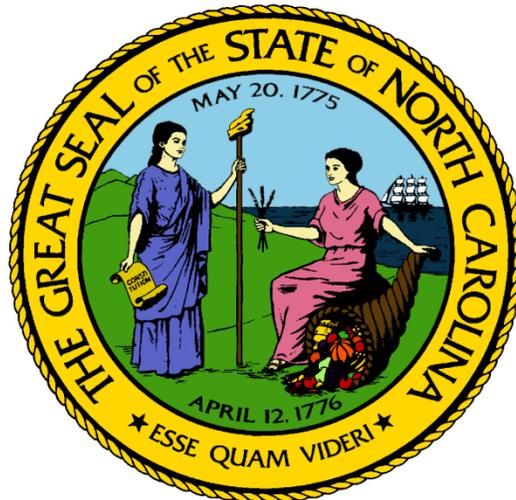


State of North Carolina



Debt Affordability Study

March 1, 2021

Debt Affordability Advisory Committee

Department of State Treasurer
3200 Atlantic Avenue
Raleigh, NC 27604
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STATE OF NORTH CAROLINA
DEBT AFFORDABILITY ADVISORY COMMITTEE



March 1, 2021

To: Governor Roy Cooper
Lieutenant Governor Mark Robinson, President of the North Carolina Senate
Senator Phil Berger, President Pro Tempore of the North Carolina Senate
Representative Tim Moore, Speaker of the North Carolina House of Representatives
Members of the 2021 General Assembly through the Fiscal Research Division

Attached is the March 1, 2021 report of the Debt Affordability Advisory Committee submitted to you pursuant to North Carolina General Statute §142-101. The report was created to serve as a tool for sound debt management practices by the State of North Carolina.

The report provides the Governor and the General Assembly with a basis for assessing the impact of future debt issuance on the State's fiscal position and enables informed decision-making regarding both financing proposals and capital spending priorities. A secondary purpose of the report is to provide a methodology for measuring, monitoring and managing the State's debt levels, thereby protecting North Carolina's bond ratings of AAA/Aaa/AAA. The methodology used by the Committee to analyze the State's debt position incorporates trends in debt levels, peer group comparisons, and provides recommendations within adopted guidelines. The analysis includes the projected issuance of all authorized but unissued debt.

The Committee is reiterating its recommendation that the State recognize the magnitude of its unfunded pension and other post-employment benefit ("OPEB") obligations that cover retiree healthcare costs and to continue to address these liabilities with a continuing annual appropriation of \$100 million to the Unfunded Liability Solvency Reserve ("Solvency Fund") created by S.L. 2018-30. The Committee likewise is recommending continuing the single target calculation utilizing the limitation that debt service and the continuing annual appropriation to the Solvency Fund not exceed 4% of revenues.

I believe that these recommendations continue to address our unfunded liabilities and represent action to preserve and protect the State's "AAA" rating.

Respectfully submitted,

Dale R. Folwell, CPA,
State Treasurer of North Carolina
Chair, Debt Affordability Advisory Committee

Debt Affordability Advisory Committee Membership

Mr. Dale R. Folwell, CPA, State Treasurer, Chair
Mr. Ronald Penny, Secretary of Revenue
Dr. Linda M. Combs, State Controller
Mr. Charles Perusse, State Budget Director
Ms. Beth Wood, State Auditor
Mr. Frank H. Aikmus, Senate Appointee
Mr. Bradford B. Briner, Senate Appointee
Mr. Eugene W. “Gene” Chianelli, Jr., House Appointee
Mr. Donald G. Pomeroy, II, House Appointee

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SUMMARY

Background and Context

A study of debt affordability is an essential management tool that helps to provide a comprehensive assessment of a government's ability to issue debt for its capital needs. S&P Global Ratings ("S&P"), one of the three major bond rating agencies, has stated that "Most of the 'AAA' states have a clearly articulated debt management policy. Evaluating the impact of new or authorized but unissued bond programs on future operating budgets as well as unfunded liabilities are an important element of debt management and assessing debt affordability." Control of debt burden is one of the key factors used by rating agencies' analysts in assessing credit quality. Other factors include economic vitality and diversity, fiscal performance and flexibility and administrative capabilities of government.

The Debt Affordability Advisory Committee (the "Committee" or "DAAC") is required to annually advise the Governor and the General Assembly of the estimated debt capacity of the General, Highway and Highway Trust Funds for the upcoming ten fiscal years. The legislation also directs the Committee to recommend other debt management policies it considers desirable and consistent with the sound management of the State's debt. The Committee hereby presents its study for 2021.

Debt Controls and Ratings

Debt capacity is a limited and scarce resource. It should be used only after evaluating the expected results and foregone opportunities. The Study enables the State to structure its future debt issuances within existing and future resource constraints by providing a comparison of its current debt position to relevant industry and peer group standards. The Study can thus be used to help develop and implement the State's capital budget and is premised on the concept that resources, not only needs, should guide the State's debt issuance program. The Committee's adopted guidelines attempt to strike a balance between providing sufficient debt capacity to allow for the funding of essential capital projects and imposing sufficient discipline so that the State does not create a situation that results in loss of future budgetary flexibility and a deteriorating credit position.

The State's ratings were affirmed in 2020 at Aaa (Moody's), AAA (S&P) and AAA (Fitch). All of the State's debt ratios remain **below** the median levels for the State's peer group comprised of all thirteen states currently rated "triple A" by all three rating agencies. North Carolina's debt is considered manageable at current levels. In affirming the State's rating, Moody's Investor Service (September 24, 2020) stated that "North Carolina's very strong credit quality is exemplified by a diverse economy exhibiting strong growth before the coronavirus outbreak, a history of conservative fiscal practices, healthy reserves and a low debt and pension burden."

The Committee has adopted the ratio of debt service as a percentage of revenues as the controlling metric that determines the State's debt capacity. Over the ten-year planning horizon, the State's DAAC general fund revenue projections show a positive growth trend not excessively impacted from earlier declines in economic activity caused by the COVID-19 pandemic. Debt service projections incorporate the future issuance of the remaining \$400 million of Connect NC Bonds and the \$2.0 billion Build NC Bonds.

The General Fund model results show that the State's General Fund has debt capacity of approximately \$1.458 billion in each of the next 10 years (up to just over \$3.0 billion in the first year) after incorporating the Committee's recommended policy that directs continuing annual appropriations of \$100 million to the Unfunded Liability Solvency Reserve (the "Solvency Fund") to

begin to address the State’s unfunded Pension and OPEB liabilities. The actual ratio of debt service to revenues is projected to peak at 2.69% this fiscal year.

Transportation debt service will increase markedly over the model horizon. Assuming all \$3 billion of the Build NC Bonds are issued, the 6% cap on Transportation debt service to revenues will be violated beginning in FY 2026 resulting in no available Transportation debt capacity. (See Section II – Transportation Debt Affordability and Build NC Bonds Capacity Constraints – page 30 for more discussion; project funding is not projected to be significantly curtailed). Transportation debt service as a percentage of Transportation revenues peaks at 6.89%.

On a combined basis, the General Fund and Transportation Fund’s debt service is projected to peak at approximately 2.80% of combined revenues in FY 2023.

Table 1

General Fund					
Debt Capacity using 4.0% debt service/revenues target ratio					
\$100 million per year to be used to address unfunded liabilities					
(In millions of dollars)					
Fiscal Year	2021	2022	2023	2024	2025
\$ to Unfunded Liabilities	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0
Total Additional Debt Capacity per Year *	\$3,220.8	\$437.4	\$1,035.1	\$2,113.9	\$1,593.9
Debt Capacity Available each and every Year	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8

* In addition to that already authorized but unissued. Assumes additional debt capacity is authorized and issued in stated fiscal year.

Table 2

Transportation					
Net Tax-Supported Debt Capacity using 6.0% debt service/revenues target ratio					
(In millions of dollars)					
Fiscal Year	2021	2022	2023	2024	2025
Total Additional Debt Capacity per Year *	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Debt Capacity Available Each and Every Year	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

* In addition to that already authorized but unissued. Assumes additional debt capacity is authorized and issued in stated fiscal year.
GAP Funding for North Carolina Turnpike Authority projects assumed to total \$49 million annually.

Table 3

General Fund and Transportation Funds Combined Debt Service / Revenue Percentages					
Fiscal Year	2021	2022	2023	2024	2025
General Fund	2.69%	2.58%	2.49%	2.24%	1.71%
Transportation *	2.98%	4.05%	4.89%	5.31%	5.85%
Combined	2.72%	2.77%	2.80%	2.63%	2.24%

Note: Percentages are based on forecasted revenues and debt service.

* GAP Funding for North Carolina Turnpike Authority projects assumed to total \$49 million annually.

Over the past decade, the State has refunded approximately \$4.6 billion of outstanding debt, representing approximately 73% of the State’s outstanding debt, achieving budgetary savings of over \$337 million. Refunding opportunities are continually monitored although additional savings are not likely to be realized during the coming year.

Interest Rate Levels

Interest rates remain near historic lows with the 10-year benchmark Treasury dropping to under 1.5%. Federal Reserve policy is accommodative. Without unanticipated shocks to the economy or other factors, most economists do not see rates rising substantially or the threat of a recession imminent. Therefore, major changes to interest rates that would significantly affect the State’s capacity calculations are unlikely.

Other Recommendations

(See Appendices A and C for further discussion)

- **Unfunded Pension and Other Post-Employment Benefits (“OPEB”) Obligations**
The State currently has unfunded Pension and OPEB obligations totaling \$39.8 billion. The bond rating agencies are scrutinizing these liabilities and measures to address them more carefully. Regarding OPEB, in December 2019 S&P wrote that “Funded ratios remain low and are not projected to materially improve given persistent underfunding and minimal pursuit of plan modifications.” In September 2020, S&P wrote that “The most recent material change to the OPEB plans was the repeal of retiree medical benefits for employees hired after January 1, 2021.” The Committee recommends that the General Assembly adopt policies to address these liabilities, including a continuing appropriation to the Solvency Fund. See **(General Fund Analysis-Other beginning on page 15 and Appendix A)** for more detail.

- **Control of Debt Authorization Authority and Management**

Centralized debt authorization, issuance and management are considered one of North Carolina's credit strengths. Sponsoring agencies whose mission is to provide a particular service or assets are not in the best position to make decisions that prioritize the use of the State's debt capacity. In the Committee's view, the prioritization of capital projects and the issuance of obligations or entering into financial arrangements that create debt or debt-like obligations that increase the State's debt burden should remain the prerogative of the General Assembly.

- **State-Aid Intercept**

The Committee strongly opposes proposals that would utilize a back-up pledge of State appropriations to provide support for debt issued by other entities.

- **Structural Budget Balance and Continued Replenishment of Reserves Should Continue to be a Priority**

These are key ratings drivers contributing to the State's "AAA" rating.

- **Consider General Obligation Bonds as the Preferred Financing Vehicle**

The Committee recommends that the State consider General Obligation ("GO") Bonds generally approved by voters as the preferred, but not exclusive, financing vehicle to provide funding for the State's capital projects. The Committee notes that the \$3 billion Build NC Bonds were not authorized as GO bonds, contrary to the Committee's standing recommendation, and will prove costlier to the State as a result.

- **Budget Adoption**

The Governor's veto of the budget passed by the North Carolina General Assembly (NCGA) and the failure of the NCGA to override and adopt a biennial budget for fiscal years 2019-21, resulted in the use of a continuing appropriations resolution coupled with standalone spending measures. This should be an anomaly. "The State's late budget for the 2019-21 biennium reflects some governance weakness" (Moody's Credit Opinion 09/24/2020).

National Recognition for North Carolina's Debt Affordability Study

In 2017, Pew Charitable Trusts published a study on the debt affordability processes for all 50 states. Pew found that North Carolina is one of nine states they considered as "leading the way by producing studies that give policymakers a clear understanding of their states' debt levels through, among other things, careful projections, smart benchmarking comparisons, multiple descriptive metrics, and analysis." The Office of State Treasurer wishes to thank the DAAC and all of the contributors to the study without whose participation the production of the Study would not be possible.

SECTION I GENERAL FUND DEBT AFFORDABILITY

Review of General Fund Debt

Outstanding Debt

The State issues two kinds of tax-supported debt: GO Bonds and various kinds of “Special Indebtedness,” which are also known as non-GO debt or appropriation-supported debt. GO Bonds are secured by the full faith, credit and taxing power of the State. The payments on all other kinds of long-term debt, including Limited Obligation Bonds, Certificates of Participation (“COPs”), lease-purchase revenue bonds, capital lease obligations and installment purchase contracts are subject to appropriation by the General Assembly. Appropriation-supported debt may sometimes also be secured by a lien on facilities or equipment.

Debt that is determined to be self-supporting or supported by non-General Fund tax revenues does not constitute net tax-supported debt but is included in the definition of “gross” tax-supported debt used by some rating analysts.

The State's outstanding debt positions as of June 30, 2020 are shown below.

Chart 1

State of North Carolina Outstanding Net Tax-Supported Debt	
The State's total outstanding debt at June 30, 2020 totaled approximately \$8.1 billion of which \$5.2 billion was tax-supported.	
<u>Tax-Supported</u>	<u>Amounts (\$ millions)</u>
<input type="checkbox"/> General Obligation Debt	\$2,605.4
<input type="radio"/> General Fund (\$2,605.4)	
<input type="radio"/> Highway Fund (\$0)	
<input type="checkbox"/> Special Indebtedness	\$1,774.9
<input type="radio"/> General Fund (\$1,490.9)	
<input type="radio"/> Highway Fund (\$284.0)	
<input type="checkbox"/> NCTA Gap-Funded Appropriation Bonds	\$785.5
<input type="checkbox"/> Installment Purchase / Capital Leases ⁽¹⁾	\$32.1
Total General Fund Tax-Supported Debt	\$4,128.4
Total Highway Tax-Supported Debt	\$1,069.5
Total Tax-Supported Debt	<u>\$5,197.9</u>
<u>Non Tax-Supported</u>	
<input type="checkbox"/> GARVEEs	\$959.5
<input type="checkbox"/> NC Turnpike Authority (includes TIFIA)	\$1,797.7
<input type="checkbox"/> Guaranteed Energy Savings Contracts ⁽²⁾	\$167.0
Total Debt	<u><u>\$8,122.1</u></u>

(1) Lease information - OSBM and other sources.

(2) Total GESCs entered into through June 30, 2020 was \$271.3 million.

Trends in Amounts of General Fund Debt

After showing substantial growth in the early 2000s, the State's outstanding net tax-supported debt peaked in FY 2013 at approximately \$6.2 billion and has declined to approximately \$4.1 billion by June 30, 2020. The amount of outstanding debt is projected to level off and begin to decline as the remaining \$400 million of authorized but unissued Connect NC Bonds are issued over the next two years. Chart 2 below illustrates the outstanding amounts of General Fund net tax-supported debt over the last five years and projects the amount outstanding through FY 2025. Absent additional authorizations, the absolute level of General Fund tax-supported debt is not projected to exceed approximately \$4.0 billion over the projection period.

Chart 2

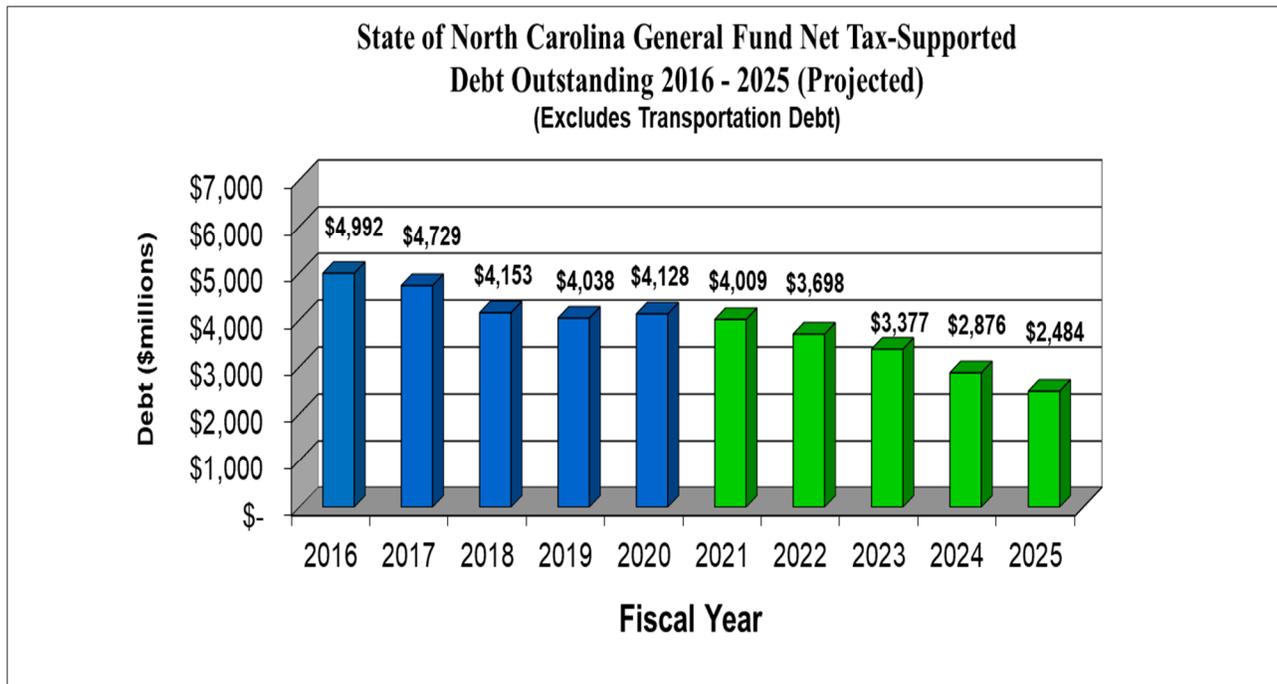


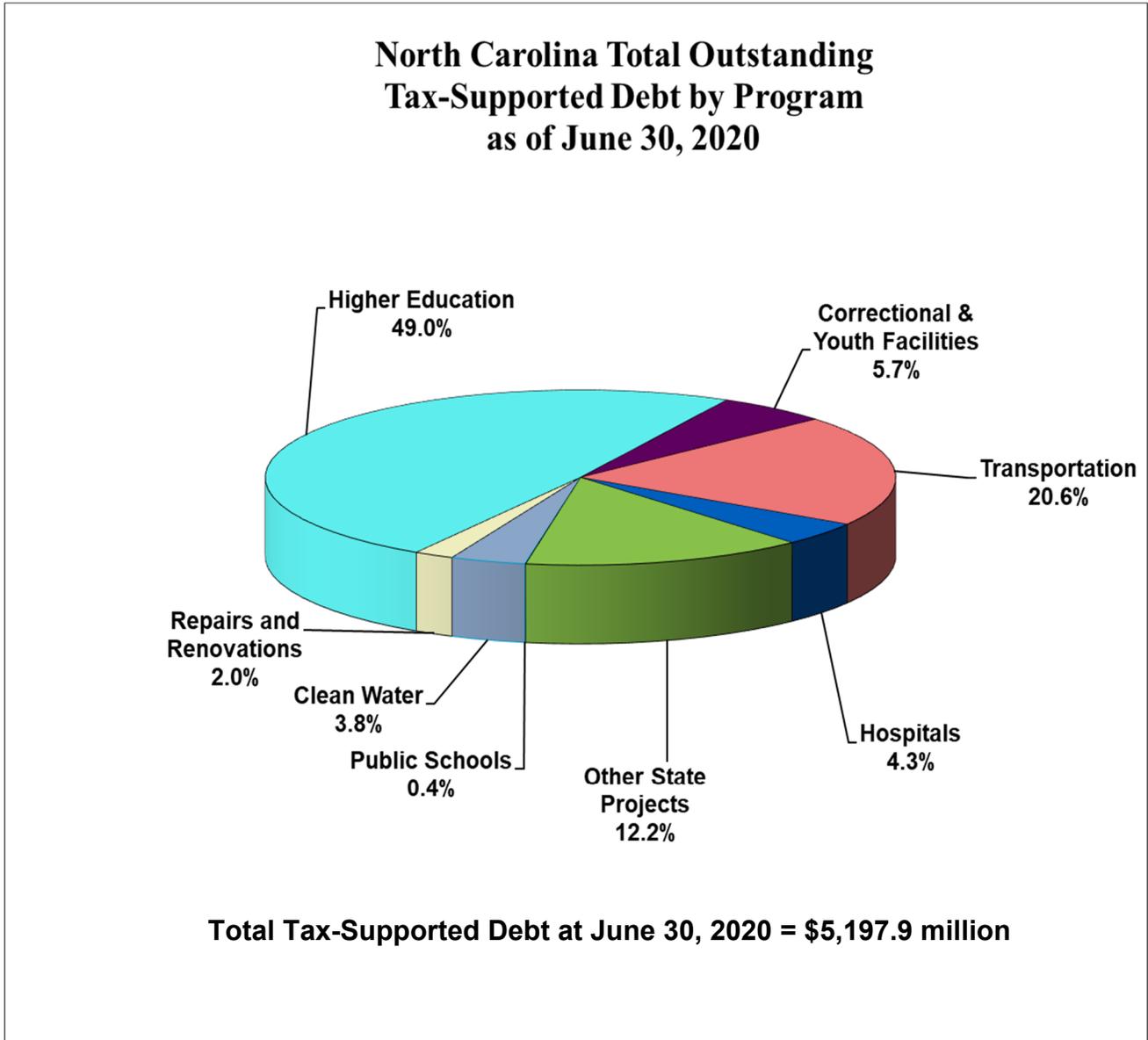
Chart 2 above incorporates all of the State's currently outstanding and all authorized, but unissued, debt including the Connect NC Bonds. The State issues debt on a cash flow basis and bond issues are timed to provide funds as they are actually needed typically creating a lag between when debt is authorized and when it is actually issued. As of December 31, 2020, the State did not have any General Fund authorized but unissued tax-supported debt except for the Connect NC Bonds.

Uses of Total Outstanding Tax-Supported Debt

The following chart illustrates the uses for which the State has issued tax-supported debt, including that used for transportation purposes, calculated on the amount outstanding at June 30, 2020. The State has used the proceeds of its debt programs for many purposes with the two largest being to

provide facilities and infrastructure for higher education (49%) and transportation (20.6%).

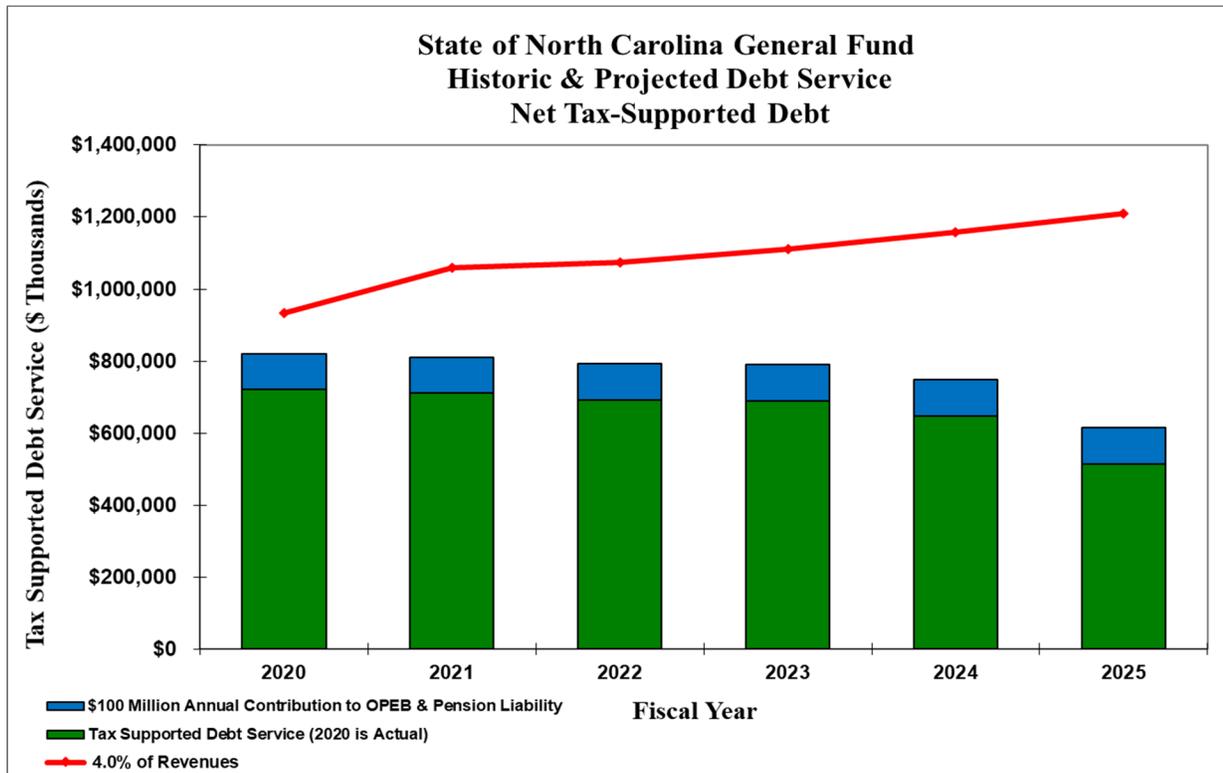
Chart 3



Debt Service

General Fund debt service as a percentage of revenues is projected to peak this fiscal year at 2.69%. The absolute amount of annual debt service peaks at approximately \$712 million in FY 2021. The State's projected debt service is illustrated below in Chart 4. This chart also illustrates the amount of capacity for additional debt service that exists while remaining under the 4.00% guideline. Even after providing \$100 million annually for Pension and OPEB liabilities, there is capacity to issue additional debt in each and every year. The model calculates the additional debt that could be serviced by this capacity.

Chart 4



General Obligation Bonds versus Special Indebtedness

General Obligation (“GO”) indebtedness is usually considered to be the highest quality of all the various types of debt or debt-like instruments and usually carries the highest credit rating because the full faith and credit of the State is pledged to its repayment. Several factors contribute to the high rating, including the legal protections inherent in constitutionally permitted debt, investor confidence in the pledge of the full faith and credit of the State and the presumption of the availability of the government’s full resources. GO bonds are generally the most transparent of the various types of State debt obligations and typically carry the lowest interest cost. The Fiscal Research Division estimates that the costs of holding a GO bond referendum to be extremely modest and does not add substantially to the cost of the projects being financed.

Special Indebtedness as defined in G.S. §142-82 (“SI”), is a commonly-used financing vehicle employed by most states and localities. Sometimes issued on an unsecured basis or sometimes secured by a specific stream of revenues, a lease payment or financing agreement (and sometimes by a security interest in the project being financed), such obligations are paid from annual appropriated amounts for debt service. Depending upon market conditions, additional credit support and structure, the financial markets usually assess an interest rate **penalty** of 5-25 basis points for the State’s appropriation-supported debt when compared with the State’s GO bonds. Using the more conservative penalty, this translates into approximately \$3.4 million of additional interest over the life of a typical \$100 million General Fund-supported debt issue.

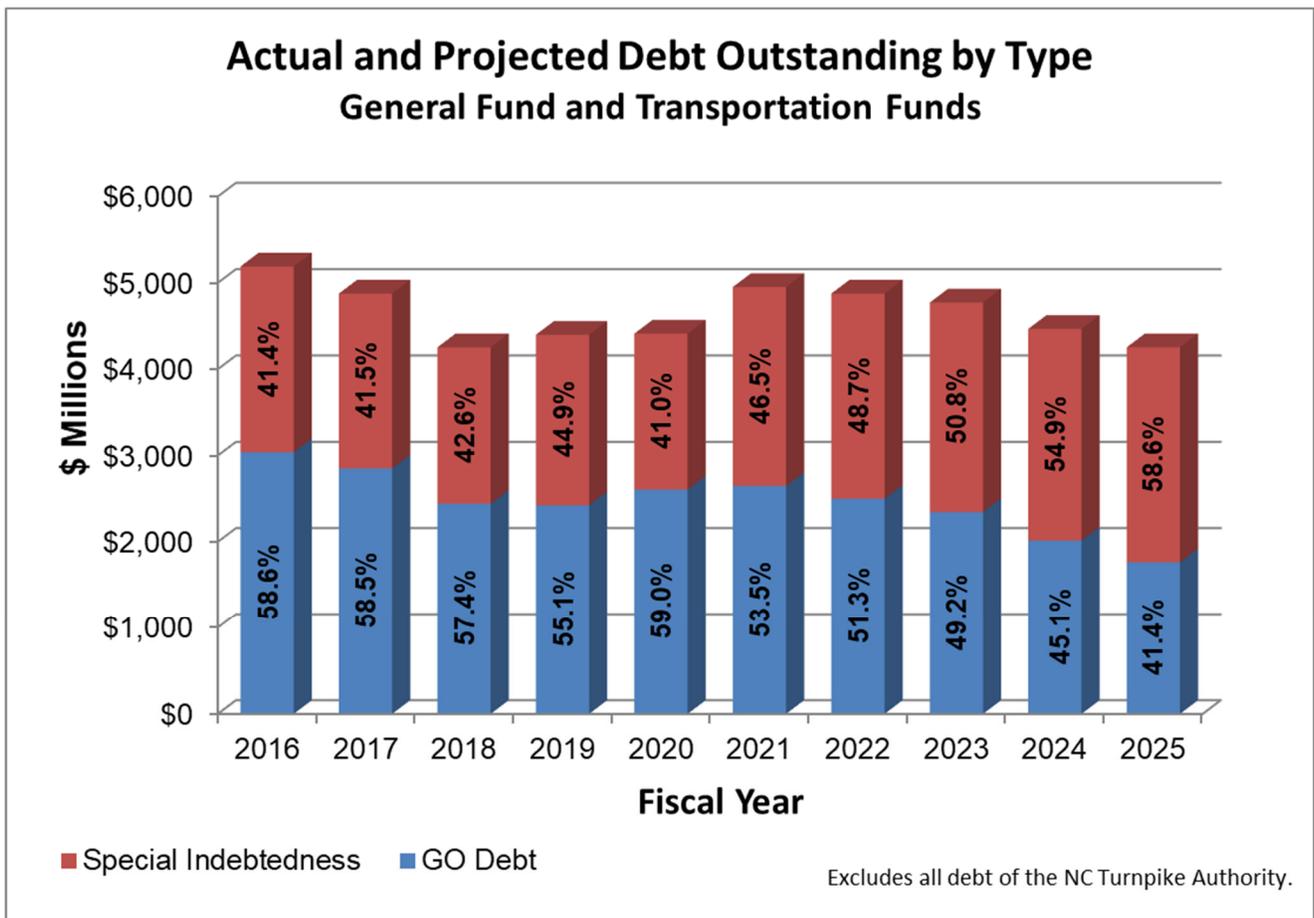
The rating agencies note that most states have incorporated alternative financing methods, including lease-revenue, appropriation-supported or special-tax debt into their liability profile. GO debt represents 50% of overall state debt according to Moody’s, although twelve states have no GO debt

at all. Projecting both the payoff of existing debt (most GO) and issuance of both the Connect NC Bonds (GO) and the Build NC Bonds (SI), GO debt will still represent over 50% of the State’s debt portfolio through fiscal year 2022.

The State is currently limited in the amount of Special Indebtedness supported by the General Fund it may issue by the provisions of S.L. 2013-78 that limits the amount of Special Indebtedness that may be authorized to 25% of the total general fund-supported debt authorized after January 1, 2013. Currently the State has the ability to authorize approximately \$577 million of additional Special Indebtedness under these limits. There is no analogous provision relating to SI supported by Transportation funds.

The amount of the State’s historic and projected outstanding appropriation-supported debt is shown below in Chart 5, with the percentage of appropriation-supported debt to total debt (including transportation debt) noted.

Chart 5



Two-Thirds Bonds

North Carolina’s Constitution permits the State to issue GO bonds without a referendum, to the extent of two-thirds of the amount of GO bonds that have been paid down over the previous biennium. The State does not currently have any available capacity to issue Two-Thirds Bonds.

Review of State Credit Ratings and Comparative Ratios

Credit ratings are the rating agencies’ assessment of a governmental entity’s ability and willingness to repay debt on a timely basis. As a barometer of financial stress, credit ratings are an important factor in the public credit markets and can influence interest rates a borrower must pay.

Chart 6

North Carolina Credit Rating Matrix		
State of North Carolina		
General Obligation Bond Credit Ratings		
Rating Agency	Rating	Outlook
Fitch Ratings	AAA	Stable
Moody's Investors Service	Aaa	Stable
Standard & Poor's Rating Services	AAA	Stable

The State’s general obligation bonds are rated AAA with a “stable” outlook by Fitch, AAA with a “stable” outlook by S&P and Aaa with a “stable” outlook by Moody’s Investors Service. These ratings are the highest ratings attainable from all three rating agencies. On September 25, 2020, S&P Global Ratings wrote “Although unexpected given the State’s historical track record and current revenue projections, we could lower the rating on North Carolina if solutions to budgetary gaps relied extensively on one-time items or if there were no plans to rebuild reserves following withdrawals.” “If the State were to soften affordability guidelines or indicate a lack of commitment to demonstrated prudent management of its strong fiscal condition, we could lower the rating.”

Comparison of Debt Ratios to Selected Medians

A comparison to peer group medians is helpful because absolute values are more useful with a basis for comparison. In addition, the rating agencies combine General Fund and Transportation tax-supported debt in their comparative analysis. The sources for this information are reports issued by Moody’s and S&P in 2020.

Chart 7 below compares North Carolina to its other twelve peer group states rated “triple A” by all three credit rating agencies (often termed “triple-triple A” or “AAA”) is presented below. Our peer

group states are of a diverse nature, but all demonstrate adherence to certain underlying core values including prudent use (in some cases, extremely modest use) of debt although not all have a formal debt affordability process. As shown in Chart 7, the State's debt ratios are at or below the median levels for its peer group.

Chart 7

North Carolina Net Tax-Supported Comparative Debt Ratios ⁽¹⁾					
State	Ratings (Fitch/S&P/Moody's)	Debt to Personal Income % ⁽¹⁾	Debt per Capita ⁽¹⁾	Debt as % Of GDP ⁽¹⁾	Debt Service Ratio ⁽²⁾
Iowa	AAA/AAA/Aaa ⁽³⁾	0.3%	\$150	0.24%	1.18%
Indiana	AAA/AAA/Aaa ⁽³⁾	0.5%	251	0.45%	1.37%
Tennessee	AAA/AAA/Aaa	0.6%	292	0.52%	2.26%
Texas	AAA/AAA/Aaa	0.7%	379	0.58%	2.61%
Missouri	AAA/AAA/Aaa	0.9%	464	0.86%	3.18%
South Dakota	AAA/AAA/Aaa ⁽³⁾	0.9%	493	0.82%	2.14%
North Carolina	AAA/AAA/Aaa	1.2%	586	1.04%	2.42%
Florida	AAA/AAA/Aaa	1.5%	780	1.53%	5.03%
Utah	AAA/AAA/Aaa	1.5%	720	1.22%	4.10%
Georgia	AAA/AAA/Aaa	2.0%	971	1.67%	5.85%
Virginia	AAA/AAA/Aaa	2.8%	1,677	2.58%	5.00%
Maryland	AAA/AAA/Aaa	3.5%	2,323	3.28%	6.05%
Delaware	AAA/AAA/Aaa	6.1%	3,289	4.25%	5.22%
	Peer Group Median	1.2%	\$586	1.04%	3.18%
Projected General Fund (GF) Tax-Supported Debt Ratios ⁽⁴⁾					GF Tax-Supported Debt Service as a % of DAAC Revenues
North Carolina		Debt to Personal Income %	Debt per Capita		
2020 (Actual)		0.8%	\$391		3.09%
2021		0.7%	377		2.69%
2022		0.7%	344		2.58%
2023		0.6%	311		2.49%

⁽¹⁾ Source: Moody's 2020 State Debt Medians.

⁽²⁾ Source: S&P Report dated June 16, 2020, defined as debt service as a % of general fund spending.

⁽³⁾ Implied by all three rating agencies. Have not issued GO debt.

⁽⁴⁾ North Carolina projections are based on March 1, 2021 DAAC Report. All other data reported 1 year in arrears.

General Fund Guidelines, Debt Affordability Model and Results

General Fund Debt Capacity Recommendations

The Committee has adopted targets and outside guidelines to analyze and/or serve as the basis for calculating the recommended amount of General Fund–supported debt that the State could prudently authorize and issue over the next 10 years. Each measure is discussed in more detail below.

1. Net Tax-Supported Debt Service after a continuing appropriation of \$100 million to the Solvency Fund as a percentage of General Tax Revenues should be targeted at no more than 4.00% and not exceed 4.75%;
2. Net Tax-Supported Debt as a percentage of Personal Income should be targeted at no more than 2.5% and not exceed 3.0%; and
3. The amount of debt to be retired over the next ten years should be targeted at no less than 55% and not decline below 50%.

Net Tax-Supported Debt Service as a Percentage of General Tax Revenues (4.0% Target, 4.75% Ceiling)

The Committee has adopted the measure of annual debt service arising from net tax-supported debt as a percentage of general tax revenues as the basis to evaluate the State’s existing and projected debt burden for the General Fund and as the basis for calculating how much additional debt the State can prudently incur. The Committee notes that policy makers control both variables that determine this ratio. In addition, the Committee believes that by measuring what portion of the State’s resources is committed to debt-related fixed costs, this ratio is a measure of the State’s budgetary flexibility and its ability to respond to economic downturns. In 2012, Moody’s stated that “the debt service ratio (is incorporated into) our assessment of fiscal flexibility, which measures the extent to which a state’s operating budget is burdened by fixed costs. The larger the fixed costs, the less flexibility a state has to structurally balance its budget in response to discretionary cost growth and revenue volatility...” “[S]tates with high fixed costs have lower budgetary flexibility and are more likely to rely on one-time budget solutions, creating structural budget imbalances that are difficult to reverse.”

Because there is often a time lag, sometimes of multiple years, between when debt is authorized and when it is issued, the Committee determined that an optimized solution, whereby a fixed amount of debt could be authorized and issued each and every year over the model horizon provides a more useful management tool, and facilitates capital planning more effectively, than a measure that assumes that all available debt capacity is utilized in the year in which it is available. It provides decision makers with an estimate of how much debt could be issued annually (over the full 10 years) without exceeding the limits even if the amounts authorized at any one time are much larger. In practice, the limit imposed by the year(s) of the least capacity over the model horizon drives the calculation process.

DAAC Revenues

The model uses general tax revenues adjusted for one-time or non-recurring items, statutory transfers to the Savings Reserve Fund (“Rainy Day Fund”) plus certain investment income and miscellaneous revenues (“DAAC Revenues”). The Office of State Budget and Management (“OSBM”) has been consulted to provide actual projections through FY 2031. See Appendix B for more details on the specific revenue items utilized by the model and the revenue projections utilized throughout the model horizon.

Debt Used in the General Fund Model Calculation

The model uses a definition of net tax-supported debt that includes all outstanding and authorized, but unissued, GO Bonds, Special Indebtedness, Capital Lease Obligations, Installment/Equipment Leasing Obligations and any other such obligations that are owed to a third party over a predetermined schedule payable from General Fund tax revenues. The remaining \$400 million of authorized but unissued Connect NC Bonds have been included. Excluded are obligations of Component Units, Transportation debt actually paid from Transportation revenues, unfunded amounts in the Pension Plans, Employment Security borrowings, OPEB liabilities and Energy Performance Contracts if the debt service is actually being paid from energy savings. See Appendix A for further details.

Debt Structuring Assumptions

The General Fund model uses a standard fixed-rate 20-year level principal or payment structure. See Appendix A for further details.

Model Solution

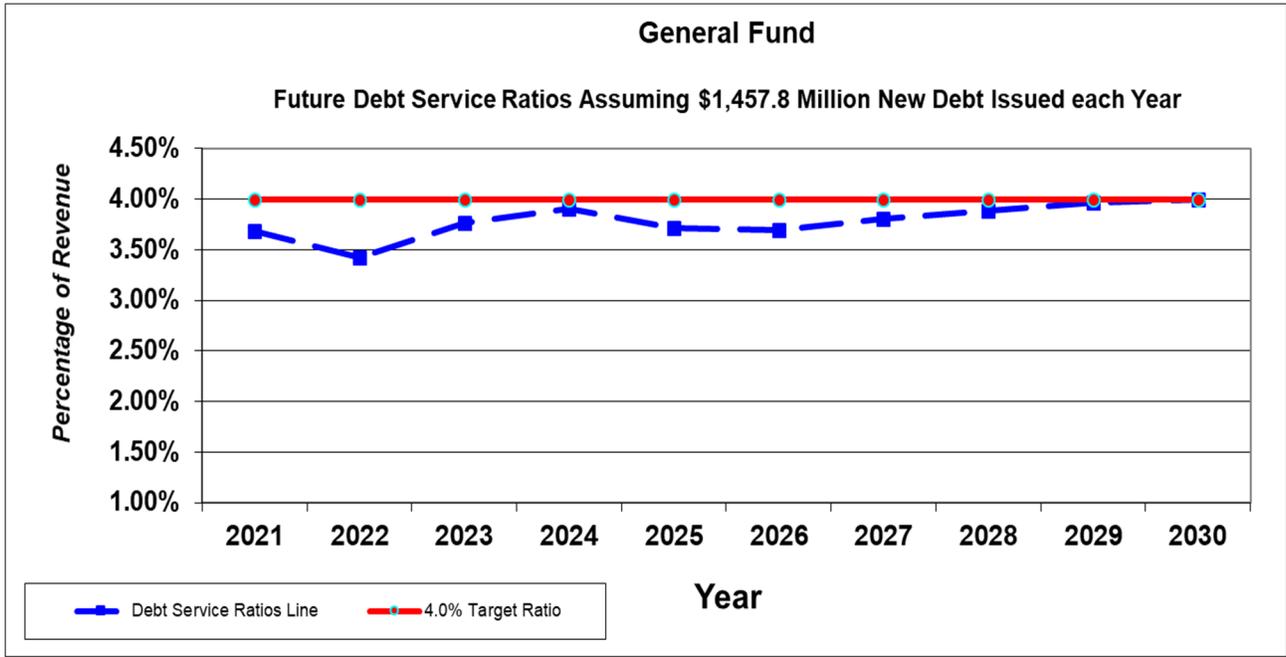
Illustrated below is the actual amount of new tax-supported debt that could be authorized and issued, by year, using the 4% debt service to revenue target and providing \$100 million to the Solvency Fund annually.

Table 4

General Fund					
Debt Capacity using 4.0% debt service/revenues target ratio					
\$100 million per year to be used to address unfunded liabilities					
(In millions of dollars)					
Fiscal Year	2021	2022	2023	2024	2025
\$ to Unfunded Liabilities	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0
Total Additional Debt Capacity per Year *	\$3,220.8	\$437.4	\$1,035.1	\$2,113.9	\$1,593.9
Debt Capacity Available each and every Year	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8

* In addition to that already authorized but unissued. Assumes additional debt capacity is authorized and issued in stated fiscal year.

Chart 8



Sensitivity Analysis

The model results are highly sensitive to changes in revenue and interest rate assumptions. A one percent change, either up or down, in general tax revenues in each and every year of the model horizon will change the amount of annual debt capacity each and every year by approximately \$19 million. A variation in revenues of \$100 million per year will impact the amount of new debt that may be issued each and every year by approximately \$5 million. A one percent change, either up or down, in the interest rate assumption for all incremental model debt will change the amount of annual debt capacity each and every year by approximately \$126 million.

General Fund Analysis – Other

Pension and OPEB Unfunded Liabilities

It is very clear that all three rating agencies are placing Pension and OPEB liabilities under greater scrutiny and yet these liabilities do not yet rise to the level of tax-supported debt. Historically Fitch has considered that “OPEB is a legally softer obligation than debt or pensions...”. Moody’s performs a comparative analysis in its ratings process and S&P adds positive and negative score factors within its ratings as a result of their analysis of Pension and OPEB liabilities. The primary pension and OPEB plans covering North Carolina’s teachers and state employees have total unfunded liabilities of \$39.8 billion as reported in North Carolina’s 2020 Comprehensive Annual Financial Report (“CAFR”). On a funding basis the combined total of the State’s actuarially determined Pension and OPEB contributions are in excess of 20% of the General Fund budget. It does not appear to be consistent with our leadership in this area to not begin to address these liabilities.

Teachers’ and State Employees’ Retirement System

Although the State has fully funded the Annual Required Contributions (“ARC”) for the TSERS in 78 of the last 79 years, the Net Pension Liability is \$12.1 billion as reported in the 2020 CAFR. During 2018, the plan’s discount rate (assumed rate of return) was reduced from 7.20% to 7.00%. For the fiscal year ending in 2021, the Actuarially Determined Employer Contribution (“ADEC”) is approximately \$2.4 billion.

In early 2021, the discount rate was further reduced from 7.00% to 6.50% as recommended by a regular experience review conducted by the plan’s independent consulting actuaries. The actuaries have estimated that the changes from the experience study (including, but not limited to, the change in discount rate) will increase the Net Pension Liability attributable to TSERS by \$2 to \$3 billion effective for 2021 financial reporting. Further, they have estimated that the changes will increase the ADEC in coming years, compared to what it otherwise would have been. The increase in the ADEC will be recognized gradually over the five years beginning July 1, 2022, and once fully recognized, it is estimated to be \$0.5 billion per year.

The rating agencies have begun to explicitly account for pensions in their methodologies (using varying techniques) and The Center for Retirement Research at Boston College has found that “several governments have experienced downgrades that have been attributed, in part, to their pension challenges.” These actions by the rating agencies highlight that pension plan assumptions continue to evolve and that, for North Carolina to remain in the forefront of states in managing pension liability, continuing analysis and potential change may be necessary.

As part of the rating agencies’ analyses, they are making certain changes to the information that states provide to standardize the data and make comparisons possible. The Fitch material for our “AAA” peer group is presented below. Of note, Fitch adjusts the discount rate (assumed rate of return) for pension liabilities to 6.00%, well below the State’s assumptions of 7.00%. When the adjusted net pension liability was combined with the net tax-supported debt burden as a percentage of personal income, Fitch found that North Carolina ranked 11th best when compared with all states and 5th best among our 13-state peer group.

Table 5

FY 2020 Debt and Fitch-Adjusted Pensions Information - "Triple-AAA" Peer Group				
State	Direct Debt (\$000)	Fitch-Adj Total NPL (\$000)	Direct Debt and Fitch- Adj NPL (\$000)	Direct Debt and Fitch- Adj NPL as % of PI
Tennessee	2,233,455	4,089,999	6,323,343	1.9%
South Dakota	636,931	304,073	941,004	2.0%
Florida	16,958,700	10,571,699	27,530,399	2.4%
Iowa	1,824,380	2,253,768	4,078,148	2.5%
North Carolina	6,313,615	8,649,948	14,963,563	3.0%
Utah	2,504,494	2,242,806	4,747,300	3.0%
Indiana	1,887,317	13,530,514	15,417,832	4.7%
Georgia	10,919,276	13,205,467	24,124,743	4.7%
Virginia	14,865,483	9,607,349	24,472,831	4.8%
Missouri	2,656,960	11,702,522	14,359,482	4.8%
Texas	17,001,227	75,932,022	92,933,249	6.1%
Delaware	3,326,143	2,782,719	6,108,862	11.5%
Maryland	15,943,230	33,167,228	49,110,458	12.6%
Peer Median	3,326,143	9,607,349	14,963,563	4.7%
Peer Average	7,467,016	14,464,624	21,931,640	4.9%

Source - FitchRatings - 2020 State Pension Update (October 26, 2020).

OPEB

Other Post-Employment Benefits (“OPEB”) that cover retiree healthcare costs administered by the State are funded through the Retiree Health Benefit Fund (“RHBF”). As reported in the 2020 CAFR, the State’s Net OPEB Liability (NOL) was \$27.7 billion, a 12% decrease from the prior year. The decrease is primarily attributable to the reduction in Medicare Advantage premiums as a result of the request for proposal process and the repeal of expected federal expenses regarding the Excise (Cadillac) Tax and the Health Insurance Provider Fee which was added on to Medicare Advantage premiums. The Actuarially Determined Employer Contribution is estimated to be \$2.82 billion. The assets in the Retiree Health Benefit Fund were augmented by a one-time infusion of \$475 million from the Public Employee Health Benefit Fund in addition to contributions in excess of actual costs. The funding ratio for the RHBF (the ratio of assets to the liability) increased to 6.9%, compared to 4.4% last year. An Employee Benefit Trust Fund (the “Solvency Fund”) has been established to augment the assets of the Teachers’ and State Employee’ Retirement System and the Retiree Health Benefit Fund (see Appendix D.) No money has yet been allocated to the Solvency Fund.

The rating agencies are also making strides in incorporating OPEB liabilities as part of a fixed cost burden measurement (debt plus pensions plus OPEB), although their belief that governments have greater legal flexibility to change retiree health benefits than they do to change debt service or pension benefits, coupled with a lack of consistent OPEB data across the states, hampers such analysis. As

new GASB rules governing the disclosure of OPEB liabilities take effect, greater comparability and measurement is possible.

Historically, the rating agency emphasis has been to determine a state’s flexibility and its plans to address and manage OPEB costs. That is changing. In a report issued in December 2019, S&P notes that “OPEBs are a growing risk for states’ credit quality...” and goes on to state that “On the whole, we believe the continued lack of funding OPEB [liabilities] indicates poor plan management that exposes state governments to rising unfunded liabilities, fixed costs, and budgetary pressure over time.” S&P ranks North Carolina as the 39th worst state on a “Static Funding Level” (defined as service costs plus unfunded interest costs). A table showing how North Carolina compares with the “AAA” peer group based on information compiled by S&P is shown below.

Table 6

North Carolina Comparative OPEB Position (Source: 2019 CAFRs and GASB 74 Reports)

State	Total OPEB Liability (\$M)	Fiduciary Net Position (\$M)	Net OPEB Liability (\$M)	NOL Per Capita	State's Proportionate Share of Combined Plan NOL (\$M)	State's Proportionate Share of Combined Plan NOL Per Capita	Funded Ratio (%)	Contributions as % of Static Funding ¹	Contributions as a % of Minimum Funding ²
Utah	358	288	70	22	70	22	80.4	142.5	127.3
Indiana	333	208	125	19	133	20	62.5	109.6	96.0
Virginia	6,610	2,527	4,083	478	1,832	214	38.2	84.1	68.1
Georgia	16,677	3,446	13,231	1,246	5,430	511	20.7	87.1	64.2
Tennessee	1,209	214	996	146	2,435	356	17.7	258.1	201.0
North Carolina	33,427	1,831	31,596	3,013	6,030	574	5.5	40.8	29.6
Delaware	8,380	410	7,970	8,184	7,189	7,375	4.9	39.5	27.9
Missouri	3,179	140	3,040	495	3,033	494	4.4	63.2	43.9
Maryland	14,641	351	14,290	2,364	15,019	2,484	2.4	65.4	40.3
Texas	96,663	1,352	95,311	3,287	73,147	2,519	1.4	23.8	17.1
Florida	21,628	232	21,395	996	12,190	567	1.1	20.1	11.4
Iowa	199	0	199	63	199	63	0.0	55.9	41.9
South Dakota ³	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Median	7,495	319	6,026	746	4,232	503	5.2	64.3	42.9
Average	16,942	917	16,025	1,693	10,559	1,267	19.9	82.5	64.0

1) Static Funding is calculated as service costs plus unfunded interest costs.

2) Minimum funding progress is calculated as static funding plus 1/30 of the unfunded liability. Minor OPEB plans not offering medical benefits were excluded.

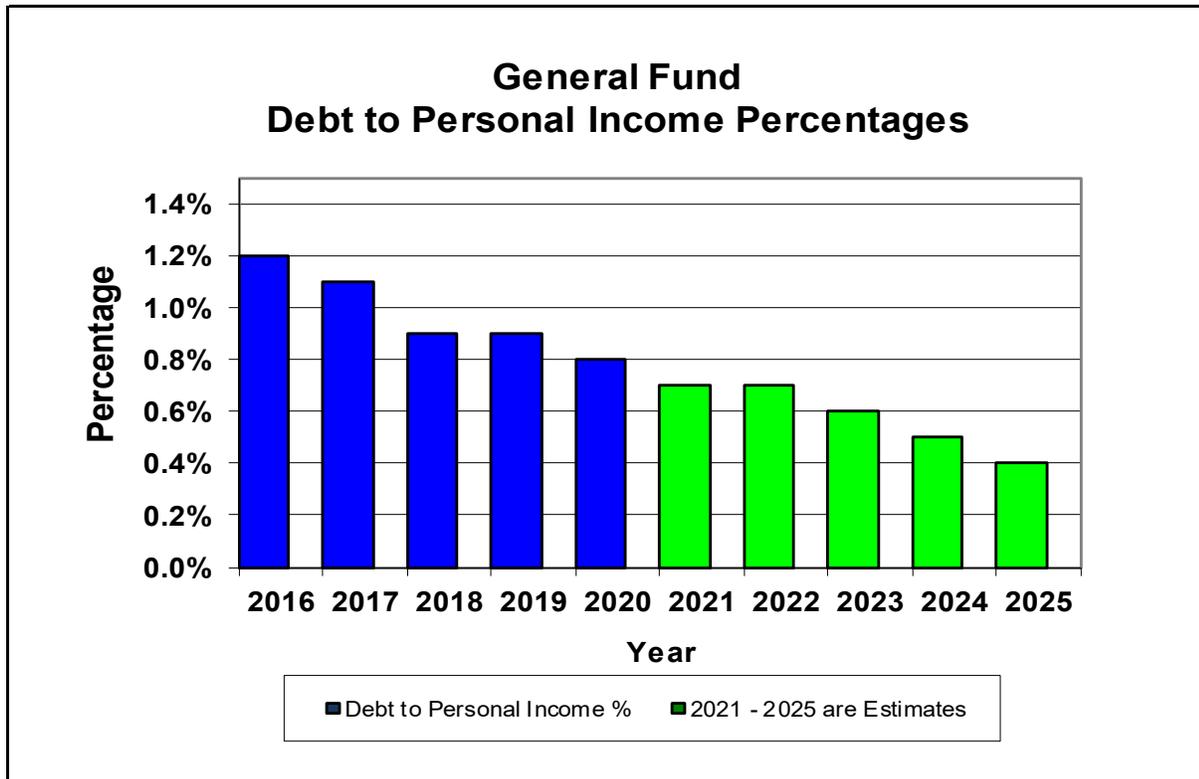
3) South Dakota does not report liability for retiree health care benefits.

Net Tax-Supported Debt to Personal Income (2.5% Target, 3% Ceiling)

As required by statute, the Committee has also established guidelines for evaluating the State’s debt burden as a measure of personal income.

The ratio of General Fund tax-supported debt to personal income actually peaked at 1.8% over 6 years ago and is anticipated to remain steady at just under 1.00% dropping to .40% in 2025. Chart 9 below shows the amount of tax-supported debt as a percentage of personal income.

Chart 9



Source: Population and Personal Income statistics provided by “Moody’s Economy.com”, courtesy of the North Carolina General Assembly Fiscal Research Division.

Ten-Year Payout Ratio (55% Target, 50% Minimum)

The rating agencies consider the payout ratio (a measure of the period of time over which a State pays off its debt) as a credit factor. A fast payout ratio is a positive credit attribute. As illustrated in Chart 10 below, the State’s payout ratio exceeds its targeted level and is projected to improve further. The chart illustrates that approximately 76% of the State’s General Fund debt will be retired over the next 10 years. In 2019, Fitch in particular noted the “rapid amortization” of the State’s debt.

Chart 10



Level of Reserves

As discussed previously, the rating agencies place a great deal of emphasis on budgetary reserves. In a 2016 report, S&P stated that “States with well-funded reserves have greater flexibility to address shortfalls should and when they occur.” However, in 2018 they cautioned that “...reserves... in a majority of states remain insufficient to absorb the first-year fiscal effects of a moderately severe recession.”

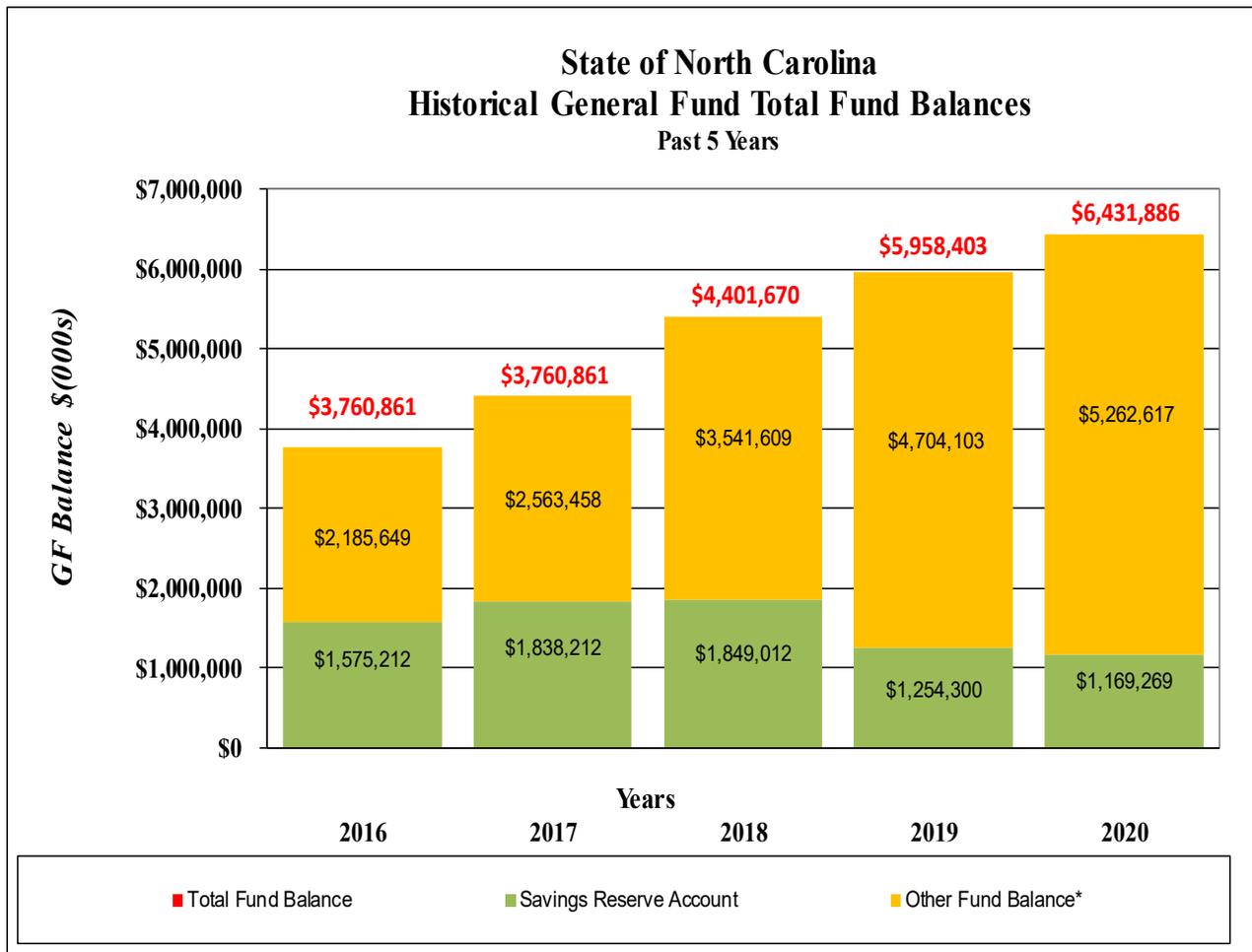
The State ended FY 2020 with a positive fund balance in the General Fund of approximately \$6.432 billion as calculated under generally accepted accounting principles (“GAAP”). This represents a significant turnaround from the negative ending balances experienced during the recession which reached -\$778 million at June 30, 2009. The Savings Reserve (“Rainy Day Fund”) which is part of the fund balance of the General Fund was reported at \$1.169 billion in the CAFR and is currently at \$1.104 billion. Notably \$65.0 million of fiscal year 2020-21 withdrawals were directed toward additional assistance in response to Hurricanes Matthew & Florence and to respond to the August 24, 2020 Sparta, NC earthquake.

S.L. 2017-5 directed OSBM and the Fiscal Research Division (“FRD”) to establish a new goal for the Savings Reserve (“Rainy Day Fund”). Previously the target was 8% of the prior year’s General Fund operating budget. The 2021 target for the current fiscal year is \$2.660 billion or 10.9% of the prior year operating budget. The target for 2022 will remain the same at 10.9%. The Committee continues to recommend that sustainable structural budgetary balance and continuing provision for

an adequate level of reserves remain a priority. On September 25, 2020, Fitch Ratings wrote “ The State’s Rainy Day fund provides a source of financial flexibility, and the State has created and added to other reserves. The State is well positioned to address the financial challenges associated with the coronavirus pandemic and resulting economic downturn.”

Chart 11 depicts the State’s historic General Fund Balance on a GAAP basis over the last five years. The Savings Reserve (“Rainy Day Fund”) is a budgetary reserve account and is not reported as an individual item in the GAAP basis financial statements but is included as part of the fund balance.

Chart 11



* Major Components of "Other Fund Balance" are: Carry Forward Reserve, Emergency Response & Disaster Relief Fund, Medicaid Transformation Fund, Medicaid Contingency, Non-Reverting Departmental Funds, Hurricane Florence Disaster Recovery Reserve, Repairs and Renovations Reserve, Coronavirus Relief Reserve & Unreserved.

SECTION II

TRANSPORTATION DEBT AFFORDABILITY

Review of Transportation Funds, Debt and Other Commitments

Highway Fund

The Highway Fund accounts for most of the activities of the Department of Transportation (“DOT”), including the construction and maintenance of the State’s primary and secondary road systems. In addition, it supports areas such as the North Carolina Ferry System and the Division of Motor Vehicles and provides revenue to municipalities for local street projects (termed “Powell Bill Transfers”) and to other State agencies. The principal revenues are motor fuels taxes, motor vehicle registration fees, driver’s license fees and federal aid.

Highway Trust Fund

The Highway Trust Fund was established by Chapter 692 of the 1989 Session Laws to provide a dedicated funding mechanism to meet the State’s highway construction needs. The Highway Trust Fund also provides allocations for secondary road construction, to municipalities for local street projects and historically provided transfers to both the General Fund and the Highway Fund. The principal revenues are highway use taxes, motor fuels taxes and various fees.

The Highway Fund and the Highway Trust Fund are in many ways managed as a combined entity. Certain transportation revenues are deposited in each fund on a formulaic basis. For example, the Highway Fund receives three-fourths of the Motor Fuels Tax and the Highway Trust Fund receives the remaining one fourth. However, various combined expenditures are routinely paid from one fund or another. For example, salary expenses associated with the management of the Highway Trust Fund are actually paid out of the Highway Fund and debt service on the existing Highway GO Bonds is paid from the Highway Trust Fund. Powell Bill transfers are made from the Highway Fund. Due to the interdependent nature of these funds, the Committee has determined that it is most useful to calculate the available debt capacities of these funds (collectively “Transportation Funds”) on an aggregate, rather than individual, basis. The resulting debt capacity is termed the “Transportation” debt capacity and is reported separately from, but is then combined with, General Fund capacity. Pew found that providing a separate calculation “allows policymakers to both focus in on liabilities of particular interest and take a broader view of the state’s long-term obligations.”

On a combined basis, the Highway Fund and Highway Trust Fund are primarily involved with construction and maintenance of the State’s highways. From total budgeted sources in FY 2020, the Transportation Funds in total allocated approximately 77 percent (\$4.0 billion) to capital intensive infrastructure improvements (Transportation Improvement Plan (“TIP”) Construction, Highway Maintenance and Other Construction).

Highway Debt

The State has a long history dating back to 1921 of authorizing debt to fund transportation projects. The last such GO authorization (the “State Highway Bond Act of 1996”) authorized \$950 million to finance the capital costs of urban loops (\$500 million), Intrastate System projects (\$300 million) and secondary highway system paving projects (\$150 million). The GO Bonds authorized by the 1996 Act as of June 30, 2020 were fully retired.

The 1996 Act stated the General Assembly’s intention to pay the debt service on the Bonds from the Highway Trust Fund, but did not pledge the Highway Trust Fund revenues to make such payments. Although the Act contained amendments regarding the priorities of the payment of funds from the Highway Trust Fund to provide for the payment of debt service, *such funds were not pledged* to secure the Bonds. Instead, the bonds were secured by “the faith and credit and taxing power of the State.” As such, the bond rating agencies did not analyze the ability of the Highway Trust Fund on a stand-alone basis to service the debt when assigning their ratings.

Build NC Bonds

The Build NC Bond Act of 2018 (S.L. 2018-16) authorizes the issuance by the State Treasurer of up to \$3 billion bonds for regional and divisional transportation projects contained in the Statewide Transportation Improvement Plan subject to a number of constraints including Council of State approval; cash balances, measured at specific times, that dip below \$1 billion; a recommendation from the Treasurer that the Bonds be issued; an issuance limitation of no more than \$300 million per year and compliance with the limitations contained in the DAAC Study. The Bonds, authorized as Special Indebtedness, are also subject to the provisions of Chapter 142, Article 9 (the State Capital Facilities Finance Act). The authorization expires December 31, 2028. The Bonds are to be paid by appropriations from the Highway Trust Fund and are limited to a 15-year final maturity. Legislative action (S.L. 2019-251) directed that the issuance of Build NC Bonds for the 2019-20 fiscal year be increased to \$400 million (from \$300 million) with no amendment to the constraints otherwise contained in the Build NC Bond Act. However, the \$400 million issuance did not occur, and this provision was repealed by S.L. 2020-91, which instead authorized the issuance of \$700 million in FY 2020-21, with no modification to the maximum authorized issuance of \$3 billion.

The first tranche of \$300 million (par) was issued on June 27, 2019 and were fully expended as of December 31, 2020. The Build NC Bonds, Series 2019A were rated Aa1 by Moody’s and AA+ by Fitch and S&P based upon their appropriation-supported status.

The second tranche of \$700 million (par) Build NC Bonds, Series 2020B was issued on November 12, 2020 of which \$700 million remained unspent on December 31, 2020. The Build NC Bonds, Series 2020B were rated Aa1 by Moody’s and AA+ by Fitch and S&P based upon their appropriation-supported status.

As stated above, the source of repayment for the Build NC bonds is the Highway Trust Fund (“HTF”). Therefore, actions which diminish the HTF’s resources have the potential to impair the ratings of the Build NC program.

Loans between the Highway Trust Fund and the Highway Fund

Between April 2018 and April 2019, the Highway Trust Fund made loans to the Highway Fund totaling approximately \$1.140 billion. Partial repayments were made in SFY20 and in SFY21 to date

of \$279.7 million. The current amount outstanding at February 14, 2021 is \$860.3 million. Repayments are anticipated to continue over the next 3.5 years. The provisions of S.L. 2019-251 dictate an additional \$100 million be transferred from the Highway Trust Fund to the Highway Fund as loans before May 1, 2020 (\$50 million on or before February 1, 2020 and \$50 million on or before May 1, 2020) with a repayment schedule to be approved by the Department of State Treasurer. These loans were made and repaid in SFY21. While these loans do not impact the amount of combined Debt Capacity for the Transportation Funds, they do have the potential to impact the creditworthiness of the Highway Trust Fund which is the sole source of repayment for the Build NC Bonds.

McKinsey & Company Report

In connection with the preparation of information related to the first tranche of Build NC Bonds, it became apparent that DOT faced some material cash management and project planning/management challenges. A study, directed by OSBM, was undertaken by McKinsey & Company (“McKinsey”) in collaboration with DOT. S.L. 2019-251 directs DOT to produce a report to the General Assembly summarizing the “McKinsey Report.” Further, DOT’s report identified measures that need to be taken by DOT to ensure budgeting integrity, enhance communication and establish key performance indicators including cash management measures and other items. S.L. 2019-251 also directed the State Auditor to conduct a performance audit of DOT. Moody’s reported on DOT’s cash flow issues in an Issuer Commentary dated November 5, 2019. DOT’s implementation of stricter management controls and other actions could potentially be viewed as a credit positive.

Office of State Auditor Performance Audit

In November 2019, the General Assembly passed Session Law 2019-251, which, among other things, directed the Office of State Auditor to conduct a performance audit of NCDOT. Key findings included in the performance audit released in May 2020 were that NCDOT had planned to spend approximately \$5.94 billion in the fiscal year ended June 30, 2019 but had exceeded that amount by \$742 million (12.5%) and that NCDOT was in danger of falling below the statutory floor which requires NCDOT to maintain an available cash balance in the HTF and Highway Fund at the end of each month equal to at least 7.5% of the total appropriation for the current fiscal year from the Highway Trust Fund and Highway Fund. The consequence of falling below the statutory floor is that no further transportation project commitments may be entered into until the statutory floor has been regained. The statutory floor for the fiscal year ended June 30, 2020 was \$293 million. The balance in the HTF and Highway Fund fell below the statutory floor at the end of April, May and June 2020. A copy of the State Auditor’s performance audit can be found at <https://www.auditor.nc.gov/EPSTWeb/reports/performance/PER-2020-4200.pdf>.

The audit made certain specific recommendations, as well as certain matters for consideration. The specific recommendations include:

- (1) NCDOT should base its spending plan on specific projects and operations scheduled for the fiscal year.
- (2) The Chief Engineer’s Office should formally monitor each highway division’s spending on a regular basis throughout the fiscal year to ensure that highway divisions do not overspend, particularly for operations and maintenance, preliminary engineering, and disasters.
- (3) The Chief Engineer’s Office should delay contract approvals, implement mid-year budget reductions or take other corrective actions whenever highway divisions are overspending budgeted allocations. The Chief Engineer should consider requiring any necessary corrections on a quarterly basis.

General Obligation Bonds versus Special Indebtedness-Transportation Rating/Cost Implications

As discussed above, the State's GO Highway Bonds (retired on June 1, 2020) were issued as GO Bonds and were not secured by any transportation revenues but enjoyed an implied General Fund back-up. As a result, the bonds were rated on a parity with the State's other GO Bonds ("AAA"), permitting them to be issued at the lowest possible interest rates. If the Bonds had not been on a parity basis but been rated on a stand-alone basis based solely on transportation backing, they may not have been rated at the same level as the State's GO Bonds. As described below, at least one rating agency explicitly rates bonds supported by transportation revenues at two notches below the State's "AAA" rating.

Special Indebtedness, backed solely by Transportation funds, may not always be rated as highly as the appropriation-supported bonds backed by the General Fund. For example, the "Gap-Funded" bonds issued for the Triangle Expressway project where transportation appropriations provide for the payment of debt service were only rated Aa2 by Moody's, AA- by Fitch and AA by S&P at the time of issue. (Note that Moody's, S&P and Fitch have since upgraded the bonds to Aa1/AA+/AA+).

Authorized as Special Indebtedness, the Build NC Bonds are likely to experience an interest rate penalty of 5-25 basis points, depending upon market conditions, compared to a more favorable interest rate had they been authorized as GO debt. This penalty ranges from approximately \$13.5 million to \$67.6 million over the life of the entire amount of \$3 billion.

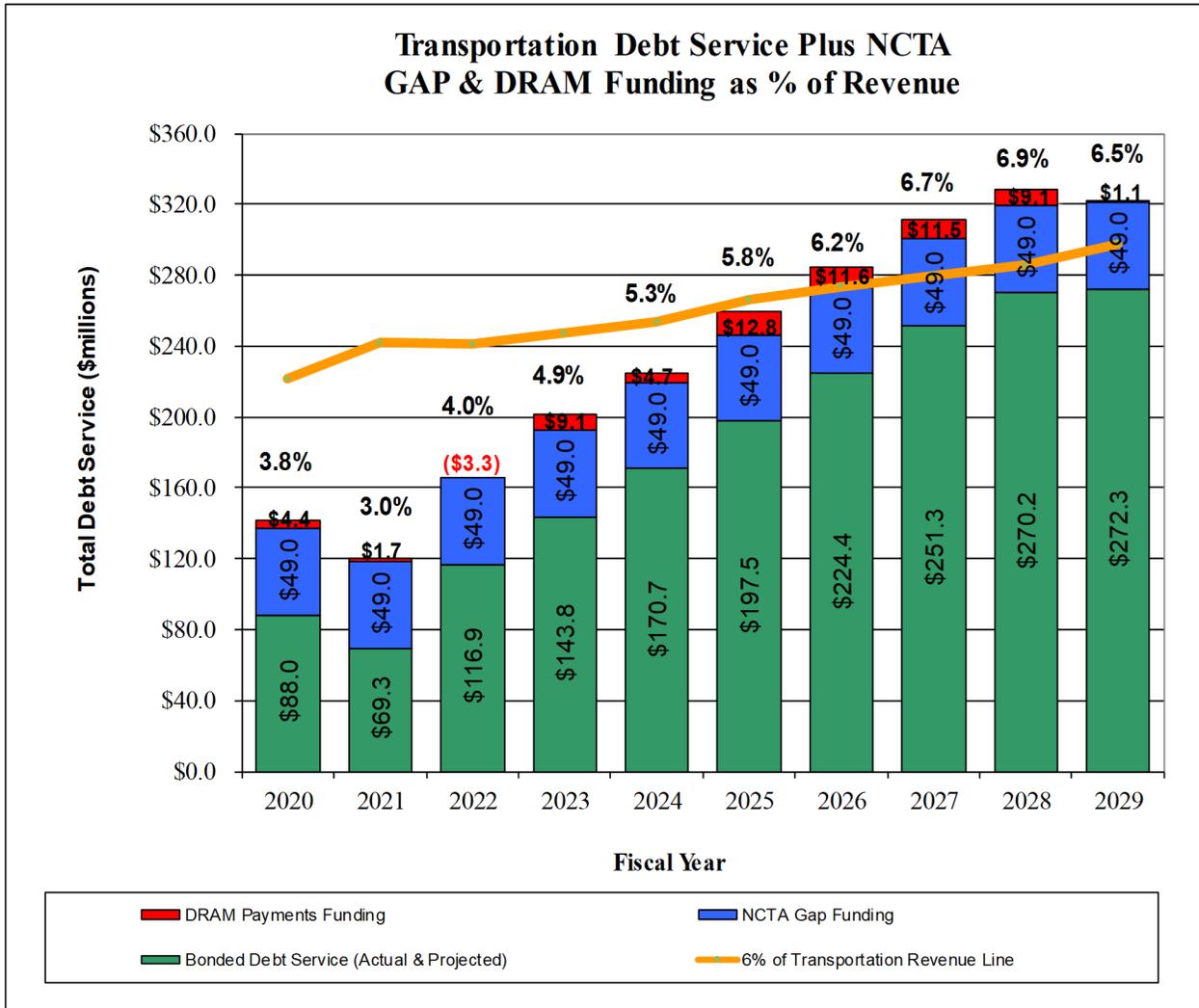
Of additional consideration is that bond counsel has determined that any bonding structure that involves a true pledge of transportation revenues, the source of which is state-wide taxes or user fees, would most likely require a voter referendum.

As a result of these factors, the Committee does not advocate the use of transportation-supported stand-alone Special Indebtedness and instead advocates the use of GO Bonds for Transportation debt.

Debt Service

Debt Service on the GO Highway Bonds ended in June of 2020 as the bonds reached final maturity. The amount of actual debt service supported by Transportation funds will increase as the Build NC Bonds are issued to nearly \$328 million in FY 2028. Debt service, both on an absolute basis and as a percentage of Transportation revenues, is illustrated below. As discussed in more detail in Appendix C, appropriation of funds to support debt obligations under the Build NC Bonds, bonds issued by the North Carolina Turnpike Authority and any "availability payments" or other long-term contractual arrangements that support P3 projects or similar arrangements are treated the same as any other debt service obligation. This is consistent with rating agency treatment. See Appendix C for further details and a discussion of the Build NC Bonds and the debt capacity limitations.

Chart 12



Grant Anticipation Revenue Vehicle Bonds (“GARVEEs”)

A review of Transportation-related debt would be incomplete without a discussion of the State’s GARVEE program. Although not supported by State Transportation or General Fund revenues and therefore not technically a part of the Transportation debt affordability model, GARVEEs do represent a financing vehicle that provides significant funds to the State to accelerate transportation projects.

North Carolina General Statute §136-18 (12b) as codified by Session Law 2005-403 (“the GARVEE Act”) authorized the State to issue GARVEEs to accelerate the funding of transportation improvement projects across the State. GARVEEs are a revenue bond-type debt instrument where the debt service is to be paid solely from future federal transportation revenues and has no other State support. The State has issued multiple series of GARVEEs and the outstanding amount is currently \$959.5

million. The ratings assigned by Fitch, S&P and Moody's for NC's GARVEEs are, respectively: A+/AA/A2. The low amount of GARVEE debt service relative to the federal reimbursements (approximately \$131 million for FY 2020 versus actual collections of approximately \$1.41 billion) means that federal sequestration should not impair bondholder payments. In 2017, the State refunded approximately \$244 million of GARVEE bonds achieving savings of approximately \$20 million. In 2019 an additional \$600 million (par) of GARVEEs were issued, of which approximately \$296.0 million (total, including premium) remained unspent as of December 31, 2020.

North Carolina Turnpike Authority

The North Carolina Turnpike Authority ("NCTA") as a part of the Department of Transportation is authorized to construct and operate toll roads within the State and to issue revenue bonds to finance the costs. The General Assembly has authorized funding to "pay debt service or related financing costs" for various series of revenue bonds issued by the NCTA (called "gap funding"). The NCTA at June 30, 2020 had \$785.5 million of such bonds outstanding that provided funding for two projects: the Triangle Expressway project and the Monroe Connector project. The NCTA also had approximately \$1.80 billion (includes \$665.9 million in TIFIA loans) in toll-supported debt outstanding for these projects.

NCTA Build America Bonds ("BABs") and Federal Sequestration

As part of the plan of finance for both the Triangle Expressway project and the Monroe Connector project, the NCTA issued BABs of which approximately \$244 million is outstanding. These bonds depend upon a federal subsidy to make a portion of the interest payments due to bondholders. The federal subsidy was reduced by approximately \$256,239 for FY 2020 due to Federal Sequestration. Reductions of a similar or slightly lesser size are anticipated for a number of the years into the future. DOT reports that there were sufficient funds in the general reserve accounts associated with these financings to make up for the shortfall so that bondholders were not affected. In addition, the debt service reserve funds for these issues totaled approximately \$36.7 million at June 30, 2020 and the total (net) annual subsidy for the current federal fiscal year totals nearly \$4.3 million.

On October 29, 2020 NCTA issued \$499,460,000 in Bond Anticipation Notes (BAN), Series 2020. The NCTA BANs save money by delaying cash draws from a higher cost TIFIA loan approved through the federal Transportation Infrastructure Finance and Innovation Act for the first four years. The BANs received a yield of 0.9% which translates into an approximately \$12.5 million net present value savings.

On December 8, 2020, the NCTA entered into a forward delivery transaction for a future refunding of the NCTA Series 2011 State Appropriation Bonds. The \$73,985,000 forward delivery refunding transaction will execute on April 6, 2021 and will provide approximately \$29 million in net present value savings.

Other Transportation Expenditures

Consistent with its treatment for General Fund debt affordability, the Committee does not advocate including non-debt related Transportation obligations or commitments in the definition of liabilities when measuring debt capacity. It is useful, however, to review the level of ongoing administrative and other recurring expenses/transfers when analyzing the level of flexibility in the Transportation Funds. From FY 2016, the levels of these commitments are shown below both with and without debt service as a percentage of total Transportation Revenues, including federal revenues. Over the last five years, between approximately 10 percent and 13 percent (\$481 million and \$514 million respectively) of total Transportation revenues are allocated to administrative costs, transfers and debt service.

Chart 13

Transportation Expenses by Year					
(\$ Dollars in Millions)					
	2016	2017	2018	2019	2020
Total Transportation Revenues ⁽¹⁾	\$4,819.0	\$5,054.3	\$5,112.1	\$5,553.2	\$5,448.8
Administration ⁽²⁾	\$293.0	\$278.2	\$284.8	\$291.5	\$282.3
Powell Bill Transfers	147.7	147.2	147.5	147.3	147.5
Transfers to Other State Agencies	72.9	38.0	42.0	41.8	43.5
General Fund Transfers	-	-	-	-	-
Expenditures excluding Debt Service	\$513.6	\$463.4	\$474.3	\$480.6	\$473.3
% Total Transportation Revenues	11%	9%	9%	9%	9%
Debt Service					
Bonds	\$48.6	\$60.9	\$52.2	\$52.6	\$91.3
GAP Funding	49.0	49.0	49.0	49.0	49.0
Total Debt Service ⁽³⁾	\$97.6	\$109.9	\$101.2	\$ 101.6	\$ 140.3
Total Expenditures	611.2	573.3	575.4	582.1	613.6
% Expenditures/Revenues	13%	11%	11%	10%	11%
<p>(1) Includes Federal Revenues. (2) Prior year administrative expenses have been restated to be net of receipts. (3) State tax-supported debt service.</p>					

Comparative Transportation Ratios

Using 2018 information where available, the State's transportation-related debt service as a percentage of State transportation revenues appears modest when compared with a peer group composed primarily of states in the Southeast region but also certain other states selected after consultation with DOT. Within the peer group, both Missouri and South Carolina utilize an approach

that limits transportation debt separately from other state-level debt. In contrast, Georgia measures available debt capacity on a combined basis, but has dedicated a great deal of that capacity toward transportation priorities as shown in Chart 14 below. Finally, Tennessee has not issued state-level debt for transportation purposes.

Chart 14

Transportation Historical Peer Group Comparisons

State	Ratings ⁽¹⁾	Maturity Limit (Yrs.)	Transportation DS % of Transportation Revenues ⁽²⁾	
			Ratio	Year
Tennessee ⁽³⁾	AAA/AAA/Aaa	N/A	0.00%	2018
North Carolina	AAA/AAA/Aaa	25	2.83%	2018
South Carolina ⁽⁴⁾	AAA/AA+/Aaa	15-20	7.77%	2017
Florida ⁽⁵⁾	AAA/AAA/Aa1	30	10.40%	2019 (Proj.)
Virginia ⁽⁶⁾	AAA/AAA/Aaa	25	8.20%	2017
Kentucky ⁽⁷⁾	AA-/A+/Aa3	20	10.18%	2018
Missouri ⁽⁸⁾	AAA/AAA/Aaa	20	11.11%	2018
Texas ⁽⁹⁾	AAA/AAA/Aaa	30	7.14%	2017
Georgia ⁽¹⁰⁾	AAA/AAA/Aaa	20	6.40%	2017
	Median		7.77%	
	Average		7.11%	

⁽¹⁾ Fitch / Standard & Poor's / Moody's (updated in 2019).

⁽²⁾ Excludes GARVEE debt service (if any) and Federal Revenues.

⁽³⁾ Tennessee finances transportation on a pay-as-you-go basis.

⁽⁴⁾ Ratio of general obligation Highway Bonds.

⁽⁵⁾ Department of Transportation total projected debt and contractual obligations as a percentage of net available revenues.

⁽⁶⁾ Virginia's state combined debt service, pension, and OPEB contributions in fiscal 2017 as a % of own-source governmental revenues.

⁽⁷⁾ Ratio calculated from Kentucky's 2018 CAFR.

⁽⁸⁾ Ratio calculated on Missouri state road bonds Senior Lien, per Moody's.

⁽⁹⁾ Texas state revenue includes motor fuels taxes, vehicle registration fees and other, smaller state revenues. Debt service is for the first tier State Highway Fund revenue bonds

⁽¹⁰⁾ Georgia net tax-supported debt and pledged revenues (excluding GARVEE Bonds).

Transportation Debt Guidelines, Affordability Model and Results

The rating agencies view all debt supported by state-wide, generally applied taxes and/or user fees to be “Tax-Supported Debt”. This combined treatment extends to all General Fund-supported, and to Highway Fund and Highway Trust Fund-supported (“Transportation Fund”) debt. Some analysts apply the same treatment to debt supported by non-State revenues such as GARVEE bonds. The Committee recognizes that the rating agencies compare the State to its peers utilizing a broad measure of Transportation and General Fund debt and has reviewed the State’s relative status on this basis (see Chart 7).

However, the State of North Carolina has a long history of viewing the debt supported by the General Fund as tax-supported debt and its Highway Bonds as being non-tax supported (in this case, Highway Trust Fund-supported) debt. The State's existing debt affordability model excludes both transportation revenues and transportation debt service as components of the General Fund calculation. Continuing this practice, the Committee has determined that it should adopt a measure of Highway Fund and Highway Trust Fund debt capacity that is separate and distinct from that calculated for the General Fund. Although not common, this practice has been discussed with the rating agencies who understand North Carolina's incremental and separate approach to debt affordability measurement.

The Committee also recognizes the inherent differences between the General Fund and the Transportation Funds, not only in terms of the revenue streams, but also in terms of the commitments on those revenues. In addition, the State's transportation "enterprise" is, by its nature, a long-lived, capital intensive, rapidly growing program. As such, a customized individual debt capacity model is appropriate to measure the debt capacities of the Transportation Funds and the Committee believes that an individual Transportation debt capacity calculation is consistent with the legislative intent of S.L. 2007-551. As stated earlier, Pew found that providing a separate calculation for transportation "allows policymakers to both focus in on liabilities of particular interest and take a broader view of the state's long-term obligations."

Due to the interdependent nature of the Highway and Highway Trust Funds as discussed earlier, the Committee has determined that it is more useful to calculate the available debt capacities of these Funds on an aggregate, rather than individual, basis. The resulting debt capacity is termed the "Transportation" debt capacity.

The Committee has adopted the ratio of annual transportation-related debt service as a percentage of State transportation revenues as the measure to evaluate the level of Transportation debt capacity. By measuring what portion of the State's transportation resources is committed to debt-related fixed costs, this ratio reflects the flexibility (or lack thereof) to allocate transportation resources to other priorities.

Revenues Used in the Transportation Model Calculation

The model uses a definition of State transportation revenues that includes an aggregate of all State-level revenues deposited into the Highway Fund and the Highway Trust Fund including the motor fuels tax, highway use tax, motor vehicle license tax and certain non-tax revenue such as investment income. Consistent with the model mechanics for the General Fund, there is no deduction for projected transfers to the General Fund, Powell Bill transfers or other non-debt commitments. Federal transportation revenues are specifically excluded from the definition of revenues used to calculate Transportation debt capacity as federal revenues have been pledged to the State's GARVEE program and are not available to back other transportation-related debt.

Debt Used in the Transportation Model Calculation

The model uses a definition of State transportation debt service that includes Build NC Bonds, Highway GO Bonds, gap funding, availability payments and long term contractual payments to support P3 or other structures (see Appendix C for further discussion of DRAM payments) but excludes the GARVEEs supported by federal revenues. There are currently no tax-supported capital lease obligations that need to be included. Highway Trust Fund support for debt issued by the North Carolina Turnpike Authority is included as a liability for model purposes.

Debt Structuring Assumptions

The standard calculation of the Transportation debt affordability model assumes that model debt is fixed-rate 25-year maturity debt with an average interest cost of 6.15% and a level debt service profile after the first year. This year, the Build NC Bonds were loaded into the model with the following assumptions:

- Fixed rate debt issued at 4%
- Level debt service after the first year
- 15-year final maturity
- \$300 million issued in FY 2021-22 forward

There is no incremental model debt because the Build NC Bonds exhaust available capacity.

Transportation Debt Capacity Guidelines

The Committee has adopted a guideline of 6% for transportation-related debt service as a percentage of state transportation revenues. In doing so, the Committee determined that the Transportation Funds enjoy a greater degree of budgetary flexibility than does the General Fund, and the Committee determined that the State’s Transportation funds could support a higher ongoing level of debt service as a percentage of revenues than was deemed appropriate for the General Fund. However, the Committee also determined not to adopt the same 15% guideline (SL 2020-91 increased to 20%) for Transportation debt capacity as was contained in the GARVEE legislation because GARVEEs have higher annual debt service requirements due to their shorter maturity. Note that when the GARVEEs were first issued, 12 years was the standard maturity in the marketplace. This has commonly been replaced with a 15-year maturity structure, with some advisors recommending a 20-year structure. The effect is that a longer maturity allows more GARVEE debt to be issued than originally contemplated under the limitations adopted.

Table 7

Transportation					
Net Tax-Supported Debt Capacity using 6.0% debt service/revenues target ratio					
(In millions of dollars)					
Fiscal Year	2021	2022	2023	2024	2025
Total Additional Debt Capacity per Year *	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Debt Capacity Available Each and Every Year	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

* In addition to that already authorized but unissued. Assumes additional debt capacity is authorized and issued in stated fiscal year. GAP Funding for North Carolina Turnpike Authority projects assumed to total \$49 million annually.

Model Assumptions regarding Revenue Growth

The model uses NCDOT estimates for the revenues over the model horizon (see Appendix C).

Build NC Bonds Capacity Constraints

Because the Build NC Bonds have a shorter maturity structure than the standard calculation methodology, the issuance of the Bonds will more than exhaust available transportation debt capacity. Specifically, only \$165 million of Build NC Bonds may be issued in FY 2025, 2026, 2027 and \$128 million in FY 2028 to remain at the 6% limit. If the full \$300 million were to be issued in those years, Transportation debt service as a percentage of revenues would reach 6.89% in FY 2028.

The moderate decline in the amount that could be issued (total \$477 million) to stay within the 6% limitation could be largely made up by the amount of premium achievable on the remaining issuances of \$2.0 billion. Assuming the market's appetite for premium structures (higher coupons and initial prices above par) remains unchanged, it is estimated that an additional \$300 million of proceeds could be realized from premium.

Depending upon the reactions by the rating agencies and financial markets to the Build NC Bonds, the Committee may choose to revisit the 6% guideline for Transportation Debt in the future, but it is not recommended at the present time due to the factors discussed above and that the capacity limitations do not cause issuance limitations for a considerable time. See also Sensitivity Analysis below.

Sensitivity Analysis

Because there currently exists no transportation debt capacity, sensitivity analysis is only somewhat useful. Revenues would need to rise more than \$186 million in 2026 (4.6%), \$530 million in 2027 (13.2%), \$707 million in 2028 (17.2%), to create additional capacity.

SECTION III

Transportation and General Fund Ratios Combined

The Committee adopted the 6% Transportation guideline after analyzing the State’s position relative to its peer group on an aggregate basis (General Fund and Transportation Funds combined), consistent with rating agency practice. Illustrated below is how the State appears on a combined basis utilizing debt service as a percentage of revenue percentages for both the General Fund and the Transportation Funds. The Committee notes that the combined ratio (2.80% in FY 2023) is below the 4.00% target and is substantially below the 4.75% ceiling.

Table 8

General Fund and Transportation Funds Combined Debt Service / Revenue Percentages					
Fiscal Year	2021	2022	2023	2024	2025
General Fund	2.69%	2.58%	2.49%	2.24%	1.71%
Transportation *	2.98%	4.05%	4.89%	5.31%	5.85%
Combined	2.72%	2.77%	2.80%	2.63%	2.24%

Note: Percentages are based on forecasted revenues and debt service.

* GAP Funding for North Carolina Turnpike Authority projects assumed to total \$49 million annually.

Appendix A

Other Recommendations

1. Policy Recommendation regarding continuing a 4% calculation target for General Fund Debt capacity and providing for ongoing appropriations to the Solvency Fund

The Committee is recommending that the 4% of revenues be continued as the targeted limitation for debt capacity. Within this single calculation, a level continuing appropriation of \$100 million to the Solvency Fund is recommended to begin to address the Pension and OPEB liabilities which totaled \$39.8 billion at fiscal year end. Under this policy the amount of available debt capacity is significant, totaling approximately \$1.458 billion per year for the next 10 years.

Rating agencies have created new tests to compare units of government carrying these unfunded liabilities. Additionally, investors and citizens have taken increased interest in how governments are responding to challenges caused by the increasing levels of these liabilities. The rating agencies have applauded the steps the State has taken recognizing the Pension and OPEB liabilities in the DAAC Study and establishing the Solvency Fund as a mechanism to accumulate assets to address these liabilities. To date however, there has been no actual funding appropriated to the Solvency Fund, but the 2020 General Assembly through the existing mechanism, deposited an additional \$30 million directly into the Retiree Health Benefit Trust to help address OPEB liabilities. Without continued meaningful action to address these liabilities, the positive credit that the State has accrued will erode.

S&P in particular is quite blunt in commenting on state OPEB liabilities and the failure of most states to make significant progress in reducing them. In December 2019, they noted that “Funded ratios remain low and are not projected to materially improve given persistent underfunding...”. The Rating agencies’ focus, specifically S&P, appears to have shifted away from states’ recognition of, and flexibility to address, their OPEB liabilities and is shifting towards actively recognizing that states are not taking significant action. We believe the rating agencies and other stakeholders will now expect concrete steps to devote money to these liabilities on a consistent basis.

The Committee believes that a continuing annual appropriation of \$100 million directed to the Solvency Fund will allow the State to begin accumulating assets to address its unfunded Pension and OPEB liabilities without jeopardizing the funding of critical infrastructure projects.

2. Control of Debt Authorization Authority

As an alternative to traditional debt structures, various agencies historically have proposed “off balance sheet” types of arrangements and/or specialized financing structures to provide funding for capital projects, including various lease structures and other agreements arranging for payments made over time subject to the availability of funds. Not only do such structures typically result in more expensive financing and issuing costs, they also circumvent the State’s historically conservative debt management practices. The Committee continues to strongly recommend that the State of North Carolina maintain its historically conservative debt management practices with regard to (1) centralized debt authorization, (2) centralized debt management and issuance and (3) classification of debt and debt-like obligations when determining the debt burden. These practices are among those considered by the rating agencies when assigning their “triple A” ratings to the State and ultimately allow the State to maintain a healthy financial position.

Centralized debt authorization, issuance and management are considered one of North Carolina's credit strengths. As stated by Fitch the "Issuance and management of all North Carolina debt is centralized" and "Centralized management of debt in North Carolina is a credit strength." Fitch has further noted that the "treasurer approves execution of each financing". The Committee believes that centralized debt management is a key best financial management practice and should be embraced by the State as a matter of policy.

3. State Aid Intercept

In a number of legislative sessions, there has been legislation discussed and/or proposed that would provide for the timely payment of special obligation bonds issued for the constituent institutions of the University of North Carolina by requiring the State to "intercept" General Fund appropriations to those entities in order to make debt service payments on "self-liquidating" indebtedness issued pursuant to G.S. Chapter 116D. Similar proposals have been discussed and put forth by other State entities. In essence, this back-stop of debt service obligations by the State's General Fund provides a form of bond insurance resulting in higher credit ratings and provides the issuer with debt service savings.

The Committee strongly opposes on policy grounds providing credit support for debt issues whose source of repayment was and is represented to be project revenues. The use of State appropriations is not currently permitted to be used to pay debt service on such debt issues. In addition, the proposals have not provided for appropriate levels of State oversight and control for debt issues that may potentially utilize the State's debt capacity and increase its debt burden.

4. Consider General Obligation Bonds as the preferred financing method

The Committee notes that the State has recently relied extensively, although not exclusively, on the authorization of Special Indebtedness to finance capital projects. Due to the potential debt service savings and increased transparency, the Committee believes that General Obligation bonds should be considered the preferred, but not the exclusive, method to debt finance the State's capital needs.

5. Structural Budget Balance and Reserve Replenishment

The Committee confirms its view that North Carolina's priorities of achieving structural budgetary balance and rebuilding the State's reserve funds are strong evidence of financial stability and flexibility. The Committee recognizes that long term budgetary stability and reserve fund replenishment are key factors in maintaining our "triple A" bond rating. In its 2016 report, Moody's states that a "Return of structural imbalance, evidenced by...recurring general fund spending outpacing recurring general fund revenues..." could result in a reduction in North Carolina's bond rating.

6. Budget Adoption

The Governor's veto of House Bill 966, the primary appropriations bill, and the North Carolina General Assembly's inability to override the veto, resulted in an impasse and a failure to adopt a biennial budget for fiscal years 2019-21. In lieu of adopting a budget, a continuing resolution process was relied upon, followed by at least 14 standalone spending measures (or "mini-budgets") which alleviated many spending limitations. The State's ability to meet debt service requirements is unaffected. However, this unusual occurrence has not gone unnoticed by the rating agencies. In an Issuer Comment dated November 5, 2019, Moody's stated the "The lack of a budget for more than

four months reflects governance weakness and is credit negative,” going on to say that “... the lack of agreement on budget priorities during a time of economic expansion and healthy revenue growth does not augur well for budgeting and strong governance during times of economic and revenue stagnation or declines. “Sticking points in the budget included differences between the governor and the state legislature on spending priorities, notably Medicaid expansion and teacher pay. The impasse intensified when the state General Assembly passed a budget on 27 June and the governor vetoed it a day later.”

The General Assembly convened for the 2020 Short Session on April 28, 2020. The second year of the biennium, or Short Session, is normally used to make technical changes to the second year of the biennial budget. However, due to the COVID-19 pandemic, the General Assembly addressed expected revenue shortfalls, the distribution of federal COVID-19 related aid, and various other budget items. The Governor did not present a Short Session Budget in spring, as is customary, due to continued focus on combating the pandemic and related uncertain economic conditions, and a lack of clarity on federal actions to further assist states in mitigating the impacts of the pandemic. OSBM issued directions to State agencies and universities with respect to expenditures on April 23, 2020. The memorandum outlined methods to reduce expenditures due to the economic impacts of the pandemic, which included not filling vacant positions, freezing salary adjustments, limiting purchases, and reducing travel related items once stay-at-home orders are lifted. In addition, expenditure authority allotments were moved from quarterly to a monthly basis.

The General Assembly passed 32 separate spending bills that directly impacted appropriations and revenues. As noted above, the COVID-19 pandemic and related economic impacts reduced revenue by an expected \$4.2 billion (May 2020 consensus) over the biennium.¹ The large amounts of unappropriated balances remaining from the 2019 General Assembly session, described above, allowed the State to weather the majority of the revenue decline. The State still experienced a \$600 million shortfall between estimated revenues and expenditures due to the shift in tax payments from April 2020 to July 2020. The availability of CARES Act funds, in addition to a variety of special fund balances, allowed the General Assembly to present a balanced budget. The General Fund budget reflects a 1.00% reduction from the certified budget.

The General Assembly returned to Session on September 2, 2020 and adjourned on September 4, 2020. The General Assembly passed, and the Governor signed, the Coronavirus Relief Act 3.0. The Act allocated the remainder of the federal Coronavirus Relief Fund and additional funds from the Savings Reserve.

¹ “As noted above, due to the COVID-19 pandemic and related economic impacts, the State’s May 2020 consensus revenue forecast anticipated reduced revenues of up to \$4.2 billion over the biennium. However, actual revenues exceeded the expected target levels - see Revenue Growth and Other Assumptions in Appendix B.”

Appendix B

General Fund Revenues and Liabilities and Debt Affordability Model 10-Year Solutions

DAAC Revenues

The model uses general tax revenues adjusted for one-time or non-recurring items plus certain other revenue items deemed available to service debt from the most recently available *Comprehensive Annual Financial Report*. The following items are included:

General Fund Tax Revenues

- Individual Income Tax
- Corporate Income Tax
- Sales & Use Tax
- Franchise Tax
- Insurance Tax
- Beverage Tax
- Tobacco Products Tax
- Other Taxes

Other General Fund Revenue Items

- Investment Income
- Miscellaneous Revenues

Revenue Growth and Other Assumptions

The COVID-19 pandemic and the resulting limits on in-person economic activity to protect public health caused a substantial decline in economic activity in 2nd quarter of 2020. Federal stimulus programs, shifting consumer habits and spending, and phased business re-openings enabled much of the economy to rebound to near pre-pandemic levels. The February 2021 consensus General Fund revenue forecast projects FY 2020-21 revenues will exceed the May 2020 revised consensus revenue forecast by approximately \$4.1 billion (17.6%).

The February consensus revenue forecast anticipates total General Fund revenue declining by \$252 million (0.9%) in FY 2021-22. Adjusting for a \$1.08 billion shift in net tax collections from late FY 2019-20 into early FY 2020-21 due to postponed tax payments converts the expected revenue decline in FY 2021-22 into revenue growth of \$833 million (3.1%). Total General Fund revenues under the consensus forecast rise \$1.1 billion (4.1%) the following fiscal year. The pace of revenue growth in

the 2021-23 biennium is slower than past recovery periods due in part to the fading effects of recent and expected federal stimulus and to the gradual reallocation of spending toward non-taxable services.

Changes to revenue estimates have a significant impact on the calculation of available debt capacity because of the multiplier effect of compounding growth over the ten-year period. Such projections are especially important when they reflect changing or differing economic outlooks.

In consultation with OSBM, DAAC revenue projections are assumed to be as follows:

Table 9

General Fund Revenue (\$ millions)⁽¹⁾					
Used in the Debt Affordability Model *					
Fiscal Year	Revenues	Growth		Revenues	Growth
	(\$ millions)	Rate	Fiscal Year	(\$ millions)	Rate
2020	\$23,346.6	-2.8%	2026	\$31,553.5	4.4%
2021	26,486.6	13.4%	2027	32,941.8	4.4%
2022	26,826.7	1.3%	2028	34,391.2	4.4%
2023	27,744.4	3.4%	2029	35,904.3	4.4%
2024	28,949.9	4.3%	2030	37,484.1	4.4%
2025	30,223.7	4.4%	2031	39,133.4	4.4%

* General Fund recurring tax revenues, miscellaneous revenues and Treasurer's investments per OSBM.
⁽¹⁾ Fiscal Years 2021 - 2031 revenue forecast as of February 2021. Fiscal Year 2020 is budgetary actual.

Liabilities

To calculate net tax-supported debt, credit analysts take into account all debt supported by general tax revenues. This debt position shows the amount of indebtedness serviced from an issuer’s General Fund; that is, it reflects the debt service payments made directly from tax revenues and is known as net tax-supported debt. Although a consensus appears to exist among credit analysts as to the appropriateness of using net tax-supported debt as the standard for determining an issuer’s debt position, there is less unanimity about the precise calculation. The Committee has determined to exclude self-supporting debt from its calculations.

The model uses a definition of net tax-supported debt that includes GO Bonds, Special Indebtedness, Capital Lease Obligations, and any other obligations that are owed to a third party over a predetermined schedule and paid from General Fund Revenues. Should mandatory payments be due to contractors or others under P3s, “Design/Build/Finance” or other such arrangements, those payments would be counted as a liability for the model. Obligations of Component Units, Highway Fund debt that is paid from Highway Fund revenues and other self-supporting debt, including performing Energy Performance Contracts where the debt service is actually being paid from energy

savings, are also excluded.

The model includes the actual debt service from all outstanding net tax-supported debt and for all authorized, but currently unissued, tax-supported debt if such issuance does not require further action on the part of the General Assembly.

The following is a list of those liabilities that are included in the General Fund model (outstanding amounts as of June 30, 2020):

- GO Bonds supported by General Fund Tax Revenue - \$2.6 billion
- General Fund appropriation-supported debt
 - Limited Obligation Bonds - \$1,490.9 million
 - Certificates of Participation- \$0.0 million
 - Capital Leases, Installment Purchase Contracts and Equipment lease obligations determined to be state-supported and/or pursuant to G.S. 147-33.72H - \$32.1 million

Liabilities not included in the General Fund model (outstanding amounts as of June 30, 2020):

- Highway Construction General Obligation Debt supported by Highway Trust Fund - \$ 0 million
- Highway Construction Special Indebtedness supported by the Highway Trust Fund - \$284.0 million
- Short Term Tax Anticipation Notes (not supported by General Tax Revenue) - \$0
- Obligations of the University of North Carolina System or other Component Units – \$12.1 billion
- Energy Performance Contract obligations where such obligations are guaranteed and approved pursuant to G.S. 142-64 and not supported by separate appropriations - \$271.3 million issued with \$167.0 million outstanding
- OPEB
- Pension liabilities
- Employment Security advances from the US Treasury not anticipated to be paid from General Fund revenues.

Note: Although these liabilities may not constitute tax-supported debt, some are obligations of the State or various component units and the State's General Fund, although not legally obligated to, could be called upon to service these obligations if necessary.

Debt Structuring Assumptions

The following assumptions were used in this year's debt affordability model calculations:

- The State does not have any outstanding Variable Rate Debt and is not expected to issue any over the model horizon.
- The State will issue the Connect NC Bonds at fixed rates over the next two years with a 20-year level principal payment profile and a budgeted interest cost at 5.75%.

- The State does not currently have any authorized but unissued non-GO debt.
- Incremental model debt will be structured with a fixed rate 20-year maturity, a 6% interest rate, and an overall level debt service profile after the initial year.

Note on Issuance of the Connect NC Bonds

The Connect NC Bonds (\$2 billion authorized/\$400 million unissued) approved by the voters, are incorporated into the model since to omit them would distort the amount of debt capacity remaining to the State. The schedule used for the issuance is provided below and is based on the currently anticipated cash flow needs as provided to OSBM by the agencies managing the projects being financed. Note that these cash flow needs will be re-evaluated prior to the issuance of any bonds.

Fall 2021 \$200 million
 Fall 2022 \$200 million

Note on Interest Rate Assumptions

The DAAC model assumes consistency between the issuing assumptions used in the study and those used for budgetary planning. The issuance of the remaining Connect NC Bonds could be at lower rates than those stated above, especially in the early years. Such savings are not expected to significantly impact the results of the Study.

General Fund

10-Year Model Solutions

4.00% Debt Service/Revenue Target

Table 10

General Fund										
Debt Capacity using 4.0% debt service/revenues target ratio										
\$100 million per year used to address unfunded liabilities										
(In millions of dollars)										
Fiscal Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
\$ to Unfunded Liabilities	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0
Total Additional Debt Capacity per Year *	\$3,220.8	\$437.4	\$1,035.1	\$2,113.9	\$1,593.9	\$1,070.1	\$1,177.8	\$1,165.4	\$1,306.0	\$1,038.6
Debt Capacity Available each and every Year	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8	\$1,457.8

* In addition to that already authorized but unissued. Assumes additional debt capacity is authorized and issued in stated fiscal year.

4.75% Debt Service/Revenue Target

Table 11

General Fund Net Tax-Supported Debt Capacity using 4.75% debt service/revenues target ratio \$100 million per year used to address unfunded liabilities (In millions of dollars)										
Fiscal Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
\$ to Unfunded Liabilities	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0
Total Additional Debt Capacity per Year *	\$5,528.5	\$516.3	\$1,138.8	\$2,223.5	\$1,708.3	\$1,189.6	\$1,302.4	\$1,295.6	\$1,441.9	\$1,180.4
Debt Capacity Available each and every Year	\$1,816.3	\$1,816.3	\$1,816.3	\$1,816.3	\$1,816.3	\$1,816.3	\$1,816.3	\$1,816.3	\$1,816.3	\$1,816.3

* In addition to that already authorized but unissued. Assumes additional debt capacity is authorized and issued in stated fiscal year.

Appendix C

Transportation Revenues and Liabilities and Debt Affordability Model 10-Year Solutions

The Transportation debt affordability model uses all state transportation revenues plus other revenue items deemed available to service debt for the most recent Fiscal Year. The following items are included:

State Transportation Revenues

- Motor Fuels Tax
- Highway Use Tax
- Motor Vehicle Revenues
 - Vehicle registration and title fees
 - Driver's license fees
 - International registration plan fees
 - Penalties
 - Equipment inspection fees
 - Other
- Investment Income
- Other misc.
- *Federal Transportation Revenues are excluded*

Revenue Growth

The COVID-19 pandemic also had a negative impact on Highway Tax receipts in fiscal year 2020 and is projected to continue to have a negative impact over the next few years. In February 2021, the Office of State Budget and Management and the Fiscal Research Division of the General Assembly released a revised consensus revenue forecast for the current year and next biennium. Compared to the Transportation revenue projections from the pre-pandemic 2020 Debt Affordability Study, the new forecast projects a revenue reduction of \$31.1 million in FY 2021, \$110.6 million revenue reduction for FY 2022 and a \$89.2 million revenue reduction in FY 2023.

A small boost to revenues in the current fiscal year was the adjustment for inflation of many DMV fees, per G.S. 20-4.02, which when into effect on July 1, 2020. Additionally, vehicle sales rebounded strongly in summer for 2020 due to pent-up demand during the lockdown, favorable financing and low interest rates, and a shift in consumer spending away from services to goods. This trend is expected to continue for a part of calendar year 2021, but highway use tax revenues are projected to decrease as stimulus wanes and consumption gradually shifts back to services as the vaccination of population against COVID-19 progresses.

While vehicle sales provided a boost to highway use tax revenue, motor fuel tax revenue, which accounts for more than half of state transportation revenue, saw a decrease as mobility dropped in 2020 and has only partially recovered since. As the vaccination effort continues, an increase in

gallons consumption is anticipated. However, it is estimated it would be a few years before we reach the pre-pandemic fuel consumption level, especially as the pandemic might have affected driving patterns in the longer term.

Changes to revenue estimates have a significant impact on the calculation of available debt capacity. In consultation with DOT, and reviewed by OSBM, Transportation revenue projections are assumed to be as follows:

Table 12

Transportation Revenues (\$ millions)					
Fiscal Year	Revenues (\$ millions)	Growth Rate	Fiscal Year	Revenues (\$ millions)	Growth Rate
2020	\$3,693.0	-5.4%	2026	\$4,564.0	2.9%
2021	4,028.8	9.1%	2027	4,666.4	2.2%
2022	4,015.9	-0.3%	2028	4,764.5	2.1%
2023	4,124.3	2.7%	2029	4,962.3	4.2%
2024	4,228.5	2.5%	2030	5,070.9	2.2%
2025	4,435.6	4.9%	2031	5,174.2	2.0%

* Revenue amounts per NC Department of Transportation (excluding federal revenues).
Fiscal Year 2020 is actual.

Transportation Liabilities

The model uses the debt service from all outstanding and authorized but unissued Highway Bonds (GO and Build NC Bonds) and includes transportation-related capital lease obligations and installment purchase contracts if appropriate. Debt service arising from the State’s GARVEE program is not included as a State Transportation Liability because the GARVEEs are supported solely by federal transportation revenues.

The General Assembly has authorized funding to “pay debt service or related financing costs” for various series of revenue bonds issued by the North Carolina Turnpike Authority. The funds so appropriated are legally pledged to support the bonds and bondholders will depend upon the appropriations continuing. Therefore, the model treats the gap funding as the equivalent of debt service since it represents ongoing Highway Trust Fund support of debt. \$49 million of GAP funding is treated as debt service for each year over the 10-year model horizon. NCDOT has also pledged certain operating and maintenance funds to secure debt, if necessary to provide adequate coverage levels. At the present, it appears that such funding will not be required. However, these funds would be treated as additional gap funding for model purposes if NCDOT were to be required to make such payments.

Availability Payments

The model counts “availability payments” as debt-like obligations. These payments are contractually owed to the contractor or other service provider on a delayed schedule that stretches beyond the standard construction period. Sometimes entered into as part of Public Private Design/Build/Finance

and/or other arrangements, the delayed payments represent debt service for contractor-provided financing. The debt-like characteristics of availability payments (even if “subject to appropriation”) mean that the payments are treated as a liability for the purposes of the model. The availability payment arrangements that NCDOT entered into in connection with the I-485 project have been satisfied.

Developer Ratio Adjustment Mechanism (DRAM) payments

In connection with the I-77 P3 project, DOT has agreed to make certain payments over time to support the project. The maximum amount of such payments may not exceed \$12 million annually or \$75 million in the aggregate. The actual amounts will be subject to the actual performance of the project. However, the amounts projected to be needed provided by DOT using relatively conservative assumptions are included in the model. This is consistent with rating agency treatment. In 2014 Moody’s stated that “States...have entered into P3 projects that incorporate a long-term contractual obligation of the state to make availability payments or other types of contractual payments to the private partner that supports the debt service of the project.” “[W]e view this contractual obligation as another form of general state debt...”

Debt Issuance Assumptions

The following assumptions were used in this year’s Transportation debt affordability model calculations because the Build NC Bonds have specific structuring limitations and their issuance utilizes all of the available Transportation debt capacity:

- There is no remaining authorized but unissued GO debt and \$2.0 billion of authorized but unissued non-GO debt at December 31, 2020.
- The Build NC Bonds will be structured with a fixed rate 15-year maturity, a 4.00% interest rate and an overall level debt service profile after the first year.

There is no incremental model debt because the Build NC Bonds exhaust available capacity.

Transportation

10-Year Model Solution

Table 13

Transportation Net Tax-Supported Debt Capacity using 6.0% debt service/revenues target ratio (In millions of dollars)										
Fiscal Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Additional Debt Capacity per Year *	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Debt Capacity Available each and every Year	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0

* In addition to that already authorized but unissued. Assumes additional debt capacity is authorized and issued in stated fiscal year.

Appendix D

Public Private Partnerships Review of Recent Debt-Related Legislation

Public Private Partnerships-Debt

As the State enacts laws that permit the procurement and financing of assets through the use of Public Private Partnerships (“P3’s”), care should be taken to ensure that sound debt management and authorization practices are in place in the review and approval process. The term P3 can describe a wide variety of arrangements in which a private sector entity plays a key role in the acquisition of an asset and/or the provision of a service. While P3s may appear to provide a new source of funds in a time of diminished revenues and debt capacity, such agreements often contain financing arrangements with the private entity that results in that entity incurring debt or obligations secured, directly or indirectly by governmental payments or charges to the citizens of that government. *Governing Magazine* notes in an article from the November 2013 issue concerning P3s that “capital often comes at a cost that can exceed the expense of a typical municipal borrowing”. More states are coming to this realization. In the summer of 2014, the state of Nevada dropped plans for a highway widening project using a P3 after “discovering it would cost less for the state to manage the project itself and issue municipal bonds,” according to an August 25, 2014 article in the *Bond Buyer*. More recently, Kansas is reported to have delayed approving a P3 for a prison after the state auditor found that “Traditional state bond finance could provide the state a better deal.”

In times of diminished resources, governments should compare the costs of financing under a P3 arrangement with the issuance of more typical municipal debt when determining the preferable means of financing the acquisition of an asset. S&P noted in 2015 that “the debt of P3s faces an inherent disadvantage compared with debt service on tax-exempt bonds, which states traditionally issue.” In addition, NC State’s Institute for Emerging Issues stated in 2010 that “it must be clear, though, that a PPP is not 1.) a panacea that resolves all procurement issues, 2.) a way to get something for nothing, or 3.) a privatization of traditionally public infrastructure.”

P3s do not create additional debt capacity although it may appear so if you do not view the agreements as debt or debt-like obligations. However, these are often a commitment of funds in order to acquire an asset and that must be treated like debt when determining debt capacity. Failure to make the contractual payments could result in loss of the asset and create a default of a contractual liability to another party, and would typically impact the credit rating of the government. The rating agency treatment is clear: when a state’s payments are used to support or secure debt issued by a private party, other public entity, and conduit issuer or through a lease arrangement, such debt will be counted toward the state’s debt burden. Sponsoring agencies whose mission is to provide a particular service or asset are not in the best position to make decisions that prioritize the use of a state’s debt capacity or require a state to enter into debt-like arrangements. That decision should be made by the state’s legislative body which represents all the citizens of the state and is equally responsible for providing all services to all citizens.

Review of Recent Debt-Related and other Legislation

G.S. 136-18(12b) as codified by Session Law 2005-403 as amended by S.L. 2020-91 The GARVEE Act

The GARVEE Act authorized the State Treasurer to Issue "GARVEE" Grant Anticipation Revenue Vehicle Bonds on behalf of The Department of Transportation. S.L 2020-91 increased the maximum annual debt service limit and modified the use of GARVEE Reserve funds.

Prior to issuance of any "GARVEE" or other eligible debt instrument using federal funds to pay a portion of principal, interest, and related bond issuance costs, the State Treasurer shall determine (i) that the total outstanding principal of the debt does not exceed the total amount of federal transportation funds authorized to the State in the prior federal fiscal year; or (ii) that the maximum annual principal and interest of the debt does not exceed twenty percent 20% (S.L. 2020-91 raised this percentage from fifteen percent (15%) of the expected average annual federal revenue shown for the period in the most recently adopted Transportation Improvement Program.”

To the extent not prohibited by either the Memorandum of Agreement between the Department of Transportation and the Federal Highway Administration or the GARVEE Master Trust Indenture, the Department of Transportation shall use other legally available federal funds to fund and maintain a GARVEE/Federal Repayment Reserve Fund in an amount equal to the immediately ensuing payment of only interest, or both principal and interest, on all outstanding GARVEE Bonds. Any State funds currently held in GARVEE/Federal Repayment Reserve shall be used for currently existing projects, defined as projects in the process of design or construction, as of June 1, 2020.

S.L. 2018-16 as amended by S.L. 2019-251 and S.L. 2020-91 Build NC Bond Act of 2018

The Build NC Bond Act authorizes the issuance by the State Treasurer of up to \$3 billion bonds for regional and divisional transportation projects contained in the Statewide Transportation Improvement Plan subject to a number of constraints including Council of State approval; cash balances, measured at specific times, that dip below \$1 billion; a recommendation from the Treasurer that the Bonds be issued; an issuance limitation of no more than \$300 million per year (the amount authorized to be issued in FY 2021 was increased to \$700 million by S.L. 2020-91) and compliance with the limitations contained in the DAAC Study. The Bonds, authorized as Special Indebtedness, are also subject to the provisions of Chapter 142, Article 9 (the State Capital Facilities Finance Act). The authorization expires December 31, 2028. The Bonds are to be paid by appropriations from the Highway Trust Fund. The bonds are limited to a 15-year final maturity.

S.L. 2018-30

State Pension/Retiree Health Benefit Fund Solvency

The legislation established the “Unfunded Liability Solvency Reserve” (the “Solvency Fund”) as a reserve within the General Fund that will be used to accumulate funds to be used to reduce the State’s unfunded pension and OPEB liabilities. Funds in the reserve may only be used to reduce the long-term unfunded liabilities associated with the Retiree Health Benefit Trust and the Teachers’ and State Employees’ Retirement System, proportionate to the unfunded liabilities of the respective programs. To the extent that the Savings Reserve balance has reached its statutory maximum, the Solvency Fund will receive amounts that otherwise would have gone to the Savings Reserve. The Solvency Fund may also receive additional appropriations.

Session Law 2017-57

State Capital and Infrastructure Fund (“SCIF”)

S.L. 2017-57 establishes a new fund to be used to address ongoing capital and infrastructure needs effective July 1, 2019. 4% of the State’s General Fund net tax revenues are to be deposited into the fund to be used to pay debt service (first priority) and then fund new capital projects and repair and renovation projects. In addition, SL 2017-15 also directs a portion of the unreserved General Fund balance be deposited into the Fund. These provisions were subsequently incorporated into the State Budget Act. The Committee notes that the use of such funds for capital projects circumvents its recommendation that a continuing appropriation of \$100 million be directed to the Solvency Fund.

Appendix E

State of North Carolina Rating Agency Reports

- 1) Fitch Ratings – September 25, 2020
- 2) Moody’s Investor Service – September 24, 2020
- 3) S&P Global Ratings – September 25, 2020

RATING ACTION COMMENTARY

Fitch Affirms North Carolina's IDR at 'AAA', Rates \$400M GOs 'AAA'; Outlook Stable

Fri 25 Sep, 2020 - 3:15 PM ET

Fitch Ratings - New York - 25 Sep 2020: Fitch Ratings has assigned a 'AAA' rating to the following general obligation (GO) bonds of the state of North Carolina:

--\$400 million GO public improvement (Connect NC) bonds, series 2020A.

The bonds are expected to sell by competitive bid on Oct. 8, 2020 and will fund a variety of capital projects under the Connect NC program.

Fitch has affirmed the following ratings of the state of North Carolina:

--Issuer Default Rating (IDR) at 'AAA';

--\$2.6 billion GO bonds at 'AAA';

--\$1.7 billion outstanding limited obligation appropriation-backed bonds at 'AA+'.

Fitch has also affirmed the following ratings of the North Carolina Turnpike Authority (NCTA):

--\$115 million triangle expressway system appropriation revenue bonds, series 2019 at 'AA+';

--\$10.3 million state annual appropriation revenue bonds, series 2009B (federally taxable -- issuer subsidy -- Build America Bonds) at 'AA+'.

The Rating Outlook is Stable.

SECURITY

GO bonds are a general obligation, full faith and credit pledge of the state of North Carolina.

Limited obligation bonds are payable solely from state appropriation, from either the state highway trust fund (HTF) or the state's general fund.

The NCTA bonds are special obligations of NCTA, secured by and payable from a \$25 million state appropriation from the HTF.

ANALYTICAL CONCLUSION

North Carolina's 'AAA' IDR and GO bond ratings reflect its low liabilities, conservative financial operations and long-term prospects for continued economic expansion and diversification. The governor is empowered to unilaterally reduce spending to maintain budget balance, after making provision for debt service. The state's rainy day fund provides a source of financial flexibility, and the state has created and added to other reserves. The state is well positioned to address the financial challenges associated with the coronavirus pandemic and resulting economic downturn.

The rating on appropriation debt, one notch below the IDR, reflects the slightly higher optionality associated with the requirement to appropriate, whether from the general fund or the transportation fund.

The rating on NCTA's triangle expressway and state annual appropriation bonds, one notch below the IDR, is based on a standing appropriation from the state of North Carolina's HTF, a major fund of the state.

ECONOMIC RESOURCE BASE

The transition of the economy away from manufacturing toward services continues. Although manufacturing employment remains a larger part of the North Carolina base than the U.S. average and has shown steady growth since 2011, it remains slightly more than half of where it stood in the 1990s. Professional and business services employment is one of the faster growing sectors.

On March 10, 2020, in efforts to mitigate coronavirus' spread, governor Roy Cooper declared a state of emergency and began to implement coronavirus containment measures. As would be expected, economic activity fell significantly with GDP declining 5.1% in the first quarter of 2020 (1Q20) as compared to the 4Q19, just slightly above the 5.0% U.S. rate. Employment also fell sharply. The state began a phased reopening of business in May and economic activity has picked up, although it is noted that COVID-19 case counts also increased over the summer months and future economic growth may be tempered by additional measures to limit the spread of the virus. The state's insured unemployment rate, (IU; not seasonally adjusted, the ratio of continuing claims for unemployment insurance [UI] to total employment covered by the UI program), was 3.4% for the week ended Sept. 5 versus 8.7% nationally. The weekly IU rate is different from the more commonly used monthly unemployment rate, but it provides a useful forward look given its timeliness.

KEY RATING DRIVERS

Revenue Framework: 'aaa'

North Carolina's broad-based revenues will continue to reflect the depth and breadth of the economy and its solid growth potential. The state has complete control over its revenues, with a nearly unlimited legal ability to raise operating revenue as needed.

Expenditure Framework: 'aaa'

The state maintains ample expenditure flexibility, with a low burden of carrying costs and the broad expense-cutting ability common to most states. Medicaid and education remain key expense drivers, but ones Fitch expects to remain manageable.

Long-Term Liability Burden: 'aaa'

The state has low liabilities and strong debt-management practices, including an affordability planning process. Pension funding is among the strongest of the states, although funding levels declined with changes to actuarial assumptions in recent years.

Operating Performance: 'aaa'

The state is well positioned to address economic downturns, with exceptionally strong gap-closing capacity due to its broad control over revenues and spending, and rebuilt rainy day fund. North Carolina demonstrated its ability to take prompt action when necessary to maintain budget balance, which will remain important as the state frequently adjusts its tax code, potentially forgoing some revenue growth associated with economic expansion.

RATING SENSITIVITIES

Factors that could, individually or collectively, lead to positive rating action/upgrade:

--Not applicable.

Factors that could, individually or collectively, lead to negative rating action/downgrade:

--An inability to address the fiscal challenges triggered by the pandemic-driven downturn, as evidenced by an inability to make sufficient budget adjustments, leaving the state less financially resilient at the end of the recovery period.

--A return to economic contraction in the U.S., consistent with Fitch's coronavirus downside scenario, which triggers sustained and deep revenue declines and materially erodes the state's gap-closing capacity.

BEST/WORST CASE RATING SCENARIO

International scale credit ratings of Sovereigns, Public Finance and Infrastructure issuers have a best-case rating upgrade scenario (defined as the 99th percentile of rating transitions, measured in a positive direction) of three notches over a three-year rating horizon; and a worst-case rating downgrade scenario (defined as the 99th percentile of rating transitions, measured in a negative direction) of three notches over three years. The complete span of best- and worst-case scenario credit ratings for all rating categories ranges from 'AAA' to 'D'. Best- and worst-case scenario credit ratings are based on historical performance. For more information about the methodology used to determine sector-specific best- and worst-case scenario credit ratings, visit [<https://www.fitchratings.com/site/re/10111579>].

CURRENT DEVELOPMENTS

The outbreak of coronavirus and related government containment measures worldwide has created an uncertain global environment for U.S. state and local governments and related entities. Fitch's ratings are forward-looking in nature, and Fitch will monitor the severity and duration of the budgetary impact on state and local governments and incorporate revised expectations for future performance and assessment of key risks.

While the initial phase of economic recovery has been faster than expected, GDP in the U.S. is projected to remain below its 4Q19 level until at least 4Q21. In its baseline scenario, Fitch assumes continued strong GDP growth in 3Q20 followed by a slower recovery trajectory from 4Q20 onward amid persisting social distancing behavior and restrictions, high unemployment and a further pullback in private-sector investment. Additional details, including key assumptions and implications of the baseline scenario and a downside scenario, are described in the report titled, "Fitch Ratings Coronavirus Scenarios: Baseline and Downside Cases - Update" (<https://www.fitchratings.com/research/sovereigns/fitch-ratings-coronavirus-scenarios-baseline-downside-cases-update-08-09-2020>), published on Sept. 8, 2020 on www.fitchratings.com.

Federal Aid Provides Some Support for State Budgets

Federal aid measures since the pandemic's onset will benefit state budgets and economies, although details remain fluid. The Families First Coronavirus Response included a 6.2 % increase in the Federal Medical Assistance Percentage (FMAP) for Medicaid for every quarter of the national public health emergency. FMAP is the rate at which the federal government reimburses states for Medicaid spending. The state estimates it will receive roughly \$200 million for each quarter of the national emergency. The ultimate value of the

FMAP rate increase will depend primarily on the state's actual Medicaid spending and the extent of the national public health emergency, which has been extended at least into the current quarter ending on Sept. 30.

Under the Coronavirus Aid, Relief and Economic Security (CARES) Act enacted on March 27, 2020, the U.S. Treasury department distributed \$150 billion to state and local governments using a population-based formula. The statute limits the use of funds to coronavirus expense reimbursement rather than to offset anticipated state tax revenue losses. North Carolina and its eligible local governments (with a population of 500,000 or more) received \$4.1 billion from the U.S. Treasury, \$3.56 billion of which flowed directly to the state, with the remainder going to eligible local governments.

North Carolina Liquidity Update

Fitch considers North Carolina well positioned to address liquidity pressure emanating from the coronavirus pandemic and related economic downturn with no interruption in timely payments for key operating expenses, including debt service. The general fund cash position was strong throughout fiscal 2020, having carried over a significant balance from strong revenue performance in fiscal 2019 and then underspending revenues in fiscal 2020, as described further below. This was sufficient to absorb the estimated shift of \$1 billion in tax revenues from fiscal 2020 to fiscal 2021 caused by extending the state's tax filing date for the personal income tax, corporate income tax and franchise taxes to July 15 to align with the federal tax filing deadline. The state has indicated it does not expect to utilize interfund or cash flow borrowing for liquidity purposes or draw on the Federal Reserve's \$500 billion Municipal Liquidity Facility (MLF).

North Carolina Budget Update

North Carolina's budget for the fiscal 2019-2021 biennium was vetoed by the governor, leaving the state to operate since July 2019 under state law that continues appropriations in the absence of a budget at the prior year's level of recurring expenditures. This highly unusual circumstance worked to the state's benefit in light of the economic downturn, with expenditures having been maintained at fiscal 2019 levels while revenues were growing well into fiscal 2020. The state reports it entered the downturn having accumulated \$2.2 billion in the general fund (over 8% of estimated revenues), giving it a significant cushion to absorb revenue weakness in the final quarter of fiscal 2020 and into fiscal 2021.

As is the expectation for most U.S. states, Fitch anticipates North Carolina's revenue collections, particularly for employment-based income tax and sales tax, to experience

weakness through this period of reduced activity. The state's May 2020 consensus revenue forecast lowered estimated revenues for fiscal 2020 by \$1.6 billion (6.6%) and the estimate for fiscal 2021 by \$2.6 billion (9.9%). While spending controls were implemented (i.e. not filling empty positions and limiting travel), state officials did not take further action in fiscal 2020 to address the reduction in revenues. Unaudited revenue collections are now estimated by the state to be approximately \$513 million higher than anticipated in the May 2020 forecast, or approximately \$1.1 billion below the certified amount. This incorporates faster than anticipated recovery in retail sales and employment, contributing to higher sales and personal income taxes. The legislature acted in August 2020 to address the forecast fiscal 2021 revenue gap, utilizing the carryover balance from fiscal 2020, federal coronavirus relief funds, and non-recurring general fund and other fund balances. An additional \$65 million was transferred from the rainy day fund (the savings reserve fund) to respond to past natural disasters and recent storms. After this transfer, the savings reserve holds \$1.1 billion, which remains available if a further budget gap materializes.

North Carolina's strong financial resilience should allow it to absorb the immediate budgetary effects of Fitch's coronavirus baseline scenario, although Fitch believes the state would be challenged to address Fitch's downside scenario. The current coronavirus baseline and downside scenarios imply revenue declines for North Carolina that approximate the median for U.S. states.

CREDIT PROFILE

After an initial slow emergence from the Great Recession, economic growth in North Carolina had been accelerating prior to the current downturn and future growth is expected to be stronger in the now smaller manufacturing sector and as business and professional service sectors grow with the overall economy. Employment growth through the expansion period was marginally faster than the nation overall. Measured by per capita personal income, North Carolina is below average at 84% of the U.S. level, ranking 41st among the states, although it does benefit from a lower cost of living.

REVENUE FRAMEWORK

North Carolina relies on broad-based income and sales taxes to fund operations. The state replaced a multi-tiered progressive personal income tax system with a flat rate in 2014. Additional tax code adjustments have further lowered the flat rate in steps to 5.25% as of

Jan. 1, 2019, while also expanding the sales tax base. Revenue performance was very weak during the Great Recession and growth emerging from the recession was weaker than expected; however, revenue performance leading into the downturn associated with the coronavirus was stronger.

Historical growth in the state's revenues, after adjusting for the estimated impact of tax policy changes, has generally been above inflation and just shy of national GDP growth. Given the expectation of solid economic growth, which is now stronger than the regional average, Fitch expects North Carolina's revenues to continue to experience real long-term growth, although perhaps tempered by the implementation of the flat income tax rate.

North Carolina has no significant legal limitation on its ability to raise revenues. A measure approved by voters on the November 2018 ballot amended the state constitution to lower the maximum permitted personal income tax rate from a 10% cap to 7%. A state Superior Court ruled in February 2019 that the constitutional amendment is not valid due to gerrymandering in the legislature that placed the amendment on the ballot, a decision that has subsequently been overturned by the NC Court of Appeals. Given capacity under the cap to raise the income tax rate and the unlimited legal ability to raise other revenue sources, Fitch does not consider the 10% cap to be a practical limitation on its ability to raise revenues.

EXPENDITURE FRAMEWORK

As in most states, education and health and human services spending are North Carolina's largest operating expenses. Funding for K-12 and higher education is the larger line item, comprising more than half of state general fund expenditures. The state has primary responsibility for funding K-12 public schools rather than local ad valorem property taxes. Health and human services spending is the second largest area of spending, with Medicaid being the primary driver.

Spending growth, absent policy actions, will likely be in line with to marginally above natural revenue growth and will require regular budget management to ensure ongoing

balance. State funding for education is calculated based on Average Daily Membership, which has been growing at a slow pace over the past five years, typically no more than 1% annually.

North Carolina retains ample expenditure flexibility. Its carrying costs for debt and retiree benefits as a percentage of governmental expenditures, while above the state median, remain low. The governor proposed optional expansion of Medicaid under the Affordable Care Act in his fiscal 2019-2021 budget, with additional state matching costs expected to come from new provider assessments. The legislature did not enact, a contributing factor to the budget disagreement in the current biennium. The state experienced a significant increase in new enrollments under preexisting eligibility guidelines and increased the Medicaid budget during the most recent biennia (2015-2017 and 2017-2019). The state created two reserves related to Medicaid - \$314.9 million in the Medicaid Risk Reserve to address volatility in the program and \$50.4 million for Medicaid Transformation. Although the state received Centers for Medicare and Medicaid Services (CMS) approval of its waiver to transition to a managed care model for Medicaid, the change has not yet taken place.

The fiscal challenge of Medicaid is common to all U.S. states and the nature of the program as well as federal government rules limit the states' options in managing the pace of spending growth. Federal action to revise Medicaid's programmatic and financial structure appears less likely in the near term.

LONG-TERM LIABILITY BURDEN

North Carolina's long-term liability burden is low. The combined burden of long-term debt and net unfunded pension obligations, adjusted by Fitch to a 6.0% return assumption, equals 3.0% of 2019 personal income, well below the 5.7% median (as of Fitch's 2019 pension update report) for U.S. states. The state's major pension plan, which covers teachers and state employees, has benefitted historically from relatively conservative actuarial assumptions, including a lower than average discount rate and short amortization for unfunded liabilities. However, previously high ratios of assets to liabilities have deteriorated in recent years as the state lowered its assumed discount rate, while still remaining higher than most plans.

Connect NC bonds are issued pursuant to a voter-approved \$2 billion GO bond authorization for a variety of capital projects, approximately half of which are for higher education. Other borrowing plans include continued issuance under Build NC, \$3 billion in legislatively authorized appropriation-supported debt to be issued over ten years for transportation projects and funded by appropriations from the highway trust fund. Given rapid amortization of outstanding debt, debt levels are expected to remain low even with additional borrowing.

OPERATING PERFORMANCE

North Carolina has a strong ability to close budgetary gaps during a cyclical downturn, based on its demonstrated controls over spending and ability to raise revenues when necessary. During the Great Recession, the state responded to significant revenue under-performance with budget reductions, reduced capital expenditures, non-recurring actions such as fund sweeps and use of reserves, and both temporary and permanent tax increases. It is Fitch's expectation that the state would take similar action to balance its budget during a cyclical downturn as well as during the current pandemic-driven downturn.

Financial performance was somewhat challenged as the state emerged slowly from the Great Recession but improved in the most recent biennia. The enacted budget for the fiscal 2017-2019 biennium, which ended June 30, 2019, continued to make tax code adjustments as was the case in earlier budgets, including lowering the personal and corporate income tax rates; however, the expected reduction in tax revenues was more than offset by economically related revenue growth. Revenue collections in both year of the biennium were well above forecast, boosted in particular by strong income tax collections. This allowed the state to make steady progress rebuilding its rainy day fund and in creating and rebuilding other reserves, until it drew upon the rainy day fund to address the significant damage caused by Hurricane Florence in September 2018. After appropriations from the rainy day fund to address hurricanes and recent earthquake activity in the state, the rainy day fund has been reduced to a still sizeable \$1.104 billion (4.7% as of the May 2019 revised consensus forecast for fiscal 2021).

The budget for the current fiscal 2019-2021 biennium was vetoed by the governor and the state is operating under state law that continues appropriations in the absence of a budget at the prior year's level of recurring expenditures. The failure to enact a comprehensive budget is not in and of itself a negative credit factor as the government continues to

operate at fiscal 2019 authorized levels, as adjusted by the legislature at the beginning of fiscal 2021. The inability to come to an agreement on the budget does not reflect a fiscal problem, as has been the case in other states with delayed budgets, but rather policy differences between the governor and the legislature.

CRITERIA VARIATION

None.

In addition to the sources of information identified in Fitch's applicable criteria specified below, this action was informed by information from Lumesis.

REFERENCES FOR SUBSTANTIALLY MATERIAL SOURCE CITED AS KEY DRIVER OF RATING

The principal sources of information used in the analysis are described in the Applicable Criteria.

ESG CONSIDERATIONS

The highest level of ESG credit relevance, if present, is a score of 3. This means ESG issues are credit-neutral or have only a minimal credit impact on the entity(ies), either due to their nature or to the way in which they are being managed by the entity(ies). For more information on Fitch's ESG Relevance Scores, visit www.fitchratings.com/esg.

RATING ACTIONS

ENTITY/DEBT	RATING			PRIOR
North Carolina, State of (NC) [General Government]	LT IDR	AAA Rating Outlook Stable	Affirmed	AAA Rating Outlook Stable

ENTITY/DEBT	RATING			PRIOR
● North Carolina Turnpike Authority (NC) /State Annual Appropriation/1 LT	LT	AA+ Rating Outlook Stable	Affirmed	AA+ Rating Outlook Stable
● North Carolina, State of (NC)	LT	AA+ Rating Outlook Stable	Affirmed	AA+ Rating Outlook

[VIEW ADDITIONAL RATING DETAILS](#)

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APPLICABLE CRITERIA

[U.S. Public Finance Tax-Supported Rating Criteria \(pub. 27 Mar 2020\) \(including rating assumption sensitivity\)](#)

APPLICABLE MODELS

Numbers in parentheses accompanying applicable model(s) contain hyperlinks to criteria providing description of model(s).

FAST States & Locals - Fitch Analytical Stress Test Model, v2.4.0 (1)

ADDITIONAL DISCLOSURES

[Dodd-Frank Rating Information Disclosure Form](#)

[Solicitation Status](#)

[Endorsement Policy](#)

ENDORSEMENT STATUS

North Carolina Turnpike Authority (NC)

EU Endorsed

North Carolina, State of (NC)

EU Endorsed

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US Public Finance North America United States

CREDIT OPINION

24 September 2020


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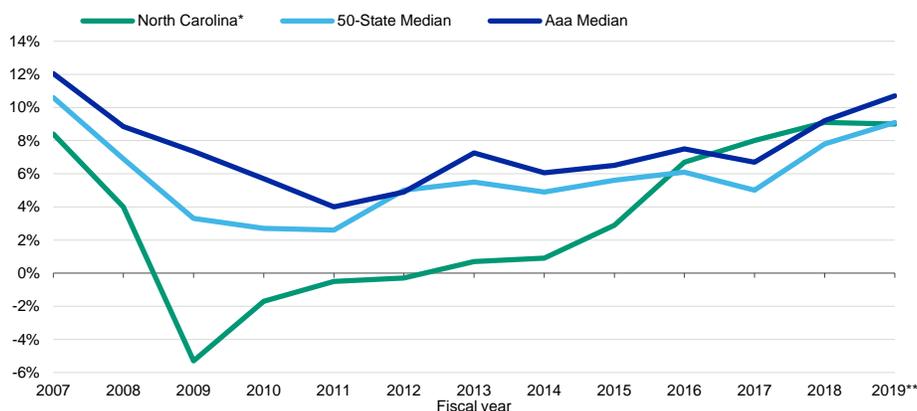
North Carolina (State of)

Update to credit analysis

Summary

The [State of North Carolina's](#) (Aaa stable) very strong credit quality is exemplified by a diverse economy exhibiting strong growth before the coronavirus outbreak, a history of conservative fiscal practices, healthy reserves and a low debt and pension burden.

We regard the coronavirus outbreak as a social risk under our ESG framework, given the substantial implications for public health and safety. We do not see any material immediate credit risks for North Carolina. However, the situation surrounding the coronavirus is rapidly evolving and the longer term impact will depend on both the severity and duration of the crisis. If our view of the credit quality of North Carolina changes, we will update our opinion at that time.

Exhibit 1
North Carolina's healthy reserves entering the coronavirus crisis mitigate revenue losses
 Available reserves as a percent of operating revenue


*North Carolina's available reserves equal the total unassigned general fund balance, which includes the Rainy Day Fund; operating revenue is equal to own-source general fund revenue plus net transfers in.

**2019 50-state median is pro forma, based on the 49 states that have published CAFRs to date.

Sources: State CAFRs, Moody's Investors Service

Credit strengths

- » Diverse economy with strong employment and population growth before the coronavirus outbreak
- » History of conservative fiscal management
- » Strong executive powers to reduce spending, if necessary
- » Commitment to maintaining strong reserve levels and affordable debt, pension and other post-employment benefit (OPEB) liabilities

Credit challenges

- » Controlling expenditure pressures within the context of more limited resources
- » Differing budget priorities between the governor and legislature leading to delayed budget adoption

Rating outlook

The outlook for the State of North Carolina is stable, reflecting conservative fiscal management and budgeting practices that will mitigate revenue losses resulting from coronavirus-driven economic disruptions.

Factors that could lead to an upgrade

- » Not applicable

Factors that could lead to a downgrade

- » Severe structural imbalance leading to a draw on reserves with no plans to replenish funds
- » Prolonged economic stagnation with significantly lagging employment and GDP growth compared to peers

Key indicators

North Carolina (State of)	2015	2016	2017	2018	2019	50-State Median (2019)
Operating Fund Revenues (000s)	\$23,408,960	\$24,086,086	\$24,480,633	\$25,529,226	\$26,726,373	\$12,439,906
Available Balances as % of Operating Fund Revenues	2.9%	6.7%	8.0%	9.1%	9.0%	9.1%
Nominal GDP (billions)	\$503.6	\$519.1	\$538.4	\$563.7	\$587.7	\$249.0
Nominal GDP Growth	5.8%	3.1%	3.7%	4.7%	4.3%	3.7%
Total Non-Farm Employment Growth	2.4%	2.4%	1.7%	1.9%	1.9%	0.9%
Fixed Costs as % of Own-Source Revenue	4.9%	4.9%	4.9%	4.9%	4.8%	7.8%
Adjusted Net Pension Liabilities (000s)	\$5,867,503	\$6,497,937	\$10,391,839	\$9,421,407	\$9,145,550	\$11,258,253
Net Tax-Supported Debt (000s)	\$7,276,985	\$6,681,880	\$6,281,556	\$5,513,130	\$6,140,848	\$3,864,531
(Adjusted Net Pension Liability + Net Tax-Supported Debt) / GDP	2.6%	2.5%	3.1%	2.6%	2.6%	6.9%

North Carolina's available reserves equal the total unassigned general fund balance, which includes the Rainy Day Fund; operating revenue is equal to own-source general fund revenue plus net transfers in.

Sources: North Carolina CAFRs, US Bureau of Economic Analysis, Moody's Investors Service

Profile

North Carolina is the ninth largest state in the US by population (10.5 million people in 2019) and the twelfth largest state by GDP (\$587.7 billion in 2019 current dollars). State income levels are below average with per capita personal income in 2019 equal to 84.6% of the US level.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Detailed credit considerations

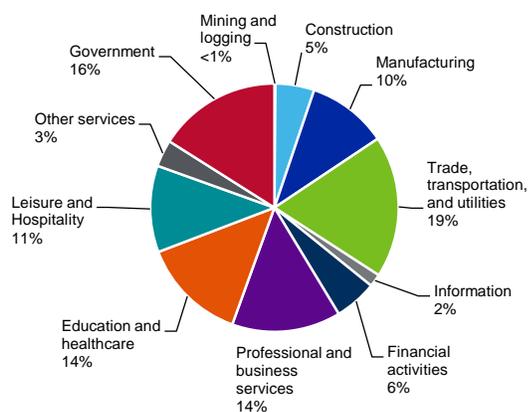
Economy: Strong growth before the pandemic and economic diversity mitigate disruptions caused by the coronavirus

Before the pandemic, North Carolina benefited from an expanding economy driven by strong employment and population growth. The state's diverse economy was once dominated by growth in the manufacturing sector. Over the last five years, employment growth was more even across all industries, but mainly driven by the professional and business services sector. The state's favorable business climate, evidenced by large corporations' interests in expanding in the state, supported economic expansion.

North Carolina's employment diversity has helped to lessen the negative impact of the coronavirus on the state's economy given the outsized impact on the leisure and hospitality sector. Industry diversity in the state approximates that of the US as whole, though with a lower concentration in education and healthcare and still a slightly higher concentration in manufacturing (see Exhibits 3 and 4). North Carolina is not overly reliant on the leisure and hospitality industry, which makes up about 11% of nonfarm employment.

Exhibit 3

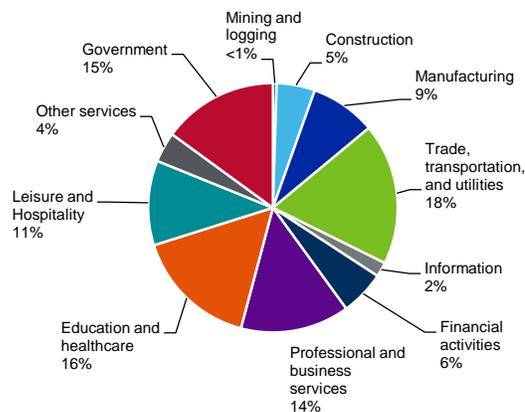
North Carolina's employment diversity ... 2019 share of nonfarm employment by industry in North Carolina



Source: US Bureau of Labor Statistics

Exhibit 4

... approximates that of the US 2019 share of nonfarm employment by industry in the US



Source: US Bureau of Labor Statistics

Like all other states, the pandemic led to unprecedented declines in employment beginning in March when state-at-home orders across different states were first put into place (see Exhibit 5 on next page). During the height of North Carolina's stay-at-home order in April, the state's unemployment rate peaked at 12.9%, which was lower than the nation's rate of 14.7% for the same month. As of August, the state's unemployment rate rebounded to 6.5%, also lower than the nation's rate of 8.4% for the same month. Real GDP growth slowed dramatically in the first quarter of 2020 because of the coronavirus (see Exhibit 6 on next page). Recovery will continue to be slow, especially in the leisure and hospitality industry, and uncertainty remains regarding the length of the economic downturn.

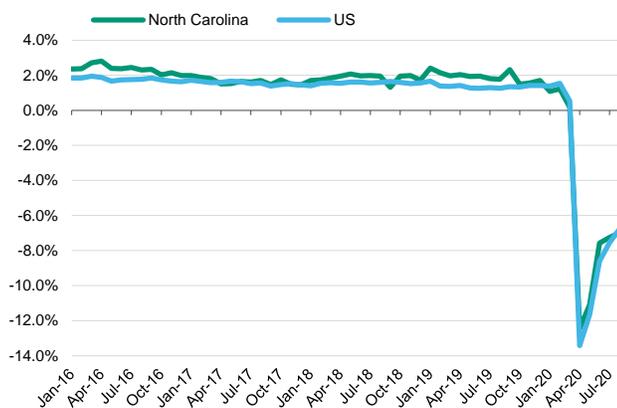
Positively, several social factors position the state well to recover from the coronavirus more quickly than other states. The state's population growth continues to outpace the nation, increasing by 9.5% since 2010 compared with 6.1% population growth in the US over the same period. From 2013 to 2018, North Carolina's prime working age population (people 25 to 54 years old) grew by 2.6% compared to 1.1% growth for the US as a whole. Over half of states saw its prime working age population decline over the same period. Migration trends in North Carolina are positive, contributing to working age population growth. In 2019, North Carolina had the seventh highest level of net migration per thousand at 7.8 people. The average net migration per thousand for the 50 states in 2019 was 1.9 people.

North Carolina also benefits from an educated workforce and investments in the Research Triangle area, which includes the [University of North Carolina at Chapel Hill](#) (Aaa stable), [Duke University](#) (Aa1 stable) and [North Carolina State University](#) (Aa1 stable). Of the state's population over the age of 25, 30.5% have a bachelor's degree or higher, which is similar to the US population as at whole at 31.5%.¹

Exhibit 5

The coronavirus led to steep employment declines in North Carolina and the US

Year-over-year monthly job growth

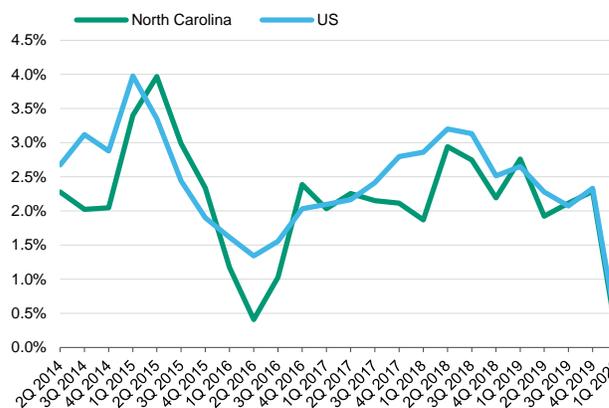


Source: US Bureau of Labor Statistics

Exhibit 6

North Carolina's real GDP growth also slowed dramatically because of the coronavirus

Year-over-year quarterly real GDP growth



Sources: US Bureau of Economic Analysis

Finances and liquidity: General revenue performs better than expected amid uncertainty surrounding the coronavirus

The state entered the coronavirus crisis with a healthy financial position because of strong revenue growth over the last few years. Despite not having a traditional budget in place for the fiscal 2019-21 biennium, the state has been able to navigate the uncertain revenue environment by limiting spending increases.

The state's Consensus Forecasting Group revised general revenue forecasts for fiscal 2020 and 2021 in May. The updated forecast projected a \$1.6 billion or 6.6% shortfall in fiscal 2020 and another \$2.6 billion or 9.9% shortfall in fiscal 2021 compared with the original certified forecast for the biennium. The forecast assumed an estimated shift of \$1.0 billion of income tax collections to fiscal 2021 because of delayed tax payments. Based on unaudited figures for fiscal 2020, general revenue collections came in \$513 million higher than the May forecast. Fiscal 2020 general revenue of \$23.9 billion represents a decline of 3.6% compared with fiscal 2019 collections and was 4.5% below the original certified forecast.

Through the first two months of fiscal 2021, general revenue grew significantly because of the shift in income tax payments to July from April. Although revenue growth over the last few months has been positive, uncertainty remains for several reasons. The end of federal programs that boosted personal income and unemployment benefits, unpredictability regarding the trajectory of the virus and variability with consumer confidence in the coming months as federal programs end and those who were temporarily unemployed potentially face permanent unemployment create a very uncertain revenue environment for the remainder of the fiscal year.

Given revenue uncertainties, the state limited spending increases by directing state agencies not to fill vacant positions, freezing salary adjustments, limiting purchases and not enacting substantial new spending during its short legislative session this year. The state balanced the biennium budget despite revenue declines because the certified expenditure budget left substantial amounts of unappropriated balance, which was made up of expected revenue not budgeted for expenditure or transfer into a reserve. Unappropriated balances of \$2.3 billion in fiscal 2020 and \$3.6 billion in fiscal 2021 resulted from the state operating under a base budget reflecting fiscal 2019 recurring spending with allowable increases and standalone spending bills enacted by the General Assembly rather than a traditional biennium budget. These unappropriated balances helped the state cover most of the projected revenue shortfall for the biennium. Additionally, the availability of significant federal aid pursuant to the CARES Act helped to balance the state's budget.

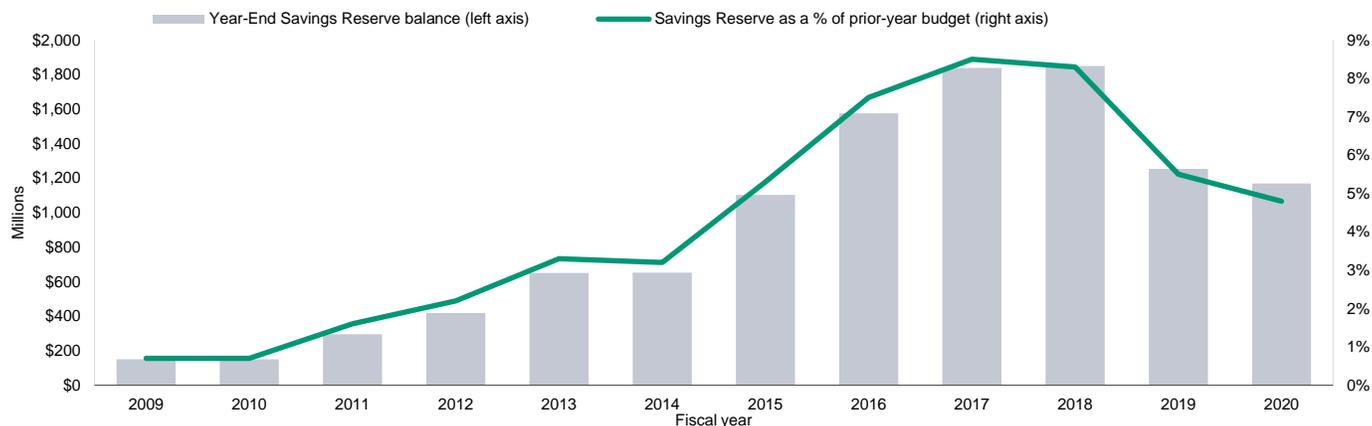
The governor proposed adjustments to the fiscal 2021 budget at the end of August that would increase spending by 1.9%. The additional spending would be allocated for education employee bonuses, funding to meet the expected state federal match for disaster recovery and Medicaid expansion. Given that the governor and General Assembly disagree on Medicaid expansion, it is unlikely that the governor's adjustments will be enacted as proposed.

LIQUIDITY

North Carolina's commitment to maintaining strong reserve levels supports its high credit quality. The state has significantly improved its Savings Reserve, or Rainy Day Fund, from \$150 million (0.7% of the prior-year budget) in fiscal 2009, to \$1.8 billion (8.3% of the prior-year budget) in fiscal 2018 (see Exhibit 7). In fiscal 2019, the state transferred \$756.5 million from the Savings Reserve to the Hurricane Florence Disaster Recovery Fund and another \$121.6 million for disaster recovery in fiscal 2020. These amounts will not be reimbursed by FEMA. After a statutorily required deposit of \$36.6 million in fiscal 2020, the reserve balance was \$1.2 billion (4.8% of the prior-year budget). The current balance is \$1.1 billion after a transfer out of \$65 million in September.

Exhibit 7

North Carolina maintains healthy reserves despite use of funds for hurricane relief in 2019



Source: North Carolina Office of State Budget and Management

The target balance for the Savings Reserve is 10.9% of the prior year's general fund budget, which is an amount the state has estimated to be sufficient to cover two years of need during nine out of ten year-over-year revenue decline scenarios. Until this target balance is achieved, 15% of annual tax revenue growth is required to be set aside for the Savings Reserve. The Savings Reserve has not been allocated for use in relation to the coronavirus. The state also has the ability to tap various reserves across special, trust and foundation funds totaling over \$2 billion, providing additional liquidity strength.

Debt and pensions: Commitment to maintaining affordable debt, pension and OPEB liabilities

DEBT STRUCTURE

North Carolina has conservatively managed its debt profile, reflecting a state constitutional provision that limits the General Assembly's ability to incur general obligation debt. The constitution stipulates that the total amount of legislatively authorized general obligation borrowing in any biennium is limited to two-thirds of the amount of debt paid down during the preceding biennium. Voters must approve any general obligation bond amount above the two-thirds limit. The General Assembly may approve appropriation-backed debt. Most of the state's debt is general obligation and appropriation debt, structured for a rapid rate of retirement.

The state's debt burden is below-average when compared with other states. With \$6.1 billion of net tax-supported debt (NTSD) outstanding at the end of 2019, North Carolina ranks 36th for NTSD per capita and 32nd for NTSD as a percent of personal income among the 50 states, according to our [most recent state debt medians report](#). North Carolina does not have any exposure to variable rate demand debt or privately placed tax-supported bank loans.

Voters approved \$2 billion in new money for the Connect NC capital improvement funding plan in March 2016. Since 2016, \$1.2 billion of Connect NC bonds have been issued and another \$400 million will be issued next month. In 2018, the governor signed into law the Build NC Bond Act, which authorized the state to issue up to \$3 billion of appropriation debt over 10 years, limited to \$300 million per fiscal year. The debt will finance transportation projects and is supported by Highway Trust Fund revenue. The first \$300 million of Build NC Bonds were issued in 2019. The General Assembly passed legislation to allow for up to \$700 million to be issued this fiscal year because there was no Build NC debt issuance during fiscal 2020.

Given the state's existing rapid principal amortization schedule and adherence to debt affordability limits, North Carolina's debt burden will not increase significantly with the issuance of additional Connect NC and Build NC bonds. Favorably, the bonding authority allows the state to address infrastructure needs to keep up with significant population growth and create opportunities for additional expansion.

In addition to the Build NC bonds, the state also appropriates money from the Highway Trust Fund to repay appropriation debt issued by the North Carolina Turnpike Authority. Last year, the North Carolina Department of Transportation (NCDOT) began experiencing cash flow issues because of large unexpected expenses related to hurricane damage and lawsuit settlements. These expenses, coupled with declining motor fuel tax revenue resulting from the pandemic, led to NCDOT failing to meet the statutory floor in April, May and June that requires NCDOT to maintain an available cash balance in the Highway Trust Fund and Highway Fund equal to at least 7.5% of total appropriations for the funds in the current fiscal year. NCDOT has since taken measures to reduce expenses and delay projects. The state General Assembly, treasurer and NCDOT have been working together to maintain spending controls going forward. Since July, the cash balance has returned to the statutorily-required level. Falling below the statutory floor did not affect the state's ability to make payments on its appropriation debt backed by Highway Trust Fund revenue.

Exhibit 8

North Carolina's 2019 outstanding debt by security

Security	Rating	Amount outstanding (000s)
General obligation	Aaa stable	\$2,424,100
Appropriation-backed debt:		
Limited obligation bonds	Aa1 stable	\$1,895,675
NCTA bonds	Aa1 stable	\$689,200
PPP - NCDOT DRAM obligation	NR	\$62,693
GARVEEs	A2 stable	\$1,046,580
Capital leases	NR	\$22,600
Total net tax-supported debt		\$6,140,848

NCTA stands for North Carolina Turnpike Authority.

PPP stands for public-private partnership. DRAM stands for Developer Ratio Adjustment Mechanism in connection with the I-77 PPP project.

GARVEE stands for Grant Anticipation Revenue Vehicle.

NR stands for no rating.

Sources: State of North Carolina and Moody's Investors Service

DEBT-RELATED DERIVATIVES

The state is not a party to any debt-related derivatives.

PENSIONS AND OPEB

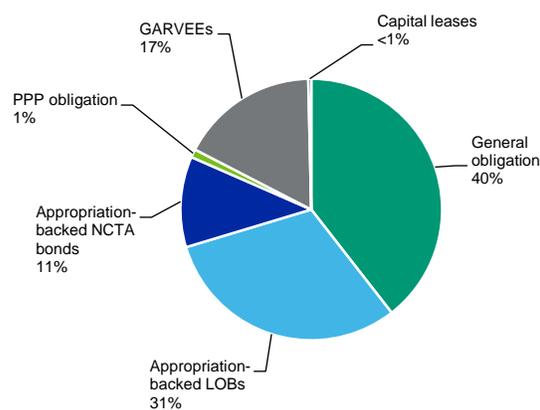
North Carolina's adjusted net pension liability (ANPL), our measure of the government's pension burden, is the lowest of any state when compared to state GDP, according to our [most recent state pension medians report](#). Moody's ANPL reflects certain adjustments made to improve comparability of reported pension liabilities. North Carolina's ANPL as of fiscal 2019 was \$9.1 billion, or 1.6% of state GDP, which is very low compared to the fiscal 2019 50-state median of 4.8%. The state participates in five pension systems, of which the most significant is the Teachers' and State Employees' Retirement System (TSERS).

The state contributed \$493 million to its pension systems in fiscal 2019. This amount is more than the contribution amount that would allow the state's reported net pension liability to "tread water," or remain stable from one year to the next, assuming investment return and other actuarial assumptions are met for the year. The tread water amount is determined by the actuarial cost of the year's benefit accruals ("service cost") plus interest on the net pension liability at the beginning of the year. The state's contribution relative to the tread water benchmark implies a funding approach that will likely lead to declining pension liabilities over time.

The state's combined debt service, pension payment on a tread water basis and OPEB contributions in fiscal 2019 were 4.8% of own-source governmental revenue. North Carolina's fixed costs are low compared to the fiscal 2019 50-state median of 7.8%.

Exhibit 9

North Carolina's share of net tax-supported debt by security



Sources: State of North Carolina

The state takes a very proactive approach to addressing its pension and OPEB liabilities, leading to the fourth-lowest ranking ANPL plus ANOL (adjusted net OPEB liability) to GDP ratio among states. In 2018, the governor signed into law the Unfunded Liability Solvency Reserve Act to further address the state's unfunded pension and OPEB liabilities. The act established a Solvency Reserve, which is funded by budgetary appropriations and overflows of the Savings Reserve once the reserve meets its statutory cap. The next opportunity for the state to appropriate funds to the Solvency Reserve will be in the next biennium budget. Any accumulated balance in the Solvency Reserve will be allocated to pre-fund the state's retiree medical and TSERS liabilities in proportion to those plans' unfunded liabilities (about a 75%/25% split).

ESG considerations

Environmental

The US states sector overall has [low exposure to environmental risks](#) because of states' large and diverse economies, revenue-raising ability and federal government support for disaster recovery costs via FEMA. Nonetheless, North Carolina is moderately exposed to rising sea levels and more frequent storms along its economically vital coastline. According to data from Moody's affiliate and climate intelligence firm Four Twenty Seven, North Carolina is most exposed to the increased frequency and severity of hurricanes. Based on Four Twenty Seven data, North Carolina ranks sixth highest among states for hurricane exposure.

Gross domestic product in North Carolina's coastal counties accounts for 8.1% of the state's total, lower than the 50-state coastal county median of 38.6%. Further, only 2.0% of wages in North Carolina are earned in hurricane flood zones, much lower than states such as Louisiana and Florida, where 33.4% and 19.5% of wages are earned in hurricane flood zones, respectively.² However, inflation-adjusted hurricane property damage and lost output since 1980 (as of July 8, 2020) ranges between 8.5% to 17.0% of North Carolina's GDP over the period, compared to only 4.5% for the US.³ Also, housing in North Carolina is especially exposed to flooding: 28.3% of coastal dwellings are in the 100/500 year flood plain compared to 16.8% of coastal dwellings for the US as a whole.

Balancing these risks are several factors, including the state's strong commitment to building up contingency reserves and diverse economy, which help the state recover more quickly after a storm event. In 2018, the state [tapped its Rainy Day Fund to provide funding for Hurricane Florence disaster recovery](#). Additionally, a long-standing history of federal disaster aid mitigates the credit impact of hurricane exposure for states.

Social

[Social issues, such as demographics, labor force, income and education, are key influencers of North Carolina's economy, governance stability and financial and leverage trends](#). The state benefits from an educated workforce and strong population growth, especially of working age people. This contributes to the state's attractiveness to businesses looking to relocate or expand, which helps boost the state's economy. For more information on social factors, please see our Economy section.

Governance

The constitutional and legal framework governing a state, along with the financial management and budgeting practices a state employs, are [material considerations in state credit quality](#). Generally, states adhere to balanced budget requirements and have significant flexibility over their revenue and expenditures, contributing to strong governance frameworks across the sector.

North Carolina benefits from strong executive management, proactive responses to unexpected budget shortfalls and conservative budgeting. The governor has the ability to reduce agency budgets without review or approval from any other entity, and the state produces robust financial reports, including a debt affordability study, timely audited financial statements, monthly revenue reports and multiyear forecasts.

The state's late budget for the fiscal 2019-21 biennium reflects some [governance weakness](#). However, it was not the first time the state experienced a protracted budget delay. In 2015, the next year's budget was not signed into law until September 18. The lack of a traditional enacted biennium budget is mitigated by a continuing appropriation that is established by state statute. A 2016 amendment to the State Budget Act permits the state budget director to continue allocating funds for expenditures at the prior fiscal year's recurring levels without any further legislative action should there be a budget delay. After failing to pass a biennium budget at the end of fiscal 2019, the state continued to operate at 2019 spending levels and had the flexibility to address additional spending priorities with smaller expenditure bills. Debt service payments are uninterrupted by a budget delay and the state is also able to spend any additional federal funds that are received, mainly for health and human services and public schools.

Rating methodology and scorecard factors

The [US States and Territories Rating Methodology](#) includes a scorecard, which summarizes the 10 rating factors generally most important to state and territory credit profiles. Because the scorecard is a summary, and may not include every consideration in the credit analysis for a specific issuer, a scorecard-indicated outcome may or may not map closely to the actual rating assigned.

US states and territories rating methodology scorecard North Carolina (State of)

Rating Factors	Measure	Score
Factor 1: Economy (25%)		
a) Per Capita Income Relative to US Average [1]	84.6%	Aa
b) Nominal Gross Domestic Product (\$ billions) [1]	\$587.7	Aaa
Factor 2: Finances (30%)		
a) Structural Balance	Aaa	Aaa
b) Fixed Costs / State Own-Source Revenue [2]	4.8%	Aaa
c) Liquidity and Fund Balance	Aa	Aa
Factor 3: Governance (20%)		
a) Governance / Constitutional Framework	Aaa	Aaa
Factor 4: Debt and Pensions (25%)		
a) (Moody's ANPL + Net Tax-Supported Debt) / State GDP [2] [3]	2.6%	Aaa
Factors 5 - 10: Notching Factors [4]		
Adjustments Up: Growth Trend	0.5	
Adjustments Down: None	0	
Rating:		
a) Scorecard-Indicated Outcome		Aaa
b) Actual Rating Assigned		Aaa

[1] Economy measures are based on data from the most recent year available.

[2] Fixed costs and debt and pensions measures are based on data from the most recent debt and pensions medians report published by Moody's.

[3] ANPL stands for adjusted net pension liability.

[4] Notching factors 5-10 are specifically defined in the US States and Territories Rating Methodology.

Sources: US Bureau of Economic Analysis, State CAFRs, Moody's Investors Service

Endnotes

[1](#) Educational attainment figures are based on 2018 American Community Survey 5-Year Estimates.

[2](#) Based on data from the US Bureau of Labor Statistics Quarterly Census of Employment and Wages 2019 Third Quarter.

[3](#) Based on data from NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2020).

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Credit Profile

US\$400.0 mil pub imp (Connect NC) GO bnds ser 2020A due 06/01/2040

Long Term Rating AAA/Stable New

North Carolina GO

Long Term Rating AAA/Stable Affirmed

Rating Action

S&P Global Ratings assigned its 'AAA' long-term rating to the State of North Carolina's \$400 million series 2020A general obligation (GO) public improvement (Connect NC) bonds. At the same time, S&P Global Ratings affirmed its 'AAA' rating on the state's existing GO bonds and its 'AA+' rating on the state's appropriation-backed obligations, which include Build NC bonds and those issued by the North Carolina Turnpike Authority. The outlook on all of the ratings is stable.

The series 2020A GO bonds are secured by a pledge of the state's faith and credit and taxing power.

The bonds are the fourth issuance of North Carolina's \$2 billion voter-approved Connect NC GO bonds, which were authorized in March 2016 for capital projects throughout the state. Within the authorization, the primary projects (66.5%) are for the University of North Carolina (\$980 million) and community colleges (\$350 million).

Credit overview

S&P Global Ratings believes North Carolina's strong credit fundamentals will allow the state to navigate through challenges brought about by the COVID-19 pandemic. Historically, the state's credit profile has benefited from strong economic growth, well-defined financial management policies, and a commitment to reserves despite budgetary challenges that include response to significant weather events. While the future impact of the pandemic on state finances is uncertain, we believe North Carolina's underlying credit strengths will persist.

The state has taken various actions to help limit the effects of the pandemic including temporary closures of schools and businesses along with implementing stay-at-home orders. Currently, North Carolina is operating under phase 2.5 of its reopening plan, which further eases previous restrictions. While recovery has begun, S&P Global Economics' latest forecast still anticipates that the resulting consequences from the pandemic-induced recession will be substantial for the nation, and estimates that U.S. real GDP will contract 4% this year (see "The U.S. Economy Reboots, With Obstacles Ahead," published Sept. 24, 2020, on RatingsDirect). In May 2020, North Carolina's Consensus Forecasting Group (CFG) predicted a steeper 7%-10% drop in the nation's GDP.

The state, however, is currently operating within a more favorable-than-anticipated fiscal 2019-2021 budgetary environment given stronger-than-forecast economic activity compared to their conservative forecasting. Officials expect that a \$2.73 billion (9.19%) structural budget gap forecast in May 2020 will be significantly reduced given this

better-than-anticipated economy activity. The CFG's May 2020 revenue forecast reduced state general fund revenue collections by \$1.64 billion (6.6%) for fiscal 2020 and \$2.57 billion (9.9%) for fiscal 2021. However, recent revenue collections have exceeded the CFG's forecast due in part to an assumption that recovery from the partial shutdown--that began in March--would occur very slowly. Specifically, growth in retail sales and employment has exceeded expectations to date. Reported general fund collections were \$513 million higher than forecast through of June 30, 2020, and collections have also outpaced projections for the first two months of fiscal 2021, with stronger-than-anticipated sales and use tax collections and individual income tax withholding collections. While the governor has said that the state is not expecting to return to its previously expected 2020 revenue levels until at least 2023, we believe North Carolina will continue to proactively manage its budget and the state's total reserve profile will likely be sufficient to cover potential shortfalls.

The state's savings reserve--informally known as the rainy-day fund--had a balance of \$1.104 billion as of September 2020, which represents a good 4.5% of fiscal 2020 general fund expenditures, in our view. In recent years, North Carolina has withdrawn reserves to address significant weather events including hurricanes Florence, Matthew, Isaias and Michael, as well as an earthquake in the western area of the state. We believe the state has a strong record of replenishing reserves after one-time use, particularly during disaster recovery activities. Management reports that the state is currently not expecting to withdraw reserve funds for operations in fiscal 2021; additions might be considered depending on conditions. We note the state also has up to \$907.1 million in special fund and trust funds, as of August 2020 that it could use without legislative action, if necessary.

North Carolina does not anticipate a need for internal or external borrowing for liquidity given strong cash levels (estimated at more than \$7 billion or over 25% of general fund expenditures), according to officials.

To date, North Carolina has fully allocated all \$3.58 billion received under Title V of the Coronavirus Aid Relief and Economic Security Act, which established the Coronavirus Relief Fund.

The GO rating also reflects our view of the state's:

- Historically strong economic growth trends still expected to exceed those of the nation even given reduced economic activity due to the COVID-19 pandemic, supported by diverse employment sectors;
- History of prudent fiscal management--this includes making difficult budget decisions to restore fiscal balance when necessary, as well as managing surpluses when they occur, to retain structural budget balance;
- Low-to-moderate debt burden, with rapid amortization and state borrowing subject to debt affordability guidelines, which we believe is an important credit factor for a growing state; and
- Well-funded pension system and progress in addressing other postemployment benefit (OPEB) liabilities.

The stable outlook reflects our view that North Carolina will continue to exercise proactive fiscal management to steer through the challenges of the current sudden-stop recession. It also reflects the state's commitment to strong fiscal management of the budget, reserve balances, debt, and retirement liabilities. The state has demonstrated the strength of such commitments by building reserves during the recent economic expansion and replenishing them after one-time use, maintaining and monitoring compliance with its debt affordability guidelines, and proactively working to reduce its pension and OPEB obligations. Furthermore, we anticipate that the underlying strengths and structural features of

North Carolina's economy will support growth after economic shocks recede.

North Carolina's GO bonds are eligible to be rated above the sovereign because we believe the state can maintain better credit characteristics than the U.S. in a stress scenario. Under our criteria "Ratings Above The Sovereign: Corporate And Government Ratings—Methodology And Assumptions" (published Nov. 19, 2013), U.S. states are considered to have moderate sensitivity to country risk. The institutional framework in the U.S. is predictable, with significant state autonomy and flexibility demonstrated by serial bond amortization as well as independent treasury management.

Based on the analytic factors evaluated for North Carolina, on a four-point scale of '1.0' (as the strongest) to '4.0' (as the weakest), S&P Global Ratings has assigned a composite score of '1.4' to the state.

Environmental, social, and governance factors

We view North Carolina's social risks in line with that of the sector as a whole, supported by strong economic growth and demographic trends over the past decade. In addition, we view its governance risks as being in line with the sector and the state has historically maintained a strong management and policy framework to respond to developing risks. However, environmental risk is somewhat elevated compared with that of other states due to some 300 miles of coastline along the Atlantic Ocean and susceptibility to adverse weather events. In our view, North Carolina has undertaken efforts to address this risk including directing all cabinet agencies to integrate climate adaptation and resiliency planning into their planning and operations and creating a statewide climate risk assessment and resilience plan.

We view the risks posed by the pandemic to public health and safety as a social risk, which, if sustained, could weaken North Carolina's economy, liquidity, and budgetary performance. For more information on the potential effects of the pandemic on state credit conditions, see "The COVID-19 Outbreak Weakens U.S. State And Local Government Credit Conditions" (published on April 2, 2020) and "U.S. States Mid-Year Sector View: States Will Continue To Be Tested In Unprecedented Ways" (published on July 13, 2020).

Stable Outlook

Downside scenario

We believe North Carolina faces significant budgetary challenges in the wake of the pandemic. Although unexpected given the state's historical track record and current revenue projections, we could lower the rating on North Carolina if solutions to budgetary gaps relied extensively on one-time items or if there were no plans to rebuild reserves following withdrawals.

In addition, we believe the rating could be pressured from increasing service, infrastructure, and capital demands as the result of a growing population and recurring severe weather events. However, we expect North Carolina's fiscal management practices in place and commitment to structural balance will allow the state to address these pressures appropriately. If the state were to soften affordability guidelines or indicate a lack of commitment to demonstrated prudent management of its strong fiscal condition, we could lower the rating.

Credit Opinion

Government Framework

North Carolina Constitution requires the state to approve balanced budgets each biennium and that its budgets stay in balance throughout the biennium. To help manage its budget, the governor is empowered by statute to adjust spending as needed. Such adjustments might only be made after first providing adequate provision for the payment of principal and interest on North Carolina's bonds and notes according to their terms.

We consider the state to have a fair amount of revenue-raising ability, despite a November 2018 approval by voters to reduce its maximum allowable income tax rate to 7% from 10%. In our opinion, the reduction could create unnecessary budgetary challenges should the state experience significant fiscal stress. This potential reduction comes several years after North Carolina began reducing its income tax rates and expanding its tax base. It moved to a flat tax rate of 5.8% in 2014, and beginning Jan. 1, 2019, the enacted budget lowered the personal income tax rate to 5.250% from 5.499%. Given the current distance of the personal income tax rate from the proposed maximum allowable rate, the reduced revenue-raising flexibility is not a credit concern, in part due to the state's strong fiscal management practices. For fiscal 2018, individual income taxes were the state's largest general fund revenue source (52.3%), followed by sales and use taxes (32.8%) on a modified accrual basis.

North Carolina can raise its income tax (to a maximum of 7%) and sales tax rates and approve new revenues without the need for voter approval or supermajority votes in the legislature. The state also has a fair amount of budgetary flexibility with regard to its expenditures. When needed, it has adjusted agency spending including high-need agencies such as prisons, Medicaid, and public education. Education aid, budgeted at 58% of appropriations for fiscal 2021, is the state's largest expenditure item.

We have assigned a score of '1.3' out of '4.0' to North Carolina's government framework, where '1.0' is the strongest score and '4.0' the weakest.

Financial management assessment: Strong

We consider North Carolina's management practices strong under S&P Global Ratings' financial management assessment (FMA) methodology. In our framework, an FMA of strong indicates practices are strong, well embedded, and likely sustainable. Management maintains best practices we consider critical to supporting credit quality, and these are well-embedded in the government's daily operations and practices. Formal policies support many of these activities, adding to the likelihood that these practices will continue and transcend changes in the operating environment or personnel.

Among North Carolina's practices are:

- Biennial budgeting that is amended annually as part of the governor's adjusted budget, which is voted on by the legislature;
- Long-term financial forecasting to include analysis of proposed changes and possible outyear budget gaps;

- Revenue and expenditure assumptions based on historical trend analysis, using both internal and outside consultants;
- A conservative investment policy, with performance reported annually to the legislature and reported internally on a monthly basis;
- A debt affordability model that targets debt ratios and defines guidelines to limit state debt levels, in addition to recent legislation that limits future special indebtedness issuance to 25% of total general obligation debt authorized after January 2013;
- A capital improvement plan generally updated for the biennium every other year, and the state has not updated its capital master plan since fiscal 2006-2007, although it, and the University of North Carolina, maintain a six-year capital needs inventory, from which capital decisions are made; and
- Formal reserve requirements; session law 2017-5 established the goal for the savings reserve account balance from 8% of the prior year's general fund operating budget to a requirement that each budget include a transfer to the savings reserve of 15% of each fiscal year's estimated growth in state tax revenues that are deposited into the general fund. Based on an annual evaluation, the amount in the reserve is intended to cover at least a two-year shortfall for nine out of 10 recessions involving a decline in general fund revenue from one fiscal year to the next. The target, based on most recent analysis by the state, is approximately 10.9% of prior-year general fund operating appropriations.

Once the budget is approved, North Carolina monitors both revenue and expenditure performance on a regular basis and reports results, in addition to an economic update. Budget adjustments have historically been implemented regularly on a timely basis. The governor has executive authority to make adjustments to the budget and a track record of doing so. Deficits are not carried forward into future fiscal years.

On a scale ranging from '1.0' (strongest) to '4.0' (weakest), S&P Global Ratings has assigned a '1.0' to North Carolina's financial management.

Economy

Although economic activity has weakened across the U.S. due to the pandemic, North Carolina's economic growth is still projected to outpace national economic growth over the next four years. In addition, the state's labor market has begun to rebound after severe job losses in the leisure and hospitality sector and temporary plant closures in the manufacturing sector. The state unemployment rate peaked in April 2020 at 12.9% and has fallen to 6.5% as of August 2020, which is tied for the 17th-lowest rate in the nation.

North Carolina's economic growth is strengthened by Charlotte, one of the nation's major financial centers, and the Raleigh-Durham area, where Research Triangle Park remains an economic center serving as a vital area for the state with a consortium of academia, researchers, and businesses working collaboratively, along with continued investments by the state in primary and higher education. The Charlotte region is also the manufacturing center for almost 60% of the nation's fiber-optic cables. Also of note is a \$160 million investment by CSX to develop a new intermodal terminal near Rocky Mount. Slated for completion in early 2021, the terminal will be able to process more than 100,000 containers per year, which will bode well for the state.

Charlotte is already home to the North American headquarters of Bank of America and Wachovia, and Atlanta-based SunTrust merged with Winston-Salem-based BB&T in December 2019, with the headquarters of the combined company to be based in the city. The combined company, Truist Financial Corp., is the sixth-largest bank holding company in the nation. Although the number of jobs to be created in the metropolitan area is still unclear, the move strengthens Charlotte's reputation as a major financial hub.

State gross domestic product (GDP) growth remains strong. State nominal GDP was \$56,036 per capita in 2019 with real GDP growth of 2.3%, just under that of the nation. IHS Markit projects the state's GDP growth will outpace that of the nation over the next four years through 2023. Also in North Carolina's favor are demographic trends indicating an increasing population, although we note continued growth in the state's 65-and-older population will exceed that of younger cohorts. Estimates have the state gaining a congressional seat on completion of the 2020 Census.

North Carolina remains the national leader in the traditional industries of tobacco, textiles, apparel, and furniture. Although its share of the state economy is gradually declining, manufacturing still accounts for almost 20% of gross state product (GSP), and is among the highest percentages in the nation (the U.S. average is 12%), according to IHS Markit. The wages in this sector, due to the large resource-based component of the state's manufacturing sector, are some of the lowest in the country. North Carolina's overall wealth levels (personal income per capita) remain below average compared with that of the U.S. and were 84.6% of national levels in 2019.

Overall, the state's location along the East Coast and major transportation corridor make it ideal for continued growth in transportation and warehousing. North Carolina Ports purchased three neo-Panamax ship-to-shore cranes for the Port of Wilmington to accommodate the larger container ships transiting through the Panama Canal. The \$34 million acquisition is part of a more than \$200 million plan to improve the port's infrastructure. All three cranes arrived within the first few months of 2019. There is also a \$580 million proposal to expand the Port of Wilmington.

We have revised our score of North Carolina's economy to a '1.9' from a '1.8', where '1.0' is the strongest score and '4.0' the weakest.

Budgetary Performance

In our view, North Carolina has consistently had well-defined financial management policies and a historical commitment to reserves despite budget challenges. Although the state has previously used nonrecurring reserves to help cover budget gaps, it also implemented deficit mitigation measures to reverse structural imbalance. More prudently, it worked to rebuild its reserve levels during the recent economic expansion and increased its reserve target.

State statutes specify that 15% of each fiscal year's estimated growth in state tax revenues that are deposited in the general fund must be transferred into the savings reserve (rainy-day fund) until it reaches a recommended target. The target, which is revised annually, is based on a consensus estimate of the amount necessary to cover two years of need for nine out of 10 scenarios involving a decline in general fund revenue from one fiscal year to the next. The current target is 10.9% of the previous year's general fund appropriations for current operations.

Following the Great Recession, the state restored its savings reserve (the rainy-day reserve) in fiscal 2015 to a level

comparable to its fiscal 2007 peak level of about 4.6% of prior-year operating appropriations. Subsequent additions to the fund occurred annually through June 30, 2018, when the balance of the savings reserve was \$1.85 billion or 8.24% of the prior year's general fund appropriation budget. During the first month of fiscal 2019, North Carolina added \$221.5 million to its rainy-day reserve. Shortly thereafter, Hurricane Florence made landfall causing extensive damage throughout the state and spurring withdrawal of \$815.8 million of rainy-day reserves to address the damage (as well as previous damage from hurricanes Matthew and Michael). The withdrawal brought the savings reserve balance to \$1.169 billion, as of June 30, 2020, or a good 4.9% of total fiscal 2019 general fund expenditures. Further withdrawals were made in fiscal 2020 to address Hurricane Dorian and further address hurricanes Matthew, Michael, and Florence, and another withdrawal was made in fiscal 2021 to provide additional aid to the aforementioned hurricanes, Hurricane Isaias, and an earthquake in the western area of the state. As of September 2020, the savings reserve balance is \$1.1104 billion or 4.5% of total fiscal 2020 general fund expenditures, which we consider good.

In our opinion, the ability of the state to use its reserves following devastating weather events--and still maintain them at strong levels--demonstrates the strong financial policies and practices in place to build reserves during times of economic expansion.

We note the state maintains other available reserves outside of its savings reserve. These funds include the needs-based public school building capital fund (\$325.5 million), commerce special fund (\$241.9 million), and other environmental funds (\$424.5 million). North Carolina has (as of August 2020) up to \$907.1 million in special fund and trust funds that it could use without legislative action if necessary.

The state's cash profile remains strong and officials do not currently anticipate the need for internal or external borrowing in the near term.

Fiscal 2019-21 biennium

North Carolina is currently operating within a more favorable-than-anticipated fiscal 2019-2021 budgetary environment given a stronger-than-forecast initial economic recovery, which officials expect will reduce a forecast \$2.73 billion (9.19%) structural budget gap.

The CFG's May 2020 revenue forecast reduced collections by \$1.64 billion (6.6%) for fiscal 2020 and \$2.57 billion (9.9%) for fiscal 2021. Included in the forecast was an estimated \$1.01 billion shift in revenue from fiscal 2020 into fiscal 2021 because of the delay in the tax filing and payments deadline to July 15.

However, recent revenue collections have exceeded the CFG's May 2020 forecast due in part to an assumption that recovery from the partial shutdown--that began in March--would occur very slowly. Specifically, growth in retail sales and employment has exceeded expectations to date. Reported general fund collections were \$513 million higher than forecast through of June 30, 2020. Collections have also outpaced projections for the first two months of fiscal 2021, with stronger-than-anticipated sales and use tax collections and individual income tax withholding collections. Specifically, year-to-date sales and use tax collections through August 2020 have outperformed fiscal 2020 collections for the same time period by \$165.3 million or 11.0%. While the governor has said that the state is not anticipating to return to its previously expected 2020 revenue levels until at least 2023, we believe North Carolina will continue to proactively manage its budget.

Before the pandemic, the state began the fiscal 2019-2021 biennium without a traditional enacted budget due to policy disagreements rather than large structural financial gaps that needed to be closed. On June 28, 2019, the governor vetoed House Bill 966, the fiscal 2019-2021 biennial budget that totaled \$24.0 billion and \$24.8 billion in each respective year. Among the items not included in the legislature's budget compared to the gubernatorial proposal were a \$3.9 billion GO bond referendum (Invest NC) for November 2020, Medicaid expansion to more than 500,000 residents, and various education spending increases the governor had proposed.

A late budget is not uncommon for North Carolina. Historically, the legislative session has several times extended past the end of the fiscal year, including 2015, when the fiscal 2016-2017 biennial budget was enacted in September. In 2016, the legislature amended the State Budget Act to allow the director of the budget to continue to allocate funds for expenditures at prior-year levels with no further legislative action if the budget does not pass by June 30. According to the act, when making allocations, the director will ensure the prompt payment of the principal and interest on bonds and notes of the state according to their terms. Therefore, despite not having a budget in place at the beginning of the 2019-2021 biennium, government operations continued.

Audited fiscal 2019 results (generally accepted accounting principles basis)

North Carolina's comprehensive annual financial report (CAFR) as of June 30, 2020, reports positive operating results for the state's general fund, on a generally accepted accounting principles basis. The fiscal year ended with a total fund balance of \$6.0 billion in its general fund, which represents 10.9% (\$586.3 million) growth in fiscal 2019 (from 2018) and follows 22.4% in fiscal 2018 (from fiscal 2017).

The fiscal 2019 CAFR reports total general fund revenues were \$42.58 billion while total general revenue fund expenditures were just below at \$42.56 billion excluding net transfers in of \$549.2 million. The general fund balance is composed of \$160.9 million (2.7%) in nonspendable funds, \$162.9 million (2.7%) in restricted funds, and \$2.7 billion (44.9%) in committed funds. The unassigned general fund balance is \$2.4 billion (40.5%). General fund cash and cash equivalents totaled \$6.1 billion, up from \$5.4 billion in fiscal 2018.

Across total governmental funds, the state posted an ending balance of \$9.59 billion, a 9.6% increase from fiscal 2018. This ending balance consists of \$392.4 million (4.0%) in nonspendable balances, \$2.4 billion (24.9%) in restricted funds, \$5.2 billion (54.0%) in committed funds, and \$1.1 billion (11.2%) in unassigned funds. Available cash and cash equivalents are \$8.0 billion.

In January 2020, the Office of State Budget and Management, along with the Fiscal Research Division of the General Assembly, recommended a savings reserve target balance of 10.9% of the prior fiscal year's general fund operating budget appropriations. At June 30, 2019, the balance of the savings reserve was \$1.25 billion, which represents 5.45% of the prior year's general fund appropriation budget. The savings reserve is included with the unassigned fund balance.

We have assigned a score of '1.2' to North Carolina's budgetary performance, where '1.0' is the strongest score and '4.0' the weakest.

Debt And Liability Profile

In our opinion, North Carolina has a low-to-moderate debt burden with rapid amortization. The state's debt profile also benefits from established debt affordability processes and limitations that have stabilized debt levels over time.

According to our calculations, North Carolina has about \$5.3 billion tax-supported debt outstanding as of June 30, 2019. This figure includes GO and appropriation-backed obligations (including highway trust fund [HTF]-backed appropriation debt) and represents \$507 per capita, 1.1% of personal income, and approximately 0.9% of GSP. About 70% of tax-supported principal retires in 10 years, which we consider rapid. Tax-supported debt service remained low in fiscal 2019 at 2.4% of general governmental expenditures less federal funds, which we view as a credit positive as the rapid amortization is not pressuring the budget. The level of debt outstanding has remained relatively stable in the previous five years and North Carolina does not have any swaps or variable-rate debt outstanding at this time.

The state constitution allows North Carolina to issue additional GO debt without a referendum as long as the amount does not exceed two-thirds of the reduction in GO debt over the preceding biennium. Furthermore, North Carolina implemented a debt-affordability process in 2003 to evaluate the debt burden on future budgets. The state treasurer updates the study annually, and the following aims are established as of the Feb. 1, 2020:

- Net tax-supported debt to personal income is targeted at no more than 2.50%, with a ceiling of 3.00%;
- General fund-supported debt service to general tax revenues has a 4.00% target and 4.75% ceiling; and
- The 10-year bond principal payout ratio is targeted at 55%, with a floor of 50%.

North Carolina is well within these targets at present, which are internal guidelines and not legal restrictions. In the 2013 session, the legislature also passed legislation to limit the issuance of appropriation debt to 25% of total general fund-supported debt authorized after January 2013.

In recent years, North Carolina has approved two major bonding programs that fund various state capital projects including:

- The Connect NC bond program authorized the issuance of \$2 billion of GO debt for funding of state public facilities. The bonds were agreed upon by the general assembly in October 2015 and subsequently approved by voters in March 2016. The state has issued bonds under the program in 2016, 2018, and 2019 in accordance with debt affordability guidelines.
- The Build NC bond program authorized the issuance of \$3 billion of appropriation-backed obligations--up to \$300 million may be issued annually over a 10-year period--to fund transportation projects. Approved in June 2018, the bonds are payable, subject to appropriation, from the state's HTF. The debt is subject to North Carolina's debt affordability limits; each issuance has a 15-year maturity limit, and the state treasurer is responsible for recommending issuances under the program. Special legislation that allows for up to \$700 million of Build NC bonds to be issued in fiscal 2021 was passed in the 2020 legislative session; the total amount authorized was not altered.

In our opinion, the potential for future bonding between the Connect NC and Build NC program is unlikely to have a rating impact. Should any additional bonding programs be approved, we believe they would be subject to the state's

debt affordability guidelines.

In 2014, North Carolina Department of Transportation (NCDOT) entered into a public-private partnership with NC Mobility Partners LLC to design, build, and finance and operate a high-occupancy lane project along approximately 27 miles of the Interstate 77 corridor. Total project costs are \$648.4 million, of which NCDOT contributed \$95.73 million of public funds. If the project experiences traffic or revenue shortfalls, NCDOT's financial contributions are limited to \$75 million (and limited to \$12 million annually). In 2013, the state also reformed its unemployment insurance system to address an approximately \$2.8 billion liability related to unemployment account advances from the U.S. Treasury. North Carolina had paid back the entire amount as of April 2015.

Statutes provide the state and agencies with the authority to finance energy conservation measures by entering into installment financing contracts that can include provisions to request state appropriation for installment payments. To date, North Carolina estimates it has \$219.4 million outstanding in installment financing agreements with various banks for various agencies and universities, which are self-supporting from energy savings at present. On our review of the documents provided, we consider most listed events of default remote, except that certain of these installment financing agreements include cross-default provisions for agency or university loans outstanding with the related bank as an event of default with immediate acceleration of principal. We believe the contingent liquidity risks are mitigated by the state's good weekly available cash.

Pension liabilities

In our view, North Carolina's unfunded pension liabilities are low compared with those of state peers due in part to a strong funding discipline. We expect the state will maintain its commitment toward adequately funding these liabilities.

North Carolina's three-year-average pension funded ratio is good at 89.2% as of June 30, 2019. The state's overall net pension liability across all plans for which it is responsible is \$2.4 billion, which we consider to be low when compared to population (\$238 per capita) and income (0.5% of personal income).

The state administers several defined-benefit pension plans. Plans representing a significant portion of the state's unfunded pension liability as of June 30, 2019, included:

- Teachers' and State Employees' Retirement System (TSERS): 87.6% funded with the state's applicable net pension liability (NPL) \$2.3 billion.

Overall, we view the state's pension funding discipline as strong with a history of paying 100% of its ADC. Total plan contributions usually meet our calculation of minimum funding progress (certain annual service and interest costs and some amortization of liability). On Jan. 1, 2016, the retirement board adopted the Employer Contribution Rate Stabilization Policy. Under the policy, the contribution rate recommended to the legislature for TSERS for the period through June 30, 2022 will be no less than 0.35% of payroll greater than the appropriated contribution from the previous fiscal year, with an ADC as its lower boundary and an alternate required contribution using a treasury bond-indexed discount rate as the upper boundary. Based on the policy, TSERS employer contributions met ADC in fiscal 2019 after exceeding the ADC by approximately \$37 million in fiscal 2018.

On the whole, management factors and actuarial inputs do not significantly encumber or improve our view of the

state's overall pension funding discipline. As of its most recent valuation (Dec. 31, 2018), the state was using a conservative closed level-dollar amortization method with 12 years remaining on its amortization period, which we view favorably. The assumed rate of return is 7.0%.

The plan reported an actual 5.6% five-year average annual money weighted rate of return, which is below its 7.0% assumed rate of return. The plan's active-to-beneficiaries membership ratio is 1.40, which is above the national average of 1.3. We believe the system incorporates experience trends and industry standards into its experience study, which has been historically produced every five years.

Other postemployment benefit liabilities

North Carolina's reported share of its net OPEB liabilities is average, in our view, compared with that of state peers.

The state administers two cost-sharing, multiple-employer, defined benefit OPEB plans. The majority of North Carolina's liability results from the Retiree Health Benefit Fund (RHBF), which provides health benefits to eligible retirees and beneficiaries. The state also provides long- and short-term disability benefits through the Disability Income Plan of North Carolina (DIPNC). Plan participants, in addition to the state, include local education agencies, higher education institutions, and local governments (DIPNC is only a benefit for TSERS members).

The state reports a 19.06% proportionate share of the NOL for the RHBF was \$6.0 billion in fiscal 2019, which translates into approximately \$545 per capita, which we note is just under the national median of \$570. The plan, due to insufficient assets, has applied a discount rate based on a municipal bond rate that fluctuates with market conditions. We do not view this volatility's effect on year-over-year reported liabilities as indicative of a fundamental plan change, all else being equal.

In the past, North Carolina has made adjustments to the benefits of new participants and established an employee benefit trust fund to control costs and provide a mechanism to accumulate assets. The most recent material change to the OPEB plans was the repeal of retiree medical benefits for employees hired after Jan. 1, 2021.

For more information on pension and OPEB liabilities across the 50 states, please see "Sudden-Stop Recession Pressures U.S. States' Funding For Pension And Other Retirement Liabilities," published on Aug. 3, 2020.

We have revised our score of North Carolina's debt and liability profile to a '1.5' from a '1.8', where '1.0' is the strongest score and '4.0' the weakest.

Related Research

Through The ESG Lens 2.0: A Deeper Dive Into U.S. Public Finance Credit Factors, April 28, 2020

Ratings Detail (As Of September 25, 2020)		
North Carolina ltd oblig build nc bnds ser 2019A due 05/01/2034		
Long Term Rating	AA+/Stable	Affirmed
North Carolina APPROP		
Long Term Rating	AA+/Stable	Affirmed

Ratings Detail (As Of September 25, 2020) (cont.)

North Carolina APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina GO		
<i>Long Term Rating</i>	AAA/Stable	Affirmed
North Carolina GO		
<i>Unenhanced Rating</i>	AAA(SPUR)/Stable	Affirmed
North Carolina GO		
<i>Long Term Rating</i>	AAA/Stable	Affirmed
North Carolina Infrastructure Fin Corp, North Carolina		
North Carolina		
North Carolina Infrastructure Fin Corp (North Carolina) APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina Infrastructure Fin Corp (North Carolina) APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina Turnpike Authority, North Carolina		
North Carolina		
North Carolina Tpk Auth APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina Tpk Auth APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina Tpk Auth APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina Tpk Auth APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina Tpk Auth (North Carolina) APPROP		
<i>Long Term Rating</i>	AA+/Stable	Affirmed
North Carolina Turnpike Authority (North Carolina) triangle expressway sys approp rev bnds (North Carolina) ser 2019 due 01/01/2049		
<i>Long Term Rating</i>	AA+/Stable	Affirmed

Many issues are enhanced by bond insurance.

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