Central Texas Regional Mobility Authority
Senior Lien Revenue Bonds
Subordinate Lien Revenue Bonds

HR BBB+ (G)
HR BBB (G)

Infrastructure
September 28, 2018

Ratings

Senior Lien Revenue Bonds	HR BBB+ (G)
Subordinate Lien Revenue Bonds	HR BBB (G)
Outlook	Stable

Contacts

Pablo Gracia
Associate
pablo.gracia@hrratings.com

Roberto Soto
Associate Director
roberto.soto@hrratings.com

Roberto Ballinez
Senior Executive Director Public Finance / Infrastructure
roberto.ballinez@hrratings.com

Definition

The assigned rating of HR BBB+ (G) to the Senior Lien Revenue Bonds indicates that the issues provide moderate safety for timely payment of debt obligations. The Bonds maintain moderate credit risk on a global scale, with weakness in the ability to pay in adverse economic scenarios. The "+" indicates relative strength within the rating category.

The assigned rating of HR BBB (G) to the Subordinate Lien Revenue Bonds indicates that the issues provide moderate safety for timely payment of debt obligations. The Bonds maintain moderate credit risk on a global scale, with weakness in the ability to pay in adverse economic scenarios.

HR Ratings assigned HR BBB+ (G) to the 2018 Senior Lien Revenue Bonds and HR BBB (G) to the 2018 Subordinate Lien Revenue Bond Anticipation Notes of the CTRMA. Also, HR Ratings confirms the rating of the current Senior Lien Revenue Bonds and Subordinate Lien Revenue Bonds. The Ratings Outlook is Stable.

The ratification of the ratings for the Senior and Subordinate Bonds is due to the level of stress that the source of payment can withstand, equivalent to an Annualized Stress Rate (ASR)[1] of 2.52% for the Senior Bonds (vs. 2.52% in the last review) and 2.04% for the Subordinate Bonds (vs. 2.05% in the last review). The above considering the favorable performance of traffic and revenue of the System's existing toll roads and the incorporation of 183 South and 290E Phase III, which will provide additional revenues to service the debt.[2]

The stress scenario also incorporates other related adjustments to the base scenario. These obligations are to be serviced by a lien against the revenues generated by toll roads owned and operated by the Authority. The ratings also consider the possibility that the CTRMA could issue additional debt in the future, as well as the inherent construction risk of ongoing and future projects (such as 183 South and 290E Phase III) that could be incorporated into the System. Furthermore, HR Ratings regards as a potential risk the fact that the provisions for the Renewal and Replacement Fund are made after servicing the Senior and Subordinated debt. However, the CTRMA has the capacity to debt finance any extraordinary renewal and replacement projects.

The factors that justify the assigned ratings to the obligations of the Rated Entity are:

- **Future incorporation of new toll roads to the System.** 183 South will start interim operation (just the northern segment) in August 2019 and full completion is expected to be in August 2020. Additionally, 290E Phase III (south to west and north to west Direct Connectors) is expected to start its construction in December 2018 and would be starting operations in July 2021.
- **Historical Performance of Traffic and Revenue.** In 2017 Average Annual Daily Transactions (AADT) in 183A and 290E grew 6.4% and 11.5%, respectively. These increases, together with the addition to the System of the 71E, led to a growth in the System's AADT of 20.6% (vs. 20.8% expected in the base scenario of the last review). The System's Real Average Annual Daily Revenue (AADR) growth in 2017 was 11.9% (vs. 13.3% expected in the base scenario of the last review). Considering that, the System's Compound Annual Growth Rate (CAGR) from 2008 to 2017 of AADT and Real AADR was 17.5% and 17.0%.
- **Expected behavior of AADT and Real AADR in the base and stress scenarios.** In the base scenario, considering the interim and full opening of 183 South in August 2019 and August 2020, respectively, and the full completion of the 290E Phase III in July 2021, HR Ratings expects a $CAGR_{17\text{-}47}$ (Senior Bonds) of AADT and Real AADR of 3.9% and 4.3% and a $CAGR_{17\text{-}49}$ (Subordinate Bonds) of AADT and Real AADR of 3.7% and 4.1%, respectively. In the stress scenario the Senior Bonds and the Subordinate Bonds can absorb a maximum $CAGR_{17\text{-}47}$ and $CAGR_{17\text{-}49}$ of -0.7% and 0.1%, respectively, in their AADRs, in real terms.
- **Base scenario.** The Senior Bonds would be paid with the System's revenues, so it would not be necessary to use the General Fund or the Senior Lien Debt Service Reserve Fund (Senior Lien DSRF). In the case of the Subordinate Bonds, the General Fund would only be used in 2022 to pay a portion of the principal due of the 2018 Subordinate BANs, which is scheduled to be amortized for the total amount issued of US$44.9m.
- **Base scenario Debt Service Coverage Ratios (DSCRs).** The minimum and average Senior DSCRs would be 2.47x and 11.87x, while the minimum and average Subordinate DSCRs would be 1.32x and 4.78x.
- **Senior stress scenario.** In this case, real dollar revenues available for the Senior Bonds debt service would be 64.9% lower than those projected in the base scenario. As a result, cash flow available for the Senior Bonds debt service would not be enough to pay principal, requiring the use of the General Fund and the Senior Lien DSRF.
- **Subordinate stress scenario.** In this case, real term revenues available for debt service could decline 74.0% from the base scenario, although this would require the use of the General Fund and the Subordinate Lien Debt Service Reserve Fund (Subordinate Lien DSRF) to pay otherwise unfunded interest and principal.
- **Stress scenario DSCRs.** The lower revenues in the stress scenarios will diminish the minimum and average DSCRs to levels of 0.62x and 2.21x in the case of the Senior Bonds and to 0.79x and 1.46x in the case of the Subordinate Bonds.

[1] The ASR is the compounded average annual reduction in revenue from the base case to the stress case. It is essentially the total cumulative decline in revenue or in transactions of the stress case from the base case converted into an average annual rate depending upon the number of years in the term of the obligation. Please see glossary for an algebraic description of the formula.
[2] Our stress scenario is not to be understood as an example of what could happen under a set of adverse circumstances. Rather, it should be understood as the most adverse set of circumstances that could be tolerated while at the same time the debt servicing obligations of the bonds are duly paid. Thus, the more adverse the set of circumstances of the stress scenario, the greater is the credit quality of the bonds.

Main Factors Considered

Basic Elements of the Structure and Debt Service

The Central Texas Regional Mobility Authority (CTRMA and/or the Authority) issued six Senior Bonds and five Subordinated Bonds for a total par amount of US$1.8bn from 2010 to 2016, which at this date have an outstanding balance of US$1.5bn. All the Senior and Subordinated Bonds pay principal annually, except for the Subordinate Lien Revenue Bonds Series 2015C (TIFIA Loan), which pays principal semi-annually in January and July. Also, all the Bonds pay interest semi-annually at a fixed rate different for each one.

Additionally, the Authority expects to issue one Senior Lien Revenue Bonds and one Subordinated Lien Revenue Bond Anticipation Notes (BANs) (together the Series 2018 Obligations), for US$51.9m and US$44.9m, respectively. Both will accrue interest semi-annually at a different fixed rate. The Series 2018 Senior Lien Bonds will amortize annually starting in January 2025 and ending in January 2048, in accordance with the maturity schedule provided by the CTRMA.

The Series 2018 Subordinated Lien BANs will amortize in one payment in January 2023 and will not have any right to any resources held in the Subordinate Lien Debt Service Reserve Fund. Also, the CTRMA expects that the Series 2018 Subordinated Lien BANs will be partially or totally refunded with the proceeds of the 290E Phase III TIFIA Loan, which is in credit review with the United States Department of Transportation (USDOT). Considering the above, in case the Series 2018 Subordinated Lien BANs were refunded, HR Ratings will evaluate the possible impact that the new loan will have on the Subordinated Bonds rating.

The source of payment of the Bonds corresponds to the revenues derived from the operation of three toll roads in Central Texas: 183A, 290E and the 71E, and from the future operation of a fourth toll road, the 183 South, which is expected to open to traffic fully in August 2020. The four toll road facilities constitute the System.

The Senior Lien Debt Service Reserve Fund must retain the amounts sufficient to maintain the Senior Lien Debt Service Reserve Requirement, which is equal to the least of: (i) the maximum annual debt service on all outstanding Senior Bonds, (ii) 1.25 times (x) the average annual debt service on all outstanding Senior Bonds, or (iii) 10.0% of the aggregate amount of the Outstanding Senior Bonds, as determined on the date each Series of Senior Bonds was issued..

Regarding the Subordinated Bonds, the Debt Service Reserve Requirement for the Bond Series 2013 and 2016 follows the same rule as that for the Senior Lien Debt Service Reserve Requirement but based on the debt service of each individual series. Whereas the requirement for the TIFIA, SHF and SIB Loans equals the maximum annual debt service of each of the loans.

Historical Performance of the Toll Roads

In 2017 AADT in 183A and 290E grew 6.4% and 11.5%. Also, the last year 71E was added to the System, driving growth in the System's AADT to a level of 20.6% (in line with the one expected by HR Ratings in the base case scenario of the last review of 20.8%). Considering the above, 183A participation in AADT was 59.5%, leaving 290E and 71E with 30.1% and 10.4%, respectively. Also, the $CAGR_{08-17}$ of AADT in the System was 17.5%, driven by a $CAGR_{08-17}$ in 183A toll road of 10.9% and a $CAGR_{13-17}$ in 290E toll road of 40.8%. If 71E had not been added, the $CAGR_{08-17}$ of AADT would have been 16.0%.

Regarding the traffic behavior in 183A, with information provided by the CTRMA, AADT growth was mainly driven by the significant population growth in Leander and Cedar Park. Also, AADT growth in the 290E was due to: i) the ramp-up period (considering it started full operation in May 2014), ii) strong retail growth (including restaurants and medical care) and iii) significant population growth in Manor. Finally, regarding the 71E, one of the main drivers of traffic behavior has been Austin Bergstrom International Airport passenger growth, which between 2011 and 2017 was of 7.3%, in average.

In terms of revenues, in 2017 the System's Real AADR grew 11.9%, with growths of 4.0% in 183A and 0.7% in 290E. The low growth in Real AADR in 290E was mainly due to a decrease in revenues of 15.5% from August to December 2017 compared with those from August to December 2016. This decrease was due to some issues with the hub that delayed the recognition of revenues until March and April 2018. Considering the above, the System's Real AADR had a $CAGR_{08-17}$ of 17.0%, driven by a $CAGR_{08-17}$ of 12.1% in 183A and a $CAGR_{13-17}$ of 51.1% in 290E. In 2017, 183A had a participation in Real AADR of 67.8%, leaving 290E and 71E with 24.3% and 7.9%, respectively.

Expectations for Future Periods

In the base scenario, HR Ratings considers the interim opening of the 183 South in August 2019 and the full completion in August 2020. Also, the full completion of the 290 Phase III is expected in July 2021. Considering that, HR Ratings expects that AADT will grow 7.9% in 2019, 23.1% in 2020 and 29.5% in 2021. From 2022 to 2049, an average growth rate of 2.0% is expected. Taking the above in consideration, in the base scenario a $CAGR_{17-47}$ and a $CAGR_{17-49}$ of AADT of 3.9% and 3.7%, respectively, will be expected. The $CAGR_{17-47}$ and the $CAGR_{17-49}$ of Real AADR will be 4.3% and 4.1%, respectively.

In the stress scenario for the Senior Bonds HR Ratings will expect a $CAGR_{17-47}$ of AADT of -1.1% and a $CAGR_{17-47}$ of Real AADR of -0.7%. For the Subordinate Bonds, the $CAGR_{17-49}$ of AADT and Real AADR will be -0.3% and 0.1%, respectively. The cumulative difference of real revenues between the base scenario and the Senior Bonds' stress scenario would result in an ASR of 2.52%. In the case of the Subordinate Bond stress scenario, the ASR would be 2.04%.

Regarding the expected behavior of the Senior and Subordinate Bonds in the base scenario, the revenues available to cover interest and principal of the Senior Bonds would always be enough and the minimum and average Senior Debt Service Coverage Ratios would be 2.47x and 11.87x, respectively. In the case of the Subordinate Bonds, the resources of the General Fund would only be used in 2022 to pay a portion of the principal due of the 2018 Subordinate BANs, which would be amortized for the total amount issued of US$44.9m. The minimum and average Subordinate Debt Service Coverage Ratios would be 1.32x and 4.78x, respectively.

In the Senior Bonds stress scenario, the revenues in real terms available for the Senior Bonds debt service would be 64.9% lower than the ones that would be obtained in the base scenario, while in the Subordinate Bonds stress scenario the revenues in real terms available for the Subordinate Bonds debt service would be 74.0% lower than the ones that would be obtained in the base scenario. The above would imply the use of the General Fund, the Senior Lien DSRF and the Subordinate Lien DSRF to cover the missing amounts of interest and principal that would not be paid with the revenues available. The minimum and average Senior Debt Service Coverage Ratios would be 0.62x and 2.21x, respectively; while the minimum and average Subordinate Debt Service Coverage Ratios would be 0.79x and 1.46x, respectively.

Rating Profile

This rating report focuses on the analysis of the Senior and Subordinated Revenue Bonds issued by the Central Texas Regional Mobility Authority (CTRMA and/or the Authority), an independent government agency created to improve the transportation system in Travis and Williamson counties. The source of payment of these obligations was originally constituted by the revenues derived from the operation of two toll roads in Central Texas: 183A and 290E. Later, on February 2017 a third toll road, 71 Express, was incorporated to the CTRMA Turnpike System (the System). Also, there is a toll road project, the 183 South, that will be part of the System when it opens to traffic, which is expected to be fully in August 2020. For more information on the previous ratings, we refer the reader to the reports published by HR Ratings, available on the following website: www.hrratings.com.

Offering Profile

At the date of publication of this report, there are six Senior Bonds and five Subordinated Bonds outstanding for a total amount of US$1.5bn, as shown in Table 1. In November 2018 the CTRMA expects to issue one Senior Lien Revenue Bonds and one Subordinated Lien Revenue Bond Anticipation Notes (BANs), together the Series 2018 Obligations, for US$51.9m and US$44.9m, respectively.

The Series 2018 Obligations will accrue interest semi-annually, in January and July, starting in January 2019 at an expected annual rate of 4.5% for the Series 2018 Senior Lien Bonds and at 1.55% for the Series 2018 Subordinated Lien BANs. The Series 2018 Senior Lien Bonds will pay principal annually by a first lien on the Master Trust Indenture on an equal and ratable basis with the Authority's outstanding Senior Lien Revenue Bonds. Principal payments will start in January 2025 and end in January 2048, in accordance with the maturity schedule provided by the CTRMA.

The Series 2018 Subordinated Lien BANs will pay principal by a third lien[3] on the Master Trust Indenture on an equal and ratable basis with the Authority's outstanding Subordinated Lien Revenue Bonds. The payment of the total amount issued will be bullet in January 2023. Also, the Series 2018 Subordinated Lien BANs will not have any right to any funds held in any account in the Subordinate Lien Debt Service Reserve Fund.

The CTRMA currently anticipates that the Series 2018 Subordinated Lien BANs will be partially or totally refunded with the proceeds of the 290E Phase III TIFIA Loan, in case the USDOT approves it. The disbursement of proceeds of the 290E Phase III TIFIA Loan (if obtained) would be subject to the satisfaction of certain conditions precedent. Accordingly, there are no assurances that the CTRMA will be able to obtain the 290E Phase III TIFIA Loan.

If the Authority does not obtain the 290E Phase III TIFIA Loan (or if obtained, the Authority is not able to satisfy the conditions related to the disbursement of the proceeds thereof), the Authority anticipates that the Series 2018 Subordinate Lien BANs will be refunded with the proceeds of additional obligations issued pursuant to the Indenture.

[3] Considering there are no junior lien obligations outstanding at this date, the subordinated lien obligations have a second lien on the Master Trust Indenture.

Considering the above, in case the Series 2018 Subordinated Lien BANs were refunded, HR Ratings will evaluate the possible impact that the new loan will have on the Subordinated Bonds rating.

Table 1. CTRMA Outstanding Issues considering possible 290 Phase III financing

Issue	Issue Date	Par Amount	Outstanding	Principal Pays	Interest Pays	First Coupon Date	Last Coupon Date
Senior Lien Revenue Bonds Series 2010[1]	01-Mar-10	94,879,710	74,904,545	Annually	Semi-annually	01-Jul-10	01-Jan-40
Senior Lien Revenue Bonds Series 2011[1]	01-Jun-11	305,929,944	15,663,701	Annually	Semi-annually	01-Jan-12	01-Jan-26
Senior Lien Revenue Refunding Bonds Series 2013A	01-May-13	155,810,000	139,885,000	Annually	Semi-annually	01-Jul-13	01-Jan-43
Senior Lien Revenue Bonds Series 2015A	01-Nov-15	298,790,000	298,790,000	Annually	Semi-annually	01-Jan-16	01-Jan-45
Senior Lien Revenue & Refunding Put Bonds Series 2015B	01-Nov-15	68,785,000	68,785,000	Annually	Semi-annually	01-Jan-16	01-Jan-45
Senior Lien Revenue Refunding Bonds Series 2016	01-Jun-16	358,030,000	358,030,000	Annually	Semi-annually	01-Jul-16	01-Jan-46
Subordinate Lien Revenue Refunding Bonds Series 2013	01-May-13	103,960,000	100,530,000	Annually	Semi-annually	01-Jul-13	01-Jan-42
Subordinate Lien Revenue Bonds Series 2015C (TIFIA Loan)[1,2]	01-Nov-15	282,220,885	333,353,439	Semi-annually	Semi-annually	01-Jul-24	01-Jul-49
Subordinate Lien Revenue Bonds Series 2015D (TxDOT SHF Loan)[1,2]	01-Nov-15	30,000,000	34,369,186	Annually	Semi-annually	01-Jul-20	01-Jul-49
Subordinate Lien Revenue Bonds Series 2015E (TxDOT SIB Loan)[1,2]	01-Nov-15	30,000,000	34,369,186	Annually	Semi-annually	01-Jul-20	01-Jul-49
Subordinate Lien Revenue Refunding Bonds Series 2016	01-Aug-16	74,690,000	74,305,000	Annually	Semi-annually	01-Jan-17	01-Jan-41
Senior Lien Revenue Bonds, Series 2018	November 2018*	51,860,000	N/A	Annually	Semi-annually	01-Jan-19	01-Jan-48
Subordinate Lien Revenue Bond Anticipation Notes, Series 2018	November 2018*	44,890,000	N/A	Bullet in 2023	Semi-annually	01-Jan-19	01-Jan-23

Source: HR Ratings with information from Central Texas Regional Mobility Authority and Municipal Advisory Council of Texas. *Expected Issue Date. (1) Includes capitalized interest. (2) Assumes an estimated principal draw schedule that is subject to change.

Debt Service Reserve Funds

According to the Master Trust Indenture and as ratified in the corresponding Supplemental Indentures, the Senior Lien Debt Service Reserve Fund must keep the amounts sufficient so as to maintain the Senior Lien Debt Service Reserve Requirement, which is an amount equal to the least of: (i) the maximum annual debt service on all outstanding Senior Bonds, (ii) 1.25 times the average annual debt service on all outstanding Senior Bonds, or (iii) 10.0% of the aggregate amount of the Outstanding Senior Bonds, as determined on the date each Series of Senior Bonds was issued.

Regarding the Subordinated Bonds, the Debt Service Reserve Requirement for the Bond Series 2013 and 2016 follows the same rule as that for the Senior Lien Debt Service Reserve Requirement but based on the debt service of each individual series. Whereas the requirement for the TIFIA, SHF and SIB Loans equals the maximum annual debt service of each of the loans.

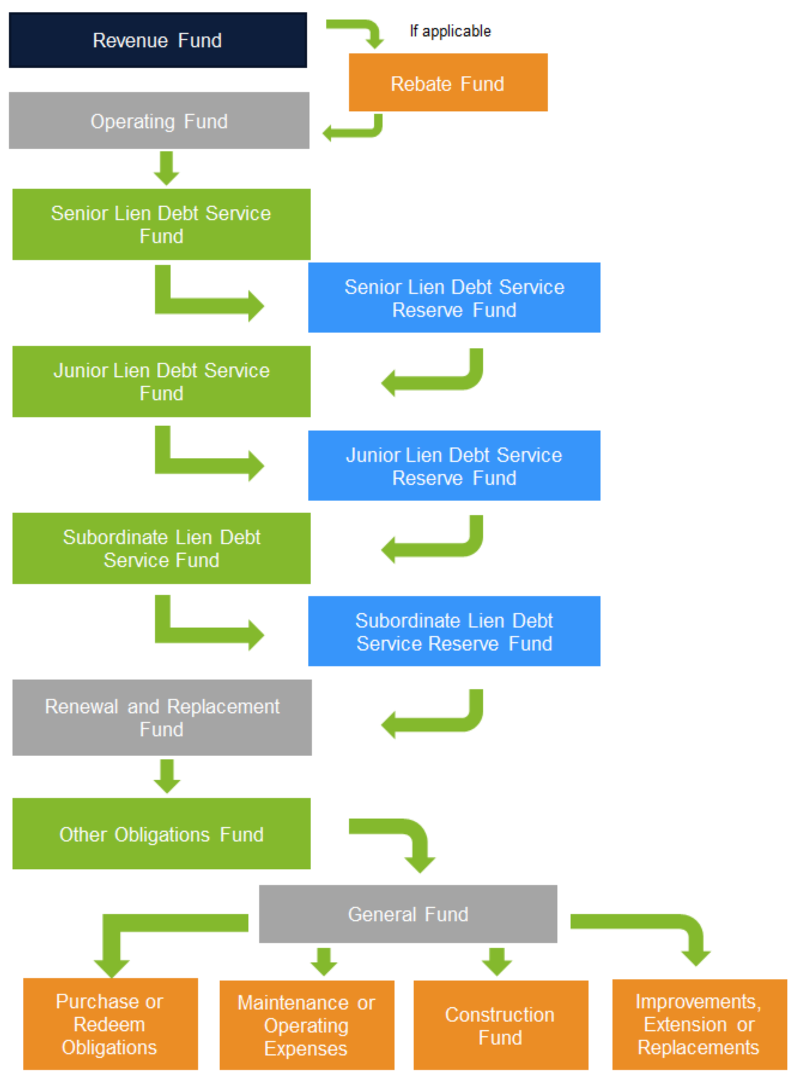
Flow of Funds

All Revenues obtained from the operation of the System shall be deposited in the Revenue Fund and shall be deposited in the funds and accounts of the trust in the order shown in Figure 1.

The Revenues shall be firstly deposited in the Rebate Fund as it may be authorized or required by any Supplemental Indenture, followed by an amount to the Operating Fund sufficient to make the balance equal to 1/6 of the Operating and Maintenance Expenses for such Fiscal Year.

In the case of the Senior Lien Debt Service Fund, Junior Lien Debt Service Fund, Subordinate Lien Debt Service Fund and Other Obligations Fund, an amount equal to the sum of the following: (i) 1/6 of the interest coming due on the next semi-annual interest payment date that bear interest semi-annually, (ii) the amount of interest next coming due that bear payable monthly interest, (iii) the amount of interest accruing in such month that bears interest payable on other than a monthly basis (other than Capital Appreciation Bonds), (iv) 1/12 of the principal amount or Maturity amount that will mature and become payable on the next annual maturity date, (v) 1/12 of the principal amount or Maturity amount subject to mandatory sinking fund redemption on the next annual maturity date, and (vi) the amount payable by the Authority under a Swap Agreement or Credit Facility.

Figure 1. Flow of Funds



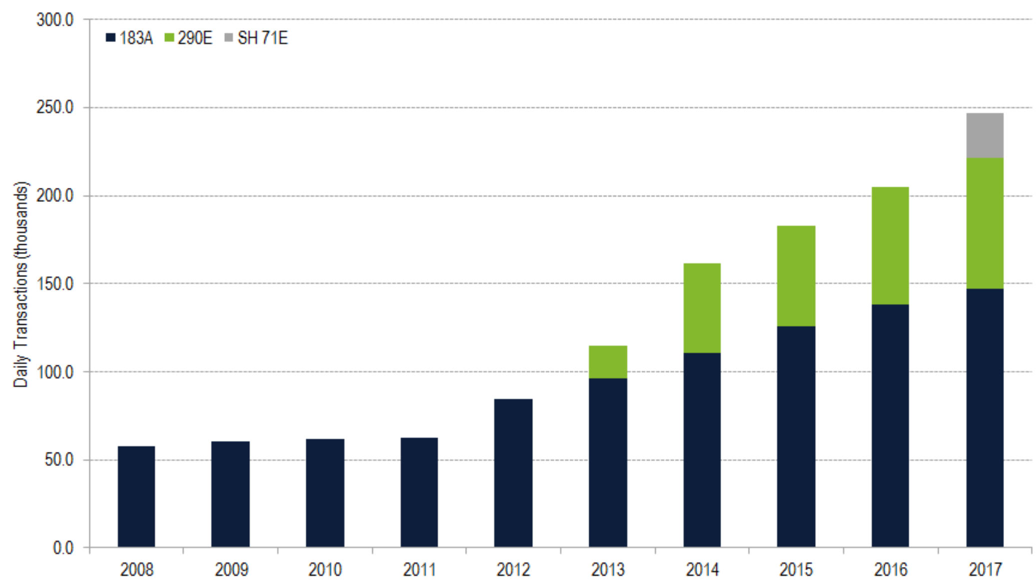
Source: HR Ratings with information of the Master Indenture.

Transactions and Revenue

The System is composed of four projects, three are already open to traffic and one is still under construction. The ones that are already operating are 183A[4], 290E[5] and 71E. Regarding 290E toll road, it is expected that Phase III will start its construction in December 2018 and be completed in July 2021. Phase III will consist of two tolled Direct Connectors (DC), south to west and north to west, owned and operated by the CTRMA, and one free DC, east to south, owned and operated by the Texas Department of Transportation (TxDOT). The toll road that is under construction is the 183 South, which is expected to open partly (just the northern segment) in August 2019, and the remainder (ultimate build) will open in August 2020.

Figure 2 shows the Average Annual Daily Transactions (AADT) for the 183A, 290E and 71E. As can be seen, from 2008 to 2012, just the 183A was opened to traffic (the second phase opened in April 2012), achieving a $CAGR_{08\text{-}12}$ of 9.8%. Then, in January 2013 and May 2014 the first and second phases of the 290E opened to traffic, increasing the number of AADT in the System from 2012 to 2014 by 92.2%. Finally, in February 2017 the 71E was included in the System with a participation in the AADT of 10.4%, so 183A and 290E were left with 59.5% and 30.1%, respectively. Considering that, the $CAGR_{08\text{-}17}$ of the AADT in the System was 17.5%.

Figure 2. Average Annual Daily Transactions (AADT)



Source: HR Ratings with information from the Central Texas Regional Mobility Authority.

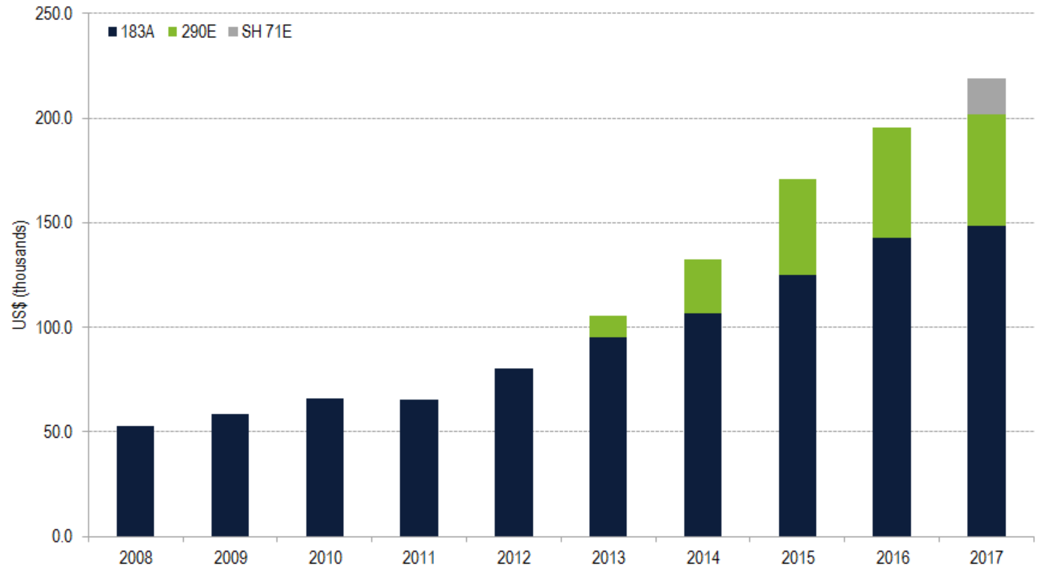
Figure 3 shows the Average Annual Daily Revenue (AADR) in real terms from 2008 to 2017. As can be seen, the Real AADR had a similar historical growth than the AADT with a $CAGR_{08\text{-}17}$ of 17.0%. It is worth to mention that the 183A had a $CAGR_{08\text{-}17}$ of 12.1% and

[4] The first phase opened in March 2007 and the second phase opened in April 2012.
[5] Also known as the Manor Expressway. The first phase opened in December 2012 with tolling beginning in January 2013 and the second phase opened in May 2014.

the 290E had a $CAGR_{13-17}$ of 51.1%. Considering the addition of 71E to the System in 2017, the participation in the Real AADR of the 183A, 290E and 71E was 67.8%, 24.3% and 7.9%, respectively.

It must be noticed that the differences in the participation of the toll roads in the Real AADR, compared with the participation in the AADT, were due to the differences in the Real Weighted Average Toll Rate (WATR). In 2017, the Real WATR of the 183A toll road was 1.4x and 1.5x greater than the one of the 290E and 71E toll roads, respectively, because 183A is the most extensive toll road, with 11.6 miles, in comparison with 290E and 71E with 6.2 and 4.0 miles, respectively.

Figure 3. Real Average Annual Daily Revenue (AADR)



Source: HR Ratings with information from the Central Texas Regional Mobility Authority.
Figures in thousands of dollars at January 2018 prices.

Table 2 shows the System's historical AADT and AADR in real and nominal terms. In 2012 the AADT grew 35.3% because of the 183A second phase opening. In 2013 and 2014, AADT grew 36.6% and 40.7% because of 290E first and second phases opening, respectively. Since 2015, the 290E started a ramp-up period with double digit growths that translate into a $CAGR_{13-17}$ of 40.8%.

Also, in 2017 the 71E was added to the System, driving growth to a level of 20.6% for AADT and 11.9% for Real AADR (both in line with the ones expected by HR Ratings in the base case scenario of the last review of 20.8% and 13.3%, respectively). The difference in growth of AADT and Real AADR was mainly due to a decrease in revenues in the 290E toll road of 15.5% from August to December 2017 compared with those from August to December 2016. The decrease was due to some issues with the hub that delayed the recognition of revenues until March and April 2018. If 71E had not been added to the System, the growth in AADT and Real AADR in 2017 would have been 8.1% and 3.1%.

Taking the last into consideration, the $CAGR_{08-17}$ of the AADT was 17.5%, driven by a $CAGR_{08-17}$ of the 183A of 10.9% and a $CAGR_{13-17}$ of the 290E of 40.8%. Regarding the traffic behavior in 183A, with information provided by the CTRMA, the growth since 2010 was mainly driven by the population growth in Leander, which has almost doubled, and Cedar Park, which grew by 45.0% between 2010 and 2017. Regarding the traffic behavior in the 290E, with information provided by the CTRMA, besides the ramp-up period, some factors that are driving growth are: i) strong retail growth (including restaurants and medical care) and ii) population in Manor has grown 147.0% over the past ten years. Finally, regarding the 71E, with information provided by the CTRMA, one of the main drivers of traffic behavior has been Austin Bergstrom International Airport passenger growth, which between 2011 and 2017 was of 7.3%, in average.

Table 2 also shows that Average Daily Traffic (ADT) and Real Average Daily Revenue (ADR) for the first seven months of 2018 grew 8.4% and 9.1%, driven by an increase in ADT of the 71E, 183A and 290E of 49.7%, 5.7% and 3.5%, respectively.

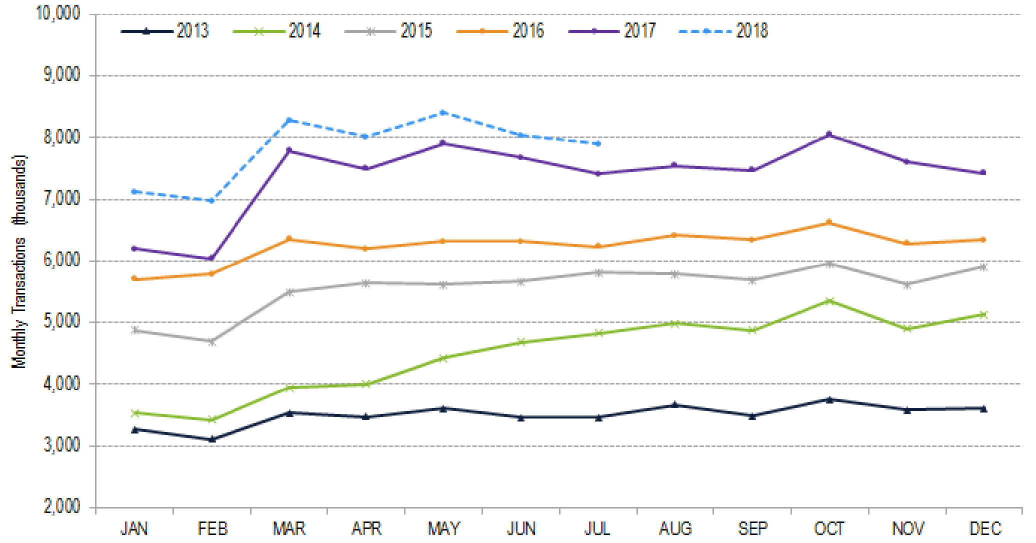
Table 2. Historical AADT and AADR

Year	AADT		Real[1] AADR		Nominal AADR	
2008	57,961		53,073		45,013	
2009	60,296	4.0%	58,400	10.0%	50,564	12.3%
2010	61,656	2.3%	66,137	13.2%	58,186	15.1%
2011	62,205	0.9%	65,321	-1.2%	59,283	1.9%
2012	84,176	35.3%	80,118	22.7%	74,244	25.2%
2013	114,981	36.6%	105,587	31.8%	99,254	33.7%
2014	161,819	40.7%	132,481	25.5%	126,571	27.5%
2015	182,825	13.0%	170,966	29.0%	163,543	29.2%
2016	204,595	11.9%	195,605	14.4%	189,471	15.9%
2017	246,705	20.6%	218,791	11.9%	216,389	14.2%
2018[2]	258,047	8.4%	238,583	9.1%	241,068	11.4%
$CAGR_{08-17}$	17.5%		17.0%		19.1%	

Source: HR Ratings with information from the Central Texas Regional Mobility Authority. (1) Information presented in dollars at January 2018 prices. (2) Data for the first seven months of 2018. Growth rates for 2018 are calculated considering the comparison with the first seven months of 2017.

Figure 4 shows that the System's traffic has grown every month of every year since 2012, with peaks in March and December, which are mainly due to holiday times. It can be noticed that the number of transactions in March 2017 grew in a significant way because of the addition of the 71E to the System. From 2013 to 2017, the first six months had an average participation of 47.7%, while the second semester had an average of 52.3%.

Figure 4. Monthly Transactions



Source: HR Ratings with information from the Central Texas Regional Mobility Authority.

Also, it's worth to mention that most of the traffic in the System is composed by 2-axle vehicles, which, between 2013 and 2017, represented 97.2% of 183A total transactions and 93.4% of 290E total transactions. In 2017, 2-axle vehicles represented 94.3% of 71E total transactions.

Toll Rates

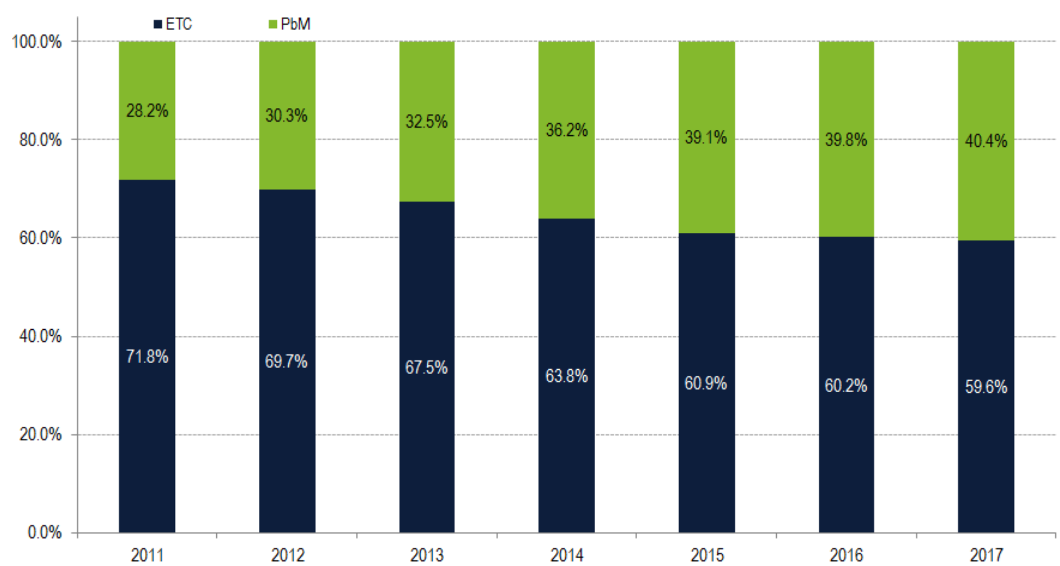
Toll rates are adjusted in January 1st of every year and require the previous approval by the Board of Directors in October 1st of the past year. The adjustment to the toll rates is determined with the increase in the Consumer Price Index – Urban (CPI-U) for the twelve months prior to October 1st, considering that the minimum adjustment is 0.0%. This means that if the CPI-U decreases in such a way that the inflation is negative, the toll rates will be the same as the ones charged the last year.

The CTRMA has two collection methods for toll rates in both toll roads: Electronic Toll Collection (ETC) using an automatic charge to a transponder and Pay by Mail (PbM). Pay By Mail customers are charged a rate 33.0% higher than the ETC customers. Bills are mailed every 15 days and customers have 30 days to pay them. Each bill has a one-dollar fee surcharge, which is used to cover the costs incurred by this collection method. If the bill is not paid within the first 30 days, a second bill is mailed with an extra US$15 fee. If this situation is repeated for another 30 days, a third bill will be mailed with a US$30 bill added on to it, and this penalty will increase to US$60 if after 30 more days have passed the bill and penalties are not paid. If the amount due is not paid after this last bill, the case is referred to the Texas Court system, facing fines of up to US$250 plus administrative fees for each unpaid toll. It's worth to mention that it is expected that from November 2018, the 33.0% surcharge will increase to 50.0% if the bill is paid after seven days, otherwise it will stay the same.

Figures 5 and 6 show the percentage of total transactions that are charged with either collection methods in 183A and 290E, respectively. ETC is the most used form of payment, although it has a decreasing participation in 183A (from 71.8% in 2011 to 59.6% in 2017) and a relatively stable participation in 290E with an average of 54.1%. In 2017, 55.7% of the transactions of the 71E were charged by ETC. Also, in 2017, with information provided by the CTRMA, approximately 70.0% of the bills mailed were collected. However, because bills are charged with fees if they are not paid in time, this does not represent a significant loss of revenues.

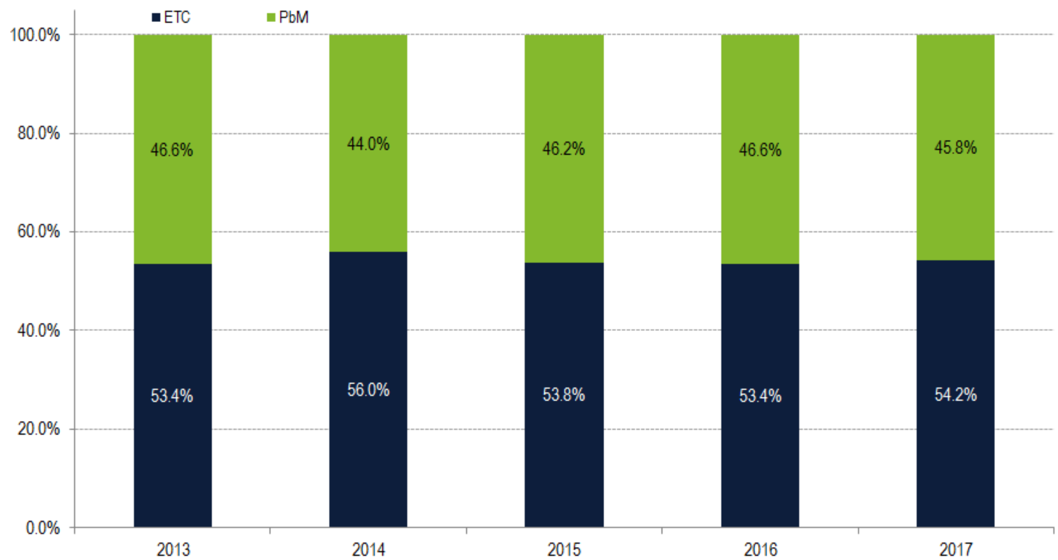
Moreover, to improve collection, CTRMA has approved an agreement consisting in the interoperability of toll systems with other governmental agencies or entities such as the Kansas Turnpike Authority (KTA) and Oklahoma Turnpike Authority (OKA). From July 2017, the CTRMA has received toll revenue from other agencies due to this agreement. Additional agreements that add Georgia, Florida, North Carolina, Louisiana and South Carolina are projected to go into effect by the end of calendar year 2018. Interoperability may be expanded to include Colorado and possibly California in 2019.

Figure 5. 183A Collection Methods



Source: HR Ratings with information from the Central Texas Regional Mobility Authority.

Figure 6. 290E Collection Methods



Source: HR Ratings with information from the Central Texas Regional Mobility Authority.

Scenario Analysis

HR Ratings uses two different scenarios to evaluate the payment of the Senior and Subordinated Bonds. The first one, the base scenario, uses the most possible forecasts of traffic and revenue that this credit rating agency considers could happen, considering the historical behavior of traffic and revenue, as well as the traffic and revenue forecasts of the traffic consultant. The second one, the stress scenario, considers the maximum reduction that AADT could have for the revenues to be sufficient to comply with all the debt obligations under a macroeconomic scenario of low economic growth and low inflation.

Due to the flow of funds established on the Master Indenture, the level of stress that could be applied to the Senior Bonds and the Subordinate Bonds would not be the same. The maximum reduction in transactions that could be applied to the Senior Bonds would be such that all the revenues and resources in the Debt Service Reserve Fund shall be used. Therefore, there would not be enough resources for the Subordinate Bonds. Meanwhile, in the maximum reduction applied to the Subordinate Bonds it would be necessary that the revenues are sufficient to comply with the flow of funds previous to the Subordinate Debt Service Fund, so it is necessary that the Senior Bonds are in conformity with their debt obligations. Hence, the reduction applied to the transactions in the stress scenarios would be larger for the Senior Bonds than the one applied to the Subordinate Bonds.

Regarding the expected behavior of revenues, in both scenarios tolls are adjusted in January of each year in accordance with the CPI-U annual increase since the last toll update. In the base scenario, HR Ratings expects an average inflation of 2.0% between 2018 and 2049, while in the stress scenario the expected average inflation would be

1.7%. It is important to mention that our estimations do not consider a negative level of inflation in any year.

Related to the expenses of the System, we have incorporated the projections of costs of the System provided by the General Engineering Consultant (GEC). Also, for the 71E, we have considered that 50.0% of the net revenue would be applied to the reimbursement related to the Project Agreement with the TxDOT, approximately $63.0m, until it is fully paid. The outstanding balance of the reimbursement amount as of August 31, 2018 was approximately $62.3m.

Table 3 shows the expected AADT and Real AADR in the base and stress scenarios. In the base scenario HR Ratings expects that the System's AADT will grow 5.0% in 2018, considering an expected growth for the 183A, 290E and 71E of 5.5%, 3.4% and 8.3%, respectively. The expected growth for the Real AADR in the base scenario will be 14.6%, higher than the one expected for the AADT because of the recognition in March and April of revenues that were not recognized from August to December 2017. According to CTRMA authorities, this situation has been solved and is not expected to happen.

Also, the base scenario considers the interim opening of 183 South in August 2019, which would drive AADT growth to 7.9%. In 2020, the full completion of 183 South would drive growth in AADT to a level of 23.1%. In 2021, considering the information provided by the CTRMA, HR Ratings expects that 290E's Phase III would start operations in July, which jointly with the ramp-up period of the 183 South, would drive growth in the System's AADT to 29.5%. Afterwards, the base scenario considers decreasing growth rates in AADT that will result in a $CAGR_{17-47}$ of 3.9% and a $CAGR_{17-49}$ of 3.7%. The $CAGR_{17-47}$ and the $CAGR_{17-48}$ of Real AADR will be 4.3% and 4.1%, respectively.

As mentioned above, HR Ratings considers two different stress scenarios for the Senior and Subordinate Bonds. For the Senior Bonds, the maximum reduction in transactions that could be applied before the senior debt obligations are compromised will result in a $CAGR_{17-47}$ of AADT of -1.1% and a $CAGR_{17-47}$ of Real AADR of -0.7%. For the Subordinate Bonds, the $CAGR_{17-49}$ of AADT and Real AADR will be -0.3% and 0.1%, respectively.

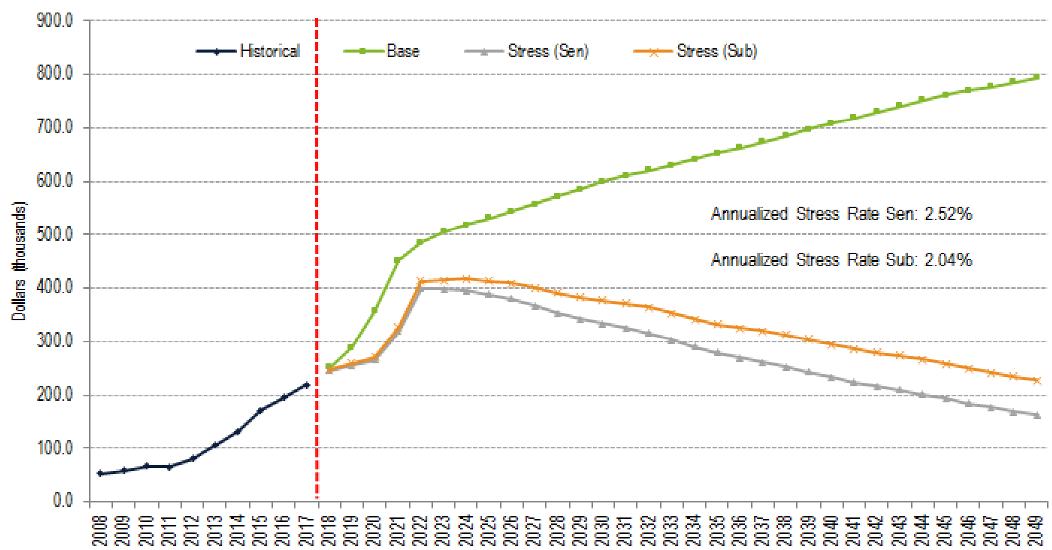
Table 3. AADT and Real AADR under the Base and Stress Scenarios

Year	AADT						Real[1] AADR					
	Base		Stress (Senior)		Stress (Subordinate)		Base		Stress (Senior)		Stress (Subordinate)	
2015	182,825	13.0%	182,825	13.0%	182,825	13.0%	170,966	29.0%	170,966	29.0%	170,966	29.0%
2016	204,595	11.9%	204,595	11.9%	204,595	11.9%	195,605	14.4%	195,605	14.4%	195,605	14.4%
2017	246,705	20.6%	246,705	20.6%	246,705	20.6%	218,791	11.9%	218,791	11.9%	218,791	11.9%
2018	258,935	5.0%	253,451	2.7%	254,593	3.2%	250,770	14.6%	245,154	12.0%	246,323	12.6%
2019	279,342	7.9%	248,677	-1.9%	252,595	-0.8%	288,324	15.0%	255,276	4.1%	259,296	5.3%
2020	343,974	23.1%	256,636	3.2%	263,270	4.2%	357,905	24.1%	264,404	3.6%	271,209	4.6%
2021	445,413	29.5%	306,313	19.4%	315,727	19.9%	451,519	26.2%	317,607	20.1%	327,258	20.7%
2022	478,118	7.3%	387,951	26.7%	400,814	26.9%	484,571	7.3%	399,872	25.9%	413,009	26.2%
2023	498,444	4.3%	395,420	1.9%	412,499	2.9%	505,131	4.2%	397,424	-0.6%	414,792	0.4%
2024	510,913	2.5%	393,509	-0.5%	414,906	0.6%	517,643	2.5%	395,595	-0.5%	417,304	0.6%
2025	523,722	2.5%	386,175	-1.9%	411,786	-0.8%	530,427	2.5%	388,037	-1.9%	413,970	-0.8%
2026	536,880	2.5%	377,558	-2.2%	407,148	-1.1%	543,587	2.5%	379,108	-2.3%	409,017	-1.2%
2027	550,397	2.5%	365,753	-3.1%	398,907	-2.0%	557,100	2.5%	367,036	-3.2%	400,499	-2.1%
2028	564,285	2.5%	352,527	-3.6%	388,896	-2.5%	571,013	2.5%	353,737	-3.6%	390,420	-2.5%
2029	578,555	2.5%	341,171	-3.2%	380,702	-2.1%	585,230	2.5%	342,300	-3.2%	382,148	-2.1%
2030	593,216	2.5%	332,632	-2.5%	375,412	-1.4%	599,867	2.5%	333,710	-2.5%	376,813	-1.4%
2031	603,127	1.7%	324,648	-2.4%	370,536	-1.3%	609,916	1.7%	325,501	-2.5%	371,693	-1.4%
2032	613,204	1.7%	314,293	-3.2%	362,760	-2.1%	620,174	1.7%	315,079	-3.2%	363,847	-2.1%
2033	623,452	1.7%	302,205	-3.8%	352,769	-2.8%	630,527	1.7%	302,879	-3.9%	353,732	-2.8%
2034	633,873	1.7%	289,366	-4.2%	341,650	-3.2%	641,095	1.7%	290,014	-4.2%	342,588	-3.2%
2035	644,471	1.7%	277,737	-4.0%	331,686	-2.9%	651,841	1.7%	278,432	-4.0%	332,682	-2.9%
2036	655,247	1.7%	268,448	-3.3%	324,243	-2.2%	662,812	1.7%	269,208	-3.3%	325,324	-2.2%
2037	666,206	1.7%	260,554	-2.9%	318,260	-1.8%	673,884	1.7%	261,280	-2.9%	319,309	-1.8%
2038	677,349	1.7%	252,225	-3.2%	311,558	-2.1%	685,186	1.7%	252,879	-3.2%	312,526	-2.1%
2039	688,681	1.7%	242,559	-3.8%	303,020	-2.7%	696,679	1.7%	243,142	-3.9%	303,905	-2.8%
2040	700,205	1.7%	232,350	-4.2%	293,592	-3.1%	708,413	1.7%	232,934	-4.2%	294,480	-3.1%
2041	710,531	1.5%	222,947	-4.0%	284,937	-2.9%	718,821	1.5%	223,522	-4.0%	285,821	-2.9%
2042	721,010	1.5%	214,968	-3.6%	277,881	-2.5%	729,431	1.5%	215,568	-3.6%	278,801	-2.5%
2043	731,644	1.5%	208,049	-3.2%	271,988	-2.1%	740,198	1.5%	208,632	-3.2%	272,891	-2.1%
2044	742,436	1.5%	200,885	-3.4%	265,597	-2.3%	751,174	1.5%	201,425	-3.5%	266,449	-2.4%
2045	753,388	1.5%	192,832	-4.0%	257,856	-2.9%	762,214	1.5%	193,301	-4.0%	258,618	-2.9%
2046	760,922	1.0%	184,219	-4.5%	249,166	-3.4%	769,836	1.0%	184,646	-4.5%	249,874	-3.4%
2047	768,531	1.0%	175,880	-4.5%	240,632	-3.4%	777,534	1.0%	176,312	-4.5%	241,348	-3.4%
2048	776,216	1.0%	168,623	-4.1%	233,354	-3.0%	785,361	1.0%	169,071	-4.1%	234,096	-3.0%
2049	783,978	1.0%	162,075	-3.9%	226,856	-2.8%	793,163	1.0%	162,494	-3.9%	227,560	-2.8%
$CAGR_{17-47}$	3.9%		-1.1%				4.3%		-0.7%			
$CAGR_{17-49}$	3.7%				-0.3%		4.1%				0.1%	

Source: HR Ratings based on internal projections.
Figures in thousands of dollars. (1) Figures in dollars at January 2018 prices.

Considering the above, the cumulative difference of real revenues between the base scenario and the Senior Bonds stress scenario would be 52.8%, which would be equivalent to an Annualized Stress Rate (ASR) of 2.52%. In the case of the Subordinate Bond stress scenario, the cumulative difference of real revenues would be 47.2%, which would be equivalent to an ASR of 2.04%. Figure 7 presents the observed real AADR as well as the projections for the base scenario and both stress scenarios.

Figure 7. Projected Real AADR - Base Scenario vs Stress Scenarios



Source: HR Ratings with information from the Central Texas Regional Mobility Authority and internal projections.
Figures in thousands of dollars at January 2018 prices.

Base Scenario

Table 4 shows the expected system cash flow in nominal terms from 2019 to 2049 (year in which the Subordinate Series 2015C, 2015D and 2015E will be amortized). It's important to notice that in 2049 revenues and operation and maintenance expenses decline in a significant way because they include only the months from January to June. Considering that, System's operation and maintenance expenses would represent on average 14.5% of revenues from 2019 to 2049. Also, the negative quantities that appear on the Debt Service Reserve Funds refer to excess amounts, which are released and deposited in the revenues account to be used as stated in the flow of funds. Since 2048 there would be no deposits or withdrawals from the Senior Lien DSRF because there would be no outstanding Senior Bonds. Also, the significant amount released in 2049 from the Subordinate Lien DSRF corresponds to the total balance in the fund due to the total amortization of the Subordinate Bonds.

According to the Master Trust Indenture, amounts available after the Subordinate Reserve Fund would be used for Replacement and Renewal. The projections for replacement and renewal were considering the GEC estimations and as it can be seen in Table 4, the revenues would be available to meet all the requirements. Also, revenues would be sufficient to comply with the Non-System Expenses. Afterwards, the amount available in the General Fund could be used to (i) Purchase or Redeem Obligations, (ii) Maintenance or Operating Expenses, (iii) Construction Fund or, (iv) Improvements or extensions of the System.

Table 4. System Cash Flow Under the Base Scenario (thousands of nominal dollars)

Year (ending Dec 31)[1]	Revenues	Operation and Maintenance Expenses	Revenues Available for Senior Lien Debt Service	Senior Lien Debt Service[2]		Senior Lien DSRF Replenish / (Release)	Revenues Available for Subordinate Lien Debt Service	Subordinate Lien Debt Service[2]		Subordinate Lien DSRF Replenish / (Release)	Revenues Available for Renewal and Replacement Fund and Non-System Expenses	Renewal and Replacement Fund	Non-System Expenses	Revenues Available for General Fund
				Interest	Principal			Interest	Principal					
2019	104,934	20,521	84,413	22,521	11,695	1,824	48,373	8,953	2,765	(12)	36,667	-	4,076	32,591
2020	137,164	26,464	110,700	26,287	13,060	1,502	69,851	11,569	2,905	(39)	55,416	-	4,769	50,647
2021	174,296	31,859	142,436	38,850	15,540	1,370	86,675	11,428	3,045	(41)	72,244	6,489	4,883	60,872
2022	193,624	32,864	160,760	44,435	17,683	728	97,914	10,932	35,288	(44)	51,738	-	2,503	49,235
2023	205,876	32,984	172,892	45,464	19,951	386	107,090	10,390	5,235	(2,142)	93,608	1,093	5,116	87,399
2024	215,772	35,902	179,870	51,841	17,022	240	110,767	20,395	5,775	(187)	84,784	953	5,230	78,601
2025	224,920	36,319	188,602	50,318	19,497	66	118,720	20,089	7,939	(216)	90,908	-	5,345	85,563
2026	235,111	37,952	197,158	48,269	22,444	16	126,429	19,724	8,337	9,656	88,712	875	5,468	82,369
2027	245,774	42,282	203,492	48,065	23,491	(39)	131,974	19,309	10,156	(374)	102,883	499	5,589	96,796
2028	257,639	41,397	216,242	47,410	25,063	(98)	143,867	18,849	15,381	(508)	110,145	13,089	5,714	91,342
2029	268,615	42,174	226,441	46,656	31,293	(173)	148,665	18,144	20,876	(667)	110,311	-	5,838	104,473
2030	280,840	44,042	236,798	44,607	33,330	(595)	159,456	17,337	21,762	(719)	121,076	2,980	5,966	112,131
2031	291,255	43,519	247,736	43,422	34,519	(669)	170,464	16,493	22,554	(761)	132,178	-	6,093	126,085
2032	302,886	45,680	257,206	42,134	35,810	(759)	180,021	15,617	23,393	(796)	141,806	1,065	6,223	134,518
2033	313,262	49,416	263,847	40,756	37,191	(867)	186,768	14,706	24,370	(844)	148,535	355	6,352	141,828
2034	324,883	47,282	277,601	39,288	38,666	(1,001)	200,648	13,755	25,310	(909)	162,493	617	6,486	155,389
2035	336,935	43,426	293,509	36,374	41,574	(1,168)	216,730	12,766	26,222	(978)	178,721	427	6,616	171,677
2036	350,393	45,859	304,534	34,667	43,278	(1,380)	227,969	11,818	27,242	(1,053)	189,963	31,320	6,748	151,894
2037	362,401	45,196	317,205	32,859	45,084	(1,656)	240,918	10,791	28,216	(1,163)	203,074	19,071	6,883	177,119
2038	375,849	46,350	329,500	30,945	47,133	(2,024)	253,445	9,725	29,320	(1,295)	215,696	644	7,020	208,032
2039	389,797	50,591	339,206	28,911	49,171	(2,551)	263,674	8,614	30,373	(1,457)	226,144	399	7,155	218,590
2040	405,370	50,381	354,989	16,606	61,470	(3,280)	280,193	7,461	32,561	(1,665)	241,836	515	7,296	234,025
2041	418,434	52,884	365,550	14,002	50,665	(4,372)	305,255	6,260	24,015	(2,095)	277,075	248	7,426	269,401
2042	433,102	55,786	377,316	11,482	51,925	(2,769)	316,678	5,403	20,430	(1,005)	291,849	13,413	7,562	270,874
2043	448,285	55,115	393,170	8,899	54,590	(3,759)	333,440	4,736	21,096	(383)	307,990	14,900	7,706	285,384
2044	465,272	57,728	407,544	6,184	84,680	(6,300)	322,979	4,048	21,780	(388)	297,540	12,711	7,860	276,969
2045	480,268	58,013	422,254	1,965	33,585	(29,709)	416,413	3,336	22,491	(383)	390,969	1,059	8,009	381,901
2046	494,772	58,393	436,379	302	3,275	(20,878)	453,680	2,601	23,221	(389)	428,247	9,241	8,129	410,877
2047	509,714	59,975	449,739	154	3,425	(3,577)	449,736	1,842	23,979	(384)	424,299	13,761	8,292	402,247
2048	526,546	65,824	460,722	-	-	-	460,722	1,059	24,756	(390)	435,297	18,067	8,457	408,772
2049	268,340	32,536	235,803	-	-	-	235,803	248	14,906	(27,735)	248,383	6,282	4,313	237,788

Source: HR Ratings based on internal projections.

Figures in thousands of dollars. (1) 2049 only includes the months from January to June. (2) Interest and principal covered with the available revenues.

Tables 5 and 6 show the expected performance of the Senior and Subordinate Bonds in the base scenario. Regarding the Senior Bonds, in Table 5 can be seen that there would be no need to use the resources of the General Fund or the Senior Lien DSRF because the revenues available to cover the senior debt obligations will always be enough. The minimum and average Senior Debt Service Coverage Ratios would be 2.47x and 11.87x, respectively.

Regarding the Subordinate Bonds, in Table 6 can be seen that only in 2022 would be necessary to use the resources of the General Fund to pay a portion of the principal due because in that year the 2018 Subordinate BANs will be amortized for the total amount issued of US$44.9m. Besides that, there would be no need to use the resources of the Subordinate Lien DSRF in any moment. The minimum and average Subordinate Debt Service Coverage Ratios would be 1.32x and 4.78x, respectively.

Table 5. Performance of the Senior Lien Obligations Under the Base Scenario

Year (ending Dec 31)	Beginning Balance	Interest				Principal				Ending Balance
		Due	Paid with Revenues	Paid with General Fund	Paid with DSRF	Due	Paid with Revenues	Paid with General Fund	Paid with DSRF	
2019	966,110	22,521	22,521	-	-	11,695	11,695	-	-	954,415
2020	954,415	26,287	26,287	-	-	13,060	13,060	-	-	941,355
2021	941,355	38,850	38,850	-	-	15,540	15,540	-	-	925,814
2022	925,814	44,435	44,435	-	-	17,683	17,683	-	-	908,131
2023	908,131	45,464	45,464	-	-	19,951	19,951	-	-	888,179
2024	888,179	51,841	51,841	-	-	17,022	17,022	-	-	871,158
2025	871,158	50,318	50,318	-	-	19,497	19,497	-	-	851,661
2026	851,661	48,269	48,269	-	-	22,444	22,444	-	-	829,216
2027	829,216	48,065	48,065	-	-	23,491	23,491	-	-	805,725
2028	805,725	47,410	47,410	-	-	25,063	25,063	-	-	780,662
2029	780,662	46,656	46,656	-	-	31,293	31,293	-	-	749,369
2030	749,369	44,607	44,607	-	-	33,330	33,330	-	-	716,040
2031	716,040	43,422	43,422	-	-	34,519	34,519	-	-	681,521
2032	681,521	42,134	42,134	-	-	35,810	35,810	-	-	645,711
2033	645,711	40,756	40,756	-	-	37,191	37,191	-	-	608,520
2034	608,520	39,288	39,288	-	-	38,666	38,666	-	-	569,854
2035	569,854	36,374	36,374	-	-	41,574	41,574	-	-	528,281
2036	528,281	34,667	34,667	-	-	43,278	43,278	-	-	485,003
2037	485,003	32,859	32,859	-	-	45,084	45,084	-	-	439,919
2038	439,919	30,945	30,945	-	-	47,133	47,133	-	-	392,786
2039	392,786	28,911	28,911	-	-	49,171	49,171	-	-	343,615
2040	343,615	16,606	16,606	-	-	61,470	61,470	-	-	282,145
2041	282,145	14,002	14,002	-	-	50,665	50,665	-	-	231,480
2042	231,480	11,482	11,482	-	-	51,925	51,925	-	-	179,555
2043	179,555	8,899	8,899	-	-	54,590	54,590	-	-	124,965
2044	124,965	6,184	6,184	-	-	84,680	84,680	-	-	40,285
2045	40,285	1,965	1,965	-	-	33,585	33,585	-	-	6,700
2046	6,700	302	302	-	-	3,275	3,275	-	-	3,425
2047	3,425	154	154	-	-	3,425	3,425	-	-	0

Source: HR Ratings based on internal projections.

Figures in thousands of dollars.

Table 6. Performance of the Subordinate Lien Obligations Under the Base Scenario

Year (ending Dec 31)	Beginning Balance	Interest				Principal				Ending Balance
		Due	Paid with Revenues	Paid with General Fund	Paid with DSRF	Due	Paid with Revenues	Paid with General Fund	Paid with DSRF	
2019	619,195	8,953	8,953	-	-	2,765	2,765	-	-	616,430
2020	616,430	11,569	11,569	-	-	2,905	2,905	-	-	613,525
2021	613,525	11,428	11,428	-	-	3,045	3,045	-	-	610,480
2022	610,480	10,932	10,932	-	-	48,785	35,288	13,497	-	561,695
2023	561,695	10,390	10,390	-	-	5,235	5,235	-	-	556,460
2024	556,460	20,395	20,395	-	-	5,775	5,775	-	-	550,685
2025	550,685	20,089	20,089	-	-	7,939	7,939	-	-	542,746
2026	542,746	19,724	19,724	-	-	8,337	8,337	-	-	534,409
2027	534,409	19,309	19,309	-	-	10,156	10,156	-	-	524,253
2028	524,253	18,849	18,849	-	-	15,381	15,381	-	-	508,872
2029	508,872	18,144	18,144	-	-	20,876	20,876	-	-	487,996
2030	487,996	17,337	17,337	-	-	21,762	21,762	-	-	466,234
2031	466,234	16,493	16,493	-	-	22,554	22,554	-	-	443,680
2032	443,680	15,617	15,617	-	-	23,393	23,393	-	-	420,286
2033	420,286	14,706	14,706	-	-	24,370	24,370	-	-	395,916
2034	395,916	13,755	13,755	-	-	25,310	25,310	-	-	370,606
2035	370,606	12,766	12,766	-	-	26,222	26,222	-	-	344,385
2036	344,385	11,818	11,818	-	-	27,242	27,242	-	-	317,143
2037	317,143	10,791	10,791	-	-	28,216	28,216	-	-	288,927
2038	288,927	9,725	9,725	-	-	29,320	29,320	-	-	259,607
2039	259,607	8,614	8,614	-	-	30,373	30,373	-	-	229,234
2040	229,234	7,461	7,461	-	-	32,561	32,561	-	-	196,673
2041	196,673	6,260	6,260	-	-	24,015	24,015	-	-	172,658
2042	172,658	5,403	5,403	-	-	20,430	20,430	-	-	152,228
2043	152,228	4,736	4,736	-	-	21,096	21,096	-	-	131,132
2044	131,132	4,048	4,048	-	-	21,780	21,780	-	-	109,352
2045	109,352	3,336	3,336	-	-	22,491	22,491	-	-	86,861
2046	86,861	2,601	2,601	-	-	23,221	23,221	-	-	63,641
2047	63,641	1,842	1,842	-	-	23,979	23,979	-	-	39,662
2048	39,662	1,059	1,059	-	-	24,756	24,756	-	-	14,906
2049	14,906	248	248	-	-	14,906	14,906	-	-	-

Source: HR Ratings based on internal projections.
Figures in thousands of dollars.

Stress Scenarios

This scenario is determined by the maximum level of stress in terms of reductions of transactions, in order that the Senior and Subordinate debt obligations are met. In that case, since the Master Trust Indenture establishes that the Senior Debt Service Fund and Senior Debt Service Reserve Fund shall be fully funded before any amount could be deposited in the Subordinate Debt Service Fund, the maximum reduction in terms of transactions that could be applied to the Senior Bonds is greater than the Subordinate Bonds.

Senior Bonds

Table 7 shows the expected System cash flow under the Senior Bonds stress scenario. In this case System's operation and maintenance expenses would represent on average 37.0% compared with the 14.5% obtained in the base scenario. The lower revenues would result in revenues in real terms available for debt service 64.9% lower than the ones that would be obtained in the base scenario.

Table 7. System Cash Flow Under the Stress Scenario [Senior Lien] (thousands of nominal dollars)

Year (ending Dec 31)[1]	Revenues	Operation and Maintenance Expenses	Revenues Available for Senior Lien Debt Service	Senior Lien Debt Service[2]		Senior Lien DSRF Replenish / (Release)	Revenues Available for Subordinate Lien Debt Service	Subordinate Lien Debt Service[2]		Subordinate Lien DSRF Replenish / (Release)	Revenues Available for Renewal and Replacement Fund and Non-System Expenses	Renewal and Replacement Fund	Non-System Expenses	Revenues Available for General Fund
				Interest	Principal			Interest	Principal					
2019	95,505	21,719	73,786	22,521	11,695	1,824	37,746	8,953	2,765	(12)	26,040	-	4,483	21,557
2020	99,467	27,921	71,546	26,287	13,060	1,502	30,698	11,569	2,905	(39)	16,262	-	3,175	13,088
2021	123,216	33,413	89,803	38,850	15,540	1,370	34,042	11,428	612	(41)	22,044	3,546	2,669	15,829
2022	154,315	34,102	120,213	44,435	17,683	728	57,368	10,932	16,836	(44)	29,644	-	2,727	26,917
2023	159,939	33,842	126,097	45,464	19,951	386	60,295	10,390	5,235	(2,142)	46,813	1,188	5,556	40,069
2024	162,342	36,612	125,730	51,841	17,022	240	56,627	20,395	5,775	(187)	30,644	1,032	4,333	25,279
2025	161,516	36,670	124,846	50,318	19,497	66	54,964	20,089	7,711	(216)	27,380	-	2,886	24,494
2026	160,482	38,015	122,467	48,269	22,444	16	51,737	19,724	5,694	9,656	16,664	471	2,944	13,249
2027	158,013	42,230	115,782	48,065	23,491	(39)	44,264	16,370	5,874	(374)	22,394	268	3,000	19,126
2028	155,290	40,816	114,474	47,410	25,063	(98)	42,099	14,130	6,144	(508)	22,333	7,004	3,058	12,271
2029	152,417	41,212	111,204	46,656	28,233	(173)	36,489	9,269	11,297	(667)	16,590	-	3,115	13,475
2030	151,118	42,765	108,353	44,607	28,141	(595)	36,200	9,291	11,812	(719)	15,816	1,585	3,174	11,057
2031	149,907	41,782	108,124	43,422	28,433	(669)	36,938	8,946	12,128	(761)	16,624	-	3,232	13,392
2032	147,967	43,610	104,358	42,134	27,024	-	35,200	7,855	12,443	359	14,543	563	3,291	10,688
2033	144,271	47,094	97,177	40,756	23,956	2,683	29,782	7,392	12,883	9,507	-	-	-	-
2034	140,492	48,207	92,285	39,288	22,084	12,368	18,545	6,921	11,624	-	-	-	-	-
2035	137,174	47,591	89,583	36,374	22,718	15,581	14,910	6,430	8,480	-	-	-	-	-
2036	135,244	49,911	85,333	34,667	21,294	17,688	11,684	5,970	5,713	-	-	-	-	-
2037	133,137	48,676	84,462	32,859	21,616	20,603	9,384	5,452	3,932	-	-	-	-	-
2038	131,047	49,935	81,113	30,945	20,757	21,813	7,598	4,924	2,675	-	-	-	-	-
2039	128,143	54,074	74,069	28,911	18,114	24,353	2,691	2,691	-	-	-	-	-	-
2040	125,183	53,515	71,667	16,606	28,011	27,050	-	-	-	-	-	-	-	-
2041	121,842	55,914	65,928	14,002	26,432	25,494	-	-	-	-	-	-	-	-
2042	119,504	58,660	60,844	11,482	25,142	24,221	-	-	-	-	-	-	-	-
2043	117,625	57,628	59,997	8,899	26,002	25,096	-	-	-	-	-	-	-	-
2044	115,800	59,857	55,944	6,184	25,326	24,434	-	-	-	-	-	-	-	-
2045	112,718	60,119	52,600	1,965	25,751	24,884	-	-	-	-	-	-	-	-
2046	109,502	60,146	49,356	302	3,275	(13,487)	59,266	2,601	23,221	28,509	4,936	4,690	246	-
2047	106,337	61,590	44,747	154	3,425	(3,577)	44,745	1,842	23,979	(384)	19,308	13,926	4,514	867
2048	103,980	67,211	36,769	-	-	-	36,769	1,059	24,756	(390)	11,345	11,345	-	-
2049	50,292	33,054	17,237	-	-	-	17,237	248	14,906	(11,044)	13,127	6,320	4,339	2,467

Source: HR Ratings based on internal projections.

Figures in thousands of dollars. (1) 2049 only includes the months from January to June. (2) Interest and principal covered with the available revenues.

The diminishing revenues expected since 2025 would imply the need for the use of resources of the General Fund from 2029 to 2032 for a total amount of approximately US$19.7m and of the Senior Lien DSRF from 2032 to 2045 for a total amount of US$335.3m to pay principal that would not be paid with the revenues available for debt service. In this scenario, the minimum and average Senior Debt Service Coverage Ratios would be 0.62x and 2.21x, respectively.

Table 8. Performance of the Senior Lien Obligations Under the Stress Scenario

Year (ending Dec 31)	Beginning Balance	Interest				Principal				Ending Balance
		Due	Paid with Revenues	Paid with General Fund	Paid with DSRF	Due	Paid with Revenues	Paid with General Fund	Paid with DSRF	
2019	966,110	22,521	22,521	-	-	11,695	11,695	-	-	954,415
2020	954,415	26,287	26,287	-	-	13,060	13,060	-	-	941,355
2021	941,355	38,850	38,850	-	-	15,540	15,540	-	-	925,814
2022	925,814	44,435	44,435	-	-	17,683	17,683	-	-	908,131
2023	908,131	45,464	45,464	-	-	19,951	19,951	-	-	888,179
2024	888,179	51,841	51,841	-	-	17,022	17,022	-	-	871,158
2025	871,158	50,318	50,318	-	-	19,497	19,497	-	-	851,661
2026	851,661	48,269	48,269	-	-	22,444	22,444	-	-	829,216
2027	829,216	48,065	48,065	-	-	23,491	23,491	-	-	805,725
2028	805,725	47,410	47,410	-	-	25,063	25,063	-	-	780,662
2029	780,662	46,656	46,656	-	-	31,293	28,233	3,060	-	749,369
2030	749,369	44,607	44,607	-	-	33,330	28,141	5,189	-	716,040
2031	716,040	43,422	43,422	-	-	34,519	28,433	6,086	-	681,521
2032	681,521	42,134	42,134	-	-	35,810	27,024	5,344	3,442	645,711
2033	645,711	40,756	40,756	-	-	37,191	23,956	-	13,235	608,520
2034	608,520	39,288	39,288	-	-	38,666	22,084	-	16,582	569,854
2035	569,854	36,374	36,374	-	-	41,574	22,718	-	18,856	528,281
2036	528,281	34,667	34,667	-	-	43,278	21,294	-	21,983	485,003
2037	485,003	32,859	32,859	-	-	45,084	21,616	-	23,468	439,919
2038	439,919	30,945	30,945	-	-	47,133	20,757	-	26,376	392,786
2039	392,786	28,911	28,911	-	-	49,171	18,114	-	31,057	343,615
2040	343,615	16,606	16,606	-	-	61,470	28,011	-	33,459	282,145
2041	282,145	14,002	14,002	-	-	50,665	26,432	-	24,233	231,480
2042	231,480	11,482	11,482	-	-	51,925	25,142	-	26,783	179,555
2043	179,555	8,899	8,899	-	-	54,590	26,002	-	28,588	124,965
2044	124,965	6,184	6,184	-	-	84,680	25,326	-	59,354	40,285
2045	40,285	1,965	1,965	-	-	33,585	25,751	-	7,834	6,700
2046	6,700	302	302	-	-	3,275	3,275	-	-	3,425
2047	3,425	154	154	-	-	3,425	3,425	-	-	0

Source: HR Ratings based on internal projections.

Figures in thousands of dollars.

Subordinate Bonds

In the Subordinate Bonds stress scenario, the System's operation and maintenance expenses would represent on average 30.8% compared with the 37.0% obtained in the Senior Bonds stress scenario, which would reflect the lower stress that the Subordinate Bonds can bear. Also, the revenues in real terms available for the Subordinate Bonds debt service would be 74.0% lower than the ones that would be obtained in the base scenario.

Table 9. System Cash Flow Under the Stress Scenario [Subordinate Lien] (thousands of nominal dollars)

Year (ending Dec 31)[1]	Revenues	Operation and Maintenance Expenses	Revenues Available for Senior Lien Debt Service	Senior Lien Debt Service[2]		Senior Lien DSRF Replenish / (Release)	Revenues Available for Subordinate Lien Debt Service	Subordinate Lien Debt Service[2]		Subordinate Lien DSRF Replenish / (Release)	Revenues Available for Renewal and Replacement Fund and Non-System Expenses	Renewal and Replacement Fund	Non-System Expenses	Revenues Available for General Fund
				Interest	Principal			Interest	Principal					
2019	97,009	21,792	75,217	22,521	11,695	1,824	39,177	8,953	2,765	(12)	27,471	-	4,483	22,987
2020	102,071	28,047	74,024	26,287	13,060	1,502	33,176	11,569	2,905	(39)	18,740	-	4,426	14,314
2021	126,961	33,587	93,374	38,850	15,540	1,370	37,612	11,428	2,413	(41)	23,813	3,546	2,669	17,598
2022	159,513	34,322	125,192	44,435	17,683	728	62,346	10,932	19,349	(44)	32,109	-	2,727	29,382
2023	166,928	34,108	132,821	45,464	19,951	386	67,019	10,390	5,235	(2,142)	53,537	1,188	5,556	46,793
2024	171,251	36,923	134,328	51,841	17,022	240	65,224	20,395	5,775	(187)	39,241	1,032	5,664	32,545
2025	172,310	37,025	135,286	50,318	19,497	66	65,404	20,089	7,939	(216)	37,592	-	5,771	31,821
2026	173,143	38,411	134,732	48,269	22,444	16	64,002	19,724	8,337	9,656	26,286	942	5,887	19,457
2027	172,419	42,665	129,754	48,065	23,491	(39)	58,236	19,309	9,981	(374)	29,320	268	3,000	26,053
2028	171,394	41,289	130,105	47,410	25,063	(98)	57,731	18,849	9,307	(508)	30,083	7,004	3,058	20,021
2029	170,160	41,721	128,439	46,656	31,293	(173)	50,663	14,898	11,297	(667)	25,135	-	3,115	22,020
2030	170,637	43,312	127,325	44,607	33,330	(595)	49,984	13,668	11,812	(719)	25,223	1,585	3,174	20,464
2031	171,180	42,363	128,817	43,422	34,519	(669)	51,545	13,293	12,128	(761)	26,885	-	3,232	23,653
2032	170,870	44,223	126,648	42,134	35,810	(759)	49,462	11,065	12,443	(796)	26,751	563	3,291	22,896
2033	168,494	47,732	120,762	40,756	35,845	(867)	45,029	8,259	12,883	(844)	24,730	187	3,350	21,193
2034	165,960	48,870	117,090	39,288	34,588	(1,001)	44,215	7,922	13,213	(909)	23,990	324	3,410	20,255
2035	163,901	48,280	115,621	36,374	35,843	(1,168)	44,573	7,599	13,544	(978)	24,408	224	3,468	20,716
2036	163,436	50,629	112,807	34,667	35,143	(1,380)	44,376	7,351	13,902	(1,053)	24,176	16,370	3,527	4,279
2037	162,706	49,418	113,289	32,859	36,146	-	44,283	5,452	14,217	(1,163)	25,777	9,939	3,587	12,251
2038	161,957	50,699	111,258	30,945	35,952	1,156	43,205	4,924	14,615	18,043	5,624	335	3,647	1,642
2039	160,167	54,857	105,310	28,911	33,861	8,336	34,201	4,373	14,919	14,909	-	-	-	-
2040	158,260	54,317	103,943	16,606	44,280	12,759	30,298	3,809	20,525	5,964	-	-	-	-
2041	155,802	56,732	99,070	14,002	43,137	13,910	28,021	3,206	11,463	13,352	-	-	-	-
2042	154,559	59,498	95,061	11,482	42,389	3,156	38,034	2,783	11,841	23,410	-	-	-	-
2043	153,854	58,485	95,368	8,899	43,831	6,768	35,870	2,455	12,239	17,464	3,713	3,713	-	-
2044	153,183	60,732	92,451	6,184	43,727	7,000	35,541	2,121	12,640	10,751	10,029	6,489	3,540	-
2045	150,807	61,003	89,804	1,965	33,585	4,945	49,309	3,336	16,337	16,837	12,798	539	4,077	8,183
2046	148,185	61,041	87,144	302	3,275	(20,878)	104,445	2,601	23,221	(389)	79,012	9,379	8,251	61,382
2047	145,562	62,496	83,065	154	3,425	(3,577)	83,063	1,842	23,979	(384)	57,626	13,926	8,391	35,309
2048	143,971	68,135	75,836	-	-	-	75,836	1,059	24,756	(390)	50,411	18,231	8,534	23,646
2049	70,426	33,522	36,904	-	-	-	36,904	248	14,906	(27,735)	49,484	6,320	4,339	38,825

Source: HR Ratings based on internal projections.

Figures in thousands of dollars. (1) 2049 only includes the months from January to June. (2) Interest and principal covered with the available revenues.

Table 10 shows the expected performance of the Subordinate Bonds in the stress scenario. Revenues available for the Subordinate Bonds debt service would not always be enough to cover interest and principal, so it would be required the use of the General Fund and the Subordinate Lien DSRF to cover the missing amounts for a total amount of US$163.4m and US$129.4m, respectively. In this scenario, the minimum and average Subordinate Debt Service Coverage Ratios would be 0.79x and 1.46x, respectively.

Table 10. Performance of the Subordinate Lien Obligations Under the Stress Scenario

Year (ending Dec 31)	Beginning Balance	Interest				Principal				Ending Balance
		Due	Paid with Revenues	Paid with General Fund	Paid with DSRF	Due	Paid with Revenues	Paid with General Fund	Paid with DSRF	
2019	619,195	8,953	8,953	-	-	2,765	2,765	-	-	616,430
2020	616,430	11,569	11,569	-	-	2,905	2,905	-	-	613,525
2021	613,525	11,428	11,428	-	-	3,045	2,413	632	-	610,480
2022	610,480	10,932	10,932	-	-	48,785	19,349	29,436	-	561,695
2023	561,695	10,390	10,390	-	-	5,235	5,235	-	-	556,460
2024	556,460	20,395	20,395	-	-	5,775	5,775	-	-	550,685
2025	550,685	20,089	20,089	-	-	7,939	7,939	-	-	542,746
2026	542,746	19,724	19,724	-	-	8,337	8,337	-	-	534,409
2027	534,409	19,309	19,309	-	-	10,156	9,981	175	-	524,253
2028	524,253	18,849	18,849	-	-	15,381	9,307	6,074	-	508,872
2029	508,872	18,144	14,898	3,247	-	20,876	11,297	9,579	-	487,996
2030	487,996	17,337	13,668	3,669	-	21,762	11,812	9,950	-	466,234
2031	466,234	16,493	13,293	3,200	-	22,554	12,128	10,426	-	443,680
2032	443,680	15,617	11,065	4,552	-	23,393	12,443	10,951	-	420,286
2033	420,286	14,706	8,259	6,447	-	24,370	12,883	11,487	-	395,916
2034	395,916	13,755	7,922	5,834	-	25,310	13,213	12,097	-	370,606
2035	370,606	12,766	7,599	5,167	-	26,222	13,544	12,678	-	344,385
2036	344,385	11,818	7,351	4,467	-	27,242	13,902	13,339	-	317,143
2037	317,143	10,791	5,452	-	5,339	28,216	14,217	-	13,999	288,927
2038	288,927	9,725	4,924	-	4,801	29,320	14,615	-	14,705	259,607
2039	259,607	8,614	4,373	-	4,241	30,373	14,919	-	15,453	229,234
2040	229,234	7,461	3,809	-	3,652	32,561	20,525	-	12,036	196,673
2041	196,673	6,260	3,206	-	3,054	24,015	11,463	-	12,552	172,658
2042	172,658	5,403	2,783	-	2,620	20,430	11,841	-	8,589	152,228
2043	152,228	4,736	2,455	-	2,281	21,096	12,239	-	8,858	131,132
2044	131,132	4,048	2,121	-	1,927	21,780	12,640	-	9,140	109,352
2045	109,352	3,336	3,336	-	-	22,491	16,337	-	6,154	86,861
2046	86,861	2,601	2,601	-	-	23,221	23,221	-	-	63,641
2047	63,641	1,842	1,842	-	-	23,979	23,979	-	-	39,662
2048	39,662	1,059	1,059	-	-	24,756	24,756	-	-	14,906
2049	14,906	248	248	-	-	14,906	14,906	-	-	-

Source: HR Ratings based on internal projections.
Figures in thousands of dollars.

Appendix

I. Central Texas Regional Mobility Authority

The Central Texas Regional Mobility Authority (CTRMA and/or the Authority) is an independent government agency formed through a jointly petition of the Travis County and the Williamson County filed on September of 2002 and authorized by the Texas Transportation Commission on October 31, 2002. In this petition, the Counties identified the 183A Turnpike Project in Williamson County as the Authority first project.

The CTRMA is governed by a Board of Directors, which is formed by seven members, three are assigned by each County Commissioners Court, while the other member (presiding officer) is appointed by the Governor of Texas. Within the responsibilities of the Board of Directors are directing and controlling the affairs of the CTRMA, the establishment of policies that direct operational management and to determine the toll rate escalation percentage.

Toll Rates

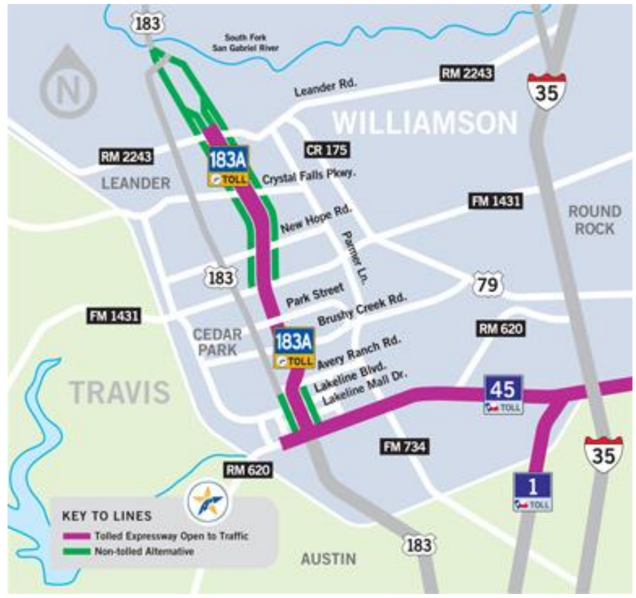
The toll rates are subject to an annual adjustment on January 1. The applicable adjustment would be determined on October 1 of the previous year and the increase in the toll rates on all toll facilities will be based on the Toll Rate Escalation Percentage[6]. If the Toll Rate Escalation Percentage is calculated to be less than zero, then the Toll Rate Escalation Percentage shall de deemed to zero. However, the Board of Directors has the right to vote for the modification of the applicable Toll Rate Escalation Percentage.

The toll roads operated by the CTRMA have the following payment options: i) electronic payment operating in the State of Texas such as TxTag, TollTag and EZTAG, and ii) pay by mail program. Pay by mail rates have an additional charge of 33.0% compared with the electronic methods and the bills are mailed to costumers. Each bill has a one-dollar fee added on to it, which is used to cover the costs incurred by this collection method. In case that the bill is not paid within the 30 after the delivery, extra fees are applied.

Current Toll Roads

183A Toll
The 183A Toll (183A Turnpike Project) is an 11.6-mile toll road with a six-lane controlled access roadway located in the metropolitan area of the City of Austin, in the northwest of Williamson County. The first section opened in March 2007. Because traffic was much heavier than originally projected, CTRMA expedite a five-mile extension which opened to traffic in April 2012.

[6] Percentage amount equal to [(CPI^{t} – CPI^{t-12})/CPI^{t-12}]. CPI: Consumer Price Index for All Urban Consumers before seasonal adjustment.



Source: Image taken from the CTRMA website.

<u>290E Toll Road</u>

The 290E Toll road (Manor Expressway) is a 6.2-mile toll road in the Northeast of Austin between the US 183 and the City of Manor. The first phase of the road, which was a 1.5-mile segment of the toll road, opened in 2012. The final phase of the project opened in May 2014. The Manor Expressway includes three tolled lanes and three non-tolled lanes in each direction. It also includes a six-mile shared use paths for pedestrians and bicycle travel.

Source: Image taken from the CTRMA website.

<u>71 Express</u>

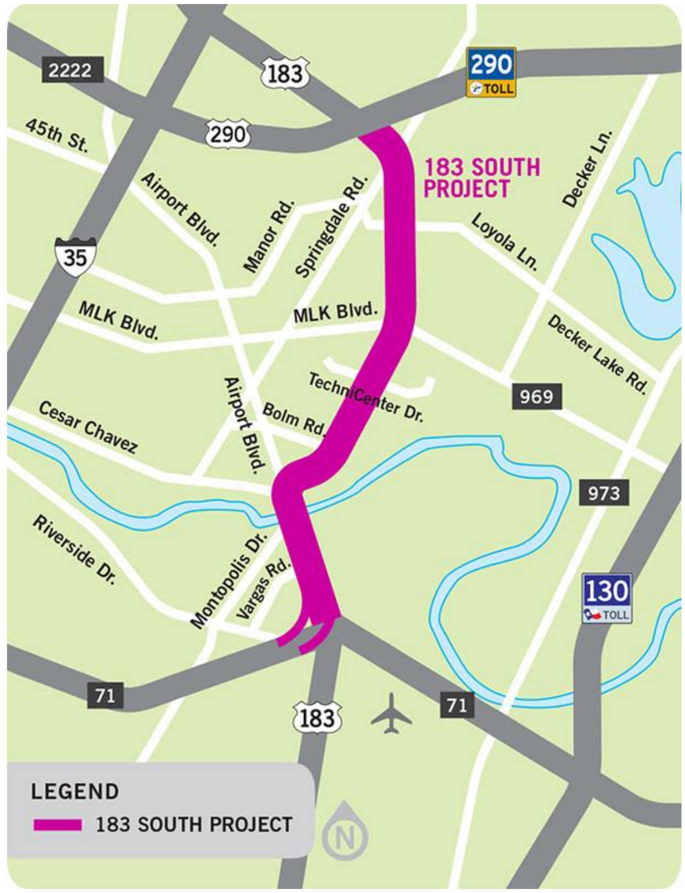
The 71 Toll Lane is a 4.0-mile toll road in east Austin from Presidential Blvd to SH 130 and it serves as a major corridor connecting drivers to the Austin-Bergstrom International Airport. It includes a toll lane in each direction as well as new ramps connecting 71 and SH 130, as well as three non-tolled lanes in each direction. The project was incorporated to the CTRMA Turnpike System on February 22th, 2017.

Source: Image taken from the CTRMA website.

Projects

<u>183 South Project</u>

The 183 South is an 8-mile project of US 183 between US 290E and 71 with three tolled lanes in each direction. The construction will take place in two phases. The first phase is expected to be completed in 2019 and the second phase will open to traffic about a year later. The current 183 South is the primary route to and from the Austin-Bergstrom International Airport.



Source: Image taken from the CTRMA website.

<u>290/130 Direct Connectors</u>

The 290/130 Direct Connectors (290 Phase III) refers to the construction of three flyovers to connect the two toll facilities together. One flyover already exists from eastbound US 290 to northbound SH 130.

Source: Image taken from the CTRMA website.

II. Master Trust Indenture

The Master Trust Indenture was celebrated on February 1, 2005 between The Central Texas Regional Mobility Authority and JP Morgan Chase Bank, National Association, as the Trustee. Currently, Regions Bank, acts as a Trustee, as a successor in trust of JP Morgan Chase Bank.

Under the Master Trust Indenture, the CTRMA grant, bargain, convey, assign and pledge to the Trustee all Revenues, all resources including investment earnings deposited into accounts or fund in the Trust.

Funds

Revenue Fund

All revenues shall be deposited as received by the CTRMA into Revenue Fund. The revenues in the fund shall be deposited or credited in the Fund and Accounts on the fifteenth day of each month.

Rebate Fund

The Rebate Fund does not constitute part of the Trust Estate. The Trustee shall withdraw from the Rebate Fund and pay to the United States of America the balance of the fund as specified in any applicable supplemental indenture.

Operating Fund
All funds in the Operating Fund shall be held separate and apart from the CTRMA's other funds and accounts until applied. Amounts shall be applied to pay operating expenses and maintenance expenses.

Debt Service Funds
Created for the Senior, Junior and Subordinated Obligations. According to the flow of fund established in the Master Indenture monthly provisions shall be made in order to meet with the interest and capital payment. Additionally, complementary accounts in each of the Debt Service Funds could be created to include drawings on credit facilities and payments to the swap agreements counterparties.

Debt Service Reserve Funds
Created for the Senior, Junior and Subordinated Obligations. Money held in these funds shall, except as otherwise provided in a supplemental indenture, be used in case that the resources in the corresponding Debt Service Fund is not sufficient to meet with the interest or capital payments. In case that the amount in any Debt Service Reserve Fund is less that the required amount, the Trustee shall make the monthly deposits in order to restore such deficiencies within 18 months.

Renewal and Replacement Fund
Resources in the fund shall be disbursed only for paying the following cost: i) unusual or extraordinary maintenance or repairs, including major items of equipment; ii) repairs of replacements resulting from an emergency caused by some extraordinary occurrence; and iii) paying of the cost of any capital improvement.

Other Obligations Fund
The Other Obligations debt service shall be paid with the money available in this fund. An additional account may be created for any Additional Other Obligation.

General Fund
Money available in this fund shall be used by the Trustee as mentioned in the Senior, Junior and Subordinate Reserve Fund, the Other Obligations Fund and to restore deficiencies in any funds or accounts under the indenture. After meeting those requirements, money available in the General Fund could be applied to the following, without any expense having priority over any of the others: i) to purchase or redeem Senior, Junior or Subordinated Bonds, ii) Maintenance and Operating Expenses, iii) Construction Fund and iv) for any other lawful purpose according to the Act.

Construction Fund
The amounts deposited in this fund shall be specified in a Supplemental Indenture. A special account shall be created for each Project and payments or reimbursement of payments of costs of any Project shall be disbursed within two business days after receipt by the Trustee. The CTRMA covenants that during the construction of any project, at least quarterly, it will cause the General Engineering Consulting to prepare a progress report including the date it will be opened for traffic, the date on which construction will be completed, the cost and the amounts required each six months during the remaining period.

Issuance of Additional Obligations

The Authority reserves the right to issue Additional Senior, Junior or Subordinated Obligations to finance the costs of improvements, extensions or enlargements of the System. All the Additional Obligations must fulfill, among others, with the following:

- A counsel's opinion.
- Letter of Instructions as to the authentication and delivery of such obligations.
- A certified copy of the resolution of the Board of Directors of the Authority authorizing the issuances of such Obligations.
- A copy of the applicable Supplemental Indenture, according to the specifications mentioned on the Indenture.
- Amounts required by the applicable Supplemental Indenture to be deposited in the Funds created pursuant to the respective Indenture.
- A Letter of Instructions as to the disposition and investment of the proceeds of such Obligations and related amounts.
- If required, the approving opinion of the Attorney General of the State to the effect that the Obligations have been issued in accordance with law, or a judgement of a district court of the State validating the issuance of Obligations.
- Such further documents and moneys as are required by the provisions of any Indenture.

In case that the long-term obligations are being incurred solely for the purpose of refunding, repurchase of refinancing any outstanding long term obligation, the Trustee should be delivered a certificate of an authorized representative of the Authority certifying the average annual debt service on all obligations prior to the issuance of the proposed long term obligations is greater than the average annual debt service on all obligations after the issuances of such proposed obligations.

In other case, the following should be delivered to the Trustee:

1) A report of the traffic consultant to the effect that the revenues during the preceding annual period ending not more than 90 days prior to the date of delivery of the proposed additional obligations, after the payment of all operating expenses for such annual period, were sufficient to satisfy the Rate Covenant.

2) A report of the traffic consultant to the effect that the projected revenues for each fiscal year over the term of the proposed additional obligations, less the projected operating expenses for each year to be paid from revenues is expected to produce the following projected debt service coverage ratio:

    a. For Additional Senior Bonds, (i) 1.40 with respect to Senior Bonds, (ii) 1.20 with respect to Senior Bonds and Junior Lien Obligations, (iii) 1.20 with respect to Senior Bonds, Junior Lien Obligations and Subordinated Bonds and (iv) 1.10 with respect to all Obligations.
    b. For Additional Junior Lien Obligations, (i) 1.20 with respect to Senior Bonds and Junior Lien Obligations, (ii) 1.20 with respect to Senior Bonds, Junior Lien Obligations and Subordinated Bonds and (iii) 1.10 with respect to all Obligations.
    c. For Additional Subordinated Bonds, (i) 1.20 with respect to Senior Bonds, Junior Lien Obligations and Subordinated Bonds and (ii) 1.10 with respect to all Obligations.

Particular Covenants of the Authority and Rate Covenant

The CTRMA covenants and agrees with the Trustee and the Holders of Obligations, among others, the following:

- The Authority shall duty and punctually pay or cause to be paid, but solely from the Trust Estate including the Revenue, the proceeds of the obligations, other funds pledged therefor by the Indenture, the principal amount of maturity amount, or redemption price and interests on every obligation.
- The Authority shall not directly or indirectly extend or assent to the extension of the time for payment of the principal amount or maturity amount.
- The Authority covenants than on or before June 30 in each Fiscal Year it will adopt an Annual Operating Budget and Annual Maintenance Budget for the System for the following year.

Additionally, the Authority covenants that it shall always establish tolls and other charges to produce Revenues, in an amount at least equal to the greater of:

1) 125% of the Annual Debt Service in such Fiscal Year on all Outstanding Senior Bonds.
2) 120% of the Annual Debt Service in such Fiscal Year on all Outstanding Senior Bonds and Junior Lien Obligations.
3) 110% of the Annual Debt Service in such Fiscal Year on all Outstanding Senior Bonds, Junior Lien Obligations and Subordinated Bonds.
4) 100% of the Annual Debt Service in such Fiscal Year on all Obligations plus the amounts to be deposited into the debt reserve funds.

Prior to adopting any change in its Toll rate schedule, the Authority shall obtain and file with 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 an Authorized Representative, it would not have caused a decrease in the Revenues for said preceding annual period.

(ii) In their opinion, that the adoption of such proposed toll rate schedule will not adversely affect the ability of the Authority to comply with the preceding percentages.

Events of Default

The occurrence and continuation of the following events shall constitute an event of default:

- Failure to pay principal or interest of any obligations and failure to purchase and variable rate obligations.
- The occurrence of an event of default under a Credit Facility[7], Senior, Junior or Subordinate Debt Service Reserve Fund Security, Swap Agreement or Reimbursement Agreement.
- Judgement for the payment of money rendered against the Authority if such judgement is under any circumstances payable from revenues and is in an

[7] Credit Facility: Any letter of credit, line of credit, standby letter of credit or agreement to purchase a debt obligation or any similar extension of credit, credit enhancement or liquidity support obtained by the Authority.

amount that its payment, in the opinion of the Trustee, have a materially adverse effect upon the financial condition of the CTRMA turnpike system.

- The occurrence of a Bankruptcy Related Event that shall not be cured, vacated, discharged or stayed within 60 days after the occurrence.[8]
- Failure of the Authority to duly and punctually perform any other of the covenants, conditions, agreements and provisions contained in any obligations, in the Master Trust Indenture or any supplemental indenture and the continuation of such failure for sixty days after written notice.

[8] Bankruptcy Related Event: i) the application by or consent of the Authority to the appointment of a receiver, trustee, liquidator or custodian or the like is appointed for the Authority, ii) the Authority becomes unable to pay its debt generally as they become due, iii) the authority id adjudicated a bankrupt or insolvent, or iv) the Authority commences a voluntary proceeding under the Bankruptcy Law.

Glossary

Stress: The applied stress level refers to the maximum stress that the bond could bear and still complying with the debt service payments.

ASR: Annualized Stress Rate:

$$ASR = \left| \left(\frac{\sum_{t=1}^{n} Stress\ Real\ Revenue_t}{\sum_{t=1}^{n} Base\ Real\ Revenue_t} \right)^{\frac{12}{n}} - 1 \right| = \left| \left(\frac{Stress\ Accumulated\ Real\ Revenue}{Base\ Accumulated\ Real\ Revenue} \right)^{\frac{12}{n}} - 1 \right|$$

Where *n* is the number of months used for the analysis.

AADT: Annual Average Daily Transactions (Total Annual Transactions / Operated Days).

ADT: Average Daily Transactions (Total Transactions in Period / Operated Days in Period).

AADR: Annual Average Daily Revenue (Total Annual Revenue / Operated Days).

ADR: Average Daily Revenue (Total Revenue in Period / Operated Days in Period).

CAGR: Compound Annual Growth Rate.

WATR: Weighted Average Toll Rate (Total Revenue / Total Transactions).

HR Ratings Management Contacts

Management

Chairman of the Board

Alberto I. Ramos
+52 55 1500 3130
alberto.ramos@hrratings.com

Vice President

Aníbal Habeica
+52 55 1500 3130
anibal.habeica@hrratings.com

Chief Executive Officer

Fernando Montes de Oca
+52 55 1500 3130
fernando.montesdeoca@hrratings.com

Analysis

Chief Credit Officer

Felix Boni
+52 55 1500 3133
felix.boni@hrratings.com

Deputy Chief Credit Officer

Pedro Latapí
+52 55 8647 3845
pedro.latapi@hrratings.com

Public Finance / Infrastructure

Ricardo Gallegos
+52 55 1500 3139
ricardo.gallegos@hrratings.com

Roberto Ballinez
+52 55 1500 3143
roberto.ballinez@hrratings.com

Financial Institutions / ABS

Fernando Sandoval
+52 55 1253 6546
fernando.sandoval@hrratings.com

Corporates / ABS

José Luis Cano
+52 55 1500 0763
joseluis.cano@hrratings.com

Methodologies

Alfonso Sales
+52 55 1500 3140
alfonso.sales@hrratings.com

Regulation

Chief Risk Officer

Rogelio Argüelles
+52 181 8187 9309
rogelio.arguelles@hrratings.com

Head Compliance Officer

Rafael Colado
+52 55 1500 3817
rafael.colado@hrratings.com

Business Development

Business Development

Francisco Valle
+52 55 1500 3134
francisco.valle@hrratings.com

Mexico: Avenida Prolongación Paseo de la Reforma #1015 torre A, piso 3, Col. Santa Fe, México, D.F., CP 01210, Tel 52 (55) 1500 3130.
United States: One World Trade Center, Suite 8500, New York, New York, ZIP Code 10007, Tel +1 (212) 220 5735.

The rating assigned by HR Ratings LLC to the entity, issuer and/or issue is based upon the analysis performed under a base case and stress case scenario, in accordance with the following methodology(ies) established by the rating agency:

Methodology for Infrastructure: Rating for Debt backed by Revenue from the Operation of Highways, Tunnels and Bridges, November 6, 2015.

For more information with respect to this (these) methodology (ies), please consult the website: www.hrratings.com/en/methodology

Form 17-g-7(a)(1): https://www.hrratings.com/en/form17g7

Complementary information	
Previous Rating.	Current Senior Bonds: HR BBB+ (G) | Stable Outlook Current Subordinate Bonds: HR BBB (G) | Stable Outlook Series 2018 Senior and Subordinate Bonds: N/A
Date of the last Rating Action.	Current Senior Bonds: October 30, 2017 Current Subordinate Bonds: October 30, 2017 Series 2018 Senior and Subordinate Bonds: N/A
Period of the financial information used by HR Ratings for the assignment of the current rating.	December 2008 to July 2018
Main sources of information used, including third parties.	Central Texas Regional Mobility Authority, First Southwest, a division of Hilltop Securities and other sources of public information.
Ratings assigned by other rating agencies that were used by HR Ratings (if so).	N/A
HR Ratings considered at the moment of assigning or reviewing the rating, the existence of mechanisms designed to align the incentives between the originator, servicer and guarantor and the possible buyers of the rated instrument (where it applies).	N/A

HR Ratings, LLC (HR Ratings), is a Credit Rating Agency registered by the Securities and Exchange Commission (SEC) as a Nationally Recognized Statistical Rating Organization (NRSRO) for the assets of public finance, corporates and financial institutions as described in section 3 (a) (62) (A) and (B) subsection (i), (iii) and (v) of the US Securities Exchange Act of 1934.

The Series 2018 Senior and Subordinate Lien Revenue Bonds ratings are solicited by the entity or issuer, or on its behalf, and therefore, HR Ratings has received the corresponding fees for the rating services provided. The following information can be found on our website at www.hrratings.com: (i) The internal procedures for the monitoring and surveillance of our ratings and the periodicity with which they are formally updated, (ii) the criteria used by HR Ratings for the withdrawal or suspension of the maintenance of a rating, and (iii) the procedure and process of voting on our Analysis Committee.

Current Outstanding Senior and Subordinate Lien Revenue Bonds issued from 2010 to 2016 are unsolicited ratings, HR Ratings received no payment in connection with this rating. This rating was issued according to HR Ratings current methodologies and based on the same policies and procedures applicable to solicited ratings. Unsolicited ratings can be withdrawn by HR Ratings at any time. The following information can be found on our website at www.hrratings.com: (i) The internal procedures for the monitoring and surveillance of our ratings and the periodicity with which they are formally updated, (ii) the criteria used by HR Ratings for the withdrawal or suspension of the maintenance of a rating, and (iii) the procedure and process of voting on our Analysis Committee.

HR Ratings ratings and/or opinions are opinions of credit quality and/or regarding the ability of management to administer assets; or opinions regarding the efficacy of activities to meet the nature or purpose of the business on the part of issuers, other entities or sectors, and are based exclusively on the characteristics of the entity, issuer or operation, independent of any activity or business that exists between HR Ratings and the entity or issuer. The ratings and/or opinions assigned are issued on behalf of HR Ratings, not of its management or technical staff, and do not constitute an investment recommendation to buy, sell, or hold any instrument nor to perform any business, investment or other operation. The assigned ratings and/or opinions issued may be subject to updates at any time, in accordance with HR Ratings' methodologies.

HR Ratings bases its ratings and/or opinions on information obtained from sources that are believed to be accurate and reliable. HR Ratings, however, does not validate, guarantee or certify the accuracy, correctness or completeness of any information and is not responsible for any errors or omissions or for results obtained from the use of such information. Most issuers of debt securities rated by HR Ratings have paid a fee for the credit rating based on the amount and type of debt issued. The degree of creditworthiness of an issue or issuer, opinions regarding asset manager quality or ratings related to an entity's performance of its business purpose are subject to change, which can produce a rating upgrade or downgrade, without implying any responsibility for HR Ratings. The ratings issued by HR Ratings are assigned in an ethical manner, in accordance with healthy market practices and in compliance with applicable regulations found on the www.hrratings.com rating agency webpage. There Code of Conduct, HR Ratings' rating methodologies, rating criteria and current ratings can also be found on the website.

Ratings and/or opinions assigned by HR Ratings are based on an analysis of the creditworthiness of an entity, issue or issuer, and do not necessarily imply a statistical likelihood of default, HR Ratings defines as the inability or unwillingness to satisfy the contractually stipulated payment terms of an obligation, such that creditors and/or bondholders are forced to take action in order to recover their investment or to restructure the debt due to a situation of stress faced by the debtor. Without disregard to the aforementioned point, in order to validate our ratings, our methodologies consider stress scenarios as a complement to the analysis derived from a base case scenario. The rating fee that HR Ratings receives from issuers generally ranges from US$1,000 to US$1,000,000 (or the foreign currency equivalent) per issue. In some instances, HR Ratings will rate all or some of the issues of a particular issuer for an annual fee. It is estimated that the annual fees range from US$5,000 to US$2,000,00 (or the foreign currency equivalent).