MOODY'S
INVESTORS SERVICE

CREDIT OPINION
27 November 2018

Rate this Research

Contacts

Kathrin Heitmann +1.212.553.4694
VP-Senior Analyst
kathrin.heitmann@moodys.com

Frieda Shalam +1.212.553.6836
Associate Analyst
frieda.shalam@moodys.com

Jennifer Chang +1.212.553.3842
VP-Senior Analyst
jennifer.chang@moodys.com

Kurt Krummenacker +1.212.553.7207
Senior Vice President/Manager
kurt.krummenacker@moodys.com

North Carolina Turnpike Authority (Monroe Expressway)

Update as project opens for traffic

Summary

The project's credit quality (Baa3 stable senior lien toll revenue bonds, TIFIA loan) benefits from strong support from the State of North Carolina (Aaa, stable) and its agency the North Carolina Department of Transportation (NCDOT). Support is evidenced by $24 million in annual state appropriation revenue for debt service on the state appropriation bonds and by NCDOT's guarantee to cover operating and maintenance costs.

The project opened to traffic on November 27, 2018 and construction has remained within schedule and under budget.

The economic characteristics of the service area remain robust which could support projected travel capture rates and assumed toll revenues. However, the service area is of modest size and demand for the new toll road will depend on its ability to offer increased travel speeds compared to the existing toll-free US 74.

Bondholders will benefit from a $25 million ramp-up reserve to cover debt service in the first five years after project completion.

Credit strengths

» Construction was completed on time and under budget

» Strong support from the State of North Carolina and NCDOT

» Robust economic characteristics of the service area

» A cash-funded $25 million ramp-up reserve

Credit challenges

» Demand for new toll road will depend on its ability to offer increased travel speed relative to free alternatives

» Modest congestion on existing US 74 related to other rated toll roads in larger metropolitan areas may lead to greater revenue volatility

» Limited track record of operating large scale toll roads

» Weak debt service coverage ratio (DSCR) if traffic falls substantially below projections

Rating outlook

The stable rating outlook assumes that traffic on the toll road will ramp up in line with expectation over the next 12 to 18 months.

Factors that could lead to an upgrade

» Traffic and revenue growth exceeds Moody's current projections on a sustained basis

Factors that could lead to a downgrade

» Lower than projected revenues as a result of lower transaction volumes or lower toll rates

» Weaker financial or policy support by the state or the NCDOT

Key indicators

The project opened to traffic on November 27, 2018.

Profile

The Monroe Expressway is a single asset, new 19.7 mile controlled-access toll road located southeast of Charlotte, running from US 74 in Union County, North Carolina. The facility runs roughly parallel to US 74, creating a high-speed alternative to the non-tolled commercial corridor along US 74. US 74 is the major east-west route connecting the Charlotte region, to the North Carolina coast and the port at Wilmington. The road is also the primary connection between Union County and Mecklenburg County (the City of Charlotte). The Monroe Expressway's main purpose is to relieve congestion on US 74.

The project includes one mile of improvement to the existing US 74, including expansion to six lanes and addition of frontage roads. The new toll road includes four travel lanes, a depressed grass median, and eight interchanges (six along the new facility, and two along existing US 74). The Monroe Expressway uses electronic tolling.

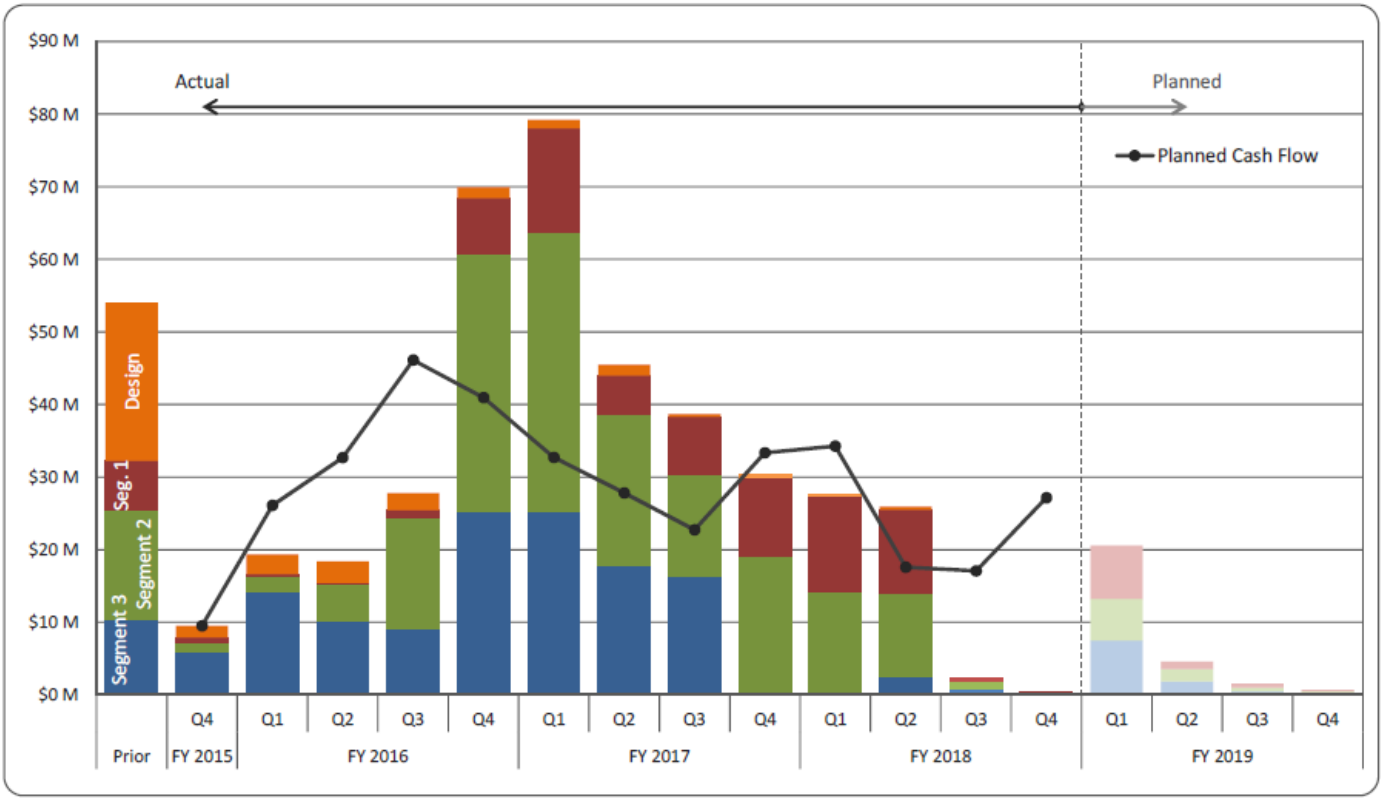
Detailed credit considerations

Construction will be completed on time and on budget

The project opened to traffic on November 27, 2018 and final completion is scheduled for May 28, 2019. The expected cost at financial close was around $731 million including construction contingencies and the updated estimated capital costs was around $698 million as of June 30, 2018. The project sustained no major damage from hurricane Florence.

Exhibit 1
Overview of quarterly design-build expenditures by construction segment as of June 30, 2018

Exhibit 6: Actual and Planned Design-Build Quarterly Expenditures by Segment



Source: NCTA Quartlery Construction progress report.

NCTA entered into a Roadside Toll Collection System (RTCS) contract with TransCore in March 2017. This contract includes capital costs for RTCS implementation, as well as maintenance of the system during the initial five-year period. In addition, NCTA selected Kapsch to supply Automatic Vehicle Identification (AVI) Readers and Transponders. For operating services, NCTA has selected AECOM which is also providing operating services for the authority's separately secured Triangle Expressway (Baa2 stable).

Revenue Generating Base

Robust economic characteristics of service area but of modest scale

The Monroe Expressway will be the primary connection between Union County and Mecklenburg County and the City of Charlotte.

The greater Charlotte area has a robust economy which has experienced strong population growth and economic growth over a considerable period of time. The area benefits from a strong manufacturing and financial services industry base and low unemployment rate. The near term outlook for economic growth and population growth remains favorable. However, the counties, excluding the City of Charlotte, are of relatively modest size. 90% of traffic on the new toll road is expected to be passenger vehicles which is less vulnerable to economic downturns than commercial vehicle traffic, a credit positive.

Uncertainty around future traffic profile

Traffic forecasts for similar new roads have varied widely based on population, traffic conditions on existing roads and travel patterns, making toll revenue levels difficult to predict. Traffic capture rates and growth rates will be susceptible to economic cycles, changes in population growth dynamics as well as consumer price elasticity for toll rate increases and perception of value of time. Toll revenue might be volatile and below the authority's expectations in particular during the first years of operation. The Monroe Expressway will be the first toll road in the area and traveler capture rates might not ramp up as quickly as expected by the authority.

The NCTA expects that about 45% to 55% of the traffic on the Monroe Expressway will come from the US 74. This represents a capture rate of about 20% to 25% of the existing traffic on the US 74. Other important roads include NC218, Lawyers Road, Idelwild Road/ Secrest Short Cut Road, and Indian Trail, Fairview Road. The Monroe Expressway expects to capture around 10% to 20% of traffic volumes on these roads as well as additional traffic volumes from other roads. US 74 suffers from congestion in particular during peak hours and as a result of a significant number of at grade signalized intersections. However, overall congestion on US 74 seems modest and consumer's value of increased travel speed might significantly underperform the authority's expectation, leading potentially to a substantial shortfall in toll revenues.

Strong support from the State of North Carolina and its agency the NCDOT

The Monroe Expressway benefits from the strong support by the state through legislative actions, $24 million in annual state appropriation revenue support, and a contingent guarantee by the NCDOT to pay for construction completion, as well as any shortfalls in the operations and maintenance and renewal and replacement reserves. NCDOT's responsibility allows for debt service on the senior lien and the TIFIA note payable to be paid ahead of O&M costs and reserve deposits as well as R&R reserve deposits.

NCTA is a relatively nascent agency with only one operating toll road under its management and is outlaying significant funds for the construction the Monroe Expressway. Therefore, it still relies on NCDOT and funds from the State Highway Trust Fund to fund any funding gaps. In addition, NCTA's strategy is closely aligned with that of NCDOT and of the state, evidenced by the fact that the North Carolina General Assembly and the governor select the vast majority of NCTA's board members. NCTA has strong rate-setting powers which could support future toll rate increases when necessary.

Financial Operations and Position

Sensitivity Analysis

We have reviewed the basis of the traffic and revenue study and multiple related sensitivities to assess the impact of changes to key model inputs, including users' willingness to pay the assumed toll rate schedule relative to the perceived value of time and reliability of the Monroe Expressway. Toll rates will be based on the distance covered on each mainline section and there will be no minimum toll rate.

Management assumes an initial toll rate of $0.14/mile for electronic tolling collection (ETC) and $0.22/mile for video tolling.

Under the management case, the project is forecasted to achieve a Senior Lien DSCR of 4.9x on average, a senior lien and TIFIA loan DSCR of 2.6x, and an all-in-coverage ratio of 1.18x on average throughout the project period.

Assuming a 50% revenue reduction, Moody's Senior Lien DSCR would be around 2.4x on average, Senior Lien and TIFIA loan DSCR around 1.3x and the all in fixed charge coverage ratios would remain below 1.0x.

While the financing structure can withstand large haircuts and still achieve adequate DSCRs, the NCTA would need to rely on its reserves and potentially support from NCDOT to cover the project's operating expenses if revenues fall materially short of expectations for a consistent period of time.

LIQUIDITY

Liquidity profile benefits from $25 million ramp-up reserve and NCDOT's contingent guarantee

At project completion any amounts remaining in the project fund will be transferred to the general fund (50% to the ramp-up reserve and 50% to the unpledged account).

During operations, NCTA's major liquidity sources will consist of (1) a Renewal and Replacement (R&R) Fund funded at approximately 110% of the budgeted annual R&R expense (average of $12.6 million during 2017-2055); (2) O&M expense fund funded at one fourth of budgeted annual O&M expense (average around $4.2 million during 2017-2055); (3) an operating reserve account and (4) a general reserve fund that will consist of three sub accounts: a $25 million ramp-up reserve account, the pledged account and the unpledged account. The unpledged account currently amounts to $12.2 million.

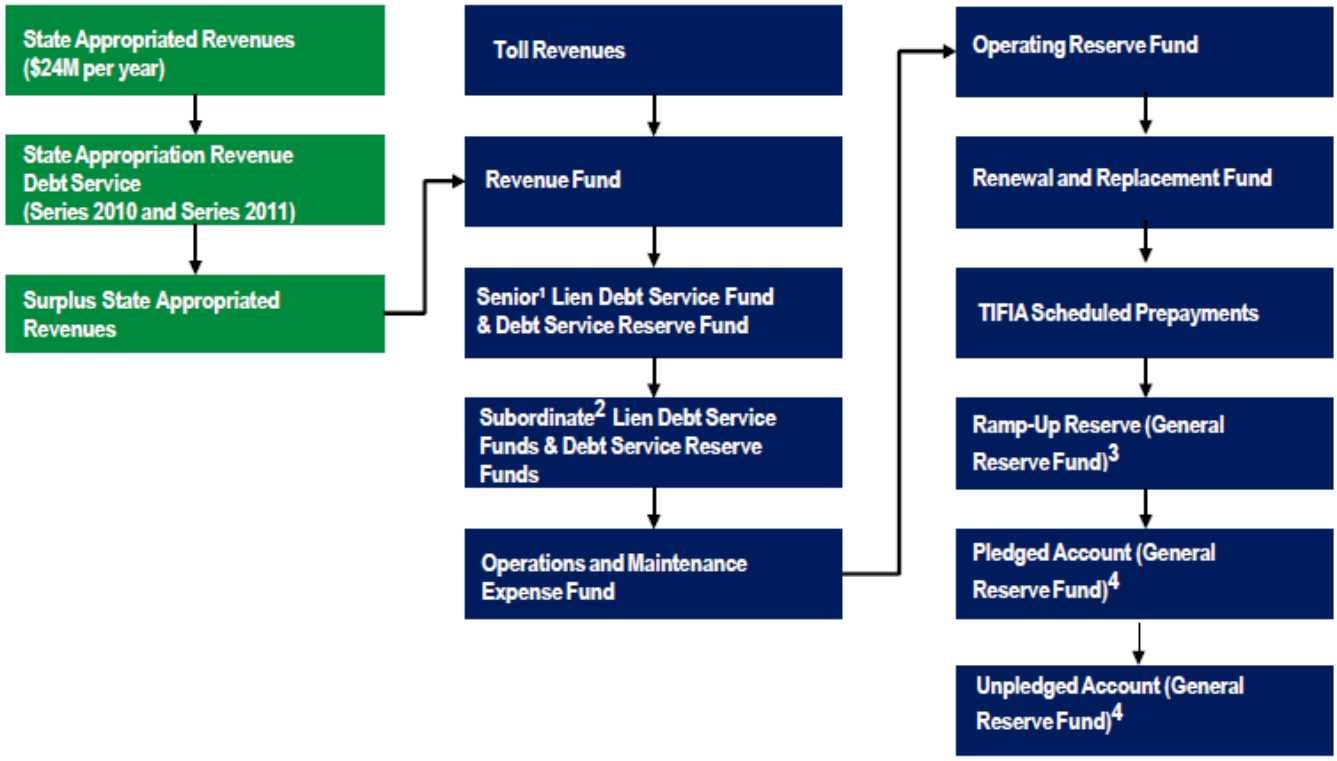
During the operating phase of the project, senior lien bondholders will benefit from the availability of the $25 million ramp-up reserve which will be available to pay senior lien debt service at least during the first five years of the project after project completion. After

the first five years, the ramp-up reserve can be used to fund deficiencies in any of the reserve accounts and upon satisfaction of the restricted payment test could be transferred to either the pledged account or the unpledged account of the general reserve fund.

The project's unpledged account is not anticipated to be used to pay debt service but would be available to fund deficiencies with respect to the state appropriation bonds, to pay operating expenses, renewal and replacement expenses and repay NCDOT for any contributions to the project (other than STIP funding) if certain conditions are met. The pledged account can be used to pay debt service.

The liquidity profile also takes into account that if at any time the amounts in either the Operating Reserve Fund or the R&R fund are not equal to the reserve requirement, then subject to the availability of funds, NCDOT will pay the amount necessary so that amounts in these reserve funds equal the requirement. The obligation to replenish the Operating Reserve Fund is to be funded from amounts in the State Highway Fund and the obligations to replenish the Renewal and Replacement Fund or pay for unexpected construction costs are to be funded from the State Highway Fund or the State Highway Trust Fund. Each such payment is subject to appropriation by the state and the availability of amounts in the respective Funds. All NCDOT funds would need to be reimbursed as NCTA receipts become available, but these reimbursements occur at the bottom of the flow of funds and there is no default provision if reimbursement does not occur.

Exhibit 2
Flow of Funds Monroe Expressway under Trust Agreement



Notes:

[1] Includes TIFIA Bond after Bankruptcy Related Event occurs

[2] Includes TIFIA Bond unless Bankruptcy Related Event occurs

[3] Funding at closing at $25 million. Beginning 5 years after the Substantial Completion Date, any amounts remaining from the initial $25 million deposit will be transferred to the Unpledged Account; other funds may be released to the Pledged Account upon meeting covenant and coverage conditions

[4] Funds may be used for Guarantee Repayments, Additional Projects and, in the case of the Unpledged Account, any other legal purpose of the Authority

Source: Offering Circular 2016 toll revenue bonds.

Debt and Other Liabilities

DEBT STRUCTURE

The debt structure of the Monroe Expressway consists of:

» $448 million State Appropriation Revenue Bonds Series 2010 and 2011, rated Aa2

» $137 million of 2016 senior lien toll revenue bonds, rated Baa3

» $166.5 million of subordinated TIFIA loan, rated Baa3

» $10 million of 2011 senior lien toll revenue bonds (refunded in advance through an escrow account).

The authority's state appropriation bonds are subject to appropriation of the funds from the state ($24 million in annual state appropriation revenue), and federal subsidies under the Build America program which covers their debt service. Any residual appropriations or grants are eligible for debt service on the senior lien toll revenue bonds but these amounts are expected to be minimal.

The debt service profile of the 2016 senior lien toll revenue bonds and the TIFIA loan is a back-loaded amortization profile which is beneficial in the initial years of the toll road when traffic is still ramping up but increases pressure on financial performance in the outer years of the Monroe Expressway.

The senior lien toll revenue bonds and the TIFIA note payable benefit effectively from a gross pledge as the NCDOT has provided a contingent guarantee to cover increased O&M and R&R reserve requirement. The O&M requirement represents one-fourth of the total budgeted operating expenses for the next fiscal year and the R&R reserve requirement is equal to approximately 110% of the total budgeted R&R expenses for the next fiscal year.

If at any time the amounts in either the Operating Reserve Fund or the R&R Fund are not equal to the reserve requirement, then subject to the availability of funds, NCDOT will pay the amount necessary so that amounts in these reserve funds equal the requirement. The obligation to replenish Operating Reserve Fund is to be funded from amounts in the State Highway Fund and the obligations to replenish the Renewal and Replacement Fund or pay for unexpected construction costs are to be funded from the State Highway Fund or the State Highway Trust Fund. Each such payment is subject to appropriation by the state and the availability of amounts in the respective funds.

The flow of funds is an open loop, which allows receipts to flow out of the bottom bucket subject to meeting certain conditions such as all reserve funds need to be fully funded at their respective requirements as well as meeting a Senior DSCR test of 140%, a Total DSCR test of 130% and a TIFIA Loan Life Coverage Ratio Test of 130% amongst others. If funds are released, an amount equal to the amount transferred to the unpledged account will be used to repay TIFIA.

The system has a cash funded debt service reserve requirement for both the senior revenue bonds and the TIFIA loan which will be both funded at lesser of 10% of principal, maximum annual debt service or 125% of average annual debt service.

DEBT-RELATED DERIVATIVES

The Monroe Expressway does not have any debt-related derivatives.

NCTA has entered into a diesel fuel cap to hedge against unforeseen fuel price increases related to the construction of the Monroe Expressway. NCTA has paid a premium of $0.3 million to acquire the diesel fuel cap but no other costs arise unless the hedge is exercised by NCTA. The diesel hedge is not secured. The strike price of the cap is $2.00/gal. Savings from the hedge have freed up funds estimated between $4.4-$5.3 million from the diesel fuel reserve fund.

PENSIONS AND OPEB

Employees of the authority are participants in the state's Teachers' and State Employees' Retirement System, and the authority is obligated to make yearly contributions. Based on a discount rate of 7.25% NCTA reported a net pension liability of $558,000 for fiscal 2017, which is however, highly sensitive to the assumed discount rate. Moody's adjusted net pension liability is calculated based on a lower discount rate and amounted to $1.9 million for fiscal 2017.

Management and Governance

The NCTA was created in 2002 by the North Carolina Legislature to look for alternative financing for key transportation projects, and became part of the NCDOT, a public agency of the State of North Carolina, in 2009. NCTA is allowed to manage up to eleven projects and is currently operating one access-controlled toll road, the Triangle Expressway.

NCTA is operating at this stage only one toll road and therefore, still relies on support from NCDOT and the state to close funding gaps.

NCTA's board consist of nine members which are mostly appointed by the North Carolina General Assembly (4) and the governor (4). The NCTA has strong toll rate setting powers, albeit this could be tested by the close relationship with the Legislature and a required review of revisions to previously approved toll rates. The initial toll rate schedule will be set at least at the same level as outlined in the T&R study for the Monroe Expressway. NCTA can determine that a toll rate increase should not go into effect if in compliance with TIFIA loan and bond resolution requirements and by resolution of the board.

Rating Methodology and Scorecard Factors

The grid is a reference tool that can be used to approximate credit profiles in the toll road industry in most cases. However, the grid is a summary that does not include every rating consideration. Please see Government Owned Toll Roads for more information about the limitations inherent to grid. The grid indicated rating of Baa3 is consistent with the assigned rating. The grid outcome is sensitive to the expected DSCR which incorporates expected improvements in revenue collection and DSCRs over time.

Methodology

The principal methodology used in this rating was Government Owned Toll Roads published in November 2016. Please see the Rating Methodologies page on www.moodys.com for a copy of this methodology.

Exhibit 3

Rating Factors - Government Owned Toll Roads

North Carolina Turnpike Authority

Factor	Subfactor	Score
1. Market Position	a) Asset Type	Ba
	b) Operating History	B
	c) Competition	Baa
	d) Service Area Characteristics	Baa
2. Performance Trends	a) Annual Traffic Transactions	Baa
	b) Traffic Profile	Aa
	c) Five Year Traffic CAGR	Baa
	d) Ability and Willingness to Increase Toll Rates	Baa
3. Financial Metrics	a) Debt Service Coverage Ratio	Baa
	b) Debt to Operating Revenue	Caa
4. Capacity, Capital Plan and Leverage	a) Asset Condition/Capital Needs	Aa
	b) Limitations to Growth/Operational Restrictions	Aa
Notching Considerations		**Notch**
	1 - Debt Service Reserve Fund level	0
	2 - Open/Closed Flow of Funds	-0.5
	3 - Days Cash on Hand	0
	4 - Other Financial, Operating and Debt Factors	-0.5
Scorecard Indicated Rating:		**Baa3**

Financial metrics are based on Moody's Base Case after the initial ramp-up period. Total debt includes state appropriation debt that funds the Monroe Expressway.
Source: Moody's Investors Service

REPORT NUMBER 1145860

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

MOODY'S
INVESTORS SERVICE