380,193	$376,822	$20,833	$26,418	$401,026	$403,240	0.6%	5.4%	5.4%
2032	$400,659	$397,611	$21,390	$26,962	$422,048	$424,573	0.6%	5.2%	5.3%
2033	$421,693	$419,370	$21,955	$27,508	$443,648	$446,878	0.7%	5.1%	5.3%
2034	$443,329	$442,139	$22,529	$28,056	$465,858	$470,195	0.9%	5.0%	5.2%
2035	$465,605	$465,962	$23,112	$28,606	$488,717	$494,568	1.2%	4.9%	5.2%
2036	$485,554	$490,885	$23,540	$29,159	$509,093	$520,044	2.2%	4.2%	5.2%
2037	$504,918	$516,956	$23,915	$29,714	$528,833	$546,670	3.4%	3.9%	5.1%
2038	$524,617	$544,224	$24,292	$30,271	$548,909	$574,495	4.7%	3.8%	5.1%
2039	$544,666	$572,739	$24,671	$30,830	$569,336	$603,569	6.0%	3.7%	5.1%
2040	$565,077	$602,557	$25,050	$31,391	$590,128	$633,948	7.4%	3.7%	5.0%
2041	$585,867	$632,448	$25,431	$31,946	$611,298	$664,394	8.7%	3.6%	4.8%
2042	$607,049	$662,988	$25,814	$32,497	$632,862	$695,485	9.9%	3.5%	4.7%

Notes: 1) SH 45 SE opened in May 2009 but did not become part of the CTTS until September 2012; therefore, it is not included in CTTS totals until FY 2013.
2) Historical Total Revenues differ from Audited Financial Reports due to accrued toll revenue receivables.
3) ***Actual Annual Revenue***

[1] Minute Order No. 110816 and Minute Order No. 112971

8.6 MONTHLY TRANSACTION AND REVENUE FORECASTS

This report presents forecasts of transactions and revenue in several formats. Transactions are provided on an AWD as well as annual basis, while revenue is provided on an annual basis. In order to provide estimates of monthly transactions and revenue consistent with the values in the CTTS quarterly reports issued by TxDOT, Stantec developed a procedure to disaggregate the annual values in this report for selected fiscal years utilizing observed data from TxDOT quarterly reports. The process implicitly accounts for seasonal variation in traffic due holiday travel and weather conditions as well as variation in revenue collection due to a number of factors, including the variation of travel by PBM patrons, which could also be influenced by seasonal travel.

The monthly allocation process utilizes a three-year rolling average distribution pattern that provides a stable allocation method derived from a broad base of historical data. This approach ensures that any exceptional conditions in the patterns of any one year do not distort the overall trends under typical conditions. Since the distribution pattern is based on a rolling three-year period of data for each CTTS roadway, the pattern can change over time to reflect changes in travel patterns as the individual facilities mature and also recognize changes in the efficiency of the PBM collection system. As an example, the SH 130 element currently has a lower percentage of ETC transactions than either Loop 1 or SH 45 North, suggesting that more travelers in this corridor are infrequent users, but with possibly more usage during holiday travel periods. As development in the SH 130 corridor continues, it is possible that more transactions will be related to local travelers making more frequent trips and using ETC. This transition would likely have an impact on the monthly allocation of both transactions and revenue as the transponder patrons would likely exhibit different monthly usage patterns and have a lower toll rate per transaction. Also, revenue collection would be more efficient for ETC transactions than for PBM transactions. For the 2014 Study, the three-year rolling average period encompassed FY 2012 – FY 2014. During this period, the rolling average calculations were influenced by several notable factors. These factors include:

- During the FY 2013, on January 1, 2013 toll rates were increased significantly for Loop 1, SH 45 North, and SH 130. Tolls were increased by 50 percent on Loop 1 and by 25 percent on SH 130 and SH 45 North.

- During the first quarter of FY 2014 (December 2013 – February 2014), the weather patterns in Texas and most of the nation were much colder than seasonal norms and there were excessive snowstorms that had an impact on overall travel.

- In September 2013, TxDOT selected a new toll systems operator responsible for collecting tolls for the PBM transactions and the FY 2014 statistics during the transition period may impact the patterns in the near-term.

- A pilot program of discounted truck tolls on SH 130 and SH 45 SE in effect April to December 2013; former toll schedule back in place on January 1, 2014.

Table 8.25 provides an example of the three-year rolling average factor calculations for SH 130. The top part of the table lists the monthly SH 130 AWT for each of the last three fiscal years (FY 2012 – FY 2014) as provided by the CTTS quarterly reports. From these values, an annual AWT for each year is calculated which is weighted by number of weekdays in each month. Note that the number of weekdays for each month will vary by year due to the number of weekend days that occur in each month and the extra day from a leap year, if it occurs within the three-year period. The values for each month across all three years are summed along with all the total values for all three years. The monthly indexes are then calculated by dividing the monthly total for the three-year period by the total AWT for all three years, as shown in the last row of this section of the table.

Table 8.25 Monthly Variance for SH 130

SH 130 Average Weekday Transactions (AWT) by Month														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Annual**
Monthly AWT Transactions by Fiscal Year	FY 2012	93,233	92,657	95,945	94,714	90,245	96,797	105,065	107,062	109,359	113,856	109,197	113,239	102,027
	FY 2013	111,510	115,919	128,511	115,081	106,100	118,428	128,271	125,366	130,644	130,520	125,521	131,214	122,422
	FY 2014	129,924	129,967	138,575	125,572	116,028	127,060	142,216	145,035	146,089	152,353	150,814	151,881	138,223
Monthly AWT Index	'12-'14 avg.	0.92	0.93	1.00	0.92	0.86	0.94	1.04	1.04	1.06	1.09	1.06	1.09	1.00

SH 130 Total Transactions by Month														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Transactions by Fiscal Year (in 000s)	FY 2012	2,604	2,647	2,688	2,661	2,474	2,537	3,039	2,987	3,149	3,182	3,113	3,272	34,352
	FY 2013	3,001	3,390	3,693	3,258	2,943	3,007	3,713	3,594	3,761	3,624	3,612	3,769	41,366
	FY 2014	3,513	3,748	3,790	3,502	3,210	3,231	4,059	4,075	4,158	4,273	4,339	4,314	46,211
Monthly Transaction Percentages	'12-'14 avg.	7.5%	8.0%	8.3%	7.7%	7.1%	7.2%	8.9%	8.7%	9.1%	9.1%	9.1%	9.3%	100.0%

SH 130 Toll Revenues by Month														
Revenue Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Revenue by Fiscal Year (in $000s)	FY 2012	3,237	3,160	3,095	3,181	2,872	2,990	3,536	3,427	3,612	3,531	3,790	4,304	40,735
	FY 2013	3,788	4,140	4,106	3,806	4,310	3,677	4,996	5,144	5,698	5,389	4,876	4,563	54,492
	FY 2014	6,088	6,145	5,825	4,296	4,887	4,988	5,892	5,761	5,763	6,981	5,384	5,083	67,092
Monthly Revenue Percentages	'12-'14 avg.	8.1%	8.3%	8.0%	7.0%	7.4%	7.2%	8.9%	8.8%	9.3%	9.8%	8.7%	8.6%	100.0%

The second section of this table provides the data used to derive the average monthly transaction percentage calculations. The first three rows provide the observed monthly transactions for each of the last three fiscal years (FY 2012 – FY 2014) as provided by the CTTS quarterly reports. The values for each month across all three years are summed along with all three years. The monthly percentages are then calculated by dividing the monthly total for the three-year period by the total transactions for all three years, yielding the percentages shown in the last row of this section of the table.

The final section of this table provides the data used to derive the average monthly revenue percentage calculations. The first three rows contain the observed monthly revenue values for each of the last three fiscal years (FY 2012 – FY 2014) from the CTTS quarterly reports. Similar to the monthly transaction calculations, the values for each month across all three years are summed along with the totals for all three years and the monthly percentages are then calculated. It should be noted that due to variations in the types of transactions (auto versus trucks, ETC versus PBM), the collections processing and the lagging period for recognizing PBM revenue, there will be some variation between the monthly percentage distribution for transactions and revenue.

Table 8.26 lists the AWT by month for each CTTS element. These values include all transactions generated on the toll facilities. In order to develop a monthly pattern demonstrating the expected variation due to seasonal travel, the annual average weekday transactions are calculated initially and an index value is developed by dividing the monthly value by annual average weekday transactions. With an index value of 1.0 representing the annual average value, any months where the index value is greater than 1.0 indicates that the average weekday exceeds the annual average value while an index value less than 1.0 indicates that average weekday transactions are less than the annual average.

Table 8.26 Estimated Monthly Average Weekday Transactions, 2015

SH 45 N														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Value**
Monthly AWT Index	2014 Obs.	1.00	1.00	0.99	0.94	0.91	0.96	0.99	1.04	1.05	1.04	1.03	1.05	1.00
	2014 Est. ('12-'14 avg.)	1.00	0.99	0.99	0.96	0.94	0.98	1.00	1.03	1.04	1.03	1.00	1.04	1.00
Monthly AWT Transactions by Fiscal Year	2014 Obs.	116,671	116,577	115,937	109,855	105,748	111,546	115,797	120,904	123,201	121,232	120,257	122,959	**116,802**
	2014 Est.	116,388	116,191	115,105	111,757	109,481	114,622	116,777	120,083	121,985	119,956	116,739	121,547	**116,802**
	2014 Est. (2012 Update)	**99,702**	**99,926**	**98,052**	**96,521**	**95,601**	**98,008**	**100,891**	**103,268**	**103,795**	**102,349**	**99,324**	**103,083**	**100,115**
	2015 Est.	**135,565**	**135,336**	**134,070**	**130,170**	**127,520**	**133,508**	**136,018**	**139,869**	**142,084**	**139,720**	**135,974**	**141,574**	**136,047**

Loop 1														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Value**
Monthly AWT Index	2014 Obs.	1.01	1.01	1.00	0.95	0.92	0.97	1.00	1.03	1.04	1.03	1.02	1.03	1.00
	2014 Est. ('12-'14 avg.)	1.01	1.00	0.99	0.96	0.95	0.99	1.00	1.02	1.03	1.02	1.00	1.03	1.00
Monthly AWT Transactions by Fiscal Year	2014 Obs.	62,362	62,302	61,822	58,920	57,186	60,036	61,785	63,452	64,063	63,678	63,181	63,630	**61,894**
	2014 Est.	62,321	61,891	61,234	59,579	58,890	61,371	61,849	63,172	63,497	63,216	61,856	63,481	**61,894**
	2014 Est. (2012 Update)	**59,470**	**59,468**	**58,323**	**57,464**	**57,375**	**58,610**	**59,777**	**60,908**	**60,717**	**60,636**	**59,282**	**60,823**	**59,441**
	2015 Est.	**73,286**	**72,780**	**72,008**	**70,061**	**69,252**	**72,169**	**72,732**	**74,287**	**74,669**	**74,338**	**72,739**	**74,651**	**72,784**

SH 130														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Value**
Monthly AWT Index	2014 Obs.	0.94	0.94	1.00	0.91	0.84	0.92	1.03	1.05	1.06	1.10	1.09	1.10	1.00
	2014 Est. ('12-'14 avg.)	0.92	0.93	1.00	0.93	0.86	0.95	1.04	1.04	1.07	1.10	1.06	1.09	1.00
Monthly AWT Transactions by Fiscal Year	2014 Obs.	129,924	129,967	138,575	125,572	116,028	127,060	142,216	145,035	146,089	152,353	150,814	151,881	**138,223**
	2014 Est.	127,429	128,844	137,940	127,992	119,409	130,689	143,184	143,933	147,309	151,383	146,883	151,208	**138,223**
	2014 Est. (2012 Update)	**108,031**	**109,965**	**114,867**	**108,295**	**100,994**	**107,495**	**119,679**	**120,120**	**121,628**	**123,232**	**120,186**	**121,467**	**114,823**
	2015 Est.	**139,442**	**140,990**	**150,944**	**140,057**	**130,665**	**143,009**	**156,682**	**157,501**	**161,196**	**165,654**	**160,729**	**165,462**	**151,253**

SH 45 SE														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Value**
Monthly AWT Index	2014 Obs.	0.94	0.94	1.03	0.89	0.83	0.93	1.05	1.05	1.06	1.08	1.09	1.08	1.00
	2014 Est. ('12-'14 avg.)	0.94	0.94	0.98	0.90	0.85	0.94	1.05	1.00	1.06	1.11	1.08	1.11	1.00
Monthly AWT Transactions by Fiscal Year	2014 Obs.	13,269	13,260	14,538	12,524	11,741	13,074	14,747	14,712	14,938	15,251	15,304	15,179	**14,069**
	2014 Est.	13,283	13,275	13,768	12,679	11,963	13,224	14,837	14,137	14,968	15,597	15,245	15,548	**14,069**
	2014 Est. (2012 Update)	**11,969**	**11,955**	**12,312**	**11,739**	**10,805**	**11,600**	**13,386**	**12,785**	**13,332**	**13,822**	**13,645**	**13,589**	**12,600**
	2015 Est.	**14,535**	**14,527**	**15,066**	**13,874**	**13,091**	**14,470**	**16,235**	**15,470**	**16,379**	**17,067**	**16,683**	**17,014**	**15,395**

The first row for each section of Table 8.26 is the observed monthly index values for FY 2014, and second row is the estimated FY 2014 values based on the data from the three-year rolling average for FY 2012 – FY 2014. While there is some variation between the two indexes for several months, the patterns are largely consistent.

The last four rows of each section contain the AWT values for several conditions. The row labeled '2014 Obs.' lists the 2014 observed monthly AWT for FY 2014. The next row labeled '2014 Est.' is a hypothetical allocation of the 2014 observed data, using the FY 2012 – FY 2014 rolling average patterns, which simply demonstrates the degree of replication provided by the pattern. The following row labeled '2014 Est. (2012 Update)' is provided as a reference to the 2014 estimated monthly AWT from the 2012 Update. Note that these values are based on the prior model forecasts and use the previous rolling average pattern derived from the FY 2011 – FY 2013 period. The final row lists the FY 2015 estimates using the current model forecasts and the FY 2012 – FY

2014 pattern. The FY 2015 estimated transactions will be used as the expected monthly AWT transactions for the FY 2015 quarterly reports issued by TxDOT.

A similar procedure was used to develop monthly patterns for total transactions and toll revenue; however the monthly percentage distribution was used instead of the index values. The findings are shown in Table 8.27 for total transactions and in Table 8.28 for toll revenues. The FY 2015 estimated transactions and revenue were prepared, based on weekday data, to provide expected monthly values that can be used by TxDOT for the FY 2015 quarterly and annual reports.

Table 8.27 Estimated Monthly Total Transactions, 2015

SH 45 N														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Transaction Percentages	2014 Obs.	8.1%	8.6%	8.0%	7.9%	7.7%	7.5%	8.4%	8.7%	9.0%	8.6%	8.7%	9.0%	100.0%
	2014 Est. ('12-'14 avg.)	8.0%	8.5%	8.0%	8.0%	7.9%	7.7%	8.5%	8.6%	8.9%	8.5%	8.4%	8.9%	100.0%
Monthly Transactions by Fiscal Year (in 000s)	2014 Obs.	3,087	3,296	3,066	3,017	2,944	2,853	3,216	3,314	3,426	3,281	3,327	3,429	**38,256**
	2014 Est.	3,077	3,264	3,077	3,072	3,011	2,940	3,254	3,280	3,406	3,239	3,222	3,413	**38,256**
	2014 Est. (2012 Update)	**2,694**	**2,830**	**2,620**	**2,647**	**2,679**	**2,482**	**2,827**	**2,852**	**2,909**	**2,796**	**2,813**	**2,889**	**33,038**
	2015 Est.	**3,502**	**3,715**	**3,502**	**3,496**	**3,427**	**3,346**	**3,703**	**3,733**	**3,876**	**3,685**	**3,667**	**3,884**	**43,535**

Loop 1														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Transaction Percentages	2014 Obs.	8.1%	8.7%	8.0%	7.9%	7.9%	7.6%	8.5%	8.6%	8.8%	8.5%	8.6%	8.8%	100.0%
	2014 Est. ('12-'14 avg.)	8.1%	8.6%	8.1%	8.0%	8.0%	7.8%	8.5%	8.5%	8.8%	8.4%	8.4%	8.8%	100.0%
Monthly Transactions by Fiscal Year (in 000s)	2014 Obs.	1,611	1,731	1,596	1,576	1,564	1,508	1,677	1,705	1,742	1,679	1,708	1,742	**19,839**
	2014 Est.	1,609	1,706	1,599	1,596	1,587	1,544	1,688	1,692	1,738	1,663	1,669	1,751	**19,839**
	2014 Est. (2012 Update)	**1,607**	**1,684**	**1,559**	**1,576**	**1,608**	**1,484**	**1,675**	**1,682**	**1,701**	**1,657**	**1,679**	**1,704**	**19,616**
	2015 Est.	**1,889**	**2,003**	**1,877**	**1,873**	**1,863**	**1,812**	**1,982**	**1,986**	**2,041**	**1,952**	**1,959**	**2,055**	**23,291**

SH 130														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Transaction Percentages	2014 Obs.	7.6%	8.1%	8.2%	7.6%	6.9%	7.0%	8.8%	8.8%	9.0%	9.2%	9.4%	9.3%	100.0%
	2014 Est. ('12-'14 avg.)	7.5%	8.0%	8.3%	7.7%	7.1%	7.2%	8.9%	8.7%	9.1%	9.1%	9.1%	9.3%	100.0%
Monthly Transactions by Fiscal Year (in 000s)	2014 Obs.	3,513	3,748	3,790	3,502	3,210	3,231	4,059	4,075	4,158	4,273	4,339	4,314	**46,211**
	2014 Est.	3,456	3,698	3,844	3,574	3,275	3,334	4,098	4,036	4,198	4,200	4,187	4,308	**46,211**
	2014 Est. (2012 Update)	**2,920**	**3,115**	**3,071**	**2,971**	**2,831**	**2,723**	**3,355**	**3,318**	**3,409**	**3,368**	**3,405**	**3,405**	**37,892**
	2015 Est.	**3,733**	**3,995**	**4,152**	**3,860**	**3,538**	**3,601**	**4,427**	**4,359**	**4,535**	**4,537**	**4,523**	**4,654**	**49,913**

SH 45 SE														
Transaction Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Transaction Percentages	2014 Obs.	7.6%	8.1%	8.5%	7.5%	6.8%	7.1%	8.9%	8.8%	9.0%	9.1%	9.3%	9.2%	100.0%
	2014 Est. ('12-'14 avg.)	7.7%	8.1%	8.2%	7.5%	6.9%	7.1%	9.0%	8.4%	9.1%	9.2%	9.2%	9.5%	100.0%
Monthly Transactions by Fiscal Year (in 000s)	2014 Obs.	362	385	403	357	323	335	424	416	428	432	441	437	**4,743**
	2014 Est.	365	384	389	357	327	339	429	401	431	436	437	449	**4,743**
	2014 Est. (2012 Update)	**324**	**339**	**329**	**322**	**303**	**294**	**375**	**353**	**374**	**378**	**387**	**381**	**4,158**
	2015 Est.	**391**	**412**	**417**	**382**	**350**	**363**	**459**	**429**	**462**	**467**	**468**	**481**	**5,080**

Table 8.28 Estimated Monthly Toll Revenue, 2015

SH 45 N														
Revenue Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Revenue Percentages	2014 Obs.	8.6%	9.1%	8.1%	8.8%	7.8%	7.6%	8.5%	8.3%	8.1%	9.5%	7.7%	7.8%	100.0%
	2014 Est. ('12-'14 avg.)	7.7%	8.1%	7.4%	7.7%	8.2%	7.9%	8.9%	8.6%	9.1%	9.3%	8.4%	8.7%	100.0%
Monthly Revenue by Fiscal Year (in $000s)	2014 Obs.	2,981	3,181	2,810	3,072	2,719	2,630	2,974	2,898	2,834	3,325	2,695	2,711	**34,831**
	2014 Est.	2,680	2,807	2,572	2,688	2,868	2,767	3,109	2,997	3,160	3,227	2,937	3,017	**34,831**
	2014 Est. (2012 Update)	**2,487**	**2,559**	**2,408**	**2,474**	**2,732**	**2,567**	**2,962**	**2,890**	**3,033**	**2,919**	**2,839**	**2,971**	**32,840**
	2015 Est.	**3,226**	**3,379**	**3,095**	**3,235**	**3,452**	**3,331**	**3,742**	**3,607**	**3,804**	**3,885**	**3,535**	**3,632**	**41,922**

Loop 1														
Revenue Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Revenue Percentages	2014 Obs.	8.8%	9.3%	8.2%	8.2%	8.0%	7.7%	8.6%	8.3%	8.1%	9.5%	7.7%	7.6%	100.0%
	2014 Est. ('12-'14 avg.)	7.8%	8.2%	7.5%	7.6%	8.4%	8.0%	8.9%	8.6%	9.0%	9.1%	8.3%	8.5%	100.0%
Monthly Revenue by Fiscal Year (in $000s)	2014 Obs.	1,626	1,730	1,518	1,526	1,493	1,429	1,588	1,543	1,499	1,768	1,424	1,417	**18,560**
	2014 Est.	1,447	1,530	1,395	1,408	1,556	1,491	1,657	1,590	1,661	1,688	1,550	1,586	**18,560**
	2014 Est. (2012 Update)	**1,579**	**1,644**	**1,545**	**1,581**	**1,750**	**1,662**	**1,881**	**1,796**	**1,903**	**1,824**	**1,782**	**1,868**	**20,815**
	2015 Est.	**1,803**	**1,906**	**1,738**	**1,754**	**1,939**	**1,858**	**2,064**	**1,981**	**2,070**	**2,103**	**1,931**	**1,976**	**23,123**

SH 130														
Revenue Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Revenue Percentages	2014 Obs.	9.1%	9.2%	8.7%	6.4%	7.3%	7.4%	8.8%	8.6%	8.6%	10.4%	8.0%	7.6%	100.0%
	2014 Est. ('12-'14 avg.)	8.0%	8.2%	7.9%	7.1%	7.4%	7.2%	8.9%	8.8%	9.3%	9.6%	8.8%	8.9%	100.0%
Monthly Revenue by Fiscal Year (in $000s)	2014 Obs.	6,088	6,145	5,825	4,296	4,887	4,988	5,892	5,761	5,763	6,981	5,384	5,083	**67,092**
	2014 Est.	5,361	5,482	5,327	4,741	4,975	4,813	5,956	5,913	6,243	6,461	5,878	5,941	**67,092**
	2014 Est. (2012 Update)	**4,394**	**4,504**	**4,407**	**4,351**	**4,276**	**3,933**	**5,064**	**5,083**	**5,225**	**5,137**	**5,057**	**5,226**	**56,656**
	2015 Est.	**5,640**	**5,767**	**5,603**	**4,987**	**5,233**	**5,063**	**6,265**	**6,220**	**6,567**	**6,796**	**6,183**	**6,249**	**70,573**

SH 45 SE														
Revenue Value	**FY Term**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Total**
Monthly Revenue Percentages	2014 Obs.	6.7%	7.3%	8.3%	7.3%	7.3%	7.5%	9.1%	12.3%	8.7%	10.4%	8.0%	7.2%	100.0%
	2014 Est. ('12-'14 avg.)	8.2%	8.6%	8.5%	8.0%	7.6%	7.4%	8.9%	9.8%	8.6%	9.0%	7.8%	7.6%	100.0%
Monthly Revenue by Fiscal Year (in $000s)	2014 Obs.	311	341	389	344	342	353	424	574	407	485	374	338	**4,680**
	2014 Est.	385	402	395	374	357	344	419	460	402	419	365	355	**4,680**
	2014 Est. (2012 Update)	**444**	**450**	**423**	**420**	**397**	**360**	**450**	**434**	**428**	**425**	**403**	**413**	**5,047**
	2015 Est.	**416**	**433**	**426**	**404**	**385**	**371**	**452**	**497**	**434**	**452**	**394**	**383**	**5,046**

The observed revenue by month for FY 2014 and the estimated patterns from the rolling average process include variations in collections processing as well as any periodic accounting adjustments. As an example, revenue from the PBM collection process is recognized during the month when the revenue is received whereas the transactions are recognized during the month that they occurred. For these reasons, the monthly variations in revenue are not directly correlated to the monthly variations in transactions.

8.7 GENERAL ASSUMPTIONS

The estimates of traffic and toll revenue presented in this report have been prepared by Stantec based on certain assumptions regarding tolling and traffic characteristics and additional assumptions regarding future toll road and local and national conditions.

The assumptions for each CTTS element regarding toll rates and traffic characteristics summarized in Table 8.29 include the truck toll multiplier, PBM surcharge, payment type distribution (PBM, ETC), vehicle type distribution (autos, trucks), toll evasion, and annualization factors. These factors were developed for each CTTS element based on observed traffic conditions as discussed previously in this report. Assumptions for future years are based on discussions with TxDOT and local government agencies and Stantec judgment.

Table 8.29 Summary of Tolling and Traffic Characteristic Assumptions: Base Case - 2015

Assumptions Related to	Element			
	SH 45 N	Loop 1	SH 130	SH 45 SE
Vehicle Type Distribution				
Autos	96.2%	96.2%	91.4%	89.1%
Trucks	3.8%	3.8%	8.6%	10.9%
Payment Type Distribution - Passenger Cars				
PBM	21.3%	22.4%	33.5%	35.4%
ETC	78.7%	77.6%	66.5%	64.6%
Payment Type Distribution - Trucks				
PBM	21.2%	24.5%	35.5%	40.6%
ETC	78.8%	75.5%	64.5%	59.4%
Toll Ratios				
Truck/Auto Ratio	2.75	2.75	2.67	2.72
PBM/ETC Toll Rate	1.33	1.33	1.33	1.33
Collection Rates				
PBM	47.7%	47.7%	47.7%	47.7%
ETC	99.7%	99.7%	99.7%	99.7%
Full Length Trip				
Distance	12.8	4.0	49.0	7.0
Rate per Mile	$0.17	$0.27	$0.14	$0.15
Toll Cost (ETC)	$2.12	$1.06	$7.00	$1.04
Annualization Factor	320	320	330	330

The estimates of CTTS transactions and toll revenue presented in this report have been prepared by Stantec based on the following assumptions and conditions:

1. Toll rates on the CTTS elements will be escalated on an annual basis on January 1st of each year based on the CPI-U. It is estimated that the rate of inflation will increase as presented in Table 4.6.

2. Toll collection on the CTTS elements will be by Electronic Toll Collection (ETC) or Pay by Mail (PBM); there will be no cash toll collection as discussed in Chapter 4.

3. The surcharge for PBM/Video transactions will remain at 33 percent throughout the forecast period as discussed in Chapter 4.

4. ETC market shares for 2015 will be as presented in Table 8.29 and remain relatively constant for future years as presented earlier in this section.

5. The traffic mix using the CTTS elements will result in toll multipliers (used for toll revenue estimation purposes) for trucks with 3+ axles as presented in Table 8.29 for 2015 and as presented earlier in this section for future years.

6. The current Truck Toll Policy uses an axle-based (N-1) formula whereby tolls for trucks are calculated as (Axles-1) times the auto toll rate. The current policy that limits truck tolls to the 4-axle rate for SH 130 and SH 45 SE will remain in place. There will be no other discounts or changes to the truck toll policy.

7. The socioeconomic growth discussed in Chapter 6 will occur as forecasted.

8. The CTTS highway network improvements and the background network improvements will be constructed as planned and in accordance with the schedule discussed in Chapter 2 of this report. The I-35 Managed Lane project in Austin will not be constructed.

9. The Speed Limit Policy on limited access roadways will be maintained at current levels.

10. The CTTS elements will be efficiently maintained and operated, but even under the most efficient operation, there will be some toll evasion and revenue "leakage." This has been accounted for in the traffic and revenue forecasts by collection rate adjustments. Assumed collection rate adjustments for 2015 are presented in Table 8.29 and are assumed constant throughout the forecast period.

11. Motor fuel will remain in adequate supply during the forecast period, and motor fuel prices (i.e., the average price for regular gasoline) will not be more than $4.50 per gallon, adjusted for inflation, for sustained periods.

12. Increases in Federal and State motor fuel taxes will not be to the extent that, together with fuel price increases, motor fuel prices will exceed $4.50, adjusted for inflation, for sustained periods.

13. No radical change in travel modes that would drastically curtail motor vehicle use will occur during the forecast period.

14. In the long term, generally normal economic conditions will prevail in the State and the United States, and a major depression, national or State emergency or prolonged fuel shortage will not occur.

15. Consistent with current agreements, TxDOT will reimburse the appropriate CTTS account the cost of tolls not paid by those customers with eligible specialty license plates registered with Texas Department of Motor Vehicles (TxDMV) to disabled veterans, Purple Heart recipients, and Medal of Honor recipients. TxDOT will also reimburse the appropriate CTTS account for the cost of tolls not paid due to any periodic truck toll rate discounts offered.

16. Customer Service Center revenues will be in line with the forecasts provided by TxDOT and current fees and policies will be held constant.

17. The projects listed in sections 2.4.2 through 2.4.5 will be completed as listed.

8.8 DISCLAIMER

It is Stantec's opinion that the revenue projections presented in this report are reasonable and have been prepared in accordance with accepted practice for investment-grade studies. However, given the uncertainties within the current international and economic climate, Stantec

considers it is necessary to state that the traffic and revenue projections are based on the following caveats:

- This report presents the results of Stantec's consideration of the information available to us as of the date hereof and the application of Stantec's experience and professional judgment to that information. It is not a guarantee of any future events or trends.

- The traffic and revenue forecasts will be subject to future economic and social conditions and demographic developments that cannot be predicted with certainty.

- The projections contained in this report, while presented with numerical specificity, are based on a number of estimates and assumptions which, though considered reasonable to us, are inherently subject to significant economic and competitive uncertainties and contingencies, many of which will be beyond Stantec's control and that of TxDOT. In many instances, a broad range of alternative assumptions could be considered reasonable. Changes in the assumptions used could result in material differences in projected outcomes.

- If, for any reason, any of these conditions should change due to changes in the economy or competitive environment, or other factors, the consultant team's opinions or estimates may require amendment or further adjustments.

- Stantec's toll revenue projections only represent its best judgment and Stantec does not warrant or represent that actual toll revenues will not vary from its projections, estimates and forecasts.

Many statements contained in this report, which are not historical facts, are forward-looking statements, which are based on Stantec's opinions, as well as assumptions made by, and information currently available to, the management and staff of Stantec. Because the statements are based on expectations about future events and economic performance and are not statements of fact, actual results may differ materially from those projected. The words "anticipate", "assume", "estimate", "expect", "objective", "projection", "plan", "forecast", "goal", "budget", or similar words are intended to identify forward-looking statements. The words or phrases "to date", "now", "currently", and the like are intended to mean as of the date of this report.

Stantec shall have the right to review, and to require any changes it believes appropriate be made to any official statement, prospectus, private placement memorandum or other document used in connection with any such financing that refers to Stantec, its reports, opinions or other documents, or services. TxDOT shall provide copies of any such materials to Stantec for review by Stantec and its legal counsel at a reasonable time prior to its use of any such materials. Stantec shall have the right to retain copies of all such materials

9.0 SENSITIVITY ANALYSIS

The assumptions upon which the 2014 CTTS transaction and revenue forecasts were based are presented in Chapter 8 of this report. In many instances, a broad range of alternative assumptions could be considered reasonable, which would result in material differences in the forecasts. This chapter of the report provides estimates of the forecast's sensitivity to changes in selected assumptions.

9.1 OVERVIEW OF ANALYSES

As a result of discussions with TxDOT staff and the financing team, as decision was made to conduct sensitivity trials to assess the impacts to the forecasts for the following three conditions:

- Reduced CPI Growth
- Reduced Trip Growth
- Reduced Value of Time

These sensitivity trials were conducted for the 2020, 2030, and 2040 model years. Average weekday toll revenues for each sensitivity trial and the corresponding percent change in toll revenue when compared to the unadjusted base forecast are provided in Table 9.1.

Table 9.1 Average Weekday Revenue Comparison for the Sensitivity Trials

Model Year	AVERAGE WEEKDAY TOLL REVENUE						
	Base Revenue	Sensitivity 1 (Reduced CPI)		Sensitivity 2 (Reduced Trip Growth)		Sensitivity 3 (Reduced VOT)	
		Revenue	% Difference	Revenue	% Difference	Revenue	% Difference
2020	$496,904	$487,786	-1.8%	$463,971	-6.6%	$476,566	-4.1%
2030	$872,656	$845,349	-3.1%	$775,700	-11.1%	$848,962	-2.7%
2040	$1,449,385	$1,393,799	-3.8%	$1,232,748	-14.9%	$1,419,541	-2.1%

9.2 REDUCED CPI GROWTH

As part of the base forecast, toll rates are escalated annually based on the change in the CPI-U value. The household income of travelers, which influences the ability to pay tolls, is also anticipated to increase over time. As discussed in Chapter 4, Stantec has obtained CPI data from 1970 to 2014. Over the longer term, the annual change in CPI has been 3 to 4 percent, while the most recent 20-year period indicates that CPI average annual growth rate is less than 2.5 percent. For the period between 2010 and 2014, CPI increase is 2.1 percent and for the most recent CTTS annual toll escalation for FY 2015, the CPI increase was 1.7 percent. The base forecast in the 2014 Study utilizes the longer term data along with current CPI trends to create a forecast that assumed that the CPI would increase at 2.0 percent for 2016, followed by small increases that increased CPI growth to 2.5 percent by 2020. From 2025 to 2026, CPI growth is assumed to increase gradually to 3.0 percent and remain at that growth rate for the remainder

of the forecast period. For this sensitivity trial, CPI growth is 0.25 percent lower than the assumed escalations in the base forecast. For example, the CPI between 2016 was reduced from 2.0 percent to 1.75 percent. Consistent with the base forecast, household income growth is assumed to equal the CPI growth rate in this sensitivity.

As expected, this sensitivity trial results in revenue estimates ranging from 1.8 percent less than the base case in 2020 to 3.8 percent less in 2040. The losses are due to lower toll rates from the reduced escalation rate. There is less impact in 2020 when compared to the base forecast as the change in toll rates are less than in the later years of the forecast.

9.3 REDUCED TRIP GROWTH

Under this sensitivity trial, the projected growth of trips was reduced by 25 percent. This reduction implies a lower level of population and employment growth, which generates a lower level of trip growth.

The lower level of trip growth from this sensitivity trial results in lower revenue estimates in response to lower traffic levels in the study area. This leads to fewer available trips for each facility and less congestion on competing facilities, making it less advantageous to use the CTTS facilities. The reduced revenue ranges from 6.6 percent in 2020 to 14.9 percent in 2040. The impact is less significant in 2020 since the difference in the number of trips is less in the early years than in the more distant horizon years.

9.4 REDUCED VALUE OF TIME

For this sensitivity trial, the estimated value of time for all trip purposes and trucks was reduced by 10 percent. The value of time would still increase throughout the forecast, but the reduced values would remain 90 percent of the values used in the base forecast.

The reduction in the value of time translates to a lower willingness by drivers to pay tolls in order to save travel time, resulting in less revenue. The loss of revenue is less variable than the other sensitivities among model years with losses of 4.1 percent, 2.7 percent, and 2.1 percent in 2020, 2030, and 2040 respectively. This more uniform response is due to the general reduction of the value of time across horizon years, which tends to have a relatively equal impact on the diversion estimates. The slightly lower levels of response in the more distant horizon years reflect the increasing congestion on the background network which tends to make the CTTS more attractive compared to the non-tolled routes in the future.

Central Texas Turnpike System
2014 Traffic & Revenue Study Appendices

Stantec

Prepared by:

Stantec Consulting Services Inc.

December 30, 2014

APPENDIX A

Technical Memorandum on Socioeconomic Data from Michael Bomba, PhD

TECHNICAL MEMORANDUM

REVIEW OF THE CAPITAL AREA MPO AND SAN ANTONIO/BEXAR COUNTY MPO SOCIOECONOMIC DATA FOR THE CTTS STUDY AREA

This technical memorandum provides an overview of the assessment and adjustment of population and employment data from the Capital Area Metropolitan Planning Organization's (CAMPO) and the San Antonio/Bexar County Metropolitan Planning Organization's (SABC MPO) travel demand models for the 2014 CTTS Update. The first portion of the memorandum provides regional background information and context that describe current population and employment trends in the two regions. The second portion of the memo provides a discussion of recent sectoral employment trends. The third portion of the memo describes the methodology used during the assessment and adjustment of the county control totals and the socioeconomic data at the individual Traffic Analysis Zone (TAZ).

POPULATION TRENDS

Historic Population Trends

In only three decades (1980-2010), the combined population of the five counties in the CAMPO study area tripled from 585,051 residents to 1,716,289 residents (See Table 1). More than half of the population growth during this period was in Travis County, with Williamson County accounting for an additional 30 percent of the growth. Williamson County also experienced the highest rate of population growth, increasing almost six-fold between 1980 and 2010 to 422,679 residents, while Hays County's population increased four-fold to 157,107 residents. Bastrop County's population grew three-fold to 74,171 residents during this same period and Caldwell County had the slowest growth rate, but still increased by 61 percent to 38,066 residents.

Population in the San Antonio/Bexar County MPO study area[1] also grew strongly between 1980 and 2010, although at a more measured pace. Table 2 shows the historic populations of Bexar, Comal, Guadalupe, Kendall, and Wilson Counties. Collectively, the population of these five counties grew from 1.1 million residents in 1980 to more than 2.0 million residents during 2010. Almost 78 percent of that population growth occurred in Bexar County, which had a population of 1,714,773 residents in 2010. Among the five counties, Kendall County's population grew most quickly, increasing three-fold during this period to 33,410 residents. Guadalupe County, the second largest county in the region, increased its population by 182 percent to 131,533 residents between 1980 and 2010, while Comal County (the third largest county) increased by 198 percent to 108,472 residents during this same period. Kendall County also grew strongly, although at a slightly slower pace and had 42,918 residents during 2010.

[1] In addition to the five counties in the San Antonio/Bexar County MPO study area (Bexar, Guadalupe, Comal, Kendall, and Wilson), the San Antonio-New Braunfels MSA also contains Atascosa, Bandera, and Medina Counties.

Table 1: Historic Population for Counties in the Austin-Round Rock MSA, 1980-2010

			TOTAL POPULATION			
	Bastrop County	**Caldwell County**	**Hays County**	**Travis County**	**Williamson County**	**Total**
1980	24,726	23,637	40,594	419,573	76,521	585,051
1990	38,263	26,392	65,614	576,407	139,551	846,227
2000	57,733	32,194	97,589	812,281	249,967	1,249,764
2010	74,171	38,066	157,107	1,024,266	422,679	1,716,289
			TOTAL CHANGE			
	Bastrop County	**Caldwell County**	**Hays County**	**Travis County**	**Williamson County**	**Total**
1980-1990	13,537	2,755	25,020	156,834	63,030	261,176
1990-2000	19,470	5,802	31,975	235,874	110,416	403,537
2000-2010	16,438	5,872	59,518	211,985	172,712	466,525
			COMPOUNDED ANNUAL GROWTH RATE			
	Bastrop County	**Caldwell County**	**Hays County**	**Travis County**	**Williamson County**	**Total**
1980-1990	4.46%	1.11%	4.92%	3.23%	6.19%	3.76%
1990-2000	4.20%	2.01%	4.05%	3.49%	6.00%	3.98%
2000-2010	2.54%	1.69%	4.88%	2.35%	5.39%	3.22%

Source: U.S. Census Bureau, 2010.

Table 2: Historic Population for Select Counties in the San Antonio-New Braunfels MSA, 1980-2010

			TOTAL POPULATION			
	Bexar County	**Comal County**	**Guadalupe County**	**Kendall County**	**Wilson County**	**Total**
1980	988,971	36,446	46,708	10,635	16,756	1,099,516
1990	1,185,394	51,832	64,873	14,589	22,650	1,339,338
2000	1,392,931	78,021	89,023	23,743	32,408	1,616,126
2010	1,714,773	108,472	131,533	33,410	42,918	2,031,106
			TOTAL CHANGE			
	Bexar County	**Comal County**	**Guadalupe County**	**Kendall County**	**Wilson County**	**Total**
1980-1990	196,423	15,386	18,165	3,954	5,894	239,822
1990-2000	207,537	26,189	24,150	9,154	9,758	276,788
2000-2010	321,842	30,451	42,510	9,667	10,510	414,980
			COMPOUNDED ANNUAL GROWTH RATE			
	Bexar County	**Comal County**	**Guadalupe County**	**Kendall County**	**Wilson County**	**Total**
1980-1990	1.83%	3.58%	3.34%	3.21%	3.06%	1.99%
1990-2000	1.63%	4.17%	3.22%	4.99%	3.65%	1.90%
2000-2010	2.10%	3.35%	3.98%	3.47%	2.85%	2.31%

Source: U.S. Census Bureau, 2010.

Recent Population Trends

More recent estimates show that the population of the CAMPO study area has continued to grow since 2010, but the overall growth rate has slowed as the 2008-2009 Recession greatly reduced the mobility of households. The data in Table 3 provides population counts from the 2000 and 2010 decennial U.S. Censuses, as well as the U.S. Census Bureau's 2013 population estimates. These data show that the population of counties in the region grew strongly between the 2010 and 2013. The largest overall population increase occurred in Travis County, with more than 96,000 new residents between the 2010 decennial Census and the 2013 estimates. Williamson County also grew strongly during this same period with approximately 48,000 new residents between 2010 and 2013, followed by Hays County with almost 19,000 new residents. However, since the 2010 U.S. Census, the rate of population growth in all of the counties, with the exception of Travis County, has slowed. During this period, Travis County's population growth accelerated slightly from a CAGR of 2.35 percent between 2000 and 2010 to an estimated CAGR of 2.61 percent between 2010 and 2013. Williamson County's population growth, on the other hand, declined from a 5.39 percent CAGR between 2000 and 2010 to 3.14 percent CAGR from 2010 to 2013. Bastrop County's population growth also slowed considerably from a 2.54 percent CAGR between 2000 and 2010 to a 0.63 percent CAGR between 2010 and 2013. Between 2010 and 2013, Bastrop County only added 1,600 residents, while Caldwell County only added 1,100 residents.

Table 3: Recent Population Trends for Select Counties in the Austin-Round Rock MSA, 2000-2013

	TOTAL POPULATION			TOTAL CHANGE	AVERAGE ANNUAL CHANGE		CAGR	
COUNTY	**2000**	**2010**	**2013**	**2000-13**	**2000-10**	**2010-13**	**2000-10**	**2010-13**
Bastrop	57,733	74,171	75,825	18,092	1,644	473	2.54%	0.63%
Caldwell	32,194	38,066	39,232	7,038	587	333	1.69%	0.87%
Hays	97,589	157,107	176,026	78,437	5,952	5,405	4.88%	3.30%
Travis	812,281	1,024,266	1,120,954	308,673	21,199	27,625	2.35%	2.61%
Williamson	249,967	422,679	471,014	221,047	17,271	13,810	5.39%	3.14%

Source: U.S. Census Bureau, 2010 and 2013.

U.S. Census Bureau data show that the populations of counties in the San Antonio MSA also grew strongly between the 2010 and 2013, adding 131,000 new residents (See Table 4). Most of this population growth occurred in Bexar County, which added 102,000 residents since the 2010 decennial Census. Guadalupe and Comal Counties also increased their populations during this period, adding 11,000 and 10,000 new residents, respectively. However, since 2010, the rate of population growth has slowed in all of the counties, with the exception of Kendall County. Kendall County's population growth accelerated slightly from a CAGR of 3.47 percent between 2000 and 2010 to an estimated CAGR of 3.56 percent between 2010 and 2013.

Table 4: Recent Population Trends for Select Counties in the San Antonio-New Braunfels MSA, 2000-2013

	TOTAL POPULATION			TOTAL CHANGE	AVERAGE ANNUAL CHANGE		CAGR	
COUNTY	**2000**	**2010**	**2013**	**2000-13**	**2000-10**	**2010-13**	**2000-10**	**2010-13**
Bexar	1,392,931	1,714,773	1,817,610	424,679	32,184	29,382	2.10%	1.68%
Comal	78,021	108,472	118,480	40,459	3,045	2,859	3.35%	2.55%
Guadalupe	89,023	131,533	143,183	54,160	4,251	3,329	3.98%	2.45%
Kendall	23,743	33,410	37,766	14,023	967	1,245	3.47%	3.56%
Wilson	32,408	42,918	45,418	13,010	1,051	714	2.85%	1.63%

Source: U.S. Census Bureau, 2010 and 2013.

Placing the growth that has occurred in Central Texas into a national context, between 2000 and 2013, the Austin-Round Rock MSA had the 12th largest population increase in the nation and the San Antonio-New Braunfels MSAs was ranked 15th (See Table 5). Other Texas MSAs in the list include the Dallas-Fort Worth MSA, which had the nation's largest population increase during this period, with more than 1.6 million new residents. The Houston-The Woodlands-Sugar Land, TX MSA (hereafter referred to as the Houston MSA) ranked third with almost 1.6 million additional residents.

Table 5: Fastest Growing Metropolitan Areas in the United States, 2000-2013

RANK	MSA	TOTAL POPULATION			TOTAL CHANGE	AVERAGE ANNUAL CHANGE		CAGR	
		2000	2010	2013	2000-13	2000-10	2010-13	2000-10	2010-13
1	Dallas-Fort Worth-Arlington, TX	5,161,544	6,426,214	6,810,913	1,649,369	126,467	118,369	2.22%	1.81%
2	New York-Newark-Jersey City, NY-NJ-PA	18,323,002	19,567,410	19,949,502	1,626,500	124,441	117,567	0.66%	0.60%
3	Houston-The Woodlands-Sugar Land, TX	4,715,407	5,920,416	6,313,158	1,597,751	120,501	120,844	2.30%	2.00%
4	Atlanta-Sandy Springs-Roswell, GA	4,247,981	5,286,728	5,522,942	1,274,961	103,875	72,681	2.21%	1.35%
5	Washington-Arlington-Alexandria, DC-VA-MD-WV	4,796,183	5,636,232	5,949,859	1,153,676	84,005	96,501	1.63%	1.68%
6	Phoenix-Mesa-Scottsdale, AZ	3,251,876	4,192,887	4,398,762	1,146,886	94,101	63,346	2.57%	1.49%
7	Riverside-San Bernardino-Ontario, CA	3,254,821	4,224,851	4,380,878	1,126,057	97,003	48,008	2.64%	1.12%
8	Charlotte-Concord-Gastonia, NC-SC	1,330,448	2,217,012	2,335,358	1,004,910	88,656	36,414	5.24%	1.61%
9	Miami-Fort Lauderdale-West Palm Beach, FL	5,007,564	5,564,635	5,828,191	820,627	55,707	81,094	1.06%	1.43%
10	Los Angeles-Long Beach-Anaheim, CA	12,365,627	12,828,837	13,131,431	765,804	46,321	93,106	0.37%	0.72%
11	Las Vegas-Henderson-Paradise, NV	1,375,765	1,951,269	2,027,868	652,103	57,550	23,569	3.56%	1.19%
12	**Austin-Round Rock, TX**	**1,249,763**	**1,716,289**	**1,883,051**	**633,288**	**46,653**	**51,311**	**3.22%**	**2.89%**
13	Orlando-Kissimmee-Sanford, FL	1,644,561	2,134,411	2,267,846	623,285	48,985	41,057	2.64%	1.88%
14	Seattle-Tacoma-Bellevue, WA	3,043,878	3,439,809	3,610,105	566,227	39,593	52,399	1.23%	1.50%
15	**San Antonio-New Braunfels, TX**	**1,711,703**	**2,142,508**	**2,277,550**	**565,847**	**43,081**	**41,551**	**2.27%**	**1.90%**

Source: U.S. Census Bureau, 2010 and 2014.

Population Projections

Recent population projection scenarios from the Texas State Data Center (TxSDC) for the Austin-Round Rock MSA suggest strong rates of population growth into the future. The projected population for the Austin-Round Rock MSA is expected to be between 2.1 million and 4.0 million residents in 2040 (See Table 6). The most conservative scenario, the 0.0 migration scenario, assumes that there will be no net migration and the population will grow solely based upon the number of births and deaths in the region. Given historic migration trends for the region, this scenario seems unlikely. The 0.5 migration scenario assumes that future net migration will be one-half the rate that occurred between the 2000 and 2010 decennial U.S. Censuses and the 1.0 migration scenario assumes that future net migration will be equal to the net migration rate between 2000 and 2010. The historic population growth rate for the Austin-Round Rock MSA suggests that the region's population will likely grow at a rate between the 0.5 and 1.0 migration scenarios, which would add between 1.1 million and 2.3 million residents between 2010 and 2040.

Table 6: Population Projections for the Austin-Round Rock MSA, 2010-2040

		TOTAL POPULATION	
Year	**0.0 Migration Scenario**	**0.5 Migration Scenario**	**1.0 Migration Scenario**
2010	1,716,289	1,716,289	1,716,289
2015	1,807,478	1,900,046	1,998,629
2020	1,886,493	2,090,278	2,322,988
2025	1,950,214	2,278,451	2,680,481
2030	2,005,249	2,470,562	3,077,805
2035	2,053,094	2,670,218	3,528,046
2040	2,095,218	2,881,441	4,046,649
		ANNUAL AVERAGE GROWTH	
Year	**0.0 Migration Scenario**	**0.5 Migration Scenario**	**1.0 Migration Scenario**
2010-2015	18,238	36,751	56,468
2015-2020	15,803	38,046	64,872
2020-2025	12,744	37,635	71,499
2020-2030	11,007	38,422	79,465
2030-2035	9,569	39,931	90,048
2035-2040	8,425	42,245	103,721
		COMPOUNDED ANNUAL GROWTH RATE	
Year	**0.0 Migration Scenario**	**0.5 Migration Scenario**	**1.0 Migration Scenario**
2010-2015	1.04%	2.06%	3.09%
2015-2020	0.86%	1.93%	3.05%
2020-2025	0.67%	1.74%	2.90%
2020-2030	0.56%	1.63%	2.80%
2030-2035	0.47%	1.57%	2.77%
2035-2040	0.41%	1.53%	2.78%

Source: Texas State Data Center, 2014.

Table 7 breaks down the TxSDC's population projections for each of the five counties in the Austin-Round Rock MSA. The TxSDC's population projections anticipate that suburban counties, particularly Williamson and Hays Counties, will generate the most population growth in the future. Assuming that net future migration rates in Williamson County and Hays County are equal to past migration rates, then Williamson County will grow by almost 1.0 million residents between 2010 and 2040 and Hays County will grow by more than 470,000 residents. Travis County's growth, despite its larger population, is expected to increase by approximately 700,000 residents under the most optimistic scenario. Under the less optimistic 0.5 migration scenario, Travis County would experience a total population growth of 460,000 new residents, while Williamson County's population would grow by 420,000 residents and Hays County's population would increase by almost 213,000 residents. Bastrop County's population is projected to grow between 9,000 and 126,000 residents by 2040, depending upon the growth scenario. Caldwell County has a narrower range with the population projected between roughly 5,000 and 40,000 new residents in 2040.

Table 7: Population Projections for Counties in the Austin-Round Rock MSA, 2010-2040

			0.0 MIGRATION SCENARIO			
	Bastrop County	**Caldwell County**	**Hays County**	**Travis County**	**Williamson County**	**Total**
2010	74,171	38,066	157,107	1,024,266	422,679	1,716,289
2015	76,070	39,207	169,793	1,083,076	439,332	1,807,478
2020	78,112	40,393	183,237	1,132,853	451,898	1,886,493
2025	80,290	41,461	193,240	1,171,340	463,883	1,950,214
2030	82,133	42,244	202,649	1,202,423	475,800	2,005,249
2035	83,264	42,730	211,031	1,229,960	486,109	2,053,094
2040	83,825	42,999	219,275	1,256,304	492,815	2,095,218
			0.5 MIGRATION SCENARIO			
	Bastrop County	**Caldwell County**	**Hays County**	**Travis County**	**Williamson County**	**Total**
2010	74,171	38,066	157,107	1,024,266	422,679	1,716,289
2015	81,196	41,192	185,107	1,113,392	479,159	1,900,046
2020	89,066	44,538	216,983	1,200,883	538,808	2,090,278
2025	98,024	48,105	249,459	1,278,723	604,140	2,278,451
2030	107,906	51,665	285,920	1,348,207	676,864	2,470,562
2035	118,100	54,948	325,744	1,415,236	756,190	2,670,218
2040	128,712	58,006	369,861	1,484,854	840,008	2,881,441
			1.0 MIGRATION SCENARIO			
	Bastrop County	**Caldwell County**	**Hays County**	**Travis County**	**Williamson County**	**Total**
2010	74,171	38,066	157,107	1,024,266	422,679	1,716,289
2015	86,729	43,466	202,000	1,144,419	522,015	1,998,629
2020	101,908	49,478	257,643	1,273,260	640,699	2,322,988
2025	120,668	56,222	323,550	1,396,384	783,657	2,680,481
2030	143,212	63,441	406,051	1,508,642	956,459	3,077,805
2035	169,675	70,649	506,459	1,617,945	1,163,318	3,528,046
2040	200,583	77,903	628,309	1,732,860	1,406,994	4,046,649

Source: Texas State Data Center, 2014

The population of the San Antonio-New Braunfels MSA's is not anticipated to grow as rapidly as will the population of the Austin-Round Rock MSA. In fact, the population of the Austin-Round Rock MSA could potentially eclipse the San Antonio-New Braunfels MSA in size. Table 8 shows that the projected population for the San Antonio-New Braunfels MSA is expected to grow to between 2.6 million and 3.8 million residents by 2040. As with the Austin-Round Rock MSA, the conservative 0.0 migration scenario is unlikely in the San Antonio-New Braunfels MSA, given its historic role as a destination for migrants and its continued attractiveness into the future. The 0.5 migration scenario projects that the region would add 1.0 million new residents between 2010 and 2040, while the 1.0 migration scenario would result in 1.6 million new residents in the region. Given the region's historic population growth trends and its prospects for future growth, it will likely grow at a rate between the 0.5 and 1.0 migration scenarios.

Table 8: Population Projections for the San Antonio-New Braunfels MSA, 2010-2040

		TOTAL POPULATION	
Year	**0.0 Migration Scenario**	**0.5 Migration Scenario**	**1.0 Migration Scenario**
2010	2,142,508	2,142,508	2,142,508
2015	2,236,245	2,309,682	2,384,493
2020	2,324,068	2,481,286	2,645,041
2025	2,404,452	2,654,768	2,920,952
2030	2,474,476	2,825,089	3,204,283
2035	2,532,228	2,986,717	3,486,276
2040	2,580,358	3,142,324	3,767,306
		ANNUAL AVERAGE GROWTH	
Year	**0.0 Migration Scenario**	**0.5 Migration Scenario**	**1.0 Migration Scenario**
2010-2015	18,747	33,435	48,397
2015-2020	17,565	34,321	52,110
2020-2025	16,077	34,696	55,182
2020-2030	14,005	34,064	56,666
2030-2035	11,550	32,326	56,399
2035-2040	9,626	31,121	56,206
		COMPOUNDED ANNUAL GROWTH RATE	
Year	**0.0 Migration Scenario**	**0.5 Migration Scenario**	**1.0 Migration Scenario**
2010-2015	0.86%	1.51%	2.16%
2015-2020	0.77%	1.44%	2.10%
2020-2025	0.68%	1.36%	2.00%
2020-2030	0.58%	1.25%	1.87%
2030-2035	0.46%	1.12%	1.70%
2035-2040	0.38%	1.02%	1.56%

Source: Texas State Data Center, 2014.

Table 9 shows the SDC's population projections for five select counties in the San Antonio MSA. Unlike the Austin-Round Rock MSA, most of the future population growth is expected in the core (i.e. Bexar County), with less total population growth in the suburban counties. Bexar

County is projected to add between 400,000 and 1.1 million new residents, depending upon the growth scenario. The region as a whole is projected to add between 423,000 and 1.5 million resident, which demonstrates the future influence of Bexar County on the region's population growth.

Table 9: Population Projections for Select Counties in the San Antonio-New Braunfels MSA, 2010-2040

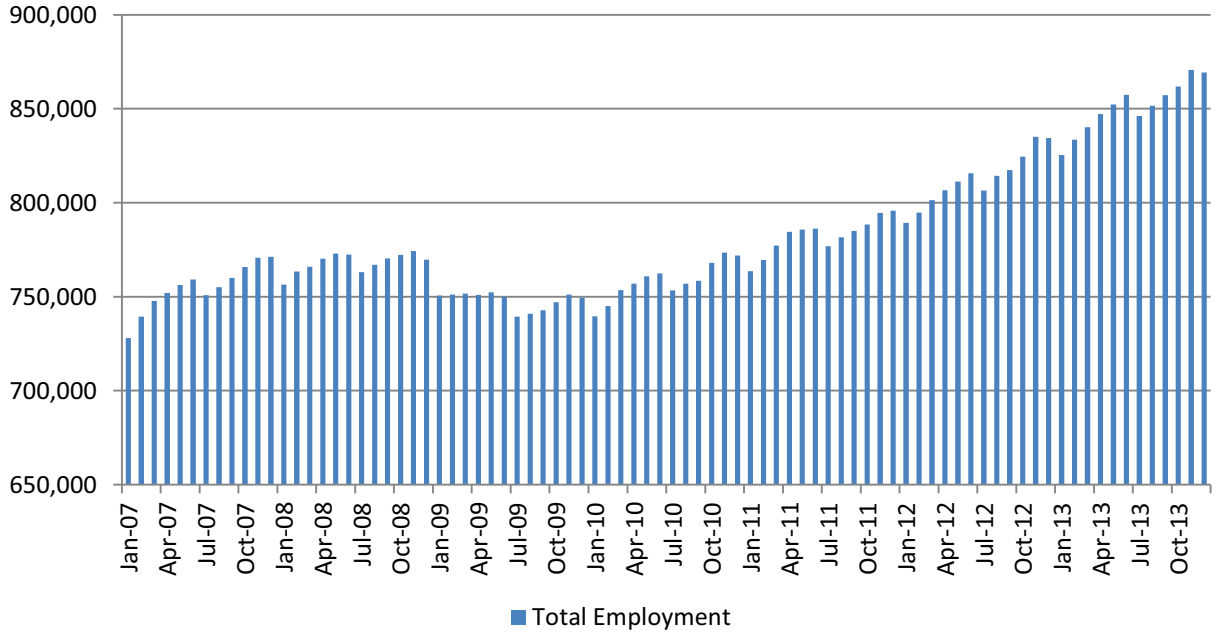
			0.0 MIGRATION SCENARIO			
	Bexar County	**Comal County**	**Guadalupe County**	**Kendall County**	**Wilson County**	**Total**
2010	1,714,773	108,472	131,533	33,410	42,918	2,031,106
2015	1,800,816	109,757	134,880	33,445	43,385	2,122,283
2020	1,880,182	111,040	138,177	33,685	44,051	2,207,135
2025	1,951,207	112,485	141,601	34,113	44,882	2,284,288
2030	2,013,760	113,486	144,418	34,479	45,503	2,351,646
2035	2,067,749	113,592	146,084	34,528	45,611	2,407,564
2040	2,115,302	113,107	146,589	34,246	45,168	2,454,412
			0.5 MIGRATION SCENARIO			
	Bexar County	**Comal County**	**Guadalupe County**	**Kendall County**	**Wilson County**	**Total**
2010	1,714,773	108,472	131,533	33,410	42,918	2,031,106
2015	1,843,080	118,919	145,520	36,163	46,652	2,190,334
2020	1,974,041	129,723	160,265	39,046	50,596	2,353,671
2025	2,104,629	141,045	176,129	42,118	54,709	2,518,630
2030	2,231,550	152,464	192,682	45,266	58,852	2,680,814
2035	2,351,770	163,100	209,380	48,304	62,665	2,835,219
2040	2,468,254	173,049	225,850	51,119	65,974	2,984,246
			1.0 MIGRATION SCENARIO			
	Bexar County	**Comal County**	**Guadalupe County**	**Kendall County**	**Wilson County**	**Total**
2010	1,714,773	108,472	131,533	33,410	42,918	2,031,106
2015	1,884,758	128,893	156,916	39,140	50,121	2,259,828
2020	2,065,849	151,926	185,504	45,323	57,935	2,506,537
2025	2,255,359	177,231	217,702	51,950	66,210	2,768,452
2030	2,446,467	204,334	253,290	59,160	74,822	3,038,073
2035	2,633,172	232,152	292,034	66,706	83,538	3,307,602
2040	2,817,067	260,075	333,880	74,494	92,113	3,577,629

Source: Texas State Data Center, 2014

EMPLOYMENT TRENDS

The Austin region's economy is generally recognized as one of the most resilient in the nation, particularly during and following the 2008-2009 Recession. The data in Figure 1 show total employment in the Austin-Round Rock MSA between 2007 and 2013 based upon the Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW) figures. The overall trend for the region has been mostly positive during this period, with the obvious exception of the 2008-2009 Recession. The region had approximately 728,000 jobs during January 2007, which grew to a peak of 774,000 jobs during November 2008. A sharp decline occurred in December 2008 when the region lost 19,000 jobs. While a decline in the number of workers between December and January is typical (since it is a period of seasonal employment) the lack of recovery during subsequent months demonstrated that these job cuts were permanent. The region's total employment fell to its lowest level during July 2009, when it reached 739,000 jobs. In the months that followed, through December 2013, total employment in the Austin-Round Rock MSA grew to 870,000 jobs. It is worth noting that the Austin region surpassed its earlier peak (prior to the 2008-2009 Recession) in 2011 and has added nearly 100,000 more jobs since then. The U.S. economy, on the other hand, did not surpass its pre-recession employment peak until 2014 (based upon Current Employment Statistics data).

Figure 1: Total Employment in the Austin-Round Rock MSA, 2007-2013

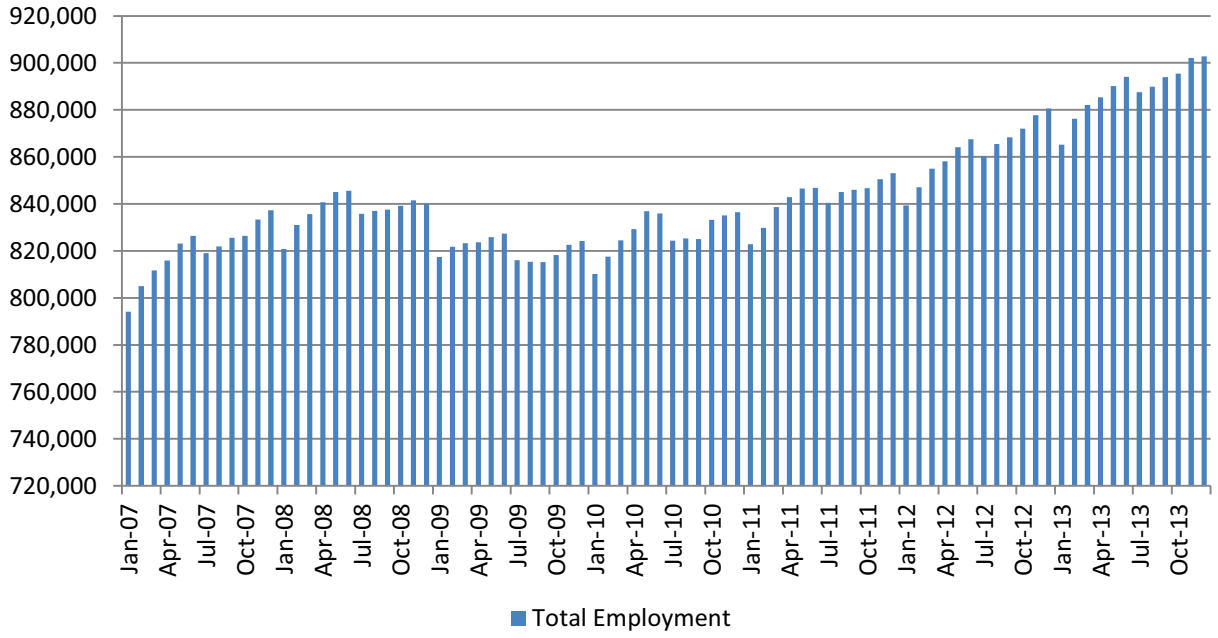


Note: Figure based upon Quarterly Census of Employment and Wages (QCEW) data.
Source: U.S. Bureau of Labor Statistics, 2014.

The workforce in the San Antonio-New Braunfels MSA also fared comparatively well during the 2008-2009 Recession. The San Antonio-New Braunfels MSA had approximately 794,000 jobs during January 2007, which grew to a peak of 845,000 jobs during June 2008 (See Figure 2). Like the Austin-Round Rock MSA, there was a sharp decline in the number of employed during

December 2008 and the region lost 22,000 jobs. The region's total employment fell to its lowest level during January 2010, when it reached 810,000 jobs. In the months that followed, through December 2013, total employment in the San Antonio-New Braunfels MSA grew to 902,000 jobs. However, it was not until May 2011 that regional employment surpassed the earlier peak and has since added more than 55,000 jobs.

Figure 2: Total Employment in the San Antonio-New Braunfels MSA, 2007-2013

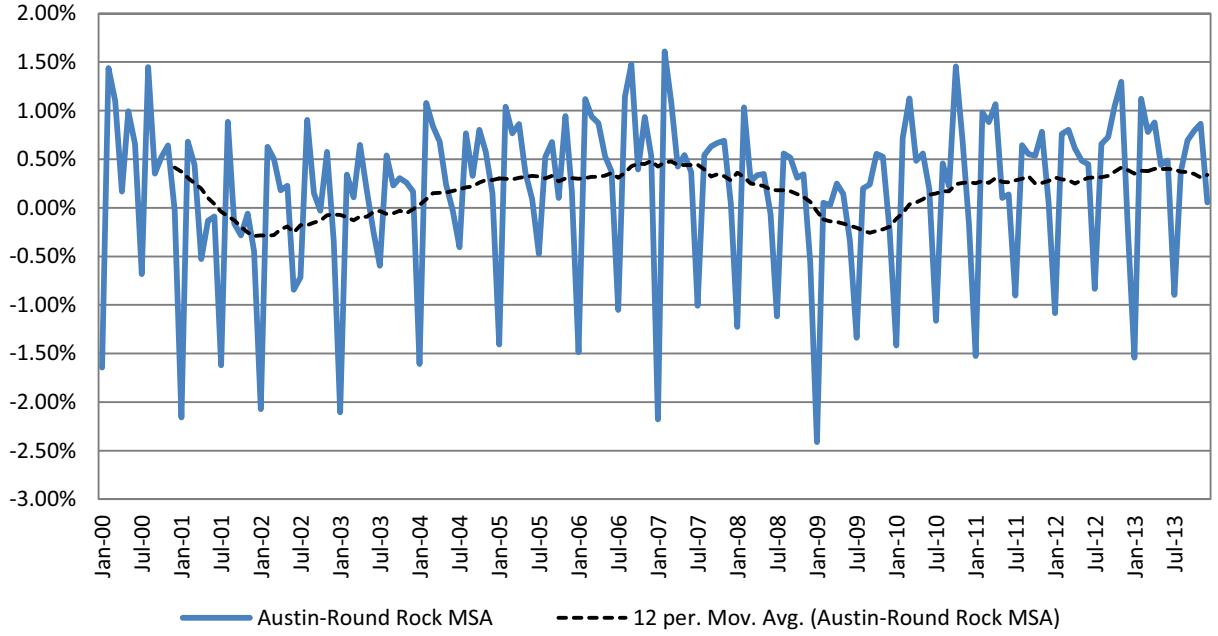


Note: Figure based upon Quarterly Census of Employment and Wages (QCEW) data.
Source: U.S. Bureau of Labor Statistics, 2014.

Figure 3 shows a longer period of employment data using the Texas Workforce Commission's Current Employment Estimates (CES) data. The CES data differ from the QCEW data because they are based upon surveys of employers rather than the actual count of employees, as the QCEW data are. Nonetheless, the discrepancies between the actual and estimated employment numbers tend to be relatively consistent, so the CES data can provide a reasonable surrogate for understanding employment trends when longer term QCEW data are not available. The data in Figure 3 show the percentage month-on-month employment change between January 2000 and December 2013. The unadjusted employment change shows considerable volatility, due to seasonal and academic employment. However, by adding a trend line showing the 12-month moving average, this volatility can be smoothed and the trends can be discerned. The 12-month moving average trend line shows that the Austin-Round Rock region suffered a prolonged period of job loss between 2001 and 2003, due to the downturn in the computer and telecommunications industries, in addition to the recessionary effects of the September 11, 2001 terrorist attacks. The region's economy recovered by early 2004 and enjoyed a period of sustained employment growth until 2008, when the national recession took hold. The job loss of the 2008-2009 Recession occurred over a briefer period than the previous

recession and the recovery came quicker. Since early 2010, the Austin-Round Rock MSA has experienced another sustained period of employment growth similar to the mid-2000s.

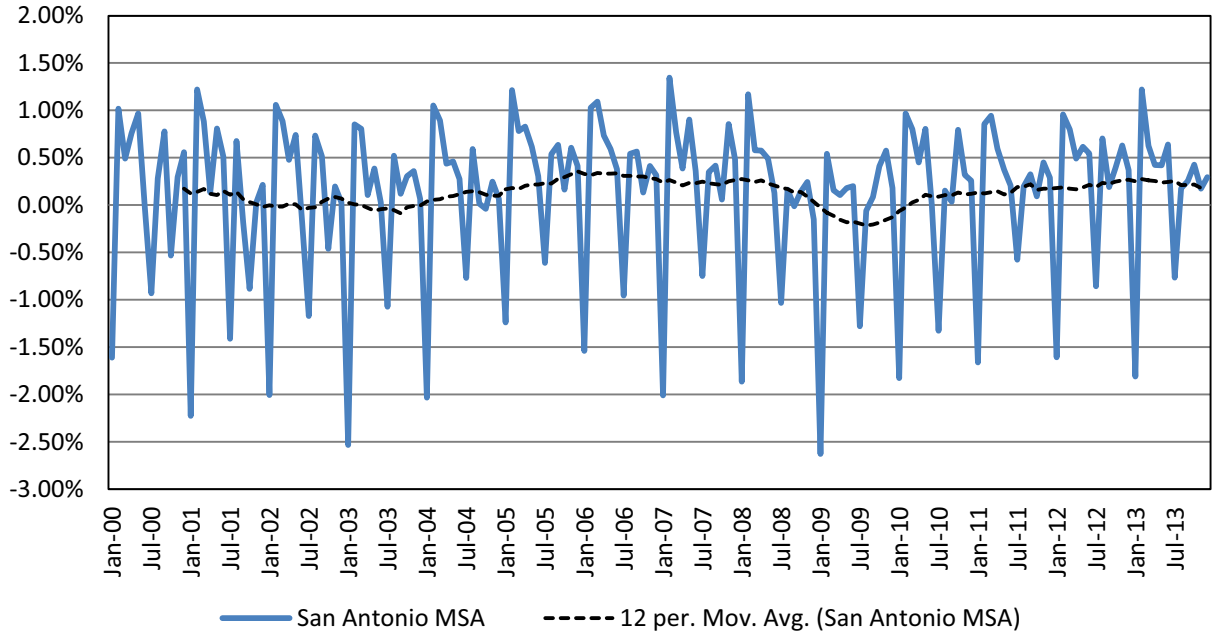
Figure 3: Month-on-Month Employment Change for Austin-Round Rock MSA, January 2000 to December 2013



Note: Figure based upon Current Employment Statistics (CES) data.
Source: Bureau of Labor Statistics, 2014.

Figure 4 shows the CES data over the same period for the San Antonio-New Braunfels MSA. The 12-month moving average trend line shows that the San Antonio region suffered a period of job growth stagnation more than job loss between 2001 and 2003, unlike the Austin-Round Rock MSA. The region's economy entered into a very modest recovery by early 2004 and enjoyed a period of sustained employment growth between 2006 and 2008, when the national recession took hold. During the recession the region's job loss was sustained between 2008 and 2009 and began a tepid recovery during 2010. Since early 2010, the San Antonio MSA has experienced another sustained period of employment growth, although it has been less robust than the growth in the Austin-Round Rock MSA.

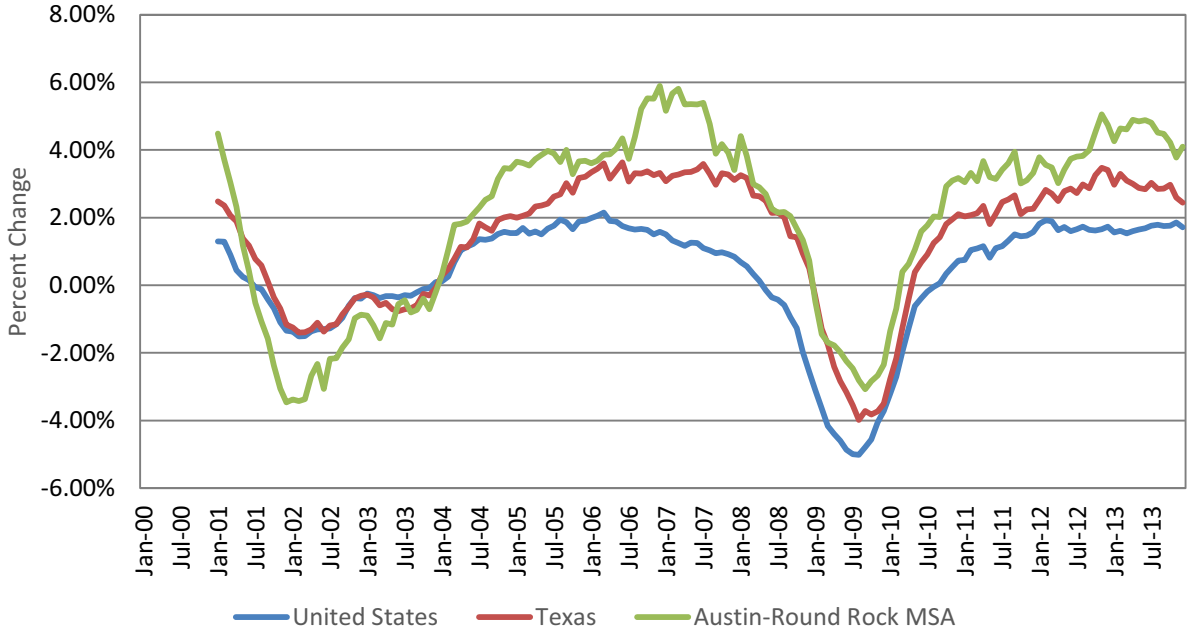
Figure 4: Month-on-Month Employment Change for San Antonio-New Braunfels MSA, January 2000 to December 2013



Note: Figure based upon Current Employment Statistics (CES) data.
Source: Bureau of Labor Statistics, 2014.

Figure 5 shows year-on-year employment change for the United States, Texas, and the Austin-Round Rock MSA. These data show that the recession, which began in 2001, had a more significant effect on the Austin-Round Rock region than it did on the United States or Texas economies. After recovering, the region's employment grew more quickly than did the nation or the state overall, for a four-year period between 2004 and 2008. The Austin-Round Rock MSA region even outperformed the U.S. economy during the period of labor force contraction, (as did the state of Texas), experiencing smaller proportional share of job losses and a quicker recovery. Since positive job growth returned in early-2010, the rate of job growth in the Austin-Round Rock MSA has outperformed the state and the nation.

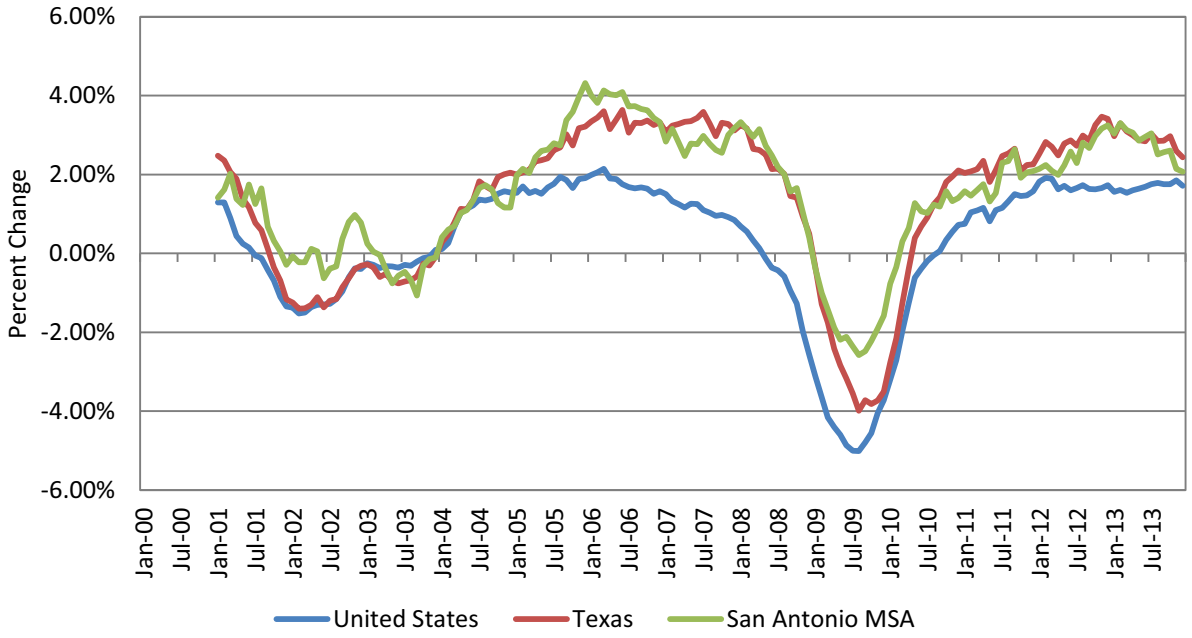
Figure 5: Year-on-Year Employment Change for the United States, Texas, and the Austin-Round Rock MSA, January 2000 to December 2013



Note: Figure based upon Current Employment Statistics (CES) data.
Source: Bureau of Labor Statistics, 2014.

Figure 6 shows the year-on-year employment change for the United States, Texas, and the San Antonio-New Braunfels MSA. These data again show that the San Antonio-New Braunfels MSA economy was less severely affected by the 2001 Recession than were the Texas and U.S. economies. Following its recovery, the region's employment grew strongly through the mid-2000s, similar to the overall state rate and more strongly than the nation. Like the Austin-Round Rock MSA's economy, the San Antonio-New Braunfels MSA's economy suffered a lower rate of employment loss and recovered from the 2008-2009 Recession more quickly than did the state and the nation. Since the recovery began, the region performed similarly to the Texas economy.

Figure 6: Year-on-Year Employment Change for the United States, Texas, and the San Antonio-New Braunfels MSA, January 2000 to December 2013



Note: Figure based upon Current Employment Statistics (CES) data.
Source: Bureau of Labor Statistics, 2014.

For comparison purposes, Table 10 shows historic employment data for the four largest MSAs in Texas during the period between 2007 and 2013. The data show that the Austin-Round Rock MSA had a net employment increase of 96,334 jobs between 2007 and 2013, which is actually the third largest net increase among the four largest MSAs. However, the data also reveal that the Austin-Round Rock MSA had the fastest CAGR at 2.02 percent. The San Antonio-New Braunfels MSA ranked fourth, in terms of overall employment growth during this period and third highest rate of employment growth.

Table 10: Total Employment in Largest Texas MSAs, 2007-2013

		TOTAL EMPLOYMENT		
Year	**Austin MSA**	**Dallas Fort Worth MSA**	**Houston MSA**	**San Antonio MSA**
2007	754,675	2,882,016	2,493,764	819,962
2008	768,189	2,927,566	2,553,210	837,490
2009	748,101	2,806,958	2,487,899	820,893
2010	758,381	2,806,620	2,478,444	827,805
2011	782,423	2,874,730	2,543,721	842,408
2012	812,600	2,955,863	2,642,469	862,961
2013	851,009	3,058,105	2,738,348	888,730
		TOTAL EMPLOYMENT CHANGE		
Year	**Austin MSA**	**Dallas Fort Worth MSA**	**Houston MSA**	**San Antonio MSA**
2007-2008	13,514	45,550	59,446	17,528
2008-2009	-20,088	-120,608	-65,311	-16,597
2009-2010	10,280	-338	-9,455	6,912
2010-2011	24,042	68,110	65,277	14,603
2011-2012	30,177	81,133	98,748	20,553
2012-2013	38,409	102,242	95,879	25,769
2007-2013	**96,334**	**176,089**	**244,584**	**68,768**
		COMPUNDED ANNUAL GROWTH RATE		
Year	**Austin MSA**	**Dallas Fort Worth MSA**	**Houston MSA**	**San Antonio MSA**
2007-2008	1.79%	1.58%	2.38%	2.14%
2008-2009	-2.61%	-4.12%	-2.56%	-1.98%
2009-2010	1.37%	-0.01%	-0.38%	0.84%
2010-2011	3.17%	2.43%	2.63%	1.76%
2011-2012	3.86%	2.82%	3.88%	2.44%
2012-2013	4.73%	3.46%	3.63%	2.99%
2007-2013	**2.02%**	**0.99%**	**1.57%**	**1.35%**

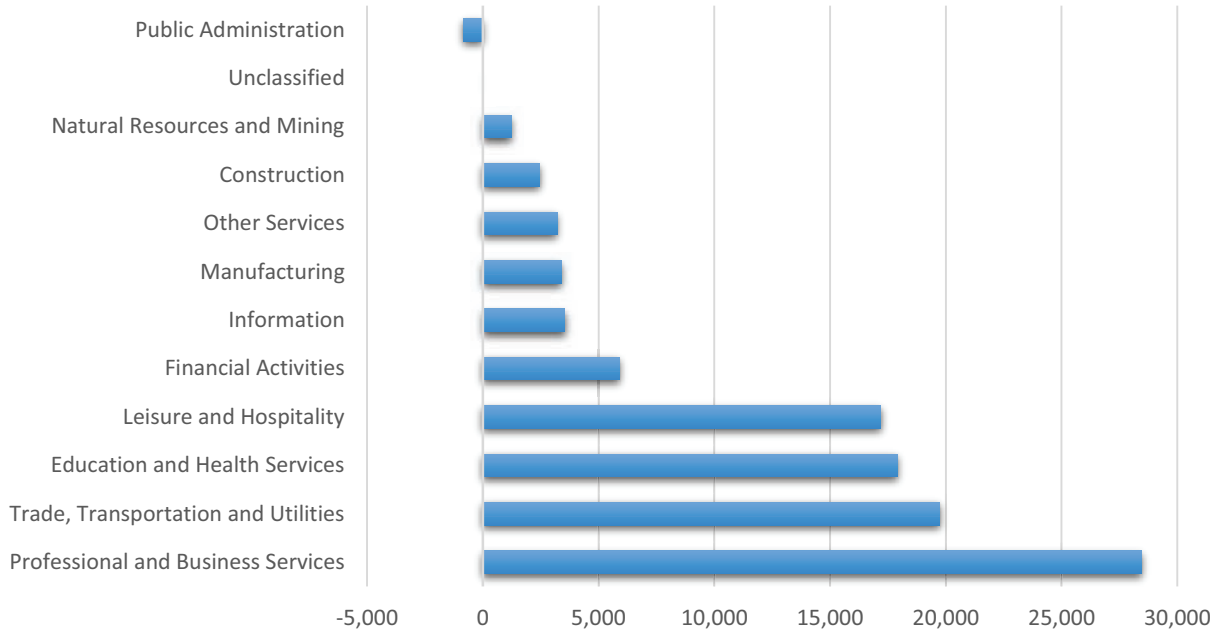
Source: Bureau of Labor Statistics, 2014.

RECENT SECTORAL EMPLOYMENT TRENDS IN THE AUSTIN-ROUND ROCK, TX MSA

This section provides detail on the recent sectoral employment patterns and trends in the Austin-Round Rock, TX MSA. Despite the effects of the 2008-2009 Recession, the Austin-Round Rock MSA experienced significant employment growth between 2009 and 2013. Overall, the region had a net employment increase of 102,221 jobs or an increase of 13.8 percent during this four-year period. Figure 7 further breaks down the employment growth, showing the absolute employment change by industry sector in the Austin-Round Rock MSA between 2009 and 2013. The Professional and Business Services sector gained the most employment with 28,448 new jobs, followed by the Trade, Transportation, and Utilities sector, which added 19,749 jobs. The next two high-growth employment sectors were Education and Health Services with 17,926 added jobs and Leisure and Hospitality with 17,201 new jobs. Surprisingly,

despite the large number of workers in state and local government, the region's Public Administration sector lost jobs.

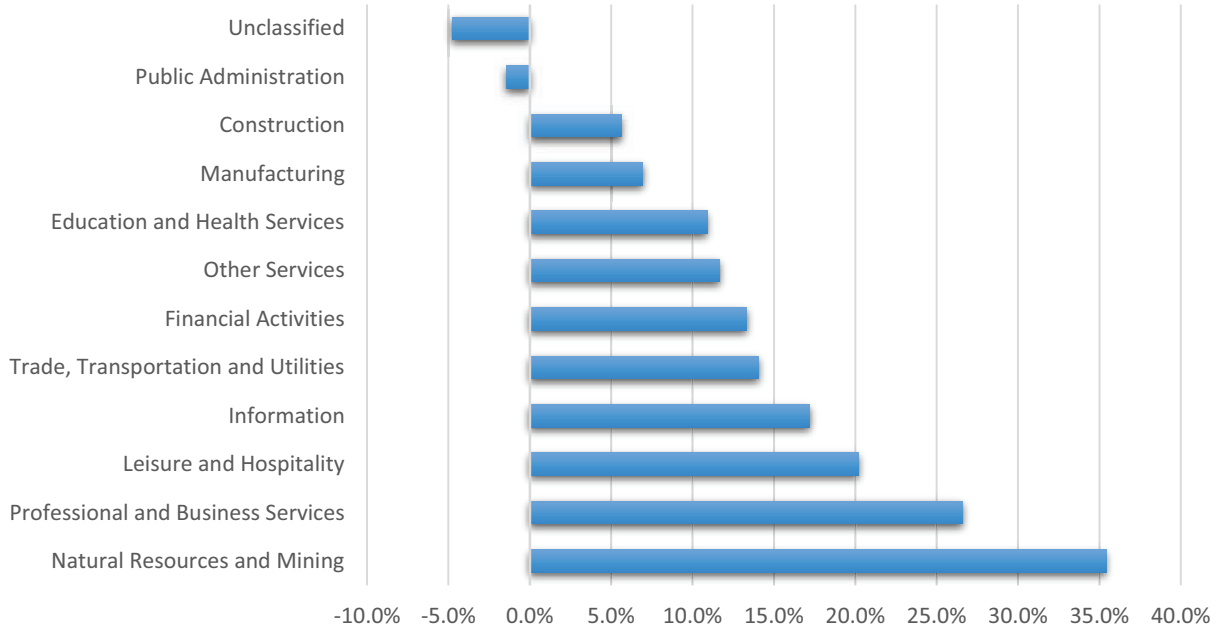
Figure 7: Absolute Employment Change in the Austin-Round Rock MSA by Sector, 2009 vs. 2013



Source: Texas Workforce Commission, 2015.

Figure 8 shows the percentage of employment change by sector between 2009 and 2013. The Natural Resources and Mining sector grew by 35.4 percent, which was the largest increase in the local economy. However, in terms of absolute change, the Natural Resources and Mining Sector increased by only 1,223 jobs or 1.2 percent of the region's overall employment growth. Other employment sectors in the region with large percentage increases, as well as absolute change, were Professional and Business Services; Leisure and Hospitality; Trade, Transportation, and Utilities; Financial Activities; and Education and Health Services.

Figure 8: Percent Employment Change in the Austin-Round Rock MSA by Sector, 2009 vs. 2013



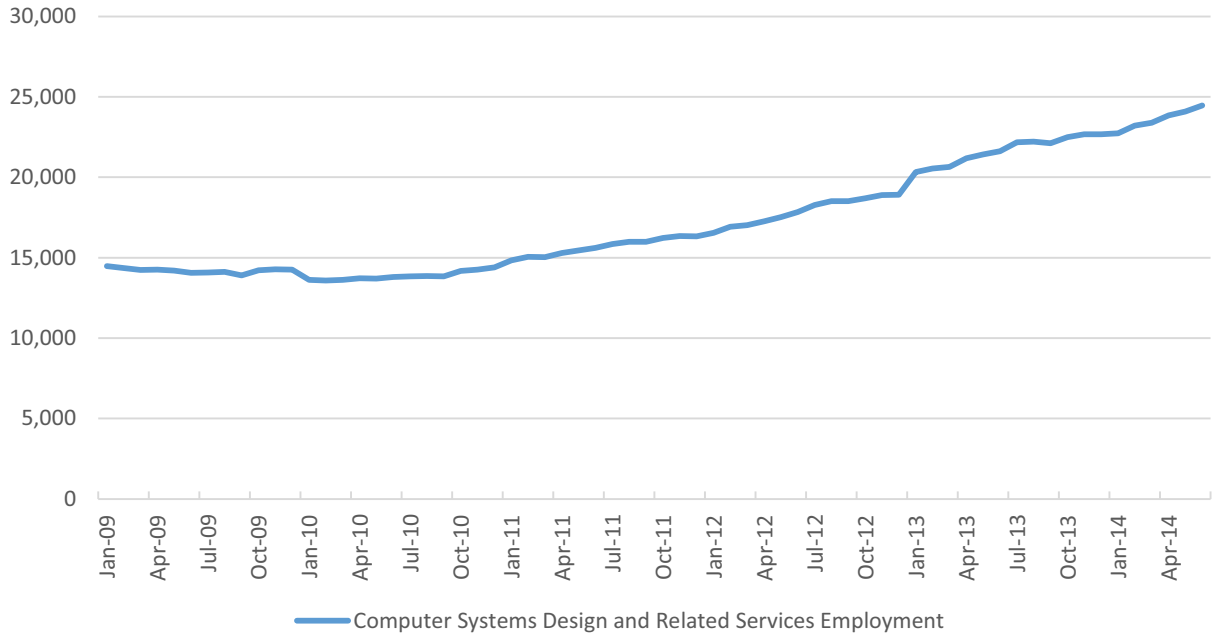
Source: Texas Workforce Commission 2015.

The remaining sections of this appendix provide additional detail on the individual employment sectors that experienced the largest absolute growth. Additionally, it will also include a discussion of the Government sector and the Natural Resources and Mining sector, which could be affected by recent drops in global oil prices.

Professional Business Services

The professional business services sector includes a wide range of industries that are mostly white-collar, such as law, accounting, architecture, engineering, computer systems design, consulting, public relations and advertising, and business management and services. As described above, the Professional Business Services sector increased by 28,448 jobs between 2009 and 2013. Total employment in the Professional Business Services sector was 143,588 jobs during the Second Quarter of 2014. Within the Professional Business Services sector, employment in the Computer Systems Design and Related Services subsector experienced significant growth between 2009 and 2013. This growth is not surprising, given Austin's specialization in the computer industry. The average employment in this subsector during 2009 was 14,204 employees, increasing to an average employment 21,676 employees during 2013 (See Figure 9). The absolute change was an increase of 7,472 jobs over these four years or an increase of 52.6 percent. The total employment in this subsector during June 2014 was 24,464 jobs.

Figure 9: Employment in the Computer Systems Design and Related Services Subsector, January 2009 through June 2014

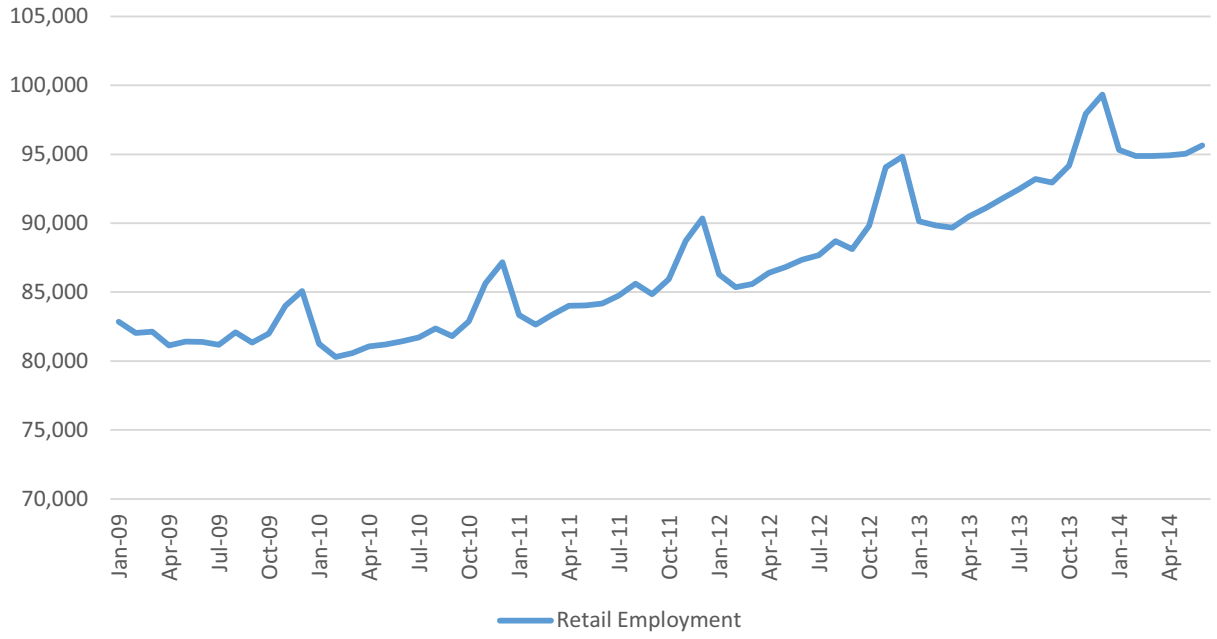


Source: Texas Workforce Commission, 2015.

Trade, Transportation, Utilities

The Trade, Transportation, and Utilities sector added 19,749 employees between 2009 and 2013. Within this sector, more than half of the new employment was added in the Retail subsector, which grew by 10,538 jobs during this period or an increase of 12.8 percent (See Figure 10). Since 2009, there have been relatively few new shopping centers built in the Austin MSA. Among those retail centers that have been built since 2009, the notable ones include Kyle Crossing (743,415 square feet), Burleson Crossing (Bastrop – 550,000 square feet), Cedar Park Town Center (325,000 square feet), and Parkline (Austin – 300,000 square feet). Other retail employment growth has resulting from adding employees to existing staff, absorbing vacant retail space, and constructing new free-standing retail buildings. Total employment in the Retail subsector was 95,637 jobs during June 2014. The noticeable employment peaks at the end and beginning of each year are the result of temporary hiring around the holidays.

Figure 10: Employment in the Retail Subsector, January 2009 through June 2014

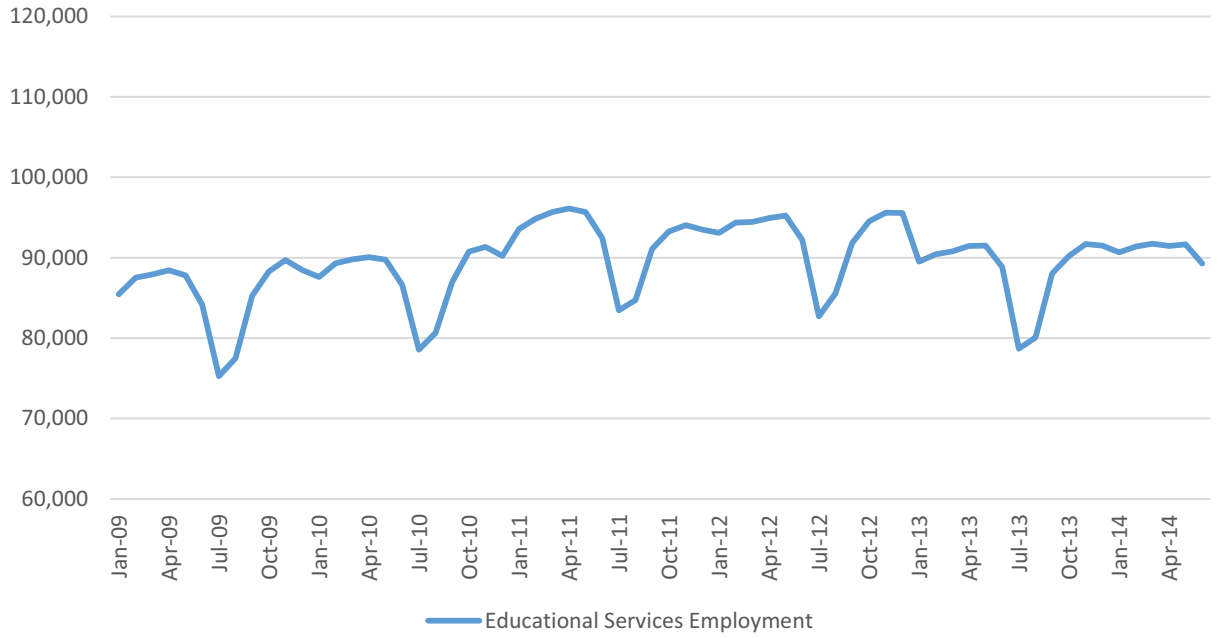


Source: Texas Workforce Commission, 2015.

Education and Health Services

Typically, the Education and Health Services sector is one of the largest and fastest growing employment sectors in a region, especially when the region is rapidly adding population. The total employment for this sector was 187,632 jobs during the Second Quarter of 2014 (See Figure 11). Usually growth is strong in both the Education and the Health Services subsectors. However, due to the 2008-2009 Recession, many school districts in the Austin-Round Rock MSA curtailed the hiring of new staff or reduced their workforce. Despite the region adding approximately 195,000 new residents (or an increase of 11.6 percent) between 2009 and 2013, the Educational Services subsector only added 3,083 workers or an increase of 3.6 percent. The cyclical element of this subsector, visible in Figure 11, is due employment changes between academic years.

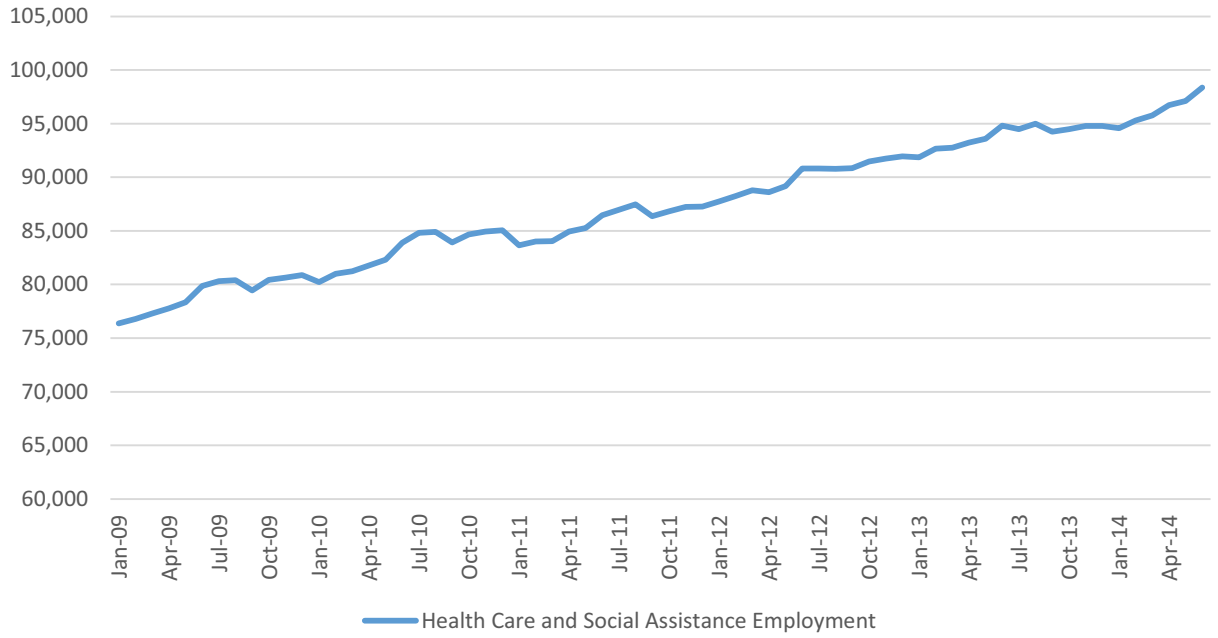
Figure 11: Educational Services Subsector Employment in Austin-Round Rock MSA, January 2009 through June 2014



Source: Texas Workforce Commission, 2015.

The Health Care and Social Assistance subsector, on the other hand, grew significantly between 2009 and 2013, adding 14,843 jobs between 2009 and 2013 or an increase of 18.8 percent (See Figure 12). Growth in the Health Care and Social Assistance subsector also outpaced population growth (the aforementioned 11.6 percent). In addition to keeping pace with population growth, the additional employment in this sector was likely due to a growing number of elderly, the opening of Seton Medical Center in Hays County and a small private hospital in Austin, and expansions of existing hospitals in the region. Total employment in the subsector was 98,371 workers during June 2014.

Figure 12: Health Care and Social Assistance Subsector Employment in Austin-Round Rock MSA, January 2009 through June 2014



Source: Texas Workforce Commission, 2015.

Leisure and Hospitality Sector

The Leisure and Hospitality Sector has been one of the fastest growing employment sectors in the Austin-Round Rock MSA. Events held in the city of Austin attract attendees not only from Texas, but nationally and internationally. The SXSW festival (which contains separate music, film, and interactive conferences) is one Austin's best known events. During the 2014 SXSW conferences, there were an estimated 376,600 attendees who booked an estimated 60,450 room nights at local hotels.[2] The daily attendance at the Austin City Limits Festival, another major event that now occupies two three-day weekends, is approximately 75,000 persons.[3] Additionally, the Formula 1 racing at the newly built Circuit of the Americas (COTA) track, which also hosted the 2014 X-Games and various concerts, is another major venue. Counting attendees to Formula 1 races, motorsport/sporting events, concerts, and other smaller events, the total attendance was 1,109,934 person days (i.e. a person's multi-day visits are counted as a one visit during each day) and COTA estimates that each Formula 1 race attendee (about a third of the total) spends an average of 3.82 nights in Austin.[4] Home football games at the University of Texas at Austin are another major event that attracts approximately 36,000 out-of-town

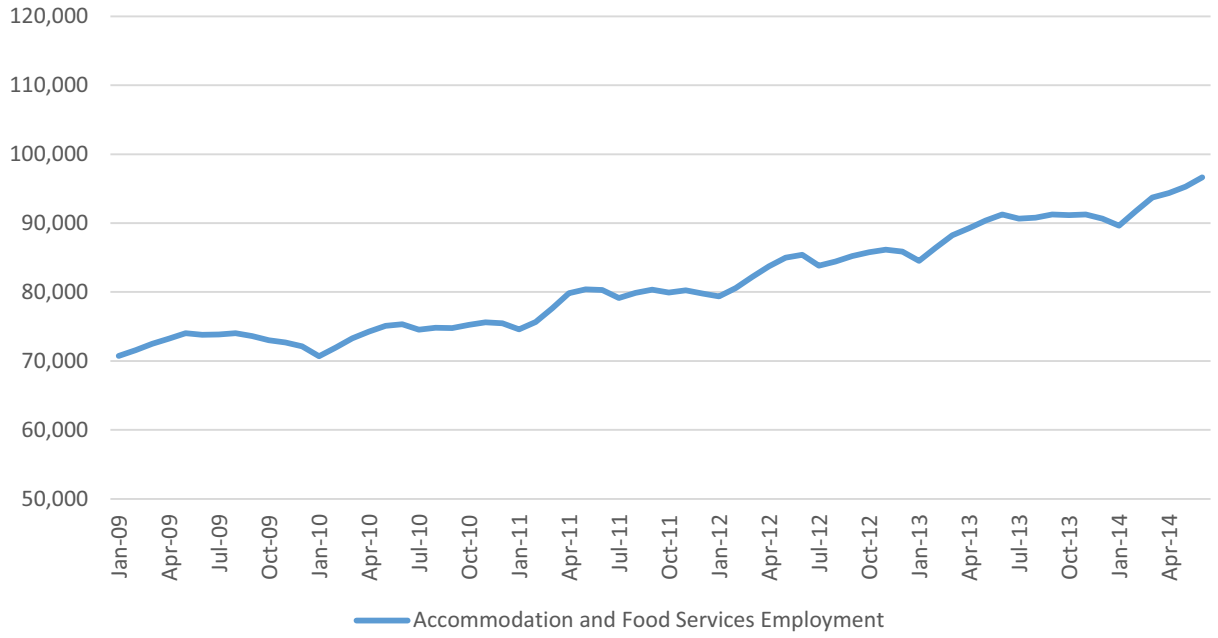
[2] Greyhill Advisors. 2014. Analysis of the Economic Benefit to the City of Austin from South by Southwest 2014. http://www.sxsw.com/sites/default/files/attachments/2014%20SXSW%20Economic%20Impact%20Analysis.pdf.

[3] Dinges, Gary. ACL Fest's expansion to 2 weekends has benefits, drawbacks. Austin American-Statesman. 29 September 2013. http://www.statesman.com/news/business/acl-fests-expansion-to-2-weekends-has-benefits-dra/nbBC4/.

[4] Greyhill Advisors. 2014. The Economic Impact of Circuit of the Americas. http://ea80e97cace747c2c244-5483548c70a81fe49af7816b21fff1c8.r64.cf1.rackcdn.com/COTA-Economic-Impact_Greyhill-Advisors.pdf.

visitors, who collectively create a $24 million economic impact on the local economy during each game.[5] All of these visitors to the city of Austin are in addition to the others who visit for conferences, other events, or simply as tourists. Within the Leisure and Hospitality sector, most of the growth has been in the Accommodation and Food Services subsector. Figure 13 shows that employment in the subsector grew by 16,724 jobs or an increase of 22.9 percent. Given Austin's healthy tourism sector, there are a number of new hotels in the construction or planning process. According to the *Austin Business Journal*, there are currently 8,649 rooms in the development pipeline within the region. One recently opened hotel is the 17-story Hyatt Place hotel in downtown Austin. Other hotels that are in the construction phase include the 1,012-room JW Marriott convention hotel (expected February 2015), a 1,066-room Fairmont convention hotel (expected June 2017), a 366-room Westin hotel (expected summer 2015), the 322-room Hotel Van Zandt, a 167-room Holiday Inn Express, and a 133-room Hotel Indigo.[6] A number of other hotels are currently planned for downtown Austin and its environs.

Figure 13: Employment in the Accommodation and Food Services Subsector, January 2009 through June 2014



Source: Texas Workforce Commission, 2015.

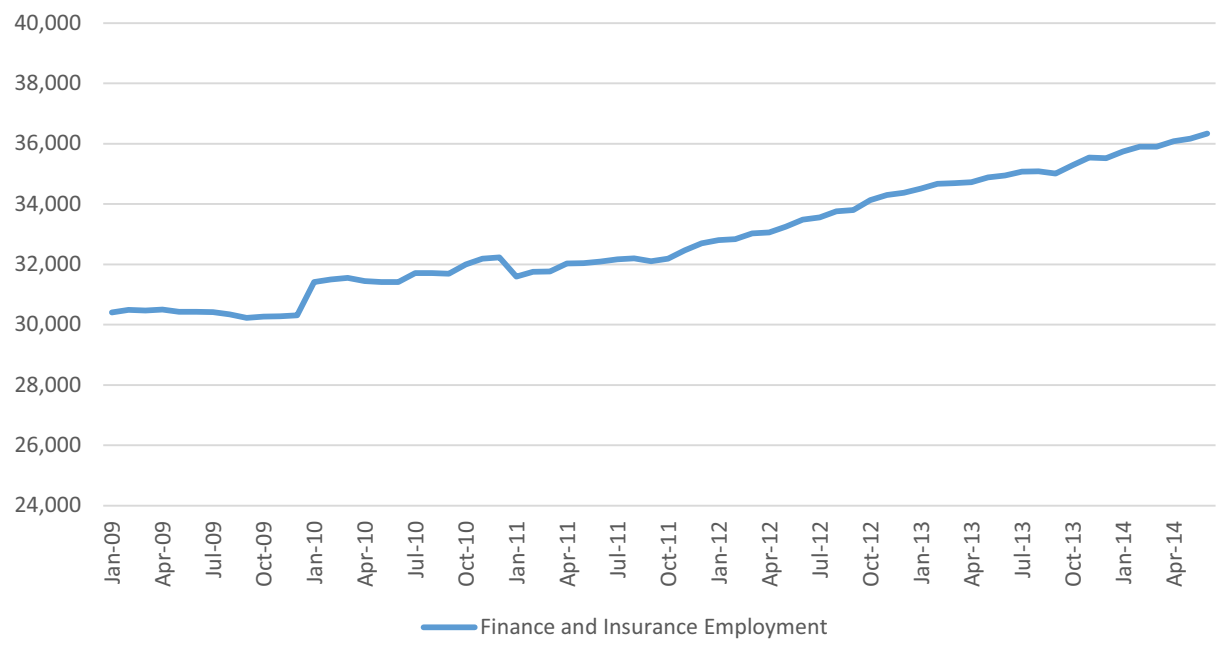
Finance and Insurance

The Finance and Insurance Sector has not traditionally had a disproportionate role in the local economy. Most employment in this sector is geared towards retail and commercial banking and insurance, along with public finance for the state and local government and managing

[5] University of Texas System. The University of Texas at Austin: impact on Austin. http://www.utsystem.edu/sites/utsfiles/news/ImpactSheetAustin0611.pdf.
[6] Buchholz, Jan. "Austin's New Roomy Interior". *Austin Business Journal*. 2 January 2015.

public pension plans. However, some new financial service activities have been added to the local economy. More recently Charles Schwab announced plans to add 800 more employees in Austin, where it currently has 1,100 employees. Charles Schwab has cited Austin's affordability with quality of life, compared to more expensive locations that traditionally attract the financial sector, as a primary reason for this expansion. Total employment in the Finance and Insurance sector during June 2014 was 36,341 jobs.

Figure 14: Employment in the Finance and Insurance Subsector, January 2009 through June 2014

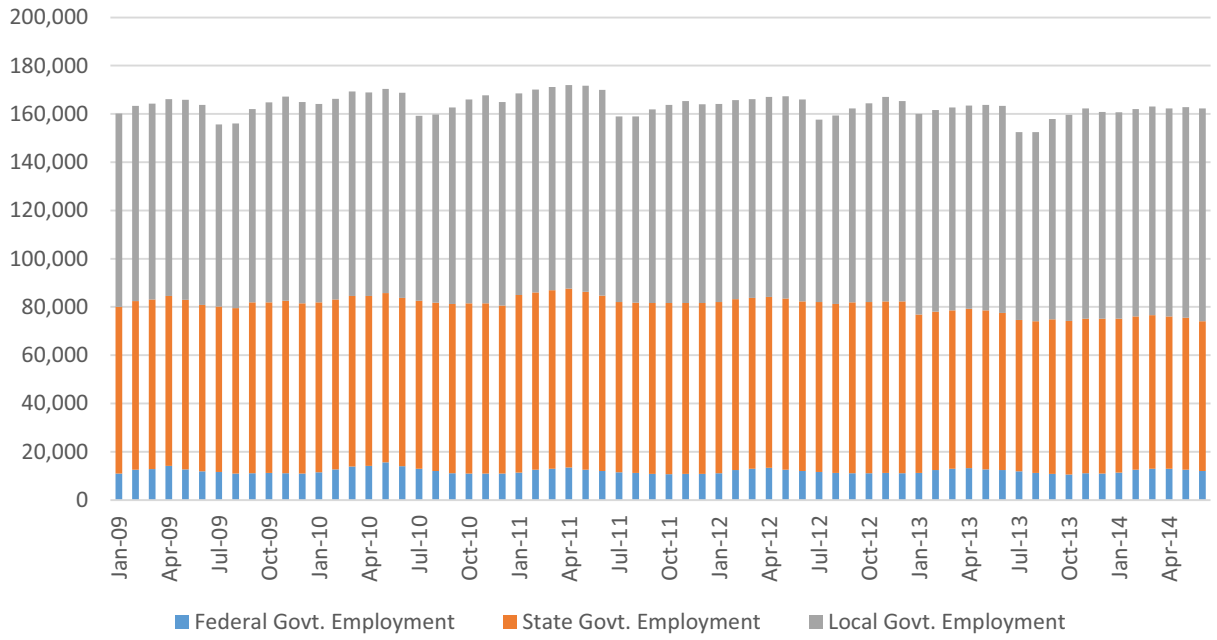


Source: Texas Workforce Commission, 2015.

Public Sector Employment

As the state capital of Texas, the Austin-Round Rock MSA has a large number of government employees. During June 2014, there were 62,157 state workers in the region. The presence of federal employment, however, is much smaller with only 11,983 workers during the same month. Many of these federal employees work at an IRS processing facility in Austin. Local government, however, was the largest sector of public workers with 88,184 employees during June 2014. While there is a common perception that public sector employment grows continuously, Figure 15 shows that public sector employment in the Austin-Round MSA actually declined modestly from an average of 162,852 workers during 2009 to an average of 160,040 workers during 2013.

Figure 15: Federal, State, and Local Government Employment in the Austin-Round Rock MSA, January 2009 through June 2014



Source: Texas Workforce Commission, 2015.

Natural Resources and Mining

The recent decline in global oil prices has generated questions about the viability of Texas's petroleum extraction industry, given its prominence in the state's economy and its role in supporting the Texas economy during the 2008-2009 Recession. Over the past decade, the widespread use of horizontal drilling and hydraulic fracturing has been used to produce significant volumes of oil and gas from shale plays that were previously untapped. In Texas, there are three major shale plays with significant drilling and production activity: the Barnett shale play, located in north Texas around the Dallas-Fort Worth region; the Permian Basin shale play, located in West Texas around the cities of Midland and Odessa; and the Eagle Ford shale play, located south of San Antonio toward the Texas-Mexico border. While there are also shale deposits deep under the Austin-Round Rock MSA, the geology of the region is not conducive to cheaply extracting any oil and gas that might exist. As a result, there is very little oil production in the Austin-Round Rock MSA, with the notable exception of southern Caldwell County. On the business side of the oil extraction industry (management, finance, engineering, support services, etc.), most major corporations are headquartered in Houston or Dallas. Houston, in particular, serves as a global center for the petroleum industry.

Nationally, during the second quarter of 2014, there were 195,215 workers employed in the oil and gas extraction sector (NAICS 211), which was 0.14 percent of the U.S. workforce. There were also 431,702 workers in the Support Activities for Mining (NAICS 213) sector, which made

up 0.32 percent of the U.S. workforce (See Table 11). As would be expected, Texas had a large share of these workers. Despite having more than half the nation's workers (101,008 jobs) in the Oil and Gas Extraction subsector, it made up less than 1.0 percent of the state's workforce. The Austin-Round Rock MSA, by comparison, had only 1,237 workers in NAICS 211, which was 0.14 percent of the region's workforce. During the same period, 1.67 percent of the state's employment worked in the NAICS 213 subsector. Only 0.18 percent of the Austin-Round Rock MSA's workforce was employed in NAICS 213.

Table 11: Total Second Quarter Employment and Employment in the Oil and Gas Extraction Subsector (NAICS 211) and the Support Activities for Mining Subsector (NAICS 213)

	EMPLOYMENT			SHARE OF TOTAL EMPLOYMENT	
Area	**Total**	**NAICS 211**	**NAICS 213**	**NAICS 211**	**NAICS 213**
United States	137,016,512	195,215	431,702	0.14%	0.32%
Texas	11,353,586	101,008	189,674	0.89%	1.67%
Austin-Round Rock MSA	879,792	1,237	1,580	0.14%	0.18%

Source: U.S. Bureau of Labor Statistics and the Texas Workforce Commission, 2014.

Note: Employment data for Texas and the Austin-Round Rock MSA was obtained from the Texas Workforce Commission and data for the United States was obtained from the U.S. Bureau of Labor Statistics. Figures from both data sources were based upon the Quarterly Census of Employment and Wages (QCEW) dataset. The BLS does not disclose data from NAICS 211 for the Austin-Round Rock MSA but the TWC does report these employment figures.

Table 12 shows the actual employment in each subsector between 2009 and 2013. The data show that NAICS 211 added 255 jobs during this period, while NAICS 213 added 734 jobs. Collectively, this increase accounted for less than 1.0 percent of the regions total employment growth during this period.

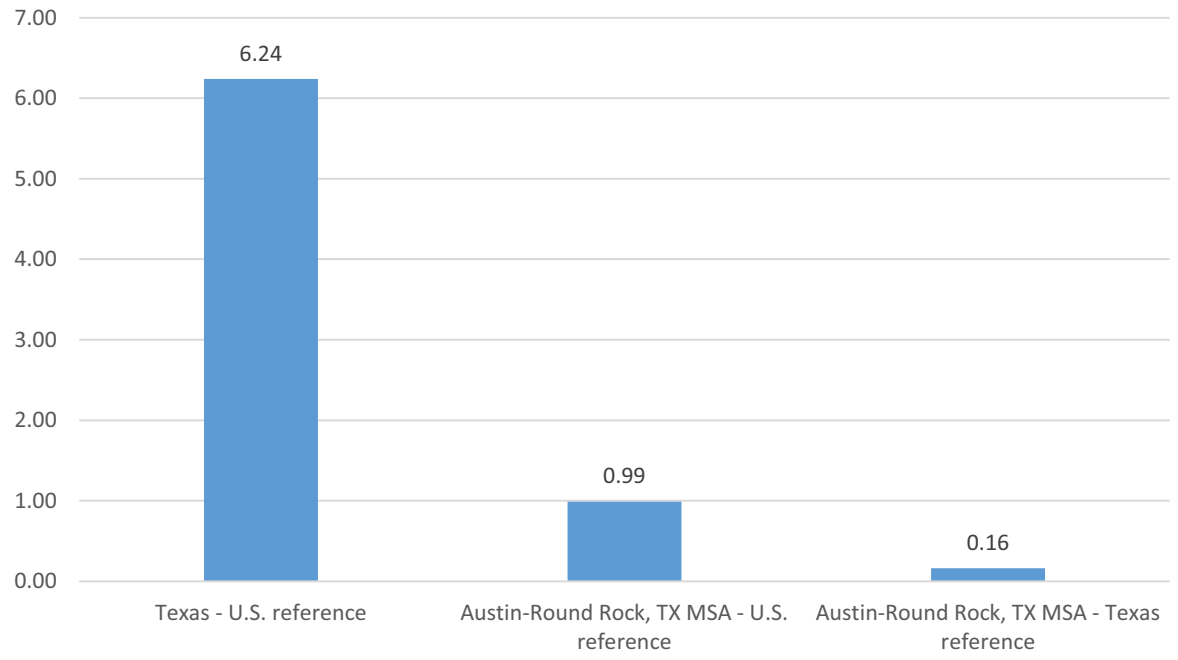
Table 12: Annual Average Employment in NAICS 211 and NAICS 213 Subsectors in Austin-Round Rock MSA, 2009-2013

Year	**NAICS 211 Oil and Gas Extraction**	**NAICS 213 Support Activities for Mining**
2009	888	629
2010	887	652
2011	975	806
2012	1,054	1,043
2013	1,143	1,363
Change 2009-13	255	734

Source: Texas Workforce Commission, 2015

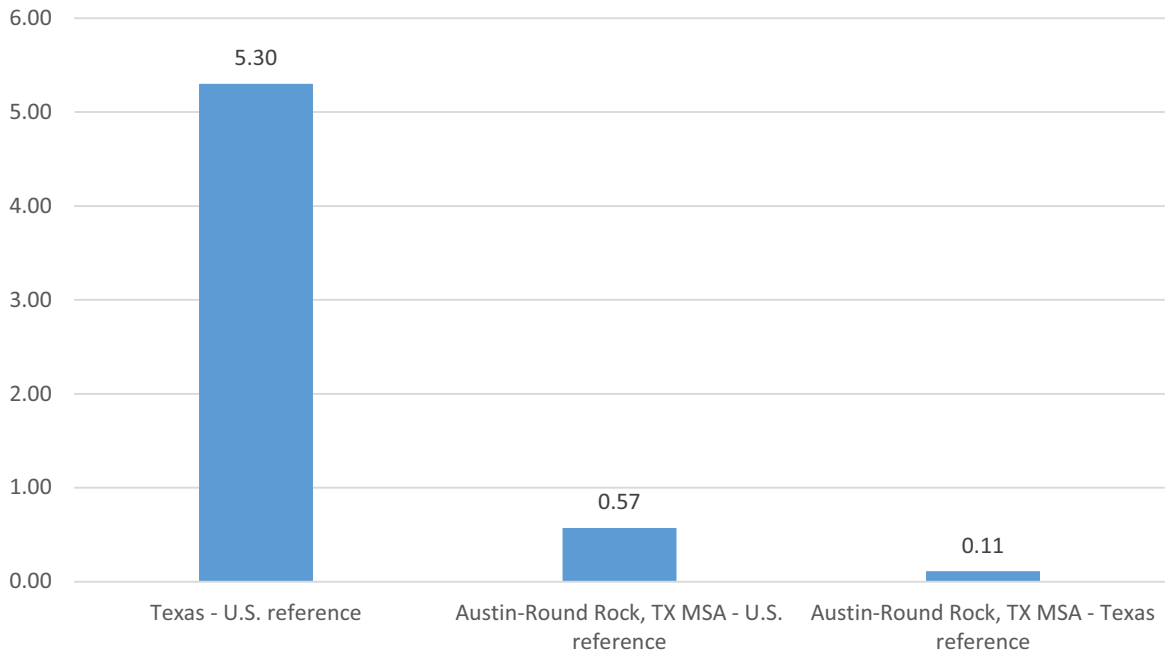
Another measure of the oil and gas extraction sector's importance to the Austin-Round Rock MSA economy is to calculate its location quotient. A location quotient is a measure of a region's employment specialization, compared to another (larger) region's employment. If the location quotient for an industry in a region is higher than 1.0, it is considered specialized within that employment sector. If the location quotient is below 1.0, the region is not considered specialized. In Figure 16, the data show that the state of Texas is highly specialized in the oil and gas extraction sector, compared to the United States overall. Texas location quotient for NAICS 211 was 6.24 during the second quarter of 2014 (See Figure 16). However, the location quotient for the Austin-Round MSA in NAICS 211 was 0.99, using the overall U.S. economy as a reference region. This number means the Austin-Round Rock MSA has roughly the number of employees in NAICS 211 that one would expect for an economy of its size. When the Austin-Round Rock MSA's employment in NAICS211 is compared to the Texas economy, it has a location quotient of 0.16, which means it has significantly less employment specialization in this sector than the state overall. The data show the specialization of the local economy in the NAICS 213 sector is even less than NAICS 211 (See Figure 17). The Austin-Round Rock MSA has a location quotient of 0.57 for NAICS 213 compared to the U.S. economy and a location quotient of 0.11 compared to the Texas economy. It should be pointed that this analysis does not account for the potential losses of indirect and induced labor nor lost income. But, given the modest role the petroleum extraction industry has in the local economy, these losses are not expected to be significant.

Figure 16: Location Quotients for NAICS 211 Oil and Gas Extraction – Second Quarter 2014



Source: Calculated using data from the U.S. Bureau of Labor Statistics and the Texas Workforce Commission, 2015.

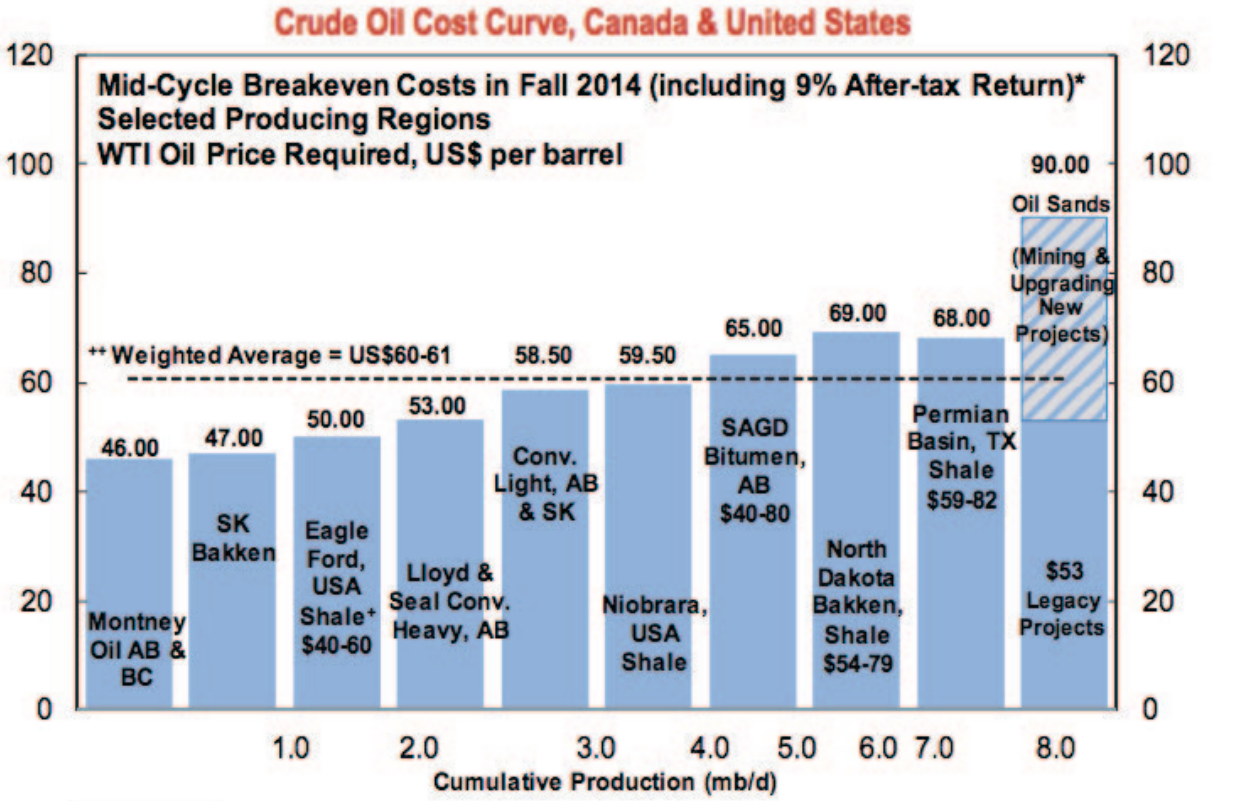
Figure 17: Location Quotients for NAICS 213 Support Activities for Mining – Second Quarter 2014



Source: Calculated using data from the U.S. Bureau of Labor Statistics and the Texas Workforce Commission, 2015.

Oil and gas production in Texas is undoubtedly influenced by the price of oil, although the impacts of falling crude oil prices on production vary by location. In other words, the cost of producing a barrel of oil is not the same across the state. The cost to produce a barrel of crude oil depends on the location of the drilling and the individual circumstances of the firms drilling the wells (e.g. are they using their own or leased equipment; are they self-financed or do they have investors, etc.). The figure below, using data from and produced by Scotiabank Equity Research and Scotiabank Economics, shows cost estimates for producing crude oil in various locations. The Permian Basin shale play is a relatively expensive location, but it is estimated that some producers in the Eagle Ford shale play could weather oil prices as low as $40 per barrel (See Figure 18). Anecdotally, there are reports of even lower costs of production in the Eagle Ford shale play, but the actual cost does literally differ from well to well.

Figure 18: Estimates of Crude Oil Production Costs in Canada and the United States, Fall 2014



* Excludes 'up-front' costs (initial land acquisition, seismic and infrastructure costs): treats 'up-front' costs as 'sunk'. Rough estimate of 'up-front' costs = US$5-10 per barrel, though wide regional differences exist. Includes royalties, which are more advantageous in Alberta/Saskatchewan.
+ Liquids-rich Eagle Ford plays, assuming natural gas prices of US$3.80 per mmbtu.
++ Weighted avg. = US$60-61 including existing Integrated Oil Sands at C$53 per barrel.
Saudi Arabia: US$10-25 per barrel.
Data source: Scotiabank Equity Research and Scotiabank Economics.

Employment data from the BLS and the TWC suggests that the Austin-Round Rock MSA does not have a high exposure to employment loss from diminished oil and gas extraction. According to TWC data, there are only 1,237 employees in the Oil and Gas Extraction sector of the Austin-Round Rock MSA during the second quarter of 2014. Similarly, the Support Activities for Mining subsector only had 1,580 employees during the same period. These workers constituted approximately 0.14 percent and 0.18 percent of the region's total employment, respectively. The location quotient analysis shows the Austin-Round MSA's concentration in the Oil and Gas Extraction sector is essentially the same as the nation overall and it has significantly less employment concentration in this sector than the state overall. An even weaker pattern exists for the Support Activities for Mining sector. Nonetheless, while the region is fairly insulated from employment losses, if oil production in the state curtails, there

will likely to be some economic impacts to the region, as less money from this sector flows into the local economy (directly, indirectly, or through induced activities) and fewer taxes are paid by oil producers. However, the overall impact on the region from diminished oil production is not expected to significantly hinder the region's continued growth.

Figure 19 and Table 13 show the locations of selected major employers in the Austin region and their number of employees and announced expansions. Many of these employers are expanding and some, like General Motors (GM), are new to the area. This testifies to the Austin area's attractiveness and competitiveness with other regions in the United States and globally. Geographically, many of the major employers are located near one of the CTTS facilities.

Figure 19: Locations of Selected Additions or Expansions to the Regional Workforce

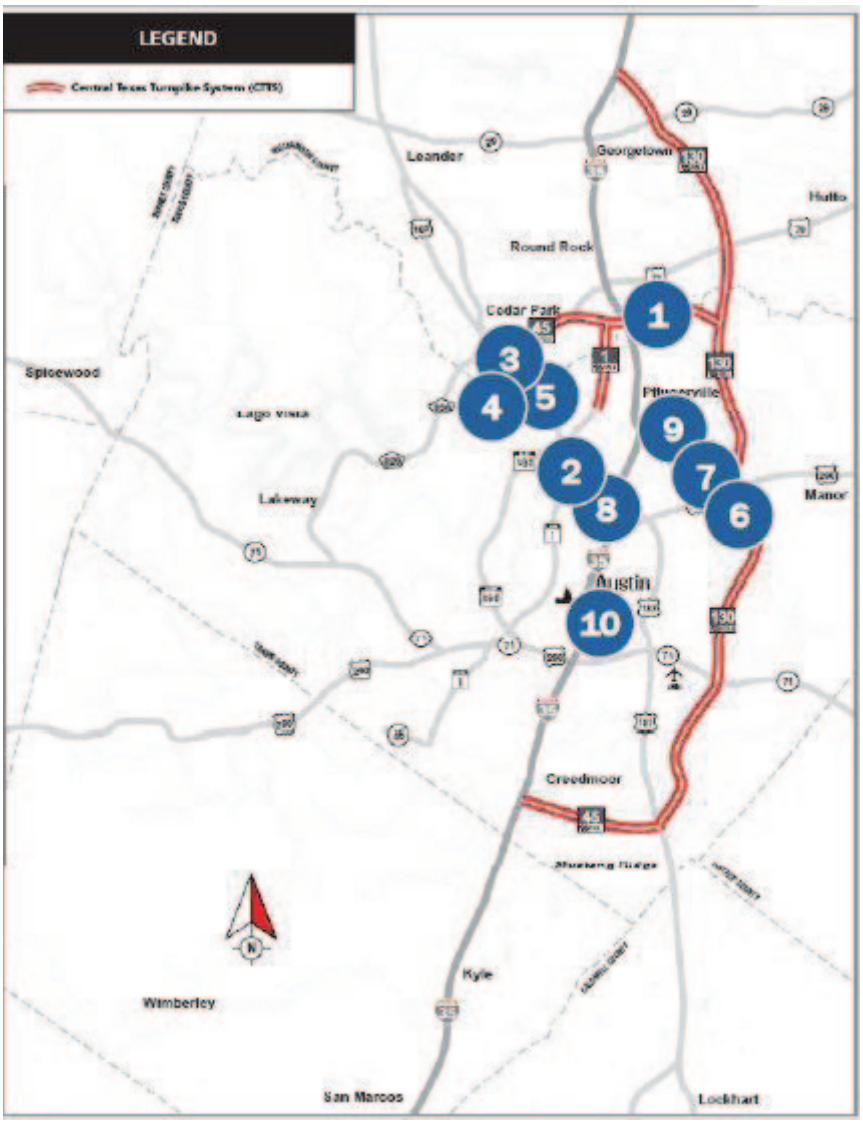


Table 13: Additions or Expansions of Regional Workforce for Selected Major Employers

Map #	Employer	Estimated Employees
1	Dell Computer	14,000
2	IBM	6,000 adding 900
3	Freescale Semiconductor	5,000
4	Flextronics	4,700 adding 800
5	Apple	4,000 adding 2,000
6	Applied Materials	2,700
7	Samsung	2,600
8	Charles Schwab	1,100 adding 800
9	GM	Adding 1,400
10	UT Austin	24,000 & adding new medical school

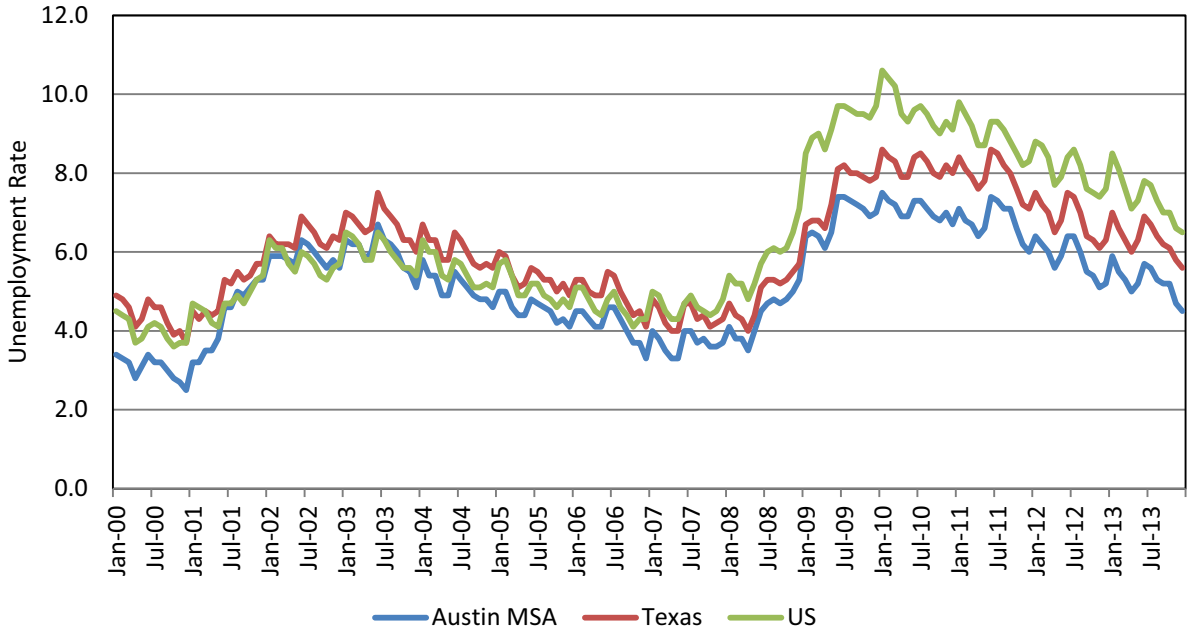
Source: Greater Austin Chamber of Commerce, 2014.

Additional expansions may be planned, but they have not been announced publically.

UNEMPLOYMENT

Figure 20 shows the unemployment rates for the United States, Texas, and the Austin-Round Rock MSA. These data show the unemployment rate in the region has been below the overall unemployment rate in Texas during most of the period between January 2000 and December 2013. The Austin MSA experienced its lowest unemployment rate during December 2000, when it fell to 2.5 percent. During the recession that began in 2001, the regional unemployment rate peaked at 6.7 percent in June 2003. As the regional and national economy recovered and the employment expanded during the mid-2000s, the regional unemployment rate fell to less than 4.0 percent, before significantly increasing during 2008 and 2009. During the 2008-2009 Recession, the regional unemployment rate reached 7.4 percent in June 2009 but was not sustained for a prolonged period of time. Between 2011 and 2013, the regional unemployment rate began to fall and reached a desirable 4.5 percent during December 2013.

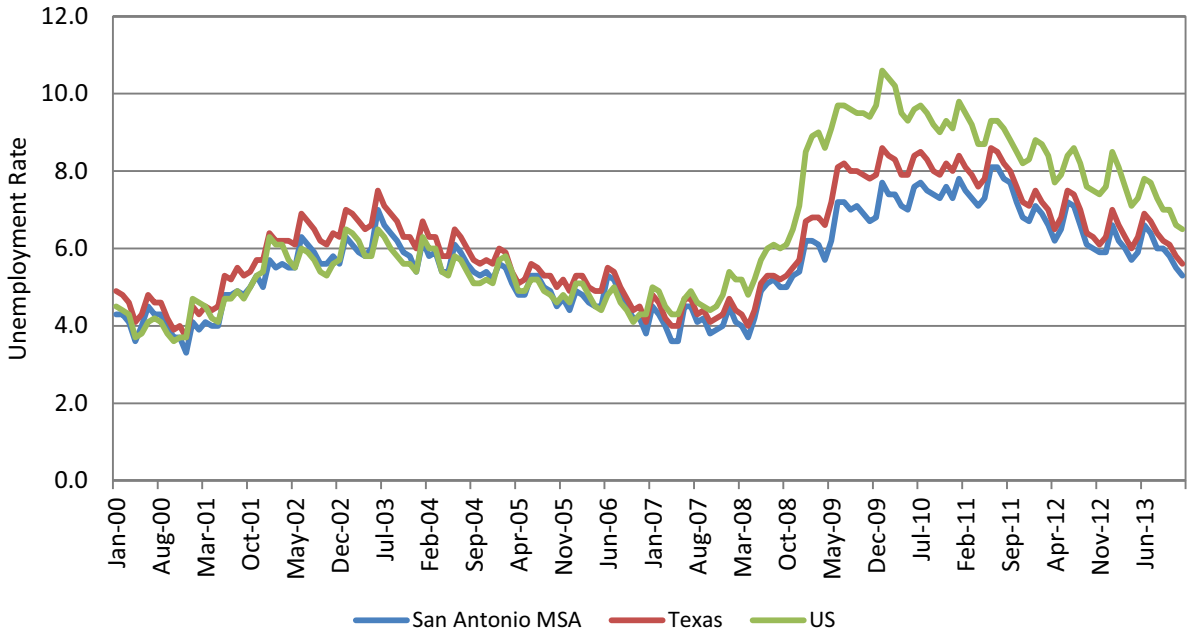
Figure 20: Unemployment Rate of Austin-Round Rock MSA, Texas, and the United States



Note: The unemployment rate data in Figure 20 are based upon seasonally unadjusted unemployment rates. The unadjusted figures were used to maintain consistency between the three geographies of the United States, Texas, and the Austin-Round Rock MSA. While seasonally adjusted data are available from the Texas Workforce Commission for the United States and Texas, they are not available for Texas's MSAs.
Source: Texas Workforce Commission, 2014.

Figure 21 shows the unemployment rates for the United States, Texas, and the San Antonio-New Braunfels MSA. These data show the unemployment rate in the region has been below the overall unemployment rate in Texas during most of the period between January 2000 and December 2013. The San Antonio-New Braunfels MSA experienced its lowest unemployment rate during December 2000, when it fell to 3.3 percent. During the recession that began in 2001, the regional unemployment rate peaked at 7.0 percent in June 2003. As the regional and national economy recovered and employment expanded during the mid-2000s, the regional unemployment rate fell to 3.6 percent before increasing rapidly during 2008 and 2009. During the 2008-2009 Recession, the regional unemployment rate reached 7.2 percent in June and July 2009. Unemployment rates remained between 7.0 and 8.0 percent through 2011, peaking at 8.1 percent in June and July 2011. Since mid-2012 to 2013, the regional unemployment rate has fallen and was 5.3 percent during December 2013.

Figure 21: Unemployment Rate of San Antonio-New Braunfels MSA, Texas, and the United States



Note: The unemployment rate data in Figure 21 are based upon seasonally unadjusted unemployment rates. The unadjusted figures were used to maintain consistency between the three geographies of the United States, Texas, and the San Antonio-New Braunfels MSA. While seasonally adjusted data are available from the Texas Workforce Commission for the United States and Texas, they are not available for Texas's MSAs.
Source: Texas Workforce Commission, 2014.

REAL ESTATE TRENDS

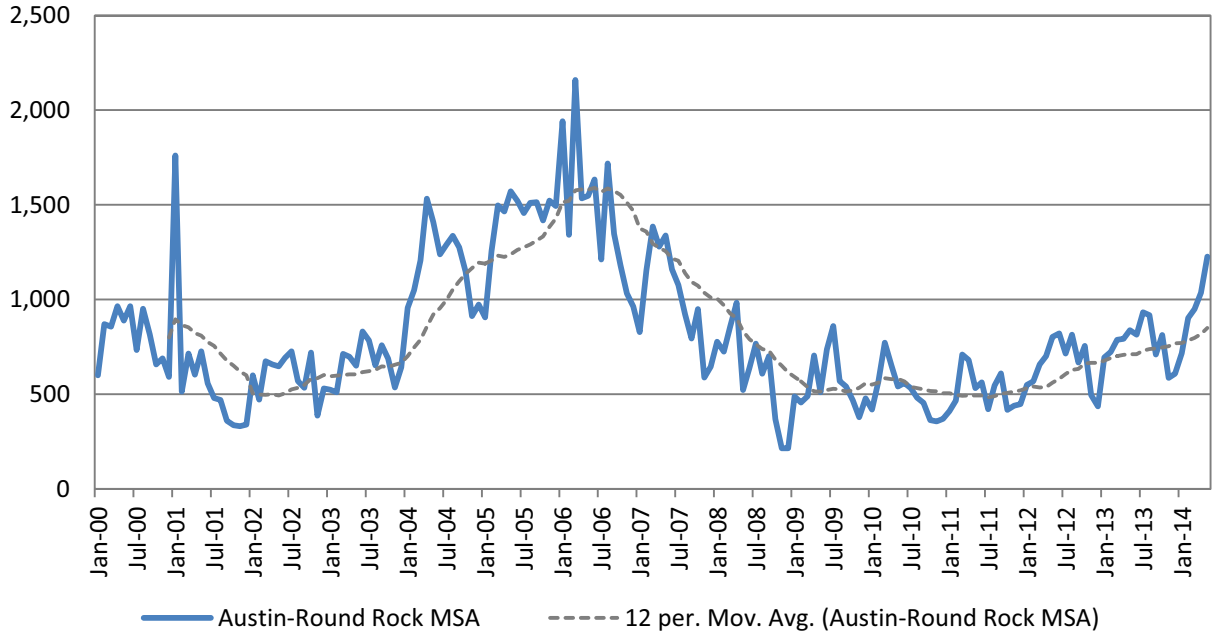
Like almost every metropolitan area in the United States, the 2008-2009 Recession had a profound impact on the regional housing market, as well as commercial real estate. The near collapse of the nation's financial system and the severe curtailment of demand due to the subsequent recession led to a sharp reduction in the number of new single-family homes built after 2006. Multifamily construction was also severely impacted by the recession, although it later benefitted because fewer households were able to secure the financing to purchase new homes. Similarly, all aspects of commercial real estate were affected by the recession, either due to tight credit markets or financially stressed tenants. Fortunately, the nation's commercial real estate market did not experience the same collapse as the residential market (a real and significant threat at the time) and it has been showing a consistently positive movement during the recent past.

Residential Trends

The U.S. Census Bureau's single-family building permit data from Real Estate Center at Texas A&M University are shown in Figure 22, which compares the number of monthly single-family building permits issued in the Austin-Round Rock MSA. While an issued building permit does not guarantee that a structure was constructed (a certificate of occupancy would provide that

proof), it provides of gauge of builder interest that can be used to compare activity in a region over time. The data generally show what one would expect, which is that the monthly issuance of building permits in the Austin-Round Rock MSA grew during the "Housing Bubble", reaching a peak of more than 2,000 permits in mid-2006. Then the number of permits issued began to decline quickly, even taking into consideration seasonal influences. The local housing market reached its lowest level during early-2009, when only a couple hundred building permits were issued each month. Since then, the local housing markets has moved towards recovery with approximately 1,200 building permits issued each month during mid-2014, which is still far from previous levels of activity. While this recovery could be interpreted as construction industry that is still under pressure from the last recession, the period leading up to 2006 was not sustainable and is not a reasonable comparison.

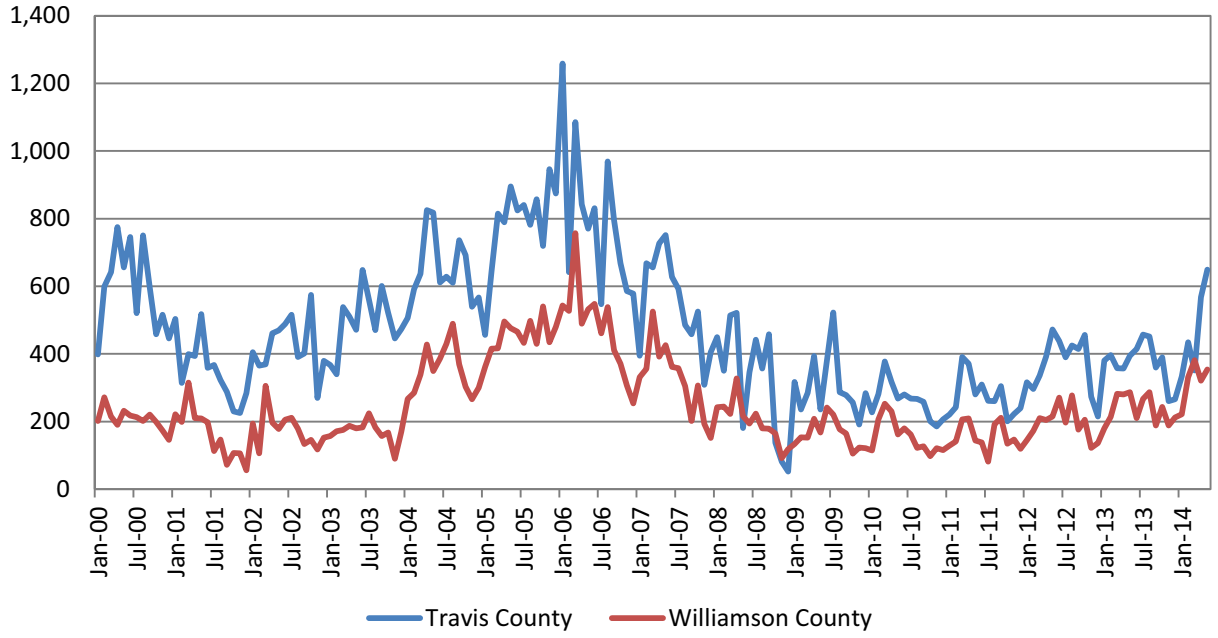
Figure 22: Single-Family Building Permits Issued in Austin-Round Rock MSA, January 2000 to May 2014



Note: MSA data based on 2013 CBSA definitions.
Source: Texas A&M Real Estate Center, 2014.

Figure 23 provides additional, detailed data showing the number of single-family building permits issued in Travis and Williamson Counties. These data show that monthly building permit activity peaked during mid-2006, at more than 1,200 permits in Travis County and almost 800 permits in Williamson County. But, the issuance of permits began to decline immediately thereafter to typically between 200 and 400 permits per month in Travis County and 100 to 300 permits per month in Williamson County.

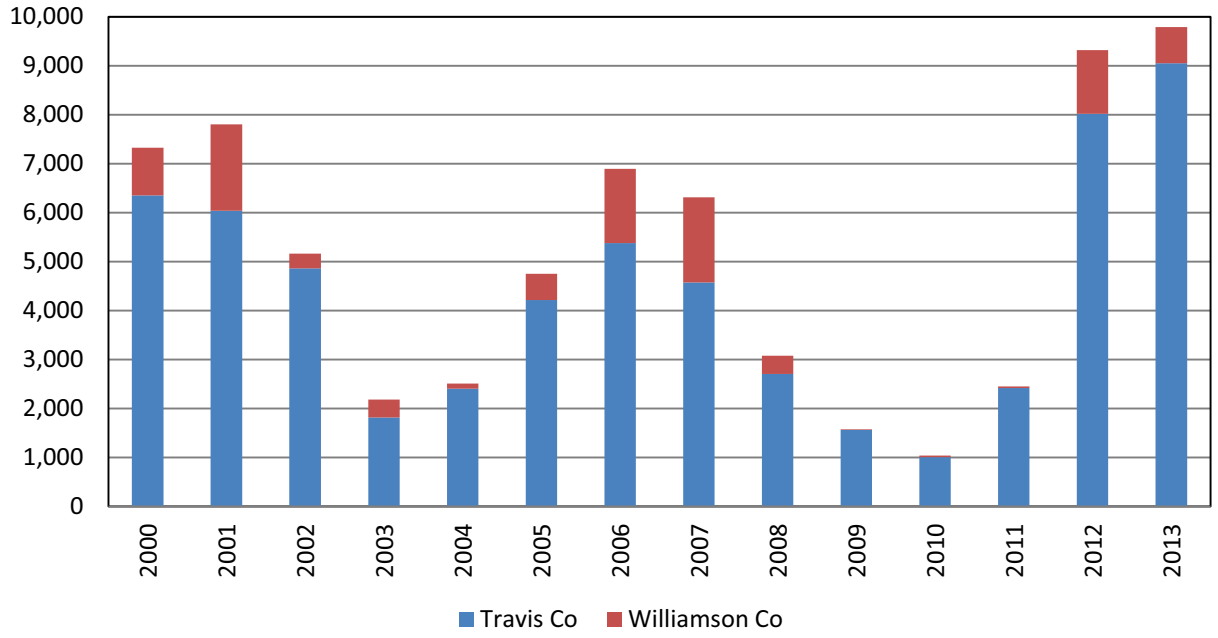
Figure 23: Single-Family Building Permits Issued in Travis and Williamson Counties, January 2000 to May 2014



Note: Monthly data for Hays, Bastrop, and Caldwell Counties were not available.
Source: Texas A&M Real Estate Center, 2014.

The number of permitted multifamily units in Travis and Williamson Counties has typically followed the housing market, until the past few years. Figure 24 shows the total number of multifamily units permitted in Travis and Williamson Counties. As would be expected, the number of multifamily permits increased sharply during the early-2000s with the technology-fueled expansion and again during the mid-2000s as a component of the Housing Bubble (at a slightly lower volume). But even more multifamily units were permitted during 2012 and 2013. This expansion is likely due to the constrained supply of single-family homes for lower-income households and households with poor credit who cannot enter the housing market, as well as decisions by more affluent households to rent their dwelling rather than buy one.

Figure 24: Multifamily Units Permitted in Travis and Williamson Counties, 2000-2013



Source: Texas A&M Real Estate Center, 2013.

Finally, Table 14 shows multifamily housing market conditions during the second quarter of 2014 within the various submarkets in the Austin region. According to the real estate firm Marcus & Millichap, the region had an overall vacancy rate of 4.9 percent during the first quarter of 2014. It anticipated that developers will deliver 14,120 units to the market during 2014. The data in Table 14 also show the lowest vacancy rate for multifamily was in the Downtown/University submarket at 2.6 percent, which also had the highest effective monthly rents at $2,022.

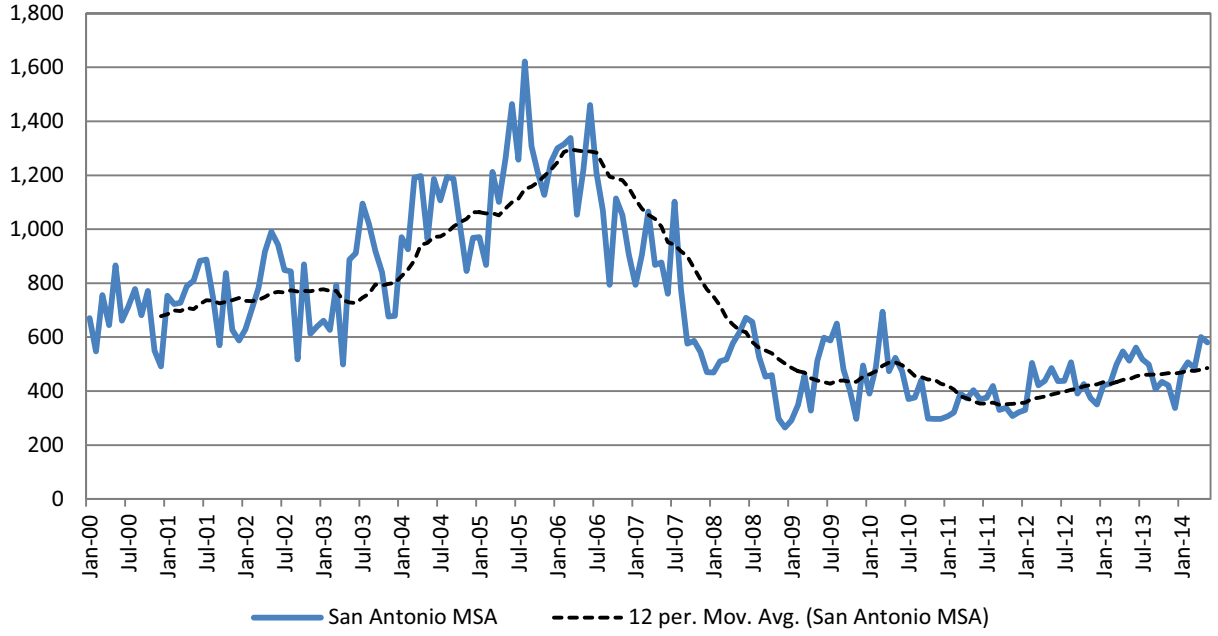
Table 14: Overview of the Austin Apartment Market during the First Quarter 2014

RANK	SUBMARKET	VACANCY RATE	Y-O-Y BASIS POINT CHANGE	EFFECTIVE RENTS	Y-O-Y PERCENT CHANGE
1	Downtown/University	2.6%	50	$2,022	1.9%
2	Arboretum	3.8%	-50	$1,019	4.2%
3	Near North Austin	4.1%	-10	$1,098	6.4%
4	Far South Austin	4.2%	-130	$1,016	5.9%
5	Pflugerville/Wells Branch	4.3%	-160	$934	7.7%
6	South Austin	4.3%	-280	$1,138	3.0%
7	Round Rock/Georgetown	4.4%	-170	$955	6.1%
8	Southwest Austin	4.4%	-80	$1,188	4.2%
9	North Central Austin	4.7%	-50	$817	6.0%
10	Northwest Austin	4.9%	-90	$1,002	7.6%
11	Far West Austin	5.0%	-60	$1,002	1.2%
12	East Austin	5.1%	-120	$948	6.5%
13	Southeast Austin	5.2%	-50	$975	8.0%
14	San Marcos	6.4%	110	$1,074	5.4%
15	Cedar Park	9.0%	450	$979	6.2%

Source: Marcus & Millichap, 2014.

Figure 25 shows these same data for the San Antonio-New Braunfels MSA. As might be expected from the data shown in the previous figures, the 2001 Recession had relatively little impact on the number of single-family building permits issued in the region. Starting in mid-2003, the number of issued building permits began to grow. The single-family housing market actually peaked during 2005 with more than 1,600 permits issued in a single month. The market then began a slow decline that accelerated in 2007, until it bottomed out in early 2009. Since then, the overall trend has been one of modest improvement. However, substantially fewer building permits were issued in the San Antonio-New Braunfels MSA in recent months, than were issued during the early-2000s and prior to the Housing Bubble.

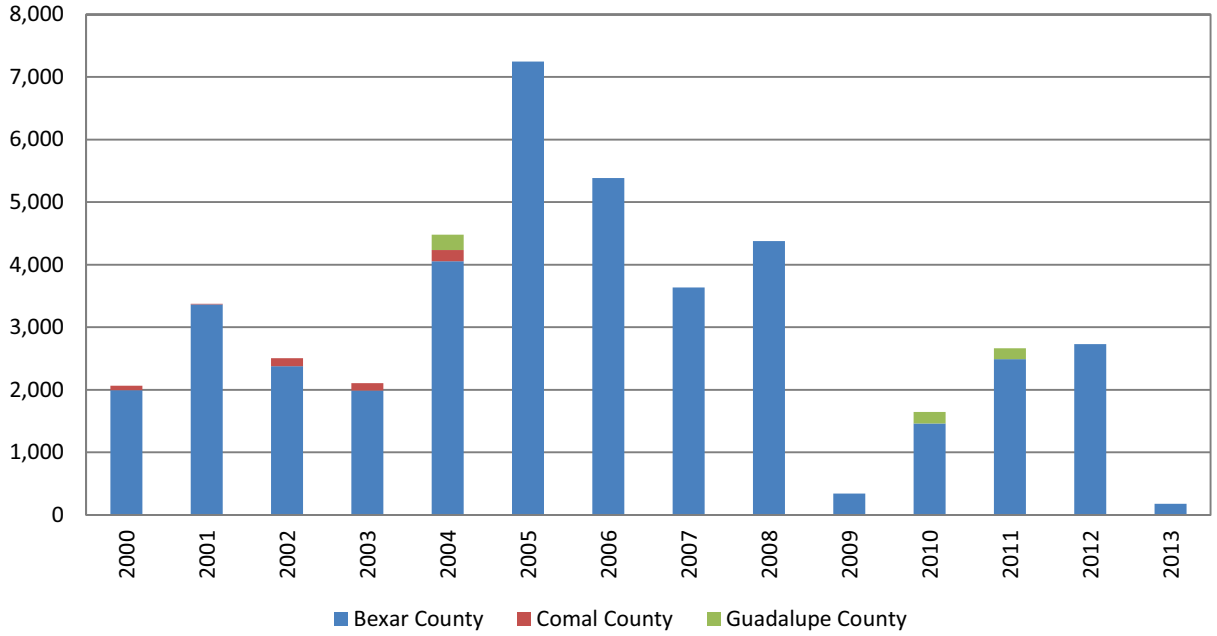
Figure 25: Single-Family Building Permits Issued in San Antonio MSA, January 2000 to May 2014



Note: MSA data based on 2013 CBSA definitions.
Source: Texas A&M Real Estate Center, 2014.

The number of permitted multifamily units in Bexar, Comal, and Guadalupe Counties are shown in Figure 26, but almost all the units were located in Bexar County. As with single-family housing, the number of building permits issued for multifamily units was not greatly impacted by the 2001 Recession, although there was potentially some impact during 2002 and 2003. Responding to the expansion of the housing market, the number of permitted multifamily units increased and peaked in 2005. The number of permitted units dropped sharply between 2008 and 2009, before a modest recover in subsequent years. Interestingly, despite the strong economy and housing market, the data show there were very few permitted multifamily units during 2013.

Figure 26: Multifamily Units Permitted in Bexar, Comal, and Guadalupe Counties, 2000-2013



Source: Texas A&M Real Estate Center, 2013.

Table 15 provides recent market conditions for multifamily housing within the various submarkets in the San Antonio region during the first quarter of 2014. Marcus & Millichap estimated that the region had an overall vacancy rate of 8.1 percent during the first quarter of 2014. It anticipated that developers will deliver 14,120 units to the market during this year. The data in Table 15 also show the lowest vacancy rate for multifamily was in the Central San Antonio submarket at 4.9 percent, while the submarket with the highest effective monthly rents was Far North Central San Antonio at $1,115.

Table 15: Overview of the San Antonio Apartment Market during the Second Quarter 2014

RANK	SUBMARKET	VACANCY RATE	Y-O-Y BASIS POINT CHANGE	EFFECTIVE RENTS	Y-O-Y PERCENT CHANGE
1	Central San Antonio	4.9%	-160	$993	12.3%
2	North Central San Antonio	6.3%	190	$845	1.2%
3	Airport Area	6.5%	-60	$747	3.6%
4	Far Northwest San Antonio	6.7%	30	$1,069	-3.2%
5	Alamo Heights	7.0%	290	$1,083	2.3%
6	Far West San Antonio	7.0%	160	$851	4.0%
7	Northwest San Antonio	7.0%	70	$773	1.8%
8	Medical Center	8.3%	140	$772	2.4%
9	New Braunfels/Universal City	8.5%	220	$863	5.8%
10	Northeast San Antonio	8.6%	90	$725	4.2%
11	West San Antonio	8.9%	30	$656	5.3%
12	Southwest San Antonio	9.0%	-230	$635	2.8%
13	Far North Central San Antonio	10.1%	400	$1,115	-5.7%
14	South San Antonio	12.2%	90	$686	2.7%

Source: Marcus & Millichap, 2014.

Office Trends

According to the real estate firm Transwestern, the Austin area office market had an overall vacancy rate of 11.9 percent during the first quarter of 2014 (See Table 16). In total, the Austin area market contained 51.8 million square feet of rentable space and at the end of the second quarter of 2014, the yield-to-date net absorption (the difference between the amount of newly leased space in the market and new constructed space or formerly leased space that has returned to the market) in the Austin area market was 529,192 square feet. Geographically, the largest concentrations of office space in the Austin market are in the Northwest & Far Northwest submarkets, the Central Business District, and the Southwest market. Austin's South submarket had the highest occupancy rate at 96.5 percent and its Southeast submarket had the lowest occupancy rate in the region at 62.4 percent.

Table 16: Overview of the Austin Area Office Market during the Second Quarter 2014

SUBMARKET	TOTAL RENTABLE SF	TOTAL OCCUPANCY	YTD 2014 TOTAL NET ABSORPTION	NET RENTAL RATE PSF
Central Business District	10,096,625	89.9%	195,215	$26.33
Central & West Central	3,324,924	88.1%	72,606	$20.68
North	5,485,809	88.3%	(29,473)	$19.16
Northeast & East	3,217,059	79.8%	18,658	$12.49
Northwest & Far Northwest	15,916,320	88.8%	161,666	$19.37
Round Rock & Cedar Park	1,586,807	87.9%	15,962	$15.15
South	2,230,392	96.5%	15,036	$16.50
Southeast	1,486,072	62.4%	7,334	$15.94
Southwest	8,472,925	89.7%	72,188	$21.83
MARKET TOTAL	**51,816,933**	**88.1%**	**529,192**	**$20.11**

Source: Transwestern, 2014.

The San Antonio region's supply of office space is slightly more than half the total rentable square footage of Austin's supply (See Table 17). The region also has a higher overall vacancy rate at 81.6 percent, although surprisingly the net rental rate in San Antonio was only slightly lower than Austin. The largest supply of the region's office space is located in the North Central submarket (8,479,825 square feet), followed by the Northwest submarket (8,004,701 square feet). San Antonio's Central Business District is the third largest submarket with 5,728,263 square feet of rentable spaced. Total net absorption during the first quarter of 2014 was 335,672 square feet.

Table 17: Overview of the San Antonio Area Office Market during the First Quarter 2014

SUBMARKET	TOTAL RENTABLE SF	TOTAL OCCUPANCY	YTD 2014 TOTAL NET ABSORPTION	NET RENTAL RATE PSF
North Central	8,479,825	86.7%	99,471	$19.76
Central Business District	5,728,263	72.1%	120,222	$19.86
Northwest	8,004,701	79.4%	83,361	$18.53
Far North Central	2,699,542	89.7%	26,842	$23.53
Northeast	1,838,766	84.2%	9,649	$16.38
Far West	333,124	90.5%	(656)	$19.70
Southwest	306,411	84.7%	(3,217)	$24.50
Southeast	503,856	77.6%	0	$16.52
Far Northwest	384,554	83.1%	0	$31.65
MARKET TOTAL	**28,279,042**	**81.6%**	**335,672**	**$19.77**

Source: Transwestern, 2014.

Industrial/Warehousing Trends

The Austin region has a sizeable amount of industrial/warehouse space totaling 49.7 million square feet during the first quarter of 2014, although a significant share is "flex space" which can also be converted into offices (See Table 18). The regional industrial/warehousing vacancy rate was 11.6 percent and there was almost 5.8 million square feet of available space. During the first quarter of 2014, the region returned 109,469 square feet to the market (Transwestern, 2014).

Table 18: Overview of the Austin Industrial Market during the First Quarter 2014

SUBMARKET	NET RENTABLE SF	TOTAL VACANCY SF	TOTAL VACANCY RATE JUNE 2013	2013 YTD TOTAL NET ABSORPTION
Central Business District	26,776	0	0.0%	3,700
Central	1,426,566	115,404	8.1%	5,239
East	3,554,975	858,706	24.2%	35,533
Far Northeast	2,476,336	336,264	13.6%	106,161
Far Northwest	510,465	13,844	2.7%	5,000
Georgetown	1,238,554	8,200	0.7%	16,927
Hays County	593,663	194,574	32.8%	(185,474)
North	13,812,271	1,078,469	7.8%	158,582
Northeast	7,830,210	1,346,767	17.2%	(309,704)
Northwest	2,600,971	194,970	7.5%	(65,021)
Round Rock	3,274,070	394,233	12.0%	55,905
South	1,751,200	24,613	1.4%	3,470
Southeast	10,210,364	1,157,688	11.3%	52,463
Southwest	415,046	37,961	9.1%	7,750
Market Total	49,721,467	5,761,693	11.6%	(109,469)

Source: Transwestern, 2014.

The San Antonio industrial market had almost 33.7 million square feet of space during the second quarter of 2014 (See Table 19). The market was had a citywide vacancy rate of 5.9 percent or less than 2.0 million square feet of available space. Almost 450,000 square feet of space was absorbed during the second quarter of 2014.

Table 19: Overview of the San Antonio Industrial Market during the Second Quarter 2014

MARKET	INVENTORY SF	DIRECT VACANT SF	YTD TOTAL NET ABSORPTION	AVERAGE NET RENT
Central Business District	233,395	0	28,548	$3.60
Non-CBD	33,451,634	1,977,334	419,460	$7.87
Citywide	33,685,029	1,977,334	448,008	$7.83

Source: REOC San Antonio, 2014.

Retail Trends

Similar to the Austin office market, CBRE estimated that the market for commercial retail space experienced modest absorption during the August 2014, with only 97,775 square feet of space coming off the market (See Table 20). Overall, the region had 50.5 million square feet of retail space and the regional vacancy rate was 4.8 percent. The highest occupancy rates were in the southeast, southwest, and south market subareas.

Table 20: Overview of the Austin Retail Market during August 2014

MARKET	INVENTORY SF	TOTAL OCCUPANCY SF	YTD TOTAL NET ABSORPTION	AVERAGE NET RENT
Central Business District	773,895	94.0%	27,949	$32.61
Central & West Central	6,664,394	95.6%	68,058	$16.45
North	5,032,427	94.9%	(69,109)	$14.18
Northeast & East	4,469,783	95.7%	7,859	$13.29
Northwest & Far NW	6,831,266	91.9%	95,751	$15.95
Round Rock & Cedar Park	11,619,069	93.8%	(8,418)	$16.58
South	7,774,195	97.2%	(87,538)	$17.25
Southeast	1,651,674	99.8%	30,258	$15.83
Southwest	5,674,823	97.4%	32,965	$19.40
MARKET TOTAL	**50,491,526**	**95.2%**	**97,775**	**$16.00**

Source: CBRE, 2014.

Less detailed information was available for the San Antonio retail market. Most of retail space in the San Antonio market is located on the north side of the city and outside of the Central Business district. The vacancy rate for retail space during the second quarter of 2014 was 9.9 percent, with most of the available retail space located in the CBD or south San Antonio (See Table 21).

Table 21: Overview of the San Antonio Retail Market during the Second Quarter 2014

MARKET	INVENTORY SF	DIRECT VACANT SF	YTD TOTAL NET ABSORPTION	AVERAGE NET RENT
CBD/South	6,375,326	3,922,128	329,190	$15.50
Non-CBD/North	40,789,626	757,115	41,853	$16.67
Citywide	47,164,952	4,679,243	371,043	$16.58

Source: REOC San Antonio, 2014.

ASSESSMENT AND ADJUSTMENT OF THE POPULATION AND EMPLOYMENT CONTROL TOTALS

The first step of the socioeconomic data review was to assess the reasonableness of the population and employment control totals in the CAMPO model. Since traffic counts for the CTTS study were conducted during 2013, this became the travel demand model's base year. New 2013 population and employment control totals were developed for each county, using data from the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, and the Texas Workforce Commission. With these data, each counties' 2013 population and employment control totals were adjusted to either an agency estimate for that year or an estimate based upon other recent data. The end result was that all ten counties had some adjustment to their base year population control total, typically to reflect the 2013 U.S. Census Bureau estimates, with Travis County having its population adjusted by the largest amount (increased by 45,530 residents)

compared to the 2012 CTTS study[7] (See Table 22). Travis County also had the largest upward adjustment to its employment control total with almost 67,000 additional jobs, followed by Bexar County with 24,877 additional jobs. During the development of the 2013 control totals, 2013 employment counts for the entire year were not yet released by TWC or the BLS, so the revised control total figures were based upon the 2013 employment data that were available and professional judgment.

[7] The 2012 CTTS values for 2013 are based upon an interpolation between the study's 2010 base year and its 2015 forecast.

Table 22: Adjustments to 2013 Baseline County Population, Households, and Employment Control Totals

	2013 POPULATION			2013 HOUSEHOLDS			2013 EMPLOYMENT		
County	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**
Travis	1,075,362	1,120,892	45,530	428,055	448,011	19,956	568,294	635,250	66,956
Williamson	469,783	465,263	-4,520	168,980	170,706	1,726	131,233	139,191	7,958
Hays	172,056	175,837	3,781	62,625	64,488	1,863	48,526	54,565	6,039
Bastrop	81,492	75,825	-5,667	29,549	28,011	-1,538	17,171	15,058	-2,113
Caldwell	39,627	39,226	-401	14,119	14,046	-73	7,429	7,966	537
Bexar	1,766,417	1,775,596	9,179	635,646	642,890	7,244	746,285	771,162	24,877
Comal	119,210	117,419	-1,791	43,730	45,437	1,707	44,956	40,379	-4,577
Guadalupe	144,446	141,300	-3,146	51,642	50,668	-974	30,284	31,080	796
Kendall	37,055	37,246	191	13,373	14,277	904	11,326	12,162	836
Wilson	45,993	44,869	-1,124	15,873	15,908	35	6,918	6,930	12
TOTAL	**3,951,441**	**3,993,473**	**42,032**	**1,463,592**	**1,494,442**	**30,850**	**1,612,422**	**1,713,743**	**101,321**

Table 23 and Table 24 shows the differences between the 2012 CTTS Update study's county population and employment control totals and the adjusted county control totals for the 2014 CTTS Update study. During each forecast year, the total population in the 10-county area is higher in the revised socioeconomic data than it was in the 2012 CTTS Update study. Most of the difference is due to higher population forecasts for Travis County, accounting for a higher baseline population estimate, and substantially higher population projections for Bexar County. The higher population projections for Bexar County were due to the TxSDC taking into account updated migration data when preparing its most recent population projections. This new information had a significant impact on the population projected for Bexar County. For the remainder of the counties, most of the population control totals were adjusted downward from the 2012 CTTS Update study, reflecting the reduction in recent population growth rates as was described in Tables 3 and 4. The forecasted control totals for households were also higher. The household control total figures were not imposed from above but were the summed at the TAZ level. As a result, they do not necessarily change in proportion with the population. The 2014 CTTS Update employment control totals were also higher than the 2012 CTTS Update study, due to more recent data that show strong employment growth during the past few years. Travis and Bexar Counties are the major source of the additional employment but most of the other counties contributed positively, as well.

Table 23: Adjustments to Forecasted County Population and Employment Control Totals

	2015 POPULATION			2015 HOUSEHOLDS			2015 EMPLOYMENT		
County	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**
Travis	1,113,248	1,170,298	57,050	439,621	467,369	27,748	579,678	660,559	80,881
Williamson	499,478	492,382	-7,096	178,181	180,180	1,999	136,815	147,884	11,069
Hays	185,385	188,375	2,990	66,553	68,978	2,425	50,989	58,102	7,113
Bastrop	87,087	77,898	-9,189	31,719	28,798	-2,921	17,984	15,797	-2,187
Caldwell	41,290	39,969	-1,321	14,751	14,327	-424	7,766	8,373	607
Bexar	1,822,842	1,832,203	9,361	653,456	663,284	9,828	764,199	796,244	32,045
Comal	126,468	123,502	-2,966	45,425	47,797	2,372	48,014	43,258	-4,756
Guadalupe	153,714	147,921	-5,793	55,315	53,012	-2,303	31,471	32,728	1,257
Kendall	39,638	39,827	189	13,813	15,266	1,453	11,828	12,842	1,014
Wilson	48,274	46,215	-2,059	16,391	16,386	-5	7,230	7,214	-16
TOTAL	**4,117,424**	**4,158,590**	**41,166**	**1,515,225**	**1,555,397**	**40,172**	**1,655,974**	**1,783,001**	**127,027**
	2020 POPULATION			**2020 HOUSEHOLDS**			**2020 EMPLOYMENT**		
County	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**
Travis	1,204,515	1,273,336	68,821	474,742	507,727	32,985	639,031	717,497	78,466
Williamson	580,652	566,298	-14,354	206,509	206,673	164	161,690	168,721	7,031
Hays	217,009	220,507	3,498	77,929	79,598	1,669	60,394	66,937	6,543
Bastrop	102,473	85,583	-16,890	37,358	31,645	-5,713	21,404	18,221	-3,183
Caldwell	44,425	42,471	-1,954	15,974	15,260	-714	9,266	9,511	245
Bexar	1,907,226	1,957,968	50,742	689,396	707,980	18,584	815,641	856,370	40,729
Comal	144,503	138,646	-5,857	52,405	53,751	1,346	57,969	50,662	-7,307
Guadalupe	177,246	169,057	-8,189	64,858	60,483	-4,375	34,914	36,668	1,754
Kendall	45,503	45,117	-386	16,431	17,296	865	12,222	14,517	2,295
Wilson	53,702	50,898	-2,804	18,191	18,046	-145	8,154	8,042	-112
TOTAL	**4,477,254**	**4,549,881**	**72,627**	**1,653,793**	**1,698,459**	**44,666**	**1,820,685**	**1,947,146**	**126,461**

Table 24: Adjustments to Forecasted County Population and Employment Control Totals (Continued)

	2030 POPULATION			2030 HOUSEHOLDS			2030 EMPLOYMENT		
County	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**
Travis	1,400,771	1,474,365	73,594	550,719	586,277	35,558	764,818	839,247	74,429
Williamson	774,375	739,143	-35,232	271,055	270,279	-776	215,120	211,554	-3,566
Hays	289,315	288,990	-325	104,733	103,230	-1,503	81,028	86,092	5,064
Bastrop	136,088	103,220	-32,868	49,904	38,389	-11,515	28,823	24,358	-4,465
Caldwell	50,126	48,235	-1,891	18,216	17,393	-823	12,504	12,300	-204
Bexar	2,047,084	2,196,665	149,581	749,816	793,624	43,808	926,217	982,096	55,879
Comal	177,697	168,731	-8,966	65,977	65,515	-462	76,807	67,780	-9,027
Guadalupe	224,321	214,674	-9,647	84,050	76,406	-7,644	42,420	45,225	2,805
Kendall	56,285	55,789	-496	20,883	21,384	501	15,298	18,255	2,957
Wilson	64,190	60,663	-3,527	22,152	21,507	-645	9,733	9,592	-141
TOTAL	**5,220,252**	**5,350,475**	**130,223**	**1,937,505**	**1,994,004**	**56,499**	**2,172,768**	**2,296,499**	**123,731**
	2040 POPULATION			**2040 HOUSEHOLDS**			**2040 EMPLOYMENT**		
County	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**	**2012 CTTS**	**2014 CTTS**	**Difference**
Travis	1,610,749	1,669,612	58,863	632,433	661,446	29,013	897,688	962,917	65,229
Williamson	999,473	952,122	-47,351	343,492	347,180	3,688	272,229	254,472	-17,757
Hays	370,679	364,369	-6,310	135,589	129,632	-5,957	103,485	108,533	5,048
Bastrop	172,545	124,358	-48,187	63,719	46,475	-17,244	36,821	33,126	-3,695
Caldwell	55,260	55,111	-149	20,254	19,938	-316	15,982	15,958	-24
Bexar	2,158,032	2,471,362	313,330	798,776	892,021	93,245	1,044,487	1,116,034	71,547
Comal	208,015	197,279	-10,736	79,160	76,873	-2,287	94,574	88,534	-6,040
Guadalupe	271,408	265,018	-6,390	103,350	94,291	-9,059	50,546	54,802	4,256
Kendall	66,120	66,740	620	24,553	25,581	1,028	20,663	22,642	1,979
Wilson	74,312	71,049	-3,263	26,474	25,192	-1,282	11,043	10,972	-71
TOTAL	**5,986,593**	**6,237,020**	**250,427**	**2,227,800**	**2,318,629**	**90,829**	**2,547,518**	**2,667,990**	**120,472**

ASSESSMENT AND ADJUSTMENT OF ZONAL POPULATION AND EMPLOYMENT DATA

The project study area for the socioeconomic review consisted of a very large region that covered significant portions of eight counties and more than 800 TAZs. The northern extent of the project study area was north of the city of Georgetown and it extended southward to the northeast quadrant of San Antonio, a distance of more than 100 miles along IH 35. The width of the CTTS study varied, but was as wide as 15 miles or more in some locations.

Since the base year for the previous 2012 CTTS study was 2010, one of the first tasks for the 2014 CTTS study was to update the base year population and employment data to 2013. During the 2012 CTTS Update study, the zonal population, household, and median household income estimates in the study area were updated using GIS and information from the 2010 decennial Census counts and the American Community Survey. The 2014 CTTS required revising these data once again to the new 2013 base year. To do this, a visual housing count of new single-family and multifamily dwelling units was undertaken, comparing 2010 and 2012 digital aerial photography. New residential development was delineated on the maps and the single-family units were counted. Dwelling unit counts for multifamily projects were derived from data provided by local governments, industry market research, company websites, or apartment locator websites. The adjustment also took into account a tightening housing market throughout the region and assumed a small share of new population growth was absorbed by vacant housing units throughout the study area. The final adjustments of the 2013 zonal population estimates incorporated the count data and other information about recent development trends, as well as professional judgment, to develop the 2013 base year population and household estimates for the entire project study area. Outside of the project study area, the populations of the TAZs were adjusted to subarea population control totals. In reconciling the zonal population estimates to the county subarea control totals, they also summed to the revised county control totals. The 2013 employment data were adjusted by assuming a portion of employment growth was absorbed into vacant commercial space or was added to firm rosters without requiring additional floor space. Additionally, new commercial developments were identified during the housing count using the digital aerial photography. Once these commercial facilities or schools were identified, 2012 firm-level employment data from the Texas Workforce Commission were used to produce employment estimates or, if they were schools, data from the Texas Education Agency. However, the TWC data (as provided by TxDOT) could not be used directly to update the study area employment estimates because not all of the data were accurately geocoded or could be geocoded. Therefore, using the TWC data and Google Maps as a reference, as well as professional judgment, the CAMPO TAZ employment data were assessed and adjusted as necessary. A similar review of the 2010 employment data was performed during the 2012 CTTS Update study. Finally, estimates of median household income in the study area were updated from the 2012 CTTS Update study by inflating the values by the CPI to 2013 dollars. The median household income assigned to a TAZ was based upon the census tract where its centroid fell.

The assessment and adjustments to the zonal population and employment forecasts relied upon a variety of data sources, which included: the digital aerial photography, limited field

surveys; zoning, future land use, and floodplain maps; and other planning reports and documents. The data collection for reviewing the forecasts also involved a large number of interviews with local planning officials across the study area. Table 25 provides a list of the 27 local governments that were interviewed. As with the baseline data, the forecasts for each TAZ were reviewed individually, drawing upon the listed resources. All TAZ forecasts were reconciled to the forecasted population and employment control totals at the subarea and county levels.

Table 25: Interviews with Local Governments in CTTS Study Area

Jurisdiction	Lead Contact/Position	Date
City of Lockhart	Dan Gibson (City Planner)	4/7/2014
City of Round Rock	Clyde von Rosenberg (Senior Planner)	4/8/2014
Williamson County	Joe England (County Engineer)	4/8/2014
City of Georgetown	Andrew Spurgin (Planning Director)	4/8/2014
City of Hutto	Erika Ragsdale (Senior Planner)	4/14/2014
City of Manor	Thomas Bolt (Interim City Manager)	4/14/2014
City of Kyle	Sofia Nelson (Director of Planning)	4/14/2014
City of San Marcos	Kristy Stark (Assistant Director of Planning & Development Services)	4/15/2014
City of Austin	Paul Frank (Principal Planner)	4/15/2014
Travis County	Charlie Watts (Senior Planner)	4/28/2014
Caldwell County	Dwight Jeffrey (Unit Road Supervisor)	4/28/2014
Guadalupe County	Shelly Coleman (Environmental Health Director)	4/28/2014
City of Pflugerville	Emily Barron (Planning Director)	4/29/2014
City of Buda	Chance Sparks (Director of Planning)	4/29/2014
Hays County	Clint Garza (Development Services Director)	
City of Live Oak	Scott Wayman (Assistant City Manager)	6/3/2014
City of Schertz	Lesa Wood (Senior Planner)	6/3/2014
City of Cedar Park	Amy Link (Assistant Director of Development Services)	6/3/2014
City of Liberty Hill	Amber Lewis (Senior City Planner) and Greg Boatright (Interim City Manager)	6/10/2014
City of Leander	Tom Yantis (Director of Development Services) and Robin Griffin (Senior Planner)	6/10/2014
City of Seguin	Pamela Centeno (Director of Planning/Codes)	6/11/2014
City of Universal City	Kim Turner (Development Services Director)	6/11/2014
City of Garden Ridge	Nancy Cain (City Administrator)	6/11/2014
City of Selma	Larry Verner (City Engineer)	6/11/2014
City of Cibolo	Lisa Ann Gonzalez (City Planner)	6/19/2014
City New Braunfels	Shannon Mattingly (Director of Planning and Community Development)	6/19/2014
City of San Antonio	Rudy Nino, Jr. (Planning Manager)	6/19/2014

CONCLUSIONS

The overall trends in the CTTS study area continue to be positive, as they have been since emerging from the 2008-2009 Recession. Although the region did experience negative employment growth and diminished residential and commercial construction during the

recession, the local effects were comparable to (or perhaps even milder than) the 2001 Recession, which impacted the Austin region more severely than other areas of the nation. While there are some recent signs that the region's current expansion is slowing, the rate of population and employment growth is expected to continue outperforming the state and the nation. The Austin region's ability to attract a young and highly skilled labor force, a steady stream of industry relocations and expansions, and the ability to generate new firms appears to be self-sustaining, although the region's rising cost of living, water supply, and traffic congestion are issues to monitor. Most of the threats to the region's future growth will likely come as a consequence of factors at the national or global level. Rising interest rates, inflation risks, geopolitical insecurity, and the future impacts of climate change are all issues that could impose future downstream impacts. While the Austin region, like all regions in the nation, cannot avoid these potential impacts, it is generally well-positioned to weather them.

New population and employment growth have been strong throughout most of the CTTS study area. In particular, the areas around Georgetown and Round Rock, the eastern side of Pflugerville, northeastern Travis County, and northern Hays County have all performed well. There are also signs that some major proposed projects in eastern Travis County are starting to move forward and, if market conditions can persist for another 1 to 3 years, will likely begin construction. However, development in southeastern Travis County continues to lag the larger region, with the notable exception of the Circuit of the Americas Formula 1 racetrack. Nonetheless, for the reasons cited above, development in the region and in the CTTS study area is expected to be favorable over the foreseeable future.

APPENDIX B

Minute Order 114073

VARIOUS Counties

VARIOUS Districts

TEXAS TRANSPORTATION COMMISSION
MINUTE ORDER

Transportation Code §228.057(d) provides that the Texas Department of Transportation (department) may charge reasonable fees for administering electronic toll collection customer accounts.

Title 43, Texas Administrative Code, §27.82(c) provides that the Texas Transportation Commission (commission) by minute order will establish customer account fees. In establishing customer account fees, the commission will consider the cost of operations, including the estimated cost to the department for labor, materials, storage, and bank fees, as well as the requirements of project bond covenants. In Minute Order 112971, dated January 26, 2012, the commission authorized the existing fee structure.

The department recently conducted an analysis of annual operational costs and recommends increasing the fee for checks returned for insufficient funds from $25.00 per check to $30.00 per check. In addition, the department has determined that an account reactivation fee is not needed under the current operational structure and recommends suspending assessment of the fee.

IT IS THEREFORE ORDERED by the commission that the department is authorized to charge a fee of $30.00 per check for checks returned for insufficient funds.

IT IS FURTHER ORDERED that assessment of the account reactivation fee is hereby suspended.

IT IS FURTHER ORDERED that all other customer account fees authorized by Minute Order 112971 remain unchanged.

Submitted and reviewed by:

Director, Toll Operations Division

Recommended by:

Executive Director

114073 SEP 18 14

Minute Number | Date Passed

APPENDIX C

Minute Order 114117

TEXAS TRANSPORTATION COMMISSION

TRAVIS and WILLIAMSON Counties **MINUTE ORDER**

AUSTIN District

Title 43, Texas Administrative Code, §27.82(d) provides that the Texas Transportation Commission (commission) will establish toll rates for the use of a toll project on the state highway system. In setting toll rates, the commission is required to consider: (1) the results of traffic and revenue studies and any schedule of toll rates established in traffic and revenue reports; (2) the requirements of project bond covenants, if applicable; and (3) vehicle classifications, type and location of the facility, and similar criteria that apply to a specific project.

The Central Texas Turnpike System (CTTS) consists of the following elements: SH 130, which runs from I-35 North of Georgetown to the intersection of US 183 and SH 130 at SH 45 Southeast; SH 45 North, which runs from west of US 183 to SH 130 / SH 45 North interchange; Loop 1, which runs from existing Loop 1 and Farm to Market 734 (Parmer Lane) to the Loop 1 / SH 45 North interchange; and SH 45 Southeast, which runs from I-35 at FM 1327 south of Austin to the SH 130 / US 183 interchange.

Minute Order 113244, dated August 30, 2012, authorized the executive director to annually escalate toll rates on the CTTS in accordance with established indices and the toll escalation policy set forth in the minute order. The Texas Department of Transportation (department) has established a toll rate escalation percentage of 1.7% (toll rate escalation percentage) to be applied to the current base toll rates for each CTTS element and paypoint, generating the schedule of increased toll rates for calendar year 2015 shown on Exhibit A. The toll rate escalation percentage and the escalated toll rate table shown in Exhibit A for each CTTS element have been prepared in accordance with the toll escalation policy established in Minute Order 113244. As provided in Minute Order 113244, the percentage increase in the toll rates will be effective automatically on January 1 of the next calendar year and implemented by the executive director, unless the commission affirmatively votes prior to January 1 to modify the toll rate escalation percentage.

IT IS THEREFORE ORDERED by the commission that the schedule of escalated toll rates for each CTTS element, attached as Exhibit A, is accepted replacing the current rate tables with the escalated toll rates on January 1, 2015.

Submitted and reviewed by:

Director, Toll Operations Division

Recommended by:

Executive Director

114117 OCT 30 14

Minute Number Date Passed

Exhibit A

Rates Effective January 1, 2015										
Tolling Point	Two-Axle		Three-Axle		Four-Axle		Five-Axle		Six-Axle	
	TxTag	PBM	TxTag	PBM	TxTag	PBM	TxTag	PBM	TxTag	PBM
SH 130 (Segments 1-4) Toll Rates										
SH 130 (Segments 1-4) From I-35 at SH 195 to US 183: Mainline Plazas and Entrance and Exit Ramps at: Cameron Rd.	$1.75	$2.33	$3.50	$4.66	$5.25	$6.98	$5.25	$6.98	$5.25	$6.98
Entrance and Exit Ramps at: SH 29, Blue Bluff, Harold Green, and Moore Rd.	$0.47	$0.63	$0.94	$1.25	$1.41	$1.88	$1.41	$1.88	$1.41	$1.88
Entrance and Exit Ramps at: FM 104, Pecan St./Pflugerville, Gregg Manor, FM 973, Fm 969, Pearce Ln, and FM 812	$0.58	$0.77	$1.16	$1.54	$1.74	$2.31	$1.74	$2.31	$1.74	$2.31
Entrance and Exit Ramps at:US 79, CR 138, Chandler Rd., and Elroy Rd.	$0.75	$1.00	$1.50	$2.00	$2.25	$2.99	$2.25	$2.99	$2.25	$2.99
SH 45 Southeast Toll Rates										
Mainline Plaza between N. Turnersville Road and Palmer Road	$1.04	$1.38	$2.08	$2.77	$3.12	$4.15	$3.12	$4.15	$3.12	$4.15
Entrance and Exit Ramps at: N. Turnersville Road, and FM 1625	$0.68	$0.90	$1.36	$1.81	$2.04	$2.71	$2.04	$2.71	$2.04	$2.71
SH 45 North Toll Rates										
Mainline Plazas: Lake Creek and Heatherwilde	$1.06	$1.41	$2.12	$2.82	$3.18	$4.23	$4.24	$5.64	$5.30	$7.05
Entrance and Exit Ramps at: Parmer Ln.(FM 734), and RM 620	$0.91	$1.21	$1.82	$2.42	$2.73	$3.63	$3.64	$4.84	$4.55	$6.05
Entrance and Exit Ramps at: O'Connor Drive	$0.93	$1.24	$1.86	$2.47	$2.79	$3.71	$3.72	$4.95	$4.65	$6.18
Entrance and Exit Ramps at: Greenlawn, and AW Grimes	$0.70	$0.93	$1.40	$1.86	$2.10	$2.79	$2.80	$3.72	$3.50	$4.66
Entrance and Exit Ramps at: Schultz Lane, Wilke Lane (Heatherwilde)	$1.06	$1.41	$2.12	$2.82	$3.18	$4.23	$4.24	$5.64	$5.30	$7.05
Loop 1 Toll Rates										
Mainline Plaza at: Merrilltown	$1.06	$1.41	$2.12	$2.82	$3.18	$4.23	$4.24	$5.64	$5.30	$7.05
Entrance and Exit Ramps at: Shoreline Drive, and Howard Ln./Wells Branch	$0.70	$0.93	$1.40	$1.86	$2.10	$2.79	$2.80	$3.72	$3.50	$4.66
Entrance and Exit Ramps at: O'Connor Drive	$0.93	$1.24	$1.86	$2.47	$2.79	$3.71	$3.72	$4.95	$4.65	$6.18

Notes:

1.) Pay By Mail (PBM) rates do not include $1.15 statement fee.

2.) A 33% surcharge (for PBM) over the TxTag rate is applied.

APPENDIX E

MINUTE ORDER 114117 –
2015 TOLL RATES

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TEXAS TRANSPORTATION COMMISSION

TRAVIS and WILLIAMSON Counties **MINUTE ORDER**

AUSTIN District

Title 43, Texas Administrative Code, §27.82(d) provides that the Texas Transportation Commission (commission) will establish toll rates for the use of a toll project on the state highway system. In setting toll rates, the commission is required to consider: (1) the results of traffic and revenue studies and any schedule of toll rates established in traffic and revenue reports; (2) the requirements of project bond covenants, if applicable; and (3) vehicle classifications, type and location of the facility, and similar criteria that apply to a specific project.

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IT IS THEREFORE ORDERED by the commission that the schedule of escalated toll rates for each CTTS element, attached as Exhibit A, is accepted replacing the current rate tables with the escalated toll rates on January 1, 2015.

Submitted and reviewed by:

Director, Toll Operations Division

Recommended by:

Executive Director

114117 OCT 30 14

Minute Number Date Passed

Exhibit A

Rates Effective January 1, 2015										
Tolling Point	Two-Axle		Three-Axle		Four-Axle		Five-Axle		Six-Axle	
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Entrance and Exit Ramps at:US 79, CR 138, Chandler Rd., and Elroy Rd.	$0.75	$1.00	$1.50	$2.00	$2.25	$2.99	$2.25	$2.99	$2.25	$2.99
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Mainline Plazas: Lake Creek and Heatherwilde	$1.06	$1.41	$2.12	$2.82	$3.18	$4.23	$4.24	$5.64	$5.30	$7.05
Entrance and Exit Ramps at: Parmer Ln.(FM 734), and RM 620	$0.91	$1.21	$1.82	$2.42	$2.73	$3.63	$3.64	$4.84	$4.55	$6.05
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Entrance and Exit Ramps at: Greenlawn, and AW Grimes	$0.70	$0.93	$1.40	$1.86	$2.10	$2.79	$2.80	$3.72	$3.50	$4.66
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Entrance and Exit Ramps at: Shoreline Drive, and Howard Ln./Wells Branch	$0.70	$0.93	$1.40	$1.86	$2.10	$2.79	$2.80	$3.72	$3.50	$4.66
Entrance and Exit Ramps at: O'Connor Drive	$0.93	$1.24	$1.86	$2.47	$2.79	$3.71	$3.72	$4.95	$4.65	$6.18

Notes:

1.) Pay By Mail (PBM) rates do not include $1.15 statement fee.

2.) A 33% surcharge (for PBM) over the TxTag rate is applied.

APPENDIX F

INVESTMENT AUTHORITY AND INVESTMENT PRACTICES OF THE COMMISSION

The Commission invests its investable funds (e.g. funds held by the Trustee related to the System) in investments authorized by State law in accordance with investment policies approved by the Commission. Both State law and the Commission's investment policies are subject to change.

Based on the current Investment Policy and current law, funds held by the Trustee related to the System may be invested in the following: (i) obligations, including letters of credit, of the United States or its agencies and instrumentalities; (ii) direct obligations of the State or its agencies and instrumentalities rated as to investment quality by a nationally-recognized investment firm of not less than "A"; (iii) collateralized mortgage obligations directly issued by a federal agency or instrumentality of the United States, the underlying security for which is guaranteed by an agency or instrumentality of the United States (such transactions not to exceed ten percent of the total of each investment portfolio under the Investment Policy); (iv) other obligations, the principal and interest of which are unconditionally guaranteed or insured by, or backed by the full faith and credit of, the State or the United States or their respective agencies and instrumentalities, including obligations that are fully guaranteed or insured by the Federal Deposit Insurance Corporation (the "*FDIC*") or by the explicit full faith and credit of the United States; (v) obligations of states, agencies, counties, cities, and other political subdivisions of any state rated as to investment quality by a nationally-recognized investment rating firm not less than "A" or its equivalent (such transactions not to exceed ten percent of the total of each investment portfolio under the Investment Policy); (vi) bonds issued, assumed, or guaranteed by the State of Israel; (vii) financial institution deposits or certificates of deposit and share certificates issued by a depository institution with its main office or a branch office in the State that is (a) guaranteed or insured by the FDIC or the National Credit Union Share Insurance Fund or their successors or (b) secured in any other manner and amount provided by law for deposits of the Commission (investment in certificates of deposit may not exceed 80 percent of the total of each investment portfolio under the Investment Policy); (viii) a fully collateralized repurchase or reverse repurchase agreement that has a defined termination date, is secured by cash and/or obligations described in (i) above; requires the securities purchased by the Commission to be pledged to the Commission, held in the Commission's name, and deposited at the time the investment is made with the Commission or with a third party selected and approved by the Commission; and is placed through a primary government securities dealer, as defined by the Federal Reserve, or financial institutions doing business in the State (however, the Commission may not enter into repurchases agreements that are not settled on a delivery versus payment process, have terms that exceed 90 days from the date the reverse security repurchase agreement is delivered, or have terms longer than six months when the financial institution or broker/dealer initially has a long-term rating category of less than "A" and does not have at least one long-term rating of least "AA" by a nationally recognized investment rating firm); (ix) certain bankers acceptances with a stated maturity of 270 days or fewer from the date of issuance, if liquidated in full at maturity, eligible for collateral for borrowing from a Federal Reserve Bank, and accepted by a bank organized and existing under the laws of the United States or any state, if the short-term obligations of the bank are rated not less than "A-1" or "P-1" or an equivalent rating by at least one nationally-recognized credit rating agency (such transactions not to exceed five percent of the total Commission investment portfolio under the Investment Policy); (x) commercial paper with a stated maturity of 270 days or less that is rated at least "A-1" or "P-1," or the equivalent, by at least (a) two nationally-recognized rating agencies or (b) one nationally-recognized credit rating agency if the paper is fully secured by an irrevocable letter of credit issued by a bank organized and existing under the laws of the United States or any state (such transactions not to exceed 15 percent of the total of each investment portfolio under the Investment Policy with no more than five percent in any one name); (xi) with certain restrictions, (a) a no-load money market mutual fund that is registered with and regulated by the SEC, provides the Commission with a prospectus and other information required by the Securities Exchange Act of 1934 or the Investment Company Act of 1940, has a dollar-weighted average stated maturity of 90 days or fewer, and includes in its investment objectives the maintenance of a stable net asset value of $1.00 for each share; or (b) a no-load mutual fund that is registered with the SEC, has an average weighted maturity of less than two years, is invested exclusively in obligations permitted for investment under the Investment Policy, is continuously rated as to investment quality by at least one nationally-recognized investment rating firm of not less than "AAA" or its equivalent, and conforms to State law relating to the eligibility of investment pools to receive and invest funds of investing entities; (xii) certain securities lending programs; (xiii) an eligible investment pool that is specifically authorized by the Commission and invests solely in such obligations authorized under State law provided that the pool is rated no lower than "AAA" or "AAAm" or an equivalent by at least one nationally-recognized rating service, operates like a money market mutual fund, and meets other requirements; (xiv) certain guaranteed investment contracts in connection with investing bond proceeds if such investment contract has a defined termination date, is secured by obligations in (i) in an amount at least equal to the amount of bond proceeds

invested under the contract, and is pledged to the Commission and deposited with the Commission or with a third party selected and approved by the Commission (such transactions that utilize bond proceeds, other than bond proceeds representing reserves and funds maintained for debt service purposes, may not be invested in a guaranteed investment contract for a term longer than 5 years or in investment agreements that are not settled on a delivery versus payment process, have terms that exceed 90 days from the date the reverse security repurchase agreement is delivered, or have terms longer than six months when the financial institution or broker/dealer initially has a long-term rating category of less than "A" and does not have at least one long-term rating of least "AA" by a nationally recognized investment rating firm.); and (xv) certain forward purchase agreements in connection with investing bond proceeds if the agreement is specifically authorized in the bond documents, has a defined termination date, the obligations delivered under the agreement meet the restrictions set forth in the investment policy and certain bidding and other procedures are met.

The Commission may invest in a securities lending program if (i) the securities loaned under the program are 100% collateralized (including accrued income), a loan made under the program allows for termination at any time, and a loan made under the program is secured by either (a) obligations that are described in clauses (i) through (vi), (b) pledged irrevocable letters of credit issued by a state or national bank that is continuously rated by a nationally-recognized investment rating firm not less than "A" or its equivalent, or (c) cash invested in obligations that are described in clauses (i) through (vi), (x), (xi) and (xiv) of the second paragraph under this caption; (ii) securities held as collateral under a loan are pledged to the Commission, held in the name of the Commission, and deposited at the time the investment is made with a third party designated by the Commission; (iii) a loan made under the program is placed through either a primary government securities dealer or a financial institution doing business in the State; and (iv) the agreement to lend securities has a term of one year or less.

Bond proceeds may be invested in accordance with the provisions of the applicable bond documents. To the extent of any inconsistency between the provisions of the Investment Policy and such bond documents, the investment terms contained in the bond documents shall control. However, no such investment of bond proceeds shall be made in the non-authorized investments described in the paragraph below.

The Commission is specifically prohibited from investing in: (i) obligations whose payment represents the coupon payments on the outstanding principal balance of the underlying mortgage-backed security collateral and pays no principal (interest only bond); (ii) obligations whose payment represents the principal stream of cash flow from the underlying mortgage-backed security collateral and bears no interest (principal only bond); (iii) collateralized mortgage obligations that have a stated final maturity date of greater than ten years; (iv) collateralized mortgage obligations the interest rate of which is determined by an index that adjusts opposite to the changes in a market index (inverse floaters); or (v) investments of any type that are denominated in a foreign currency. In addition, the Commission is not authorized to invest in the aggregate more than 15% of the monthly average fund balance, excluding bond proceeds and reserves and other funds held for debt service, in mutual funds described in clause (xi)(b) of the second paragraph under this caption, any portion of bond proceeds, reserves and other funds held for debt service, in mutual funds described in clause (xi)(b) of the second paragraph under this caption, or invest its funds or funds under its control, including bond proceeds and reserves and other funds held for debt service, in any one mutual fund described in (xi) of the second paragraph under this caption in an amount that exceeds ten percent of the total assets of the mutual fund. Further, reverse repurchase agreements must not have a term of more than 90 days, and the investment of reverse repurchase agreement funds must be in obligations with a term no greater than the term of the reverse purchase agreement.

Under State law, the Commission is required to invest its funds under written investment policies that primarily emphasize safety of principal and liquidity; that address investment diversification, yield, maturity, and the quality and capability of investment management; and that include a list of authorized investments for Commission funds, the maximum allowable stated maturity of any individual investment, and the maximum average dollar-weighted maturity allowed for pooled fund groups. All Commission funds must be invested consistent with a formally adopted "Investment Strategy" that specifically addresses each fund's investment. Each Investment Strategy will describe its objectives concerning: (i) suitability of the investment to the financial requirements of the Commission, (ii) preservation and safety of principal, (iii) liquidity, (iv) marketability of each investment if the need arises to liquidate prior to maturity, (v) diversification of the portfolio, and (vi) yield.

Under State law, the Commission's investments must be made "with judgment and care, under prevailing circumstances, that a person of prudence, discretion, and intelligence would exercise in the management of the person's own affairs, not for speculation, but for investment considering the probable safety of capital and the probable income to be derived." At least quarterly, the Commission's investment officers must submit an

investment report to the Commission including: (i) the book value and market value for each investment at the beginning and end of the reporting period; (ii) if the funds are pooled and invested, a summary statement, prepared in accordance with generally accepted accounting principles, presenting the beginning market value of the pool portfolio, changes in market value during the reporting periods, the ending market value of the portfolio, and fully accrued interest for the reporting period; (iii) the maturity date of each investment, if applicable; (iv) a statement of intent if some or all securities are intended to be held to maturity; (v) any variations from the investment strategy of the Commission; (vi) recommended amendments to current specific investment strategies; and (vii) an analysis of current market conditions.

Under State law, the Commission is additionally required to: (i) annually review its adopted policies and strategies, (ii) adopt a rule, order, ordinance or resolution stating that it has reviewed its investment policy and investment strategies and record any changes made to either its investment policy or investment strategy in the respective rule, order, ordinance or resolution, (iii) require any investment officers with personal business relationships or relatives with firms seeking to sell securities to the Commission to disclose the relationship and file a statement with the Texas Ethics Commission and the Commission; (iv) require the qualified representative of firms offering to engage in an investment transaction with the Commission to: (a) receive and review the Commission's investment policy, (b) acknowledge that reasonable controls and procedures have been implemented to preclude investment transactions conducted between the Commission and the business organization that are not authorized by the Commission's investment policy (except to the extent that this authorization is dependent on an analysis of the makeup of the Commission's entire portfolio or requires an interpretation of subjective investment standards), and (c) deliver a written statement in a form acceptable to the Commission and the business organization attesting to these requirements; (v) perform a biennial audit of the management controls on investments and adherence to the Commission's investment policy; (vi) provide specific investment training for the Commissioners, Chief Financial Officer, and investment officers; (vii) require local government investment pools to conform to the disclosure, rating, net asset value, yield calculation, and advisory board requirements, and (viii) at least annually review, revise, and adopt a list of qualified brokers that are authorized to engage in investment transactions with the Commission.

The Commission has entered into the Master Repurchase Agreement for the investment of approximately $115 million in the First Tier Debt Service Reserve Fund to establish a fixed rate of return for such amount. See "SOURCES OF PAYMENT AND SECURITY FOR THE BONDS – Funds and Accounts – *First Tier Debt Service Reserve Fund.*"

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APPENDIX G

FORMS OF OPINIONS OF BOND COUNSEL

LAW OFFICES

McCALL, PARKHURST & HORTON L.L.P.

717 NORTH HARWOOD
SUITE 900
DALLAS, TEXAS 75201-6587
TELEPHONE: 214 754-9200
FACSIMILE: 214 754-9250

600 CONGRESS AVENUE
SUITE 1800
AUSTIN, TEXAS 78701-3248
TELEPHONE: 512 478-3805
FACSIMILE: 512 472-0871

700 N. ST. MARY'S STREET
SUITE 1525
SAN ANTONIO, TEXAS 78205-3503
TELEPHONE: 210 225-2800
FACSIMILE: 210 225-2984

[*An opinion in substantially the following form will be delivered by McCall, Parkhurst & Horton L.L.P., Bond Counsel, upon the delivery of the Bonds, assuming no material changes in facts or law.*]

$225,000,000
TEXAS TRANSPORTATION COMMISSION
CENTRAL TEXAS TURNPIKE SYSTEM
FIRST TIER REVENUE REFUNDING PUT BONDS,
SERIES 2015-A

AS BOND COUNSEL for the Texas Transportation Commission (the "Commission") the governing body of the Texas Department of Transportation (the "Department"), we have examined into the legality and validity of the issue of bonds described above (the "Bonds"), which bear interest from the dates and mature on the dates specified on the face of the Bonds, all in accordance with the minute order of the Commission authorizing the issuance of such Bonds adopted on November 20, 2014 (the "Authorizing Minute Order"), the Indenture of Trust dated as of July 15, 2002, (the "Master Indenture") between the Commission and The Bank of New York Mellon Trust Company, National Association, as Trustee (successor to JPMorgan Trust Company as successor to Bank One, National Association), the Amended and Restated Seventh Supplemental Indenture of Trust dated as of January 1, 2015 between the Commission and The Bank of New York Mellon Trust Company, National Association as Trustee (the "Seventh Supplemental Indenture") and the Chief Financial Officer's Award Certificate establishing the pricing terms of the Bonds. The Master Indenture, the Seventh Supplemental Indenture and the Chief Financial Officer's Award Certificate are collectively referenced as the "Indenture." Terms used herein and not otherwise defined shall have the meaning given in the Indenture.

WE HAVE EXAMINED the applicable and pertinent provisions of the Constitution and laws of the State of Texas, a transcript of certified proceedings of the Commission, the executed Indenture and other pertinent instruments relating to the authorization, issuance, and delivery of the Bonds; and we have examined various certificates and documents executed by officers and officials of the Commission and the Department upon which certificates and documents we rely as to certain matters stated below. We have also examined one of the executed Bonds which we found to be in proper form and duly executed.

BASED ON SAID EXAMINATION, IT IS OUR OPINION that the Commission, as the governing body of the Department, is an agency of the State of Texas, created and operating under the Constitution and laws of the State of Texas and is authorized to issue the Bonds under Chapter 228, Texas Transportation Code, as amended, and Chapters 1207 and 1371, Texas Government Code, as amended. It is further our opinion that (i) the Bonds have been duly authorized; (ii) all conditions precedent to the delivery of the Bonds have been fulfilled; and (iii) the Bonds have been duly issued and delivered, all in accordance with law. Except as the enforceability may be limited by sovereign immunity, bankruptcy, insolvency, reorganization, moratorium, liquidation and other similar laws now or hereafter enacted relating to creditors' rights generally or by sovereign immunity or principles of equity which permit the exercise of judicial discretion the (i) Bonds are First Tier Obligations; (ii) covenants and agreements in the Indenture constitute valid and binding obligations of the Commission, and the Bonds constitute valid and legally binding obligations of the Commission which, together with the outstanding the Texas Turnpike Authority Central Texas Turnpike System Revenue Bonds, Series 2002-A (the "Series 2002-A Bonds"), the Texas Transportation Commission Central Texas Turnpike System First Tier Revenue Refunding Bonds, Series 2012-A (the "Series 2012-A Bonds") and the Texas Transportation Commission Central Texas Turnpike System First Tier Revenue Refunding Bonds, Series 2015-B (the "Series 2015-B Bonds") are secured equally and ratably, on a parity, by a first lien on,

pledge of and security interest in the Trust Estate established by the Indenture and are payable as to principal and interest solely from the sources provided therein, including the Revenues of the Central Texas Turnpike System (the "System"); and (iii) Indenture is authorized by law, has been duly executed and delivered, and is valid and legally binding upon and enforceable by the parties thereto in accordance with its terms and provisions.

THE COMMISSION has reserved the right, subject to the restrictions stated in the Indenture, to issue Additional First Tier Obligations which also may be secured by the Indenture on a parity with the Bonds, the outstanding Series 2002-A Bonds, Series 2012-A Bonds and Series 2015-B Bonds. The Commission also has reserved the right to amend the Indenture in the manner provided therein and under some (but not all) circumstances amendments thereto must be approved by the Secured Owners of a majority of all Outstanding Obligations secured by the Indenture.

THE REGISTERED OWNERS of the Bonds shall never have the right to demand payment of the principal thereof or interest thereon out of any funds raised or to be raised by taxation or from any source whatsoever other than as described in the Indenture.

IT IS FURTHER OUR OPINION, that except as discussed below, under the statutes, regulations, published rulings, and court decisions existing on the date of this opinion, for federal income tax purposes, the interest on the Bonds (i) is excludable from the gross income of the owners thereof and (ii) the Bonds will not be treated as "specified private activity bonds" the interest on which would be included as an alternative minimum tax preferred item under section 57(a)(5) of the Internal Revenue Code of 1986 (the "Code"). In expressing the aforementioned opinions, we have relied on the verification report of Causey Demgen & Moore P.C. and certain representations, the accuracy of which we have not independently verified, and assume compliance by the Commission with certain representations and covenants regarding the use and investment of the proceeds of the Bonds and the use of the property financed therewith. We call your attention to the fact that if such representations are determined to be inaccurate or upon a failure by the Commission to comply with such covenants, interest on the Bonds may become includable in gross income retroactively to the date of issuance of the Bonds.

EXCEPT AS STATED ABOVE, we express no opinion as to any other federal, state, or local tax consequences of acquiring, carrying, owning, or disposing of the Bonds. In particular, but not by way of limitation, we express no opinion with respect to the federal, state or local tax consequences arising from the enactment of any pending or future legislation.

WE EXPRESS NO OPINION as to any insurance policies issued in the future.

OUR OPINIONS ARE BASED ON EXISTING LAW, which is subject to change. Such opinions are further based on our knowledge of facts as of the date hereof. We assume no duty to update or supplement our opinions to reflect any facts or circumstances that may thereafter come to our attention or to reflect any changes in any law that may thereafter occur or become effective. Moreover, our opinions are not a guarantee of result and are not binding on the Internal Revenue Service (the "Service"); rather, such opinions represent our legal judgment based upon our review of existing law and in reliance upon the representations and covenants referenced above that we deem relevant to such opinions. The Service has an ongoing audit program to determine compliance with rules that relate to whether interest on state or local obligations is includable in gross income for federal income tax purposes. No assurance can be given whether or not the Service will commence an audit of the Bonds. If an audit is commenced, in accordance with its current published procedures the Service is likely to treat the Commission as the taxpayer. We observe that the Commission has covenanted not to take any action, or omit to take any action within its control, that if taken or omitted, respectively, may result in the treatment of interest on the Bonds as includable in gross income for federal income tax purposes.

WE CALL YOUR ATTENTION TO THE FACT THAT the interest on tax-exempt obligations, such as the Bonds, is included in a corporation's alternative minimum taxable income for purposes of determining the alternative minimum tax imposed on corporations by section 55 of the Code.

WE HAVE ACTED AS BOND COUNSEL for the Commission for the purpose of rendering an opinion with respect to the legality and validity of the Bonds under the Constitution and laws of the State of Texas and with respect to the exclusion from gross income of the interest on the Bonds for federal income tax purposes. We have not been requested to investigate or verify, and have not investigated or verified, any records, data, or other material relating to the financial condition or capabilities of the Commission and have not assumed any responsibility with respect thereto. We express no opinion and make no comment with respect to the marketability of the Bonds.

THE FOREGOING OPINIONS represent our legal judgment based upon a review of existing legal authorities that we deem relevant to render such opinions and are not a guarantee of a result.

Respectfully,

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LAW OFFICES

M^c^CALL, PARKHURST & HORTON L.L.P.

717 NORTH HARWOOD
SUITE 900
DALLAS, TEXAS 75201-6587
TELEPHONE: 214 754-9200
FACSIMILE: 214 754-9250

600 CONGRESS AVENUE
SUITE 1800
AUSTIN, TEXAS 78701-3248
TELEPHONE: 512 478-3805
FACSIMILE: 512 472-0871

700 N. ST. MARY'S STREET
SUITE 1525
SAN ANTONIO, TEXAS 78205-3503
TELEPHONE: 210 225-2800
FACSIMILE: 210 225-2984

[*An opinion in substantially the following form will be delivered by McCall, Parkhurst & Horton L.L.P., Bond Counsel, upon the delivery of the Bonds, assuming no material changes in facts or law.*]

$226,019,800
TEXAS TRANSPORTATION COMMISSION
CENTRAL TEXAS TURNPIKE SYSTEM
FIRST TIER REVENUE REFUNDING BONDS,
SERIES 2015-B

AS BOND COUNSEL for the Texas Transportation Commission (the "Commission") the governing body of the Texas Department of Transportation (the "Department"), we have examined into the legality and validity of the issue of bonds described above (the "Bonds"), which bear interest from the dates and mature on the dates specified on the face of the Bonds, all in accordance with the minute order of the Commission authorizing the issuance of such Bonds adopted on November 20, 2014 (the "Authorizing Minute Order"), the Indenture of Trust dated as of July 15, 2002, (the "Master Indenture") between the Commission and The Bank of New York Mellon Trust Company, National Association, as Trustee (successor to JPMorgan Trust Company as successor to Bank One, National Association), the Amended and Restated Seventh Supplemental Indenture of Trust dated as of January 1, 2015 between the Commission and The Bank of New York Mellon Trust Company, National Association as Trustee (the "Seventh Supplemental Indenture") and the Chief Financial Officer's Award Certificate establishing the pricing terms of the Bonds. The Master Indenture, the Seventh Supplemental Indenture and the Chief Financial Officer's Award Certificate are collectively referenced as the "Indenture." Terms used herein and not otherwise defined shall have the meaning given in the Indenture.

WE HAVE EXAMINED the applicable and pertinent provisions of the Constitution and laws of the State of Texas, a transcript of certified proceedings of the Commission, the executed Indenture and other pertinent instruments relating to the authorization, issuance, and delivery of the Bonds; and we have examined various certificates and documents executed by officers and officials of the Commission and the Department upon which certificates and documents we rely as to certain matters stated below. We have also examined one of the executed Bonds which we found to be in proper form and duly executed.

BASED ON SAID EXAMINATION, IT IS OUR OPINION that the Commission, as the governing body of the Department, is an agency of the State of Texas, created and operating under the Constitution and laws of the State of Texas and is authorized to issue the Bonds under Chapter 228, Texas Transportation Code, as amended, and Chapters 1207 and 1371, Texas Government Code, as amended. It is further our opinion that (i) the Bonds have been duly authorized; (ii) all conditions precedent to the delivery of the Bonds have been fulfilled; and (iii) the Bonds have been duly issued and delivered, all in accordance with law. Except as the enforceability may be limited by sovereign immunity, bankruptcy, insolvency, reorganization, moratorium, liquidation and other similar laws now or hereafter enacted relating to creditors' rights generally or by sovereign immunity or principles of equity which permit the exercise of judicial discretion the (i) Bonds are First Tier Obligations; (ii) covenants and agreements in the Indenture constitute valid and binding obligations of the Commission, and the Bonds constitute valid and legally binding obligations of the Commission which, together with the outstanding the Texas Turnpike Authority Central Texas Turnpike System Revenue Bonds, Series 2002-A (the "Series 2002-A Bonds"), the Texas Transportation Commission Central Texas Turnpike System First Tier Revenue Refunding Bonds, Series 2012-A (the "Series 2012-A Bonds") and the Texas Transportation Commission Central Texas Turnpike System First Tier Revenue Refunding Put Bonds, Series 2015-A (the "Series 2015-A Bonds") are secured equally and ratably, on a parity, by a first lien on, pledge of and security interest in the Trust Estate established by the Indenture and are payable as to principal and interest solely from the sources provided therein, including the Revenues of the Central Texas Turnpike System (the "System"); and (iii) Indenture is authorized by law, has been duly executed and delivered, and is valid and legally binding upon and enforceable by the parties thereto in accordance with its terms and provisions.

THE COMMISSION has reserved the right, subject to the restrictions stated in the Indenture, to issue Additional First Tier Obligations which also may be secured by the Indenture on a parity with the Bonds, the outstanding Series 2002-A Bonds, Series 2012-A Bonds and Series 2015-A Bonds. The Commission also has reserved the right to amend the Indenture in the manner provided therein and under some (but not all) circumstances amendments thereto must be approved by the Secured Owners of a majority of all Outstanding Obligations secured by the Indenture.

THE REGISTERED OWNERS of the Bonds shall never have the right to demand payment of the principal thereof or interest thereon out of any funds raised or to be raised by taxation or from any source whatsoever other than as described in the Indenture.

IT IS FURTHER OUR OPINION, that except as discussed below, under the statutes, regulations, published rulings, and court decisions existing on the date of this opinion, for federal income tax purposes, the interest on the Bonds (i) is excludable from the gross income of the owners thereof and (ii) the Bonds will not be treated as "specified private activity bonds" the interest on which would be included as an alternative minimum tax preferred item under section 57(a)(5) of the Internal Revenue Code of 1986 (the "Code"). In expressing the aforementioned opinions, we have relied on the verification report of Causey Demgen & Moore P.C. and certain representations, the accuracy of which we have not independently verified, and assume compliance by the Commission with certain representations and covenants regarding the use and investment of the proceeds of the Bonds and the use of the property financed therewith. We call your attention to the fact that if such representations are determined to be inaccurate or upon a failure by the Commission to comply with such covenants, interest on the Bonds may become includable in gross income retroactively to the date of issuance of the Bonds.

EXCEPT AS STATED ABOVE, we express no opinion as to any other federal, state, or local tax consequences of acquiring, carrying, owning, or disposing of the Bonds. In particular, but not by way of limitation, we express no opinion with respect to the federal, state or local tax consequences arising from the enactment of any pending or future legislation.

WE EXPRESS NO OPINION as to any insurance policies issued in the future.

OUR OPINIONS ARE BASED ON EXISTING LAW, which is subject to change. Such opinions are further based on our knowledge of facts as of the date hereof. We assume no duty to update or supplement our opinions to reflect any facts or circumstances that may thereafter come to our attention or to reflect any changes in any law that may thereafter occur or become effective. Moreover, our opinions are not a guarantee of result and are not binding on the Internal Revenue Service (the "Service"); rather, such opinions represent our legal judgment based upon our review of existing law and in reliance upon the representations and covenants referenced above that we deem relevant to such opinions. The Service has an ongoing audit program to determine compliance with rules that relate to whether interest on state or local obligations is includable in gross income for federal income tax purposes. No assurance can be given whether or not the Service will commence an audit of the Bonds. If an audit is commenced, in accordance with its current published procedures the Service is likely to treat the Commission as the taxpayer. We observe that the Commission has covenanted not to take any action, or omit to take any action within its control, that if taken or omitted, respectively, may result in the treatment of interest on the Bonds as includable in gross income for federal income tax purposes.

WE CALL YOUR ATTENTION TO THE FACT THAT the interest on tax-exempt obligations, such as the Bonds, is included in a corporation's alternative minimum taxable income for purposes of determining the alternative minimum tax imposed on corporations by section 55 of the Code.

WE HAVE ACTED AS BOND COUNSEL for the Commission for the purpose of rendering an opinion with respect to the legality and validity of the Bonds under the Constitution and laws of the State of Texas and with respect to the exclusion from gross income of the interest on the Bonds for federal income tax purposes. We have not been requested to investigate or verify, and have not investigated or verified, any records, data, or other material relating to the financial condition or capabilities of the Commission and have not assumed any responsibility with respect thereto. We express no opinion and make no comment with respect to the marketability of the Bonds.

THE FOREGOING OPINIONS represent our legal judgment based upon a review of existing legal authorities that we deem relevant to render such opinions and are not a guarantee of a result.

Respectfully,

LAW OFFICES

McCALL, PARKHURST & HORTON L.L.P.

717 NORTH HARWOOD
SUITE 900
DALLAS, TEXAS 75201-6587
TELEPHONE: 214 754-9200
FACSIMILE: 214 754-9250

600 CONGRESS AVENUE
SUITE 1800
AUSTIN, TEXAS 78701-3248
TELEPHONE: 512 478-3805
FACSIMILE: 512 472-0871

700 N. ST. MARY'S STREET
SUITE 1525
SAN ANTONIO, TEXAS 78205-3503
TELEPHONE: 210 225-2800
FACSIMILE: 210 225-2984

[*An opinion in substantially the following form will be delivered by McCall, Parkhurst & Horton L.L.P., Bond Counsel, upon the delivery of the Bonds, assuming no material changes in facts or law.*]

$1,157,320,000
TEXAS TRANSPORTATION COMMISSION
CENTRAL TEXAS TURNPIKE SYSTEM
SECOND TIER REVENUE REFUNDING BONDS,
SERIES 2015-C

AS BOND COUNSEL for the Texas Transportation Commission (the "Commission") the governing body of the Texas Department of Transportation (the "Department"), we have examined into the legality and validity of the issue of bonds described above (the "Bonds"), which bear interest from the dates and mature on the dates specified on the face of the Bonds, all in accordance with the minute order of the Commission authorizing the issuance of such Bonds adopted on November 20, 2014 (the "Authorizing Minute Order"), the Indenture of Trust dated as of July 15, 2002, (the "Master Indenture") between the Commission and The Bank of New York Mellon Trust Company, National Association, as Trustee (successor to JPMorgan Trust Company as successor to Bank One, National Association), the Amended and Restated Seventh Supplemental Indenture of Trust dated as of January 1, 2015 between the Commission and The Bank of New York Mellon Trust Company, National Association as Trustee (the "Seventh Supplemental Indenture") and the Chief Financial Officer's Award Certificate establishing the pricing terms of the Bonds. The Master Indenture, the Seventh Supplemental Indenture and the Chief Financial Officer's Award Certificate are collectively referenced as the "Indenture." Terms used herein and not otherwise defined shall have the meaning given in the Indenture.

WE HAVE EXAMINED the applicable and pertinent provisions of the Constitution and laws of the State of Texas, a transcript of certified proceedings of the Commission, the executed Indenture and other pertinent instruments relating to the authorization, issuance, and delivery of the Bonds; and we have examined various certificates and documents executed by officers and officials of the Commission and the Department upon which certificates and documents we rely as to certain matters stated below. We have also examined one of the executed Bonds which we found to be in proper form and duly executed.

BASED ON SAID EXAMINATION, IT IS OUR OPINION that the Commission, as the governing body of the Department, is an agency of the State of Texas, created and operating under the Constitution and laws of the State of Texas and is authorized to issue the Bonds under Chapter 228, Texas Transportation Code, as amended, and Chapters 1207 and 1371, Texas Government Code, as amended. It is further our opinion that (i) the Bonds have been duly authorized; (ii) all conditions precedent to the delivery of the Bonds have been fulfilled; and (iii) the Bonds have been duly issued and delivered, all in accordance with law. Except as the enforceability may be limited by sovereign immunity, bankruptcy, insolvency, reorganization, moratorium, liquidation and other similar laws now or hereafter enacted relating to creditors' rights generally or by sovereign immunity or principles of equity which permit the exercise of judicial discretion the (i) Bonds are Second Tier Obligations; (ii) covenants and agreements in the Indenture constitute valid and binding obligations of the Commission, and the Bonds constitute valid and legally binding obligations of the Commission which, together with any Additional Second Tier Obligations are secured equally and ratably, by a lien on, pledge of and security interest in the Trust Estate established by the Indenture junior and subordinate to the First Tier Obligations and are payable as to principal and interest solely from the sources provided therein, including the Revenues of the Central Texas Turnpike System (the "System"); and (iii) the Indenture is authorized by law, has been duly executed and delivered, and is valid and legally binding upon and enforceable by the parties thereto in accordance with its terms and provisions.

THE COMMISSION has reserved the right, subject to the restrictions stated in the Indenture, to issue Additional Second Tier Obligations which also may be secured by the Indenture on a parity with the Bonds. The

Commission also has reserved the right to amend the Indenture in the manner provided therein and under some (but not all) circumstances amendments thereto must be approved by the Secured Owners of a majority of all Outstanding Obligations secured by the Indenture.

THE REGISTERED OWNERS of the Bonds shall never have the right to demand payment of the principal thereof or interest thereon out of any funds raised or to be raised by taxation or from any source whatsoever other than as described in the Indenture.

IT IS FURTHER OUR OPINION, that except as discussed below, under the statutes, regulations, published rulings, and court decisions existing on the date of this opinion, for federal income tax purposes, the interest on the Bonds (i) is excludable from the gross income of the owners thereof and (ii) the Bonds will not be treated as "specified private activity bonds" the interest on which would be included as an alternative minimum tax preferred item under section 57(a)(5) of the Internal Revenue Code of 1986 (the "Code"). In expressing the aforementioned opinions, we have relied on the verification report of Causey Demgen & Moore P.C. and certain representations, the accuracy of which we have not independently verified, and assume compliance by the Commission with certain representations and covenants regarding the use and investment of the proceeds of the Bonds and the use of the property financed therewith. We call your attention to the fact that if such representations are determined to be inaccurate or upon a failure by the Commission to comply with such covenants, interest on the Bonds may become includable in gross income retroactively to the date of issuance of the Bonds.

EXCEPT AS STATED ABOVE, we express no opinion as to any other federal, state, or local tax consequences of acquiring, carrying, owning, or disposing of the Bonds. In particular, but not by way of limitation, we express no opinion with respect to the federal, state or local tax consequences arising from the enactment of any pending or future legislation.

WE EXPRESS NO OPINION as to any insurance policies issued in the future.

OUR OPINIONS ARE BASED ON EXISTING LAW, which is subject to change. Such opinions are further based on our knowledge of facts as of the date hereof. We assume no duty to update or supplement our opinions to reflect any facts or circumstances that may thereafter come to our attention or to reflect any changes in any law that may thereafter occur or become effective. Moreover, our opinions are not a guarantee of result and are not binding on the Internal Revenue Service (the "Service"); rather, such opinions represent our legal judgment based upon our review of existing law and in reliance upon the representations and covenants referenced above that we deem relevant to such opinions. The Service has an ongoing audit program to determine compliance with rules that relate to whether interest on state or local obligations is includable in gross income for federal income tax purposes. No assurance can be given whether or not the Service will commence an audit of the Bonds. If an audit is commenced, in accordance with its current published procedures the Service is likely to treat the Commission as the taxpayer. We observe that the Commission has covenanted not to take any action, or omit to take any action within its control, that if taken or omitted, respectively, may result in the treatment of interest on the Bonds as includable in gross income for federal income tax purposes.

WE CALL YOUR ATTENTION TO THE FACT THAT the interest on tax-exempt obligations, such as the Bonds, is included in a corporation's alternative minimum taxable income for purposes of determining the alternative minimum tax imposed on corporations by section 55 of the Code.

WE HAVE ACTED AS BOND COUNSEL for the Commission for the purpose of rendering an opinion with respect to the legality and validity of the Bonds under the Constitution and laws of the State of Texas and with respect to the exclusion from gross income of the interest on the Bonds for federal income tax purposes. We have not been requested to investigate or verify, and have not investigated or verified, any records, data, or other material relating to the financial condition or capabilities of the Commission and have not assumed any responsibility with respect thereto. We express no opinion and make no comment with respect to the marketability of the Bonds.

THE FOREGOING OPINIONS represent our legal judgment based upon a review of existing legal authorities that we deem relevant to render such opinions and are not a guarantee of a result.

Respectfully,

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TEXAS TRANSPORTATION COMMISSION • CENTRAL TEXAS TURNPIKE SYSTEM FIRST TIER REVENUE REFUNDING PUT BONDS, SERIES 2015-A, FIRST TIER REVENUE REFUNDING BONDS, SERIES 2015-B AND SECOND TIER REVENUE REFUNDING BONDS, SERIES 2015-C

Texas Department of Transportation

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