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MOODY'S INVESTORS SERVICE

CREDIT OPINION
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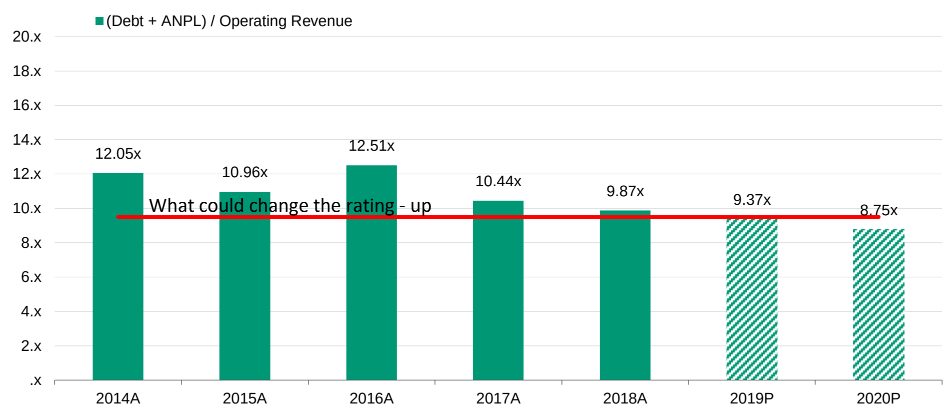
North Texas Tollway Authority, TX

Update following affirmation of first and second tier ratings, outlook changed to positive

Summary

North Texas Tollway Authority's (NTTA, first lien A1, second lien A2, positive) credit profile is strengthening a result of continued strong revenue growth and a series of debt refundings that has reduced future debt service requirements. NTTA's essential roadway network is located in one of the fastest growing US service areas that will experience continued traffic growth, and automatic biennial toll increases will produce strong revenue growth. Total debt service coverage ratios (DSCRs) will narrow to 1.22x if the authority's budgeted revenue forecast is realized, but will begin a long-term strengthening given the flattening debt service requirement profile to 1.32x in fiscal 2023. Elevated leverage will moderate as debt amortizes and revenues continue to rise and NTTA will avoid additional debt over the next five years as planned capital investments will be made from annual surplus revenue and balances available in the capital improvement fund.

Exhibit 1
Bond amortization and rising toll revenues will drive leverage lower.



Source: Moody's Investors Service

We recently changed the outlook on first and second tier bonds to positive based on recent strong revenue performance and lower annual debt service requirements that decreased maximum annual debt service requirements and also results in faster de-leveraging. We also upgraded the subordinate lien bonds to Baa1 from Baa2 given our expectation of greater annual cashflow to the capital improvement fund.

Credit strengths

» Population and employment growth is among the strongest in the nation and continues to generate traffic and revenue growth

» Traffic grew 1.8% in fiscal 2019, while toll revenue increased 4.8% due to the increase in overall transactions

» Most facilities were completed within the last 20 years and assets are in good condition. Construction risk for system expansions is minimal and should not impact traffic significantly for the projects that have been announced

» Nearly half of NTTA's capital plan is for expansion projects that will be revenue additive

» Strong tolling policy establishes a set 2.75% annual rate increase implemented every two years, including one scheduled for July 2019

» Annual engineering report states that system is in good condition with maintenance fully covered by annual deposits to Operating and Maintenance (O&M) and Reserve Maintenance funds (RMF)

Credit challenges

» Annual debt service requirements escalate through 2024, however peak debt service will be reduced by the 2019 bond issue

» Authority's collection rate (37% in fiscal 2018) on video toll transactions remains well below previous targets (49% target by fiscal 2017) and total leakage is among the highest in the rated portfolio

» Expanding service area could pressure NTTA to assume additional capital improvements, though the authority has opted out of several TxDOT projects

» The bond indenture flow of funds is open and allows for transfers up to 10% of surplus revenue to support non-system projects after all operating and debt service obligations of the authority have been satisfied

» Second tier bonds have half the standard 12-month DSRF and subordinate lien bonds lack a DSRF

Rating outlook

The positive outlook reflects our view that the authority will continue to see strong year-over-year traffic growth in fiscal 2019 and beyond supporting higher DSCR and a more rapid reduction in leverage than traffic engineer's forecast suggests.

Factors that could lead to an upgrade

» Sustained and projected DSCR of first and second tier bonds above 1.5x

» Leverage, as measured by debt to operating revenue, below the 9.5x

Factors that could lead to a downgrade

» Additional debt issuances or revenue declines that lead to sustained DSCR of first and second tier bonds below 1.3x

» Lower than expected video toll enforcement and collections

» Failure to implement planned toll increases necessary to produce projected debt service coverage levels

» Traffic and revenue growth no longer exceeds current projections

Key indicators

Exhibit 2

NORTH TEXAS TOLLWAY AUTHORITY, TX	2014	2015	2016	2017	2018
Total Transactions Annual Growth (%)	5.5	5.1	3.9	2.9	15.2
Debt Outstanding ($'000)	7,648,188	7,840,320	7,767,128	9,533,055	9,495,368
Debt to Operating Revenues (x)	12.6	12.1	11.0	12.5	10.4
Days Cash on Hand ('000)	684	677	812	931	986
Senior Lien Debt Service Coverage By Net Revenues (x)	1.64	1.64	1.75	1.73	1.71
Total Debt Service Coverage By Net Revenues (x)	1.23	1.26	1.36	1.33	1.29

FY Ended June 30
Source: Moody's Investors Service

Profile

NTTA manages a well-established multi-asset tollway system in the Dallas-Fort Worth MSA. Assets include two bridges; one tunnel and five highways, approximately 141 miles in length and with 995 lane miles. Traffic is predominantly two axle passenger cars with only 2.7% multi-axle vehicles.

Detailed credit considerations

Revenue Generating Base - NTTA's service area population and economy continues at a well above average pace, leading to increased demand for toll roads

NTTA is poised to see continued strong revenue growth as the service area continues to grow, especially in the northern and western areas where NTTA's newer facilities are located. The NTTA's primary legacy facilities, the Dallas North Tollway (DNT), President George Bush Tollway (PGBT), and Sam Rayburn Tollway (SRT), serve the fastest growing areas of the Dallas-Fort Worth "metroplex" and will remain at least 75% of total revenue throughout the traffic consultant's forecast. Frisco, the second fastest growing city in the US according the census bureau, provides one of the primary sources of employment and entertainment facility growth in the region. Population growth in the Frisco area has been explosive, experiencing a 247% increase in the 10 years leading up to 2010. Since 2010, the population has continued to grow an additional 60.6%. The labor market is tight with the city's April 2019 unemployment rate of 3.4%, below the state's 3.7% and the nation's 3.6%. Income levels are favorable with the median family income equal to 209.4% of the nation. JP Morgan Chase & Co. (6,000 employees), Liberty Mutual (5,000 employees) and Toyota North America (4,000 employees) have recently moved substantial operations to developments near the intersection of the DNT and SRT. Additionally, the Dallas Cowboys have created an entertainment district on the DNT just north of the SRT adjacent to Major League Soccer and minor league baseball facilities. Finally, the University of North Texas System plans to open a campus within the city, which will contribute to the economic vitality. The DNT, which connects to downtown Dallas, will also capture modest growth from these new developments as many new arrivals to the area may elect to live in the more urbanized, and densifying, areas in Dallas. However, the facility is functionally constrained from expanding in its lower reaches within the city of Dallas. McKinney TX (4.45% population growth in 2019) is third fastest growing city in the US according to the census bureau and is served by the SRT.

Moody's Analytics expects the Dallas-Plano-Irving area, which includes the three primary NTTA facilities, to expand significantly faster than the U.S. as a whole in terms of job growth. Virtually all major private-sector industries are contributing to the gains, with most of them outpacing their national counterparts. Well-paying professional services and construction are leading the way, resulting in high-wage job growth that is twice the national average over the past year. Furthermore, Dallas's population growth is triple the national average which will lift personal services industries over the coming year. Although Moody's Analytics anticipates office development to remain strong, they have slowed. Employment in professional services rose by 4.8% over the past year, twice the national pace, supporting demand. Most recently, pharmaceutical distributor McKesson, among the largest companies in the country by revenue, has begun moving its headquarters to Irving from San Francisco, adding over 1,000 jobs. However, the most recent wave of blockbuster relocations like Toyota, Liberty Mutual and State Farm has ended, and the office vacancy rate exceeds 20%, among the highest in the country. Some of the new demand in the area is coming from IT firms, financial services, retail, and other business services.

With the addition of the Chisholm Trail Parkway, there is increased access to new businesses and for students to access the Crowley Independent School District. Employment in the Fort Worth-Arlington metro area has slowed significantly since the beginning of 2019. Goods-producing industries and private service have been the major source of weakness. Growth in the number of high-wage jobs is matching the national pace, contributing to above-average gains in average hourly earnings. Fort Worth-Arlington metro is a major hub of defense related manufacturing and is poised to benefit from the boost to military spending enacted in 2018. In the past half year, Lockheed, Bell, Boeing, Bell Flight, DynCorp, Elbit Systems, L3 Technologies and Raytheon have been awarded new contracts. In 2018, the company delivered 91 aircraft, twice as many as in 2016, and it aims to ramp up production to 160 by 2023. Also fostering growth is the increase in homebuilding, which will continue to advance because the job market is fundamentally strong, population growth is more than twice the national average, and affordability remains better than that of Dallas.

Operational and Financial Performance - Strong revenue growth coupled with rising debt service requirements have lead DSCR to slightly decline in the near term

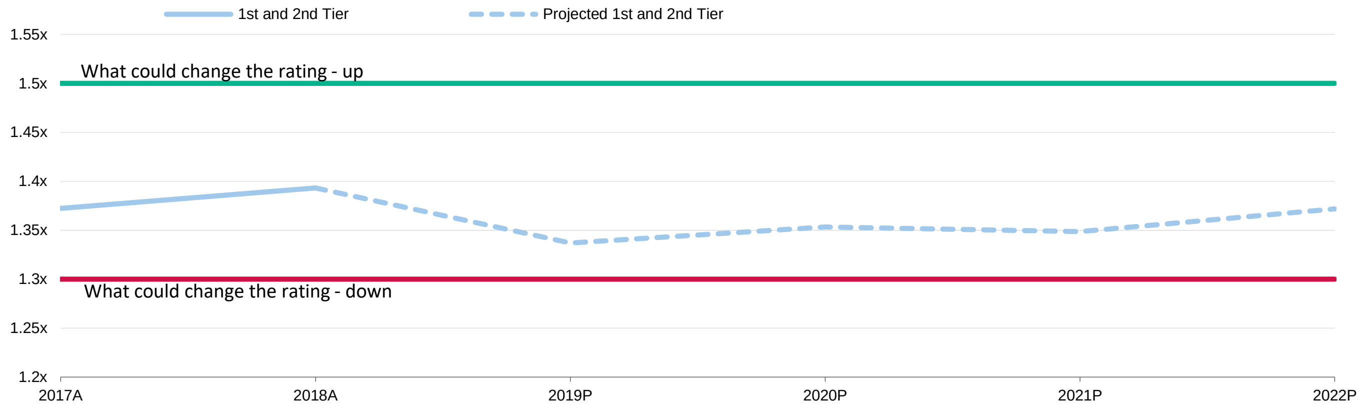
We expect NTTA's revenues to grow at similar rates as the combined operating expense and annual debt service requirement growth to produce slightly declining debt service coverage ratios over the next three years. NTTA's baseline forecast is for total revenue to increase generally by 5% per year after fiscal 2018. The revenue forecast is based on approximately 2.0% annual transaction growth over the next five years, which we think is reasonable given the favorable economic conditions. We think the forecast is exposed to potential slower growth expected at the end of the current economic cycle.

NTTA is a cashless tolling system and derives approximately 82% of revenues through electronic toll collection (ETC). The proportion of revenues collected by ETC is a credit strength. NTTA continues to expand "interoperability" with other regional systems, including all other operators in Texas, Oklahoma, and Kansas. NTTA collects the remainder of revenues through ZipCash tolling, which is a post-mailed billing options.

DSCR of first and second tier debt service on a net revenue basis (which uses the total operating expenses as defined in the audited financial statements) declined slightly to 1.37x in fiscal 2018 from 1.45x in fiscal 2017. On a bond ordinance basis, which excludes operating expenses paid from the RMF or other capital fund expenditures, DSCR decreased to 1.41x in 2018 from 1.62x in 2017. Based on NTTA's current revenue projections, which we think are based on conservative assumptions, DSCR by net revenue on first and second tier bonds will range from 1.35x to 1.39x over the next five years; however we view the latter years to have greater uncertainty. DSCR on a bond ordinance basis will range between 1.41x and 1.47x. Reported operating expenses, which include payments from the RMF fund and some portions of expenses from the capital improvement fund, decreased by 3.6% to $203.7 million in fiscal 2018 from $211.2 million in fiscal 2017.

Total DSCR on a net revenue basis declined slightly to 1.29x in fiscal 2018 from 1.33x in fiscal 2017. On a bond ordinance basis, DSCR decreased to 1.41x in 2018 from 1.49x in 2017. Based on NTTA's current revenue projections, DSCR by net revenue will range from 1.22x to 1.32x over the next five years. DSCR on a bond ordinance basis will range between 1.20x and 1.30x.

Exhibit 3
DSCR by net revenue will slightly decline over the next few years due to increased debt service requirements



Note: Net revenue includes payments from RMF as operating expenses.
Source: Moody's Investors Service

LIQUIDITY

Liquidity will remain adequate as NTTA draws down on strong cash balances. NTTA reported 986 days cash on hand (DCOH) at the end of fiscal 2018, representing an increase from 931 DCOH in fiscal 2017. We expect that liquidity will decrease to approximately 365 days cash on hand as NTTA funds its capital needs from existing cash balances and from surplus cash generated annually.

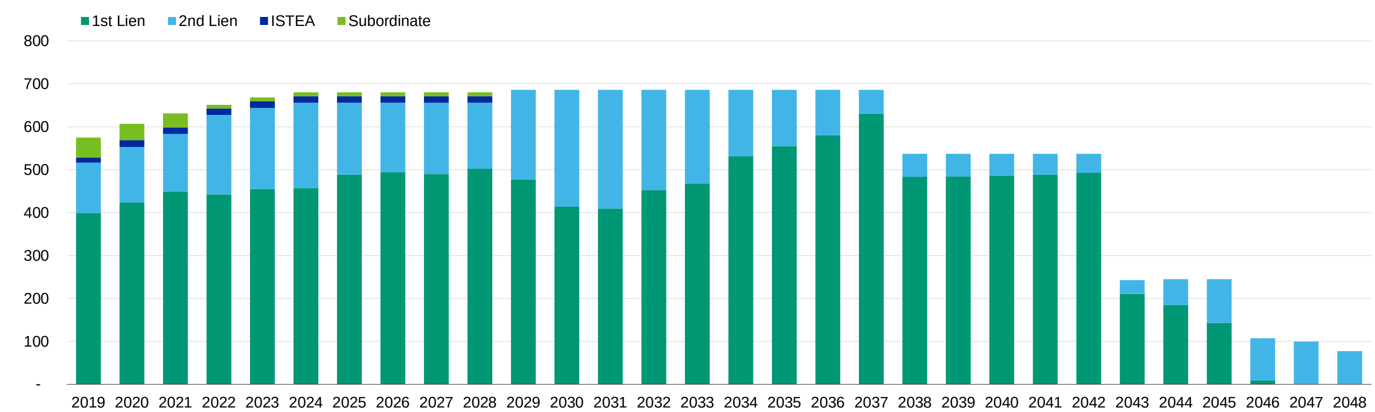
Debt and Other Liabilities

DEBT STRUCTURE

NTTA's debt structure has been simplified by recent and current transactions that have resulted in the elimination of variable rate debt, lower future annual debt service levels, and realize significant NPV savings. At the end of fiscal 2018, NTTA had $6.78 billion of first tier debt, $2.10 billion of second tier debt, $120.10 million of unrated ISTEA loan, and $400 million of subordinate debt.

Annual debt service requirements will escalate through 2024, when requirements level off. Given no need for additional debt in the current capital plan and expected growth in revenue, the debt profile provides flexibility to address growth or maintenance capital needs after the next five to seven years. Absent new debt, NTTA will see greater DSCR and lower leverage and therefore a stronger credit profile after 2020, though revenue performance above NTTA's current projections would strengthen the credit earlier.

Exhibit 4
Debt service requirements will flatten after 2024



Source: North Texas Tollway Authority

NTTA's current fiscal 2019-2023 capital plan includes $1.6 billion of project costs that will be funded from net cash flow. The largest projects in the plan include the addition of one lane in each direction on the SRT, PGBT, and northern portions of the DNT. NTTA expects the construction projects on the PGBT and the SRT to have minimal impact to traffic. Similarly, NTTA expects that remaining construction work on the DNT will have lesser impacts on traffic than that experienced over the last year. Slightly more than half of the capital plan ($842 million) is dedicated to projects that increase traffic capacity and have the potential to lead to increased revenue.

DEBT-RELATED DERIVATIVES

None.

PENSIONS AND OPEB

NTTA participates in the Texas County and District Retirement System (TCDRS), a hybrid benefit pension plan. NTTA reported a net pension asset of $7.4 million in fiscal 2018. On our adjusted net pension liability (ANPL) basis, NTTA had a $208.7 million liability in fiscal 2018. We view this liability to be manageable in relation to NTTA's overall debt load and a minor negative pressure on the credit. We adjust the reported pension liabilities of entities that report under governmental accounting standards, to enhance comparability across rated issuers. Under governmental pension accounting, liabilities are discounted using an assumed rate of investment return on plan assets. Under our adjustments, we value liabilities using a market based discount rate for high quality taxable bonds, a proxy for the risk of pension benefits.

Management and Governance

The NTTA has a nine-member board of directors - two members from each of four counties served by the authority and one appointed by the Governor of Texas from a county adjacent to the authority's service area. Eight of the nine members must vote affirmatively to add on another project to the system, or to proceed with a stand-alone/off system project.

Legal Security

The NTTA bonds are secured by net system revenues, with first tier having a priority claim, followed by the second tier and the CIF bonds that are secured only by balances in the CIF. The rate covenant in the amended and restated trust agreement dated April 1, 2008 requires net revenues to provide at least 1.35 times coverage of first tier debt service requirements, 1.2 times coverage of outstanding first tier and second tier debt service, and 1.0 times coverage of all outstanding obligations. The first tier bonds are additionally secured by a DSRF equal to average annual debt service the and second tier DSRF equal to one-half of average annual debt service.

Other considerations:mapping to the grid

The principal methodology used in these ratings was Publicly Managed Toll Roads and Parking Facilities published in March 2019. Please see the Rating Methodologies page on www.moodys.com for a copy of this methodology. The assigned rating of A1 on the first tier bonds matches the grid indicated rating of A1. The scorecard indicated outcome is based on fiscal 2018 values and reflects the strength of NTTA's liquidity, which will fall below current levels as NTTA funds its capital plan.

Exhibit 5

Publicly Managed Toll Roads and Parking Facilities Methodology Scorecard

North Texas Tollway Authority

Factor	Subfactor	Score	Metric
1. Market Position	a) Asset Type	Aa	
	b) Competitive Position and Environment	Aa	
	c) Economic Strength and Diversity of Service Area	Aaa	
2. Performance Trends	a) Annual Revenue (USD Million)	Aaa	909
	b) Operating Track Record and Revenue Stability	Aa	
	c) Ability and Willingness to Increase Toll Rates	Aa	
3. Leverage and Coverage	a) Debt Service Coverage Ratio	Baa	1.37x 1st & 2nd Tier, 1.29x Total
	b) (Debt + ANPL) to Operating Revenue	Caa	10.54x
Notching Considerations		**Notch**	
	1 - Debt Service Reserve Fund	-0.5	
	2 - Open Flow of Funds	-0.5	
	3 - Days Cash on Hand	1.0	986
	4 - Asset Ownership and Financing Structure	0.0	
	5 - Leverage Outlook	0.0	
Scorecard Indicated Outcome		**A1**	

Source: Moody's Investors Service

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