



COMMONWEALTH of VIRGINIA

Aubrey L. Layne, Jr., MBA, CPA
Secretary of Finance

P.O. Box 1475
Richmond, Virginia 23218

December 18, 2019

The Honorable Ralph S. Northam
Governor of Virginia
Patrick Henry Building, 3rd Floor
Richmond, Virginia 23219

The Honorable Susan Clarke Schaar
Clerk of the Senate
Senate of Virginia
Pocahontas Building
Richmond, Virginia 23219

The Honorable G. Paul Nardo
Clerk of the House of Delegates
Virginia House of Delegates
Pocahontas Building
Richmond, Virginia 23219

Dear Governor Northam, Ms. Schaar, and Mr. Nardo:

The Debt Capacity Advisory Committee (“Committee” or “DCAC”) is required pursuant to Section 2.2-2713 of the Code of Virginia to annually review the Commonwealth's tax-supported debt and submit to the Governor and General Assembly an estimate of the maximum amount of new tax-supported debt that prudently may be authorized and issued for the next two years. In addition, the Committee is required to annually review the Commonwealth’s moral obligation debt and other debt for which the Commonwealth has a contingent or limited liability. I am pleased to present the report for 2019.

Based on the debt capacity model, the Committee estimates that up to \$765 million in additional debt could be authorized and issued in each of fiscal years 2020 and 2021. While this is the average amount that will allow the projection of debt service as a percentage of blended revenues to remain at or below five-percent during the 10-year model horizon, it will also mean that projected debt service will exceed five-percent in three years and fall below that threshold in seven years, should \$765 million be authorized and issued each year. This solution is based on a number of issuance assumptions contained in the model. Accordingly, if the assumptions change, the resulting capacity will also change.

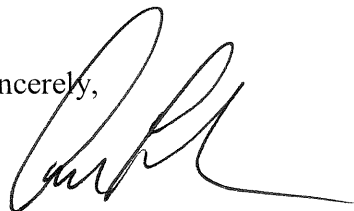
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It should be noted that with one exception, the 2019 DCAC Model was calculated using the December 2019 Revenue Forecast produced by the Department of Taxation. As with the prior year's DCAC Model, an exception was made regarding one-time, temporary revenues related to the Federal Tax Cuts and Jobs Act. However, all other revenues were incorporated as presented in the 2019 December Revenue Forecast. As such, revenues associated with the Governor's proposal to increase tobacco taxes are included beginning in fiscal year 2021. Given the tax increase is expected to generate approximately \$120 million in its first year of implementation and to have some growth going forward, the debt capacity impact is approximately \$8 million a year. The proposed changes to transportation funding and the net terminal tax on games of skill were not included in the forecast or the DCAC Model.

The Committee acknowledged that many economists and financial market professionals are forecasting interest rates to remain low over the coming year and then to possibly begin an ascent higher around the start of calendar year 2021. Given the Model's structure for determining an interest rate proxy is based on three years of historical data, it is important to note that when interest rates finally rise, it is possible for a future issuance rate to exceed the current Model interest rate of 3.44%. With nearly \$5 billion of authorized and unissued debt included in the Model, it is important to note that a 100 basis point increase to the Model interest rate results in an \$88 million decline in annual capacity to \$677 million a year. Given there is typically a delay between debt authorization and issuance and the potential for rates to rise before any debt authorized in the 2020 Session of the General Assembly is issued, the implications of a future rise in interest rates should be considered.

The report provides the Governor and the General Assembly with a basis to assess the impact of debt authorization and issuance on the Commonwealth's fiscal position and enables informed decision-making on capital spending priorities. The report also provides historical perspective on the Commonwealth's authorization and issuance of tax-supported debt over the last decade. In addition, it contains information on the rating agencies' assessment of the Commonwealth. As such, the report encourages the continued use of fiscally prudent practices such as establishing a structurally balanced budget and contributing to the reserve fund balances during periods of economic expansion, as failure to follow these practices could result in a negative bond rating action.

Sincerely,



Aubrey L. Layne, Jr., Chairman
Debt Capacity Advisory Committee

Attachment
CC: Debt Capacity Advisory Committee Members

Commonwealth of Virginia



Debt Capacity Advisory Committee

Report to the Governor and the General Assembly

December 18, 2019

Debt Capacity Advisory Committee Members

The Honorable Aubrey L. Layne, Jr. – Chairman
Secretary of Finance

Manju S. Ganeriwala
State Treasurer

Harold E. Greer
Director, Joint Legislative Audit & Review Commission

April R. Kees
Staff Director, Senate Finance Committee

Martha S. Mavredes
Auditor of Public Accounts

Hossein Sadid
Citizen Member

Ronald L. Tillett
Citizen Member

Daniel S. Timberlake
Director of the Department of Planning & Budget

Robert P. Vaughn
Staff Director, House Appropriations Committee

David A. Von Moll
State Comptroller

REPORT OF THE DEBT CAPACITY ADVISORY COMMITTEE

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Background

Following the Commonwealth's increased use of debt in the 1980's, Governor Wilder issued Executive Order 38 (1991) which established the Debt Capacity Advisory Committee (Committee or DCAC). Subsequent to the Executive Order, the DCAC was codified in Section 2.2-2712 of the Code of Virginia. The Committee was initially comprised of the Secretary of Finance, the State Treasurer, the Auditor of Public Accounts, the Director of Planning and Budget, the Director of the Joint Legislative Audit and Review Commission, and two citizen members appointed by the Governor. Legislation enacted in 2010 added three additional members to the Committee: the staff directors of the Senate Finance and House Appropriations Committees, and the State Comptroller. The Secretary of Finance serves as Chairman.

The Committee is vested with the power and duty to annually review the size and condition of the Commonwealth's tax-supported debt and to submit to the Governor and the General Assembly, by January 1st of each year, an estimate of the maximum amount of new tax-supported debt that prudently may be authorized for the next biennium. The Committee's recommendations must consider the projected debt service requirements over the current fiscal year and the following nine fiscal years. The Committee must also review annually the amount and condition of obligations for which the Commonwealth has a contingent or limited liability, and for which the Commonwealth is permitted to replenish reserve funds if deficiencies occur (i.e., Moral Obligation debt).

Control of debt burden is one of several key factors evaluated by rating agencies in their assessment of a state's credit quality. Other factors include: economy, financial management, governance, budgetary and operating performance, and debt and pension liabilities. The Commonwealth's triple-A bond rating, which it has held since 1938, facilitates access to the capital markets at the lowest borrowing cost. However, the ability to take on additional debt while maintaining the triple-A ratings is not unlimited. Higher debt service payments (a fixed expense) mean less flexibility to respond to economic cycles and address other budgetary needs. Because capacity is viewed with many other variables, there is no precise point at which increased debt levels will result in a lower bond rating.

In 1991, after consideration of various alternatives to assess capacity, the Committee decided on a measure based on tax-supported debt service as a percent of revenues. This measure provides a direct comparison of the state's obligations to the resources available to pay them. Measuring the portion of the State's resources committed to debt-related fixed costs provides a measure of the State's budgetary flexibility and its ability to respond to economic downturns.

The target level selected by the Committee in 1991 was five percent - that is, debt service on tax-supported debt obligations should not exceed 5% of blended revenues. This measure is intended to ensure that annual debt service payments do not consume so much of the state's annual operating budget as to hinder the Commonwealth's ability to provide core government services. This basic measure has been endorsed by the DCAC in each subsequent year.

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In the wake of the 2008 financial melt-down and the resulting economic downturn, coupled with the increased debt burden of several years of significant bonded debt authorizations, the December 18, 2009 DCAC Report to the Governor and the General Assembly conveyed there was no additional debt capacity. As a result of the findings in the 2009 DCAC Report, the Committee determined that a study should be completed to reevaluate the model and consider ways to smooth dramatic changes in capacity in times of extraordinary revenue fluctuations.

Following the 2010 study, the Committee considered various measures (e.g., debt per capita), as well as changes to the treatment of transportation debt in the model. Ultimately, the changes adopted by the Committee were the (i) inclusion in the model of the 0.25% sales tax enacted in 2004 and certain recurring transfers to the general fund from non-general funds, (ii) the reduction of debt service carried in the model for amounts expected to be paid from non-general fund sources, (iii) a change to the interest rate proxy used to estimate the debt service on future borrowings, and (iv) using a ten-year average capacity to arrive at the Committee's recommendation rather than basing it solely on the next two year period. This latter recommendation was an effort to smooth the effect of dramatic revenue fluctuations, and to facilitate long-term capital planning. The target measure of annual debt service payments to annual blended revenues remained unchanged at 5%.

It is important to note that maintaining debt service at less than 5% of revenues is merely a benchmark of affordability. Debt service requires annual appropriation, and to the extent debt is authorized and issued, debt service will limit the amounts available for other budgetary needs.

Debt Capacity Model

The DCAC report is a resource that assists Commonwealth leaders with planning the issuance of future obligations within future resource constraints. The Committee's report provides elected officials with information to enable them to balance capital funding needs while maintaining fiscal discipline and budgetary flexibility. The DCAC report can guide decision-makers in the development and implementation of the capital budget. Report recommendations are all based on the Committee's analysis of the Debt Capacity Model results.

The Committee's Debt Capacity Model compares annual Blended Revenues from the Official Revenue Forecast to the (i) scheduled debt service payments on all outstanding tax-supported debt obligations, and (ii) estimates of the debt service payments on all currently authorized but yet to be issued tax-supported debt. A calculation is then made to determine the amount of additional debt that could be authorized and issued without causing total debt service to exceed 5% of the forecasted Blended Revenues.

Blended Revenues are comprised of general fund revenues, certain recurring non-general fund transfers including ABC profits, state revenues in the Transportation Trust Fund (TTF), and Virginia Health Care Fund revenues. Beginning with the 2010 Report, Blended Revenues also include the relevant portion of sales tax and certain recurring non-general fund Appropriation Act transfers. It should be noted that for the 2018 DCAC Model, the Department of Taxation

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provided the Committee with adjusted general fund revenues that removed temporary revenues related to the Federal Tax Cuts and Jobs Act (the “Act” or “TCJA”); therefore, the actual fiscal year 2019 revenues contained in the Appendix are also adjusted to remove the temporary revenues. The Department of Taxation again provided the Committee with adjusted general fund revenues that remove temporary TCJA revenues from the 2019 DCAC Model.

Tax-supported debt obligations in the model include general obligation bonds (excluding those general obligation bonds issued pursuant to Article X, Section 9(c) of the Constitution of Virginia for which debt service is paid from project revenues), debt secured by the TTF, obligations issued by the Virginia Public Building Authority (VPBA) and the Virginia College Building Authority (VCBA) that are repaid from general fund appropriations, obligations payable under regional jail reimbursement agreements, bonded capital leases paid from a general fund appropriation, and other capital leases and installment purchases.

The impact of debt service related to authorized but not yet issued bond programs on future operating budgets is an important element of debt management and assessing the state’s debt capacity. Accordingly, debt service estimates for those programs are included in the debt capacity calculations. These debt service estimates are based in part on draw schedules compiled by the Department of Planning and Budget or are based on information obtained from agencies on their authorized projects.

Potential Influencing Factors for Virginia’s Fiscal Position

After a strong financial close to fiscal year 2019, uncertainty will dominate the 2020-2022 Biennium. Virginia, along with the nation, has continued to ride the wave of a long, slow economic expansion. While the expansionary wave was thought to have crested at various times, the undertow of trade tensions, inverted yield curves and global economic slowdowns, to name a few, have tried to drag the economy back down. General sentiment for the national economy is that the wave won’t crash in calendar year 2020 and the economy will continue in expansionary territory, although the expansion may slow; that is, unless the Federal Open Market Committee makes a misstep or one of the many other global factors quickly implodes. To safely ride out the wave, Virginia will need to closely monitor taxes, trade, environmental and cybersecurity threats, all while securing its financial footing through continued reserve fund deposits and thoughtful prioritization of spending of limited resources.

Recent federal and state tax law changes and the uncertainty surrounding their implementation is thought to have caused a boost in fiscal year 2019 Virginia nonwithholding revenues. With U.S. equity markets at record highs and various market scares and recessionary risks looming, it is impossible to predict what actions investors might have taken this year and what they will do over the next year to drive or shrink nonwithholding. The Commonwealth has a collar mechanism in place to control forecasting growth in this revenue category, but the known volatility of this revenue source points to the need for a cautionary eye during fiscal year 2020. There is thinking that the strong unemployment rate and modest wage growth will help propel withholding

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revenues upward. There is evidence that the newly implemented internet sales tax will slightly boost overall sales taxes. From a U.S. macro perspective, it appears that the general consumer is the underpinning for recent continued economic growth. Early reports of Black Friday sales seem to signal strong consumer confidence; however, a government shutdown or further rise of global concerns could cause a decline in consumer sentiment and reduced spending, ultimately resulting in a recession in the next year or two.

The Virginia Port Authority has several reasons to celebrate: record cargo volume; increased efficiencies at Virginia International Gateway and Norfolk International Terminals thanks to large capital projects; and the undertaking of a dredging project that is planned to place Virginia as the premier trade gateway as the East Coast's deepest port. However, trade tensions remain a risk for not only the Port Authority, but also for Virginia businesses that utilize this maritime asset. Tariffs and the uncertainty surrounding the threat of tariffs strains Virginia businesses' international relationships. Virginia's forestry and agricultural products travel through the Port and around the world. However, as tariffs are applied, or are threatened, the laws of supply and demand can cause substitution of Virginia products resulting in a decline of Virginia exports. Tariffs can also result in a decline of imports possibly creating an increased local or national demand. Although, in general, the uncertainty of the tariffs creates a loss in business opportunities, which could impact the Port Authority and state revenues.

While the Commonwealth might not have to withstand anything more than a figurative tsunami, there has been a global trend in more destructive natural disasters. Recovery from disasters has become more expensive. Intensity aside, costs have risen in part due to increased population, desire for waterfront property and all of the government infrastructure that allows for increased standard of living. Rating agencies have been noting coastal risks and states' preparedness to handle disasters for several years. This trend will likely continue into the future and it further strengthens the need for strong reserve fund balances. As water creeps higher, difficult decisions will need to be made and innovation and preparedness will be the keys for sustainability.

Despite the recent strong financial performance and potential for continued positive results, there are many risk categories that carry either significant weight on revenue performance or are expense drivers. Given these risks, a cautious budgeting approach is needed for the start of the next biennium. Core services such as education and Medicaid consume a large and growing portion of the Commonwealth's budget. As these expenses continue to grow faster than revenues, prioritization of spending across programs is essential given the more limited resources. Among the items that should be prioritized is continued deposits to the reserve funds, which the rating agencies are closely monitoring. In the case of a conservative approach to budgeting that results in excess revenues, such revenues could be directed to further support reserve funds, be applied to the unfunded pension liabilities, reduce future borrowings through the use of pay-go financings, or be returned to the taxpayers. On the other hand, an overly optimistic budgeting approach that results in an unexpected revenue decline during a continued economic expansion might result in a rating downgrade should it be so severe as to require the use of reserve funds or result in a departure from a structural balanced budget. As the tide swirls, the safe footing will be found in conservative financial management practices.

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2019 Debt Capacity Recommendations

The 2019 Base Model Solution – Average debt capacity calculation (Appendix A-8) shows that an additional \$765 million in debt could be authorized and issued in each 2020 and 2021. This amount will cause projections of debt service as a percent of Blended Revenues to exceed five percent in three years and to be below five percent in the first three and the last four years.

Other Recommendations

- a) The Committee recognizes that a significant amount of 9(d) projects have been authorized in recent years and that many project needs have been met with the earlier bond authorizations. Once significant project needs return, the Committee expresses its support in seeking the approval of 9(b) general obligation bonds, which must be approved by a voter referendum. With a higher bond rating than 9(d) appropriation-backed debt, general obligation bonds have lower interest costs. The growing proportion of 9(d) debt compared to general obligation bonds has caught the attention of the bond rating agencies and in the past has resulted in comments in ratings of the Commonwealth. Please see the chart on page 10 for more information regarding the growing proportion of 9(d) debt.
- b) The Committee expresses its continued support of the use of traditional financing methods for state projects such as those offered through the issuance of general obligation bonds, or appropriation-supported programs through the VCBA or the VPBA, since bonded capital lease and other conduit borrowings typically result in higher financing costs, and are ultimately still viewed as tax-supported debt.

Review of Tax-Supported Debt

General Fund Supported Debt

The State issues two types of tax-supported debt: General Obligation Bonds and various kinds of appropriation-supported obligations. The Commonwealth's GO Bonds are secured by the full faith and credit of the Commonwealth and are rated in the highest rating category by the bond rating agencies. Several factors contribute to the high bond ratings, 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 the most transparent of the various types of State debt obligations and typically carry the lowest interest cost. GO bonds issued under Article X, Section 9(b) of the Constitution require approval by the voters through referendum.

Article X, Section 9(c) of the Constitution provides for the issuance of GO debt that is self-supporting (e.g. through tolls, dormitory fees, etc.). The GO pledge for 9(c) Bonds provides a back-stop in the event net project revenues are insufficient to service the debt. These bonds do

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not require voter approval, but do require a two-thirds majority approval by each house of the General Assembly. They also require the Governor to opine that net project revenues will be sufficient to pay debt service on the bonds. Because of the GO pledge, 9(c) debt is considered tax-supported debt for financial reporting purposes; however, it is not included in the debt capacity model. Only if the net revenues are insufficient and the GO pledge is invoked, will that debt be incorporated in the model. This has not occurred since 9(c) debt was first issued in 1973.

Commonwealth appropriation-supported debt includes bonded debt as well as certain capital leases and installment purchase obligations. Such debt is authorized by the General Assembly. Principal and interest payments on these obligations are made from annual appropriations from the general fund or the TTF. These bonds are rated slightly lower than Virginia's GO bonds, reflecting the marginally higher risk that debt service will not be annually appropriated. Depending upon market conditions, interest rates on appropriation-supported debt on any given day may range from 5 to 20 basis points higher than comparable GO bonds. The Commonwealth has increasingly relied on the use of appropriation-supported debt (e.g. VPBA and VCBA) to provide financing for capital projects.

Transportation Debt

The rating agencies view all debt supported by state-wide, generally applied taxes and fees to be "Tax-Supported Debt". The Transportation Trust Fund is funded primarily from incremental revenues generated by increases in the retail sales and use tax, motor fuels tax and motor vehicle related taxes and fees enacted in the 1986 Special Session Acts, as well as other tax revenues subsequently dedicated to the TTF (e.g. one-third of the insurance license tax in 2007). As a result of legislation passed by the 2013 session of the General Assembly, the state's \$0.175 per gallon on motor vehicle fuels tax on gasoline and diesel was eliminated and replaced with a tax of 3.5% on the wholesale price of gasoline and a 6.0% tax on the wholesale price of diesel (the fuel taxes). The TTF receives 15% of the revenues generated from the fuel taxes and 4% of the fuel tax revenue will be deposited to the Priority Transportation Fund (a subset of the TTF). Those revenues, as well as the debt service supported by those revenues, are included in the model calculation. Not included in the Debt Capacity Model are highway maintenance and operating revenues (HMO), federal transportation revenues, and debt related to Grant Anticipation Revenue Vehicles (GARVEEs) paid from federal transportation revenues.

Transportation debt has been authorized and issued with a pledge that other available amounts, including the general fund, may be appropriated for their repayment. Since repayment is not limited solely to the TTF (though in practice, payments are made from the TTF), these bonds are viewed by rating agencies the same as other appropriation-supported obligations of the Commonwealth. The strength of the Commonwealth appropriation pledge and the depth of resources available for repayment may result in a higher rating than if secured by the TTF alone.

The Commonwealth Transportation Board (CTB) has issued bonds to be repaid from the TTF for construction projects involving U.S. Route 28, the U.S. Route 58 Corridor Development Program, the Northern Virginia Transportation District Program, the Oak Grove Connector in

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Chesapeake, and most recently various projects through the Capital Projects Revenue (CPR) Bonds authorized by the General Assembly in 2007. Currently, debt service on debt paid by the TTF exceeds 5% of TTF revenues. Accordingly, to the extent the 5% measure is exceeded, capacity derived from the general fund is being utilized. This does not mean that general fund dollars are supplementing debt service payments on TTF debt; rather, it means that capacity derived from the general fund is being used to keep overall capacity for all tax-supported debt under the 5% target.

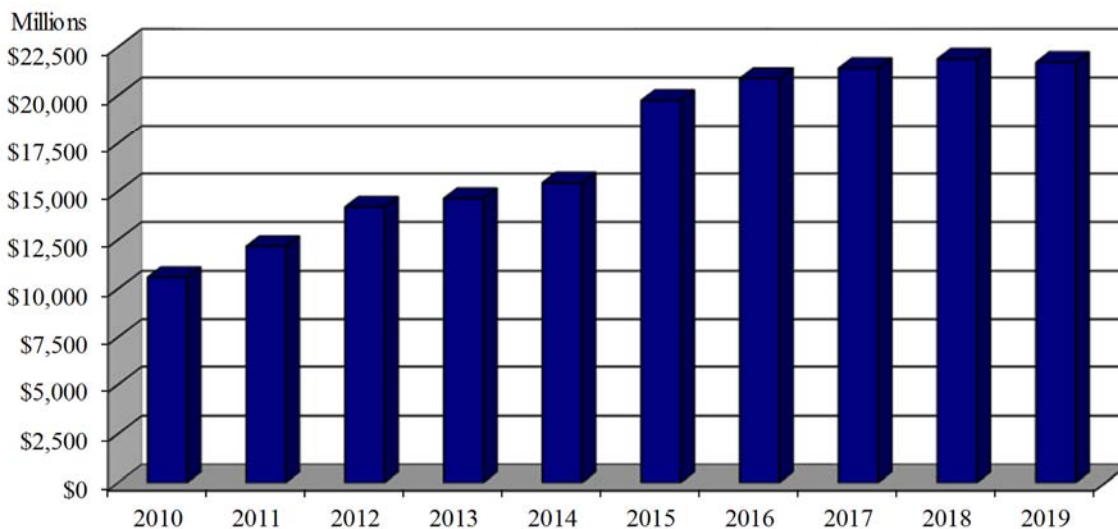
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Trends in Tax-Supported Debt

Outstanding tax-supported debt of the Commonwealth increased by 105%, or \$11.1 billion, from \$10.6 billion in fiscal year 2010 to \$21.7 billion in fiscal year 2019. The significant increase is the result of growing 9(d) debt outstanding and overall increases in pension and other post-employment benefits (OPEB) liabilities, some of which is due to underlying growth and some of which is the result of financial reporting changes. However, between fiscal year 2018 and fiscal year 2019, outstanding tax-supported debt declined \$0.2 billion, which is equivalent to a 0.75% decrease from the prior fiscal year. Despite modest growth in 9(d) obligations over the last fiscal year, a slight decline in general obligation bonds and a moderate decline in pension and OPEB liabilities allowed for the noted decline in total tax-supported debt during fiscal year 2019. The following graph includes long-term obligations such as pension liabilities, OPEBs and compensated absences. These obligations are generally evaluated by rating agencies as part of an issuer's overall debt profile, but are not part of their calculations of debt ratios. Accordingly, they are not included in the Commonwealth's debt capacity calculation. The following graph provides a historical perspective on the Commonwealth's outstanding tax-supported debt, including these other long-term obligations.

Outstanding Tax-Supported Debt
Fiscal Years 2010-2019^{(1), (2)}



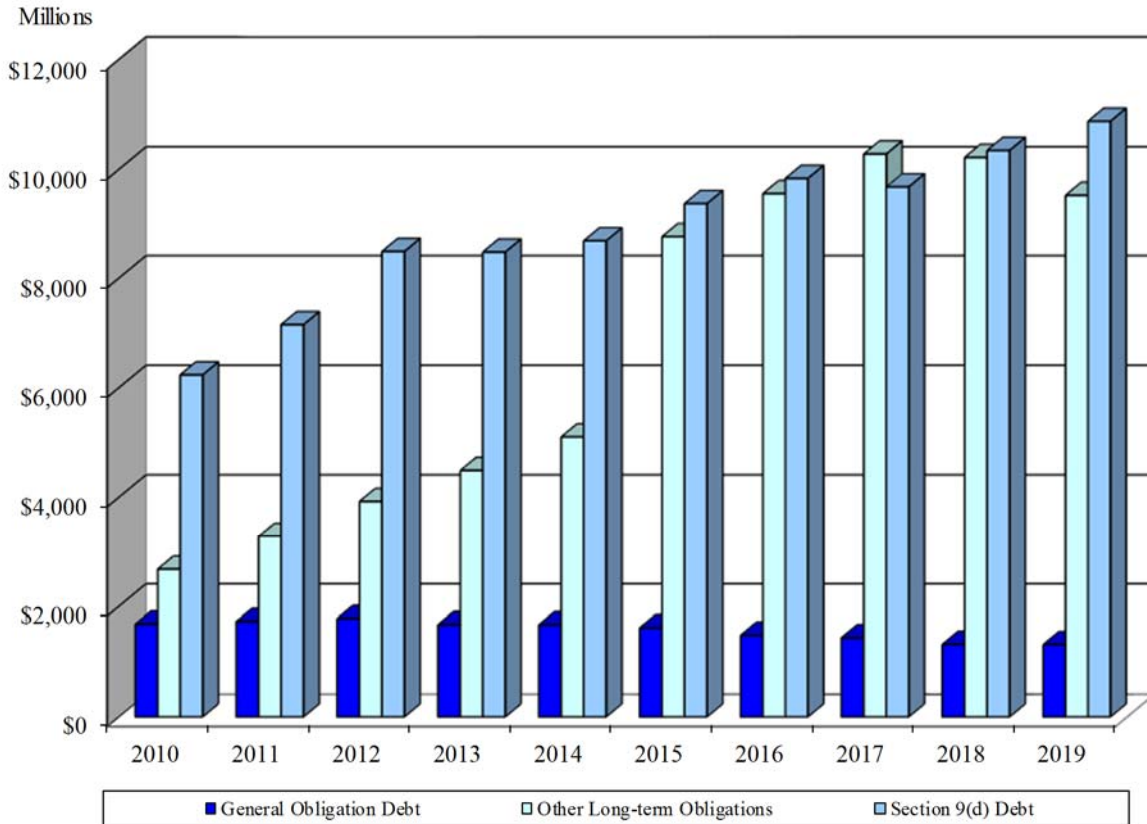
⁽¹⁾ Includes other long-term obligations such as pension liabilities, OPEB and compensated absences.

⁽²⁾ Implementation of GASB 68 occurred in FY2015, which impacted the reporting of net pension liabilities.

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Outstanding Tax-Supported Debt by Category Fiscal Years 2010-2019^{(1), (2)}



⁽¹⁾ Includes other long-term obligations such as pension liabilities, OPEB and compensated absences.

⁽²⁾ Implementation of GASB 68 occurred in FY2015, which impacted the reporting of net pension liabilities in the Other Long-term Obligations bar.

The chart above shows outstanding tax-supported debt separated into three major categories: GO bonds, debt obligations incurred pursuant to Article X, Section 9(d) of the Virginia Constitution (i.e. appropriation-supported debt), and other long-term obligations, which include pension liabilities and OPEB liabilities.

General obligation debt, which had a June 30, 2019 balance outstanding of \$1.31 billion, peaked in fiscal year 2012 and has declined 22%, or \$371 million, over the ten-year period. This is due in part to a \$1 billion 9(b) general obligation bond referendum approved by the voters in 2002. Bonds from the 2002 authorization were issued as needed, with the final issuance occurring during fiscal year 2010. Between fiscal years 2010 and 2012, increases in the general obligation debt outstanding came from the issuance of 9(c) general obligation bonds, which are regularly authorized by the General Assembly for qualifying revenue-producing capital projects, and are not included in the debt capacity calculation. However, with a lag between the timing of new

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9(c) bond authorizations and the issuance of those bonds and the continued payment of previously issued 9(b) and 9(c) debt, GO debt levels have been declining since 2012. Following an 8% decline in fiscal year 2018 GO debt outstanding, the 2019 level only declined 0.3%, or \$4 million, from the prior year. Since fiscal year 2012, the outstanding GO balance has declined 26%, or \$471 million.

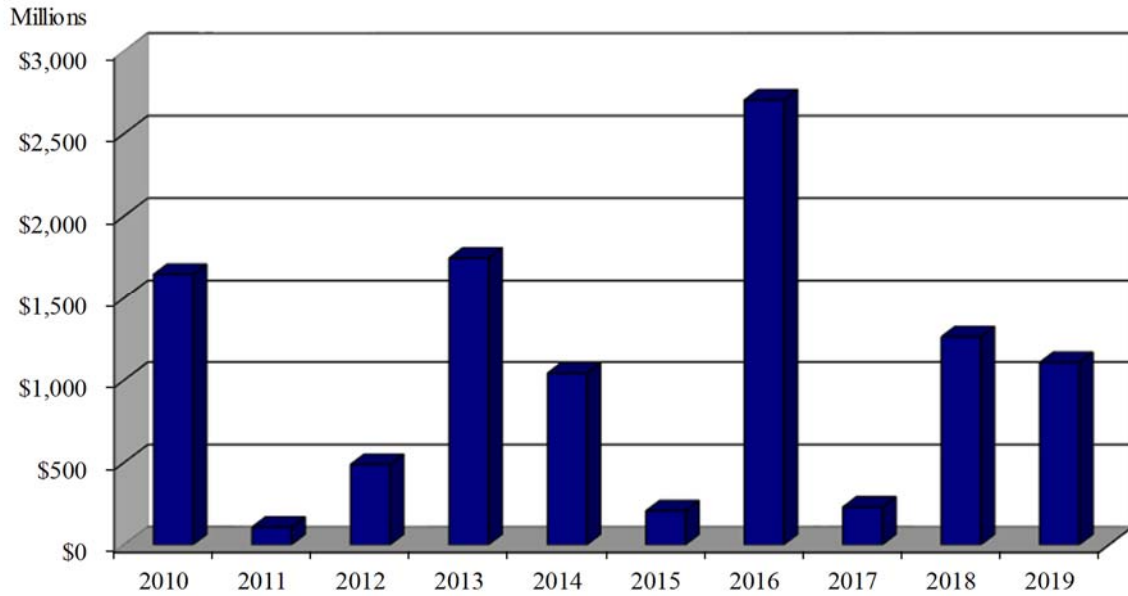
Section 9(d) debt includes tax-supported bonds issued by the VCBA, the VPBA, the CTB, and certain obligations of the Virginia Port Authority. It also includes bonded capital leases, other long-term capital leases, and installment purchases. This debt category has shown significant dollar growth over the last ten years, increasing \$4.64 billion during the ten-year period. Total outstanding Section 9(d) debt at June 30, 2019 was \$10.88 billion compared to \$6.24 billion at fiscal year-end 2010, which is equivalent to a 74% increase over the ten-year period. The increase is attributed to significant authorizations for transportation bonds in 2007 that have been issued over the last 10 years, and significant authorizations of VCBA and VPBA bonds in 2008, 2009, 2010, 2013, 2014, 2016, 2018 and 2019. Given the timing of authorizations versus issuances, the large fiscal year 2018 and 2019 authorizations have not had much impact to the currently outstanding 9(d) debt, but the authorizations will have a significant impact on the outstanding debt in future years. The outstanding balance of section 9(d) debt increased 5%, or \$531 million, between fiscal year 2018 and fiscal year 2019.

Other long-term obligations have experienced the most growth, increasing \$6.85 billion, or 256%, from \$2.68 billion at fiscal year-end 2010 to \$9.53 billion at fiscal year-end 2019. The increase is due to a significant overall rise in pension and OPEB obligations. The increase also reflects the implementation of GASB 68 in fiscal year 2015, which impacted the reporting of net pension liabilities. Although there has generally been a steady increase in this group of obligations, between fiscal year 2017 and fiscal year 2018, other long-term obligations declined \$63 million, which is equivalent to less than a 1% decrease. The decline continued through the last fiscal year. Between fiscal year 2018 and fiscal year 2019, other long-term obligations declined a more substantial \$690 million, which equates to a 7% decline. While the slight decline during fiscal year 2018 was related to a decline in pension liabilities of \$991 million, or 13%, and a nearly offsetting increase in OPEB liabilities of \$903 million, or 47%, the moderate decline during fiscal year 2019 was attributable to a \$478 million, or 7%, decline in pension liabilities and a \$251 million, or 9%, decline in OPEB liabilities.

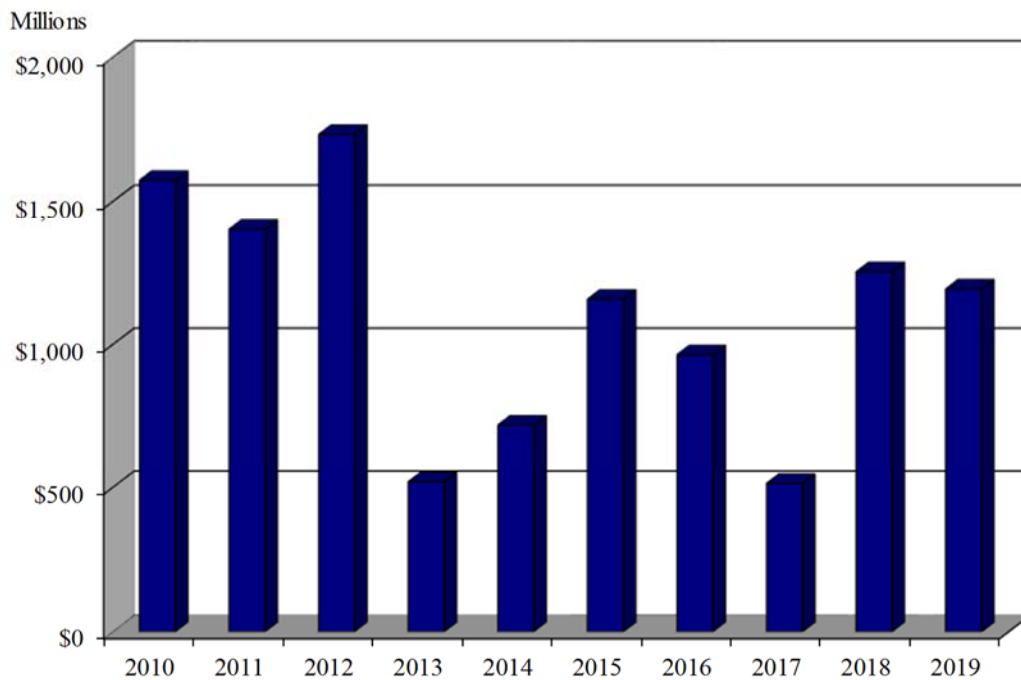
The following two charts illustrate the amounts of tax-supported debt authorized and issued from fiscal years 2010 to 2019. Over the 10-year period, \$10.53 billion of tax-supported debt was authorized across various programs with the majority authorized for VCBA and VPBA. In fiscal year 2019, authorizations amounted to \$1.11 billion. Authorizations in a year ranged from a conservative \$107.5 million in fiscal year 2011 to more than \$2.7 billion in fiscal year 2016. In four of the ten years, authorizations were below \$500 million, while in the other six years authorizations were above \$1 billion with three of those amounts exceeding \$1.5 billion. As can be seen in the graph that follows, significant authorizations occur in both even and odd years and are not always related to a new two-year budget being passed. However, it is more common for higher authorizations to occur with the passage of a new two-year budget.

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**Tax-Supported Debt Authorizations
Fiscal Years 2010-2019
\$10.53 Billion in Authorizations**



**Tax-Supported Debt Issued
Fiscal Years 2010-2019
\$11.03 Billion in Issuances**



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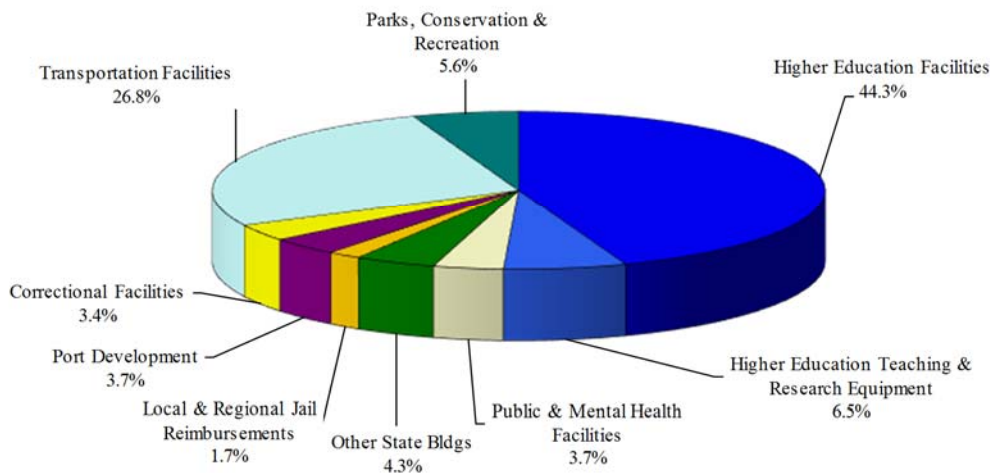
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Between fiscal year 2010 and fiscal year 2019, \$11.03 billion of new tax-supported debt was issued with \$1.19 billion of that amount occurring in fiscal year 2019. Annual debt issuance, refundings excluded, ranged from a low of \$514 million in fiscal year 2017 to as much as \$1.73 billion in fiscal year 2012. Issuances of below \$1 billion in a fiscal year have only occurred four times over the last ten years. Bond issuances are based on the cash flow needs of authorized projects and are not market driven. As such, authorizations do not result in the immediate issuance of associated bonds. Therefore, despite \$10.53 billion of authorizations within the last 10-years, there was nearly \$500 million more of issuances. With the June 30, 2019 authorized and unissued debt amounting to \$5.4 billion, of which \$4.8 billion is for 9(d) projects, it is likely that significant issuances will continue over the next several years even if additional debt authorizations are restrained in the 2020-2022 Biennium.

Uses of Outstanding Tax-Supported Debt

The following chart illustrates how the Commonwealth has utilized its tax-supported debt over the last ten years. Of the total \$11.03 billion, 51% has been used for capital projects and teaching and research equipment at state institutions of higher education. Transportation projects paid from the TTF is the next highest category at 27%. (Note: transportation projects financed with federal revenues are not considered tax-supported debt and are not included.)

Uses of Tax-Supported Debt Issued FY 2010 - FY 2019



Ten-year Total = \$11.03 Billion

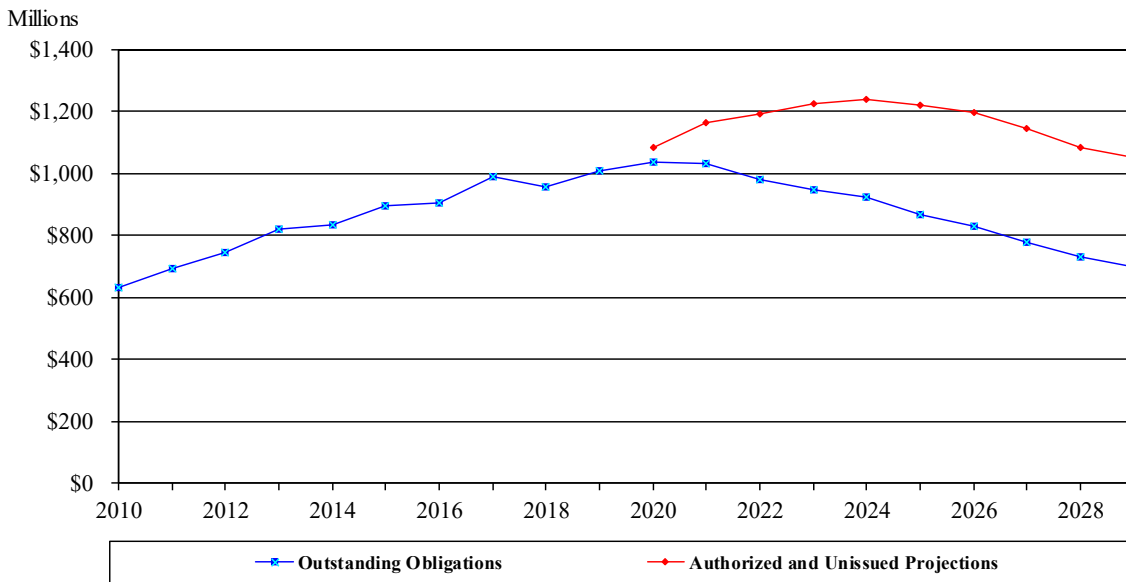
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Debt Service

Amounts paid annually for debt service have increased over the last ten years. The increase has been both on an absolute basis and as a percentage of Blended Revenues compared to ten years ago. However, as revenues have also increased and Virginia has been able to take advantage of historically low interest rates, debt service as a percentage of Blended Revenues has declined slightly since a peak of nearly 4.7% in fiscal year 2017. An increasing trend for both absolute debt service and as a percentage of blended revenues is expected to continue as currently authorized debt is issued, and the amount of outstanding debt increases. Annual debt service, including the estimated debt service on all currently authorized but unissued amounts and capital leases and installment purchases, is illustrated below.

Tax-Supported Debt Service: Actual and Projected Fiscal Years 2010 – 2029⁽¹⁾



⁽¹⁾ Assumes authorized debt is issued in future periods in accordance with the Model's current assumptions. Past data includes lease revenue bonds issued by the Virginia Biotech Research Park Authority and Newport News Industrial Development Authority.

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Review of State Credit Ratings

Credit ratings are the rating agencies' assessment of a governmental entity's ability and willingness to repay debt on a timely basis going forward. Credit ratings are an important factor in the public debt markets and generally influence the interest rates a borrower must pay. The Commonwealth is rated Aaa/Stable (Moody's), AAA/Stable (S&P), and AAA/Stable (Fitch).

Ratings on the Commonwealth's appropriation-supported programs are "one notch" below the general obligation rating: Aa1 (Moody's), AA+ (S&P) and AA+ (Fitch). The appropriation-supported bonds carry the same outlooks as the G.O. ratings.

Given Virginia's structurally balanced budget, recent efforts to replenish the Revenue Stabilization Fund, and the establishment and funding of the Revenue Reserve Fund, the rating agencies view Virginia as taking strong steps that will help to cushion the Commonwealth should challenges arise. The rating agencies also credit Virginia's strong governance and financial management structure. Virginia's Constitution provides limitations on the use of the Revenue Stabilization Fund and require its replenishment, which are factors that the rating agencies note as positives for Virginia's credit. Rating agencies also note the General Assembly's ability to raise taxes and the Governor's ability to implement budget cuts as additional flexibilities that allow for revenue generation and expense cutting in times of need.

Virginia's economy is significantly influenced by the federal government through both direct employment and contract spending. This relationship can have a positive impact on Virginia's revenues, but it also places Virginia at risk as potential federal government shutdowns and downsizing loom. While the rating agencies note the federal employment factor as specific to Virginia, there are several factors that rating agencies note as risks to the broader state credit sector. Rating agencies are recognizing the potential for slower revenue growth across the U.S. state sector. They are also noting rising Medicaid costs, which are thought might outpace revenue growth placing constraints on future budgets. In addition, climate change and sea level rise are items rating agencies are considering as they evaluate risks for coastal and flood prone areas and the general increased risk of costly natural disasters. Given the magnitude, unfunded pension liabilities also are becoming increasingly important to state credit ratings and investors alike.

While Virginia finished fiscal year 2019 with a strong revenue surplus and has been exceeding the forecast for fiscal year 2020, rating agencies will be closely watching for any dips in revenue performance during the second half of the fiscal year, as well as any unanticipated cost increases of government funded programs. More important than cost increases, the rating agencies will be monitoring Virginia's response to any increased costs or decisions to implement new programs or expand existing ones. Rating agencies note that should the Commonwealth return to a practice of a structurally unbalanced budget that utilizes one-time revenues to fund ongoing expenses, or should a revenue decline in a time of economic expansion result in a decision to reverse course and use reserve funds to plug a portion of the budget gap, an action to lower the Commonwealth's rating would be considered.

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As economic and global uncertainty rise, it is critical for the Commonwealth to maintain its structural budgeting practice and its commitment to building reserve fund balances. During times of revenue growth, there are many seeming opportunities to create new programs and expand existing ones, as well as opportunities to increase capital spending through bond programs given increased debt capacity. However, during these times of growth, it is imperative that the Commonwealth prioritize programs and capital projects to ensure those programs and projects deemed most critical can continue to function and be built should a downturn occur. It is conservative financial management that resulted in the award of AAA bond ratings and it is those bond ratings that result in Virginia's low cost borrowing that helps create budget flexibilities. A loss of even one AAA rating would prove costly not only to Virginia's reputation, but it would also result in higher debt service costs and reduced budget flexibility.

Review of Comparative Ratios

Moody's Investors Service has compiled net tax-supported debt (NTSD) data for US states for more than 30 years. Each year, Moody's releases a comparative NTSD ratios report, its *State Debt Medians Report* (Moody's Medians). The *State Debt Medians 2019 Report*, which was published on June 3, 2019, has been reviewed and certain data and analytical opinions from Moody's are incorporated herein.

In recent years, Moody's has continued to predict stable to low growth in new debt issuances. The *State Debt Medians 2019 Report* noted that there has been eight straight years of minimal change in total NTSD across the 50 states, which has resulted in just 0.6% annual growth since 2011. Most recently, total NTSD increased just 0.1% and 30 of the 50 states actually experienced declines in their level of NTSD compared to the prior year.

In the 2019 Report, Moody's noted that governments have maintained a cautious approach to bond issuance and provided several insights to the opportunities and challenges this has created. An increased use of operating revenue for infrastructure investment, particularly transportation infrastructure, has resulted in a smaller percentage of bonds as the project funding source. This is a continued trend of increased pay-go funding, which Moody's began to recognize and note in recent reports. Moody's attributes the shift to pay-go to continued tax revenue growth, potential taxpayer aversion to increased debt and taxes, a possible increased awareness of other governmental spending priorities, and the fact that numerous states have raised or modified their motor fuel tax levies, some of which were increased for the purpose of supporting pay-go programs. However, it was noted that while there has been an overall increase in infrastructure investment, the investment has stagnated compared to GDP. While keeping debt to GDP low has resulted in NTSD remaining in check, the earlier decline and now stagnation in debt to GDP can be seen as a growing level of deferred new project and maintenance investment, which will likely eventually need to be addressed through greater debt issuance. The relatively stable NTSD resulted in debt service ratios most recently of 4.1% for the median and 4.3% for the average. Moody's noted these ratios are down from a high for the median of 4.4% in 2014 and a high of 4.7% for the average in 2012. Moody's stated that lower debt service costs over time

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frees up resources to address pension liabilities, which it noted amounted to \$1.6 trillion across all 50 states. Moody's speculated that the awareness of the large pension liabilities in some states might have influenced policymakers to defer or downsize bond issuance plans. Moody's further speculated that it is possible that debt issuance might also be restrained by voters given their awareness of the pension liabilities and the fact the majority of states' debt is voter approved general obligation bonds.

In 2019, Moody's reported that the median nationwide NTSD per capita increased by 8.2% to \$1,068 from \$987 breaking a declining trend. For the third consecutive year, Virginia remained ranked as having the 19th highest debt per capita. However, Moody's reported a slight decline of 0.9% in Virginia's NTSD per capita, which declined to \$1,502 compared to \$1,515 the prior year.

Moody's reported a continued decline in median nationwide NTSD as a percentage of personal income which fell to 2.2% from 2.3% last year. Virginia's NTSD as a percentage of personal income also declined recently, falling to 2.7% from 2.9% the prior year. Virginia's ranking for this metric also declined from the 19th highest last year to 21st highest in the current report.

The table and chart on the following page illustrate how Virginia compares to other triple-A states based on net tax-supported debt per capita and the table and chart that later follow on page 19 compare Virginia's net tax-supported debt as a percentage of personal income with that of other triple-A states.

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AAA/Aaa/AAA STATE DEBT BURDENS FROM 2010-2019 PROVIDED BY MOODY'S INVESTORS SERVICE

Net Tax-Supported Debt per Capita (1)(2)

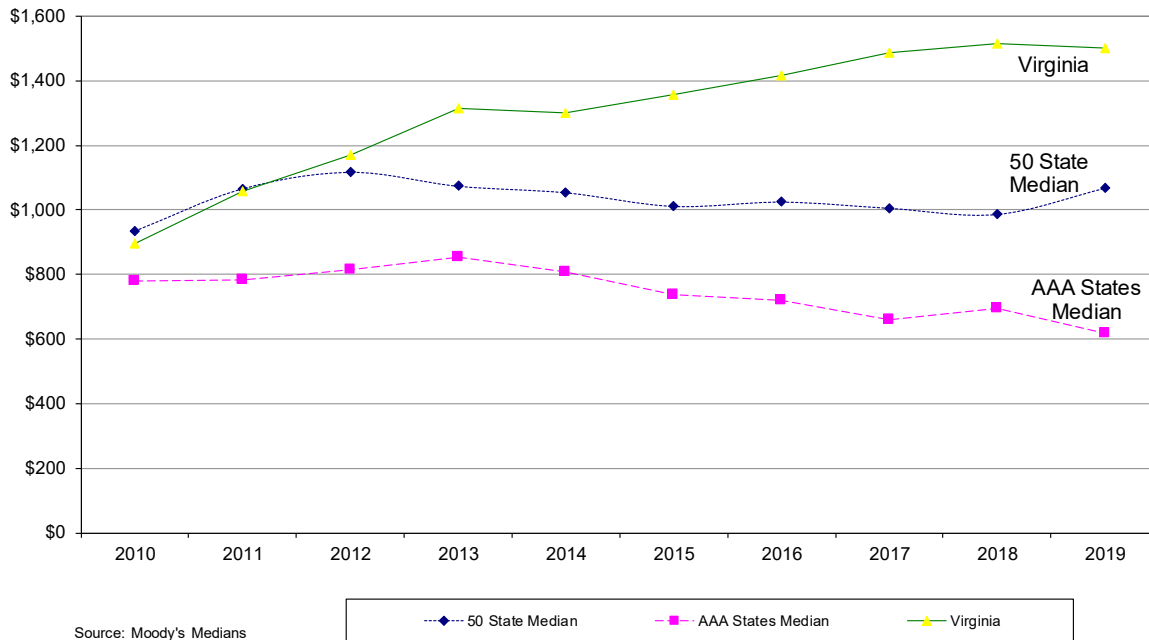
	<u>2019</u> <u>Ranking</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>
Delaware	6	\$3,206	\$2,587	\$2,544	\$2,385	\$2,438	\$2,485	\$2,536	\$2,674	\$2,676	\$2,489
Maryland	9	2,343	2,164	2,122	1,928	1,889	1,791	1,799	1,742	1,681	1,608
VIRGINIA	19	1,502	1,515	1,486	1,418	1,356	1,302	1,315	1,169	1,058	895
Georgia	26	996	986	992	1,029	1,043	1,064	1,061	1,099	1,103	1,120
Florida *	29	812	889 *	961 *	1,038 *	973 *	1,008 *	1,087 *	1,167 *	1,150 *	1,123 *
Utah	30	792	772	824	921	1,060	1,187	1,275	1,393	1,222	957
South Dakota *	34	618	694	641	652 *	547 *	391 *	355 *	358 *	328 *	135 *
North Carolina	37	531	611	659	721	739	806	853	815	782	765
Missouri	40	487	532	579	574	606	668	699	741	775	780
Texas *	42	389	410	383	383	406	614	580 *	588 *	612 *	520 *
Tennessee*	44	305	312	322	298	327 *	324 *	343 *	343 *	345 *	318 *
Indiana *	45	270	295	310	463 *	474 *	533 *	424 *	446 *	471 *	492 *
Iowa *	46	207	219	228	239	250	275	287	310	270	73 *
Median All States		1,068	987	1,006	1,025	1,012	1,054	1,074	1,117	1,066	936
AAA Median		618	694	659	721	739	806	853	815	782	780
AAA Average		958	922	927	927	931	958	970	988	959	867

* State was not triple triple A during entire 2010-2019 period.

(1) Population is based on Census data from one year prior to each respective year's debt analyzed.

(2) Year refers to prior calendar year-end.

Net Tax-Supported Debt Per Capita Virginia Versus Moody's U.S. 50-State Median and other AAA States 2010 – 2019



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AAA/Aaa/AAA STATE DEBT BURDENS FROM 2010-2019
PROVIDED BY MOODY'S INVESTORS SERVICE

Net Tax-Supported Debt as Percent of Personal Income (1) (2)

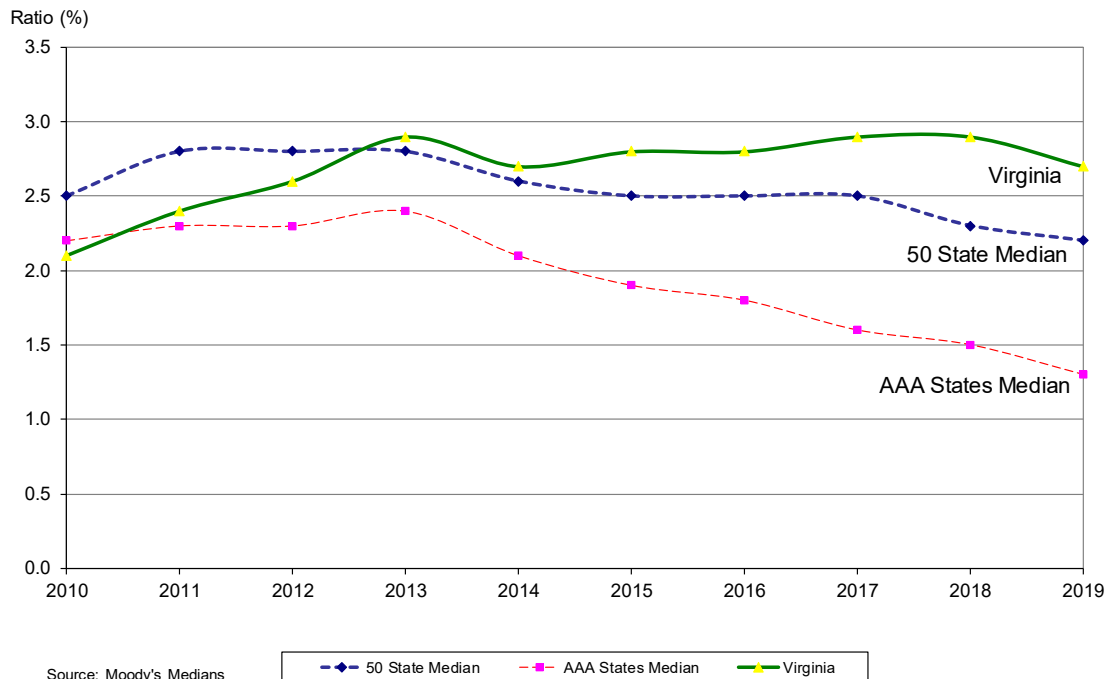
	2019																			
	Ranking	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010									
Delaware	4	6.5 %	5.5 %	5.4 %	5.2 %	5.5 %	5.7 %	6.2 %	6.8 %	6.8 %	6.2 %									
Maryland	13	3.8	3.7	3.8	3.5	3.5	3.4	3.6	3.6	3.3	3.4									
VIRGINIA	21	2.7	2.9	2.9	2.8	2.8	2.7	2.9	2.6	2.4	2.1									
Georgia	25	2.3	2.4	2.5	2.7	2.8	2.9	3.0	3.1	3.3	3.3									
Utah	28	1.9	1.9	2.1	2.5	3.0	3.4	3.8	4.4	4.1	3.2									
Florida *	30	1.7	2.0 *	2.2 *	2.5 *	2.4 *	2.5 *	2.8 *	3.0 *	3.0 *	2.9 *									
South Dakota *	36	1.3	1.5	1.4	1.4 *	1.2 *	0.9 *	0.9 *	0.9 *	0.9 *	0.4 *									
North Carolina	39	1.2	1.5	1.6	1.8	1.9	2.1	2.4	2.3	2.3	2.3									
Missouri	40	1.1	1.2	1.4	1.4	1.6	1.7	1.8	2.0	2.2	2.2									
Texas *	42	0.8	0.9	0.8	0.9	1.0	1.5	1.5 *	1.5 *	1.6 *	1.4 *									
Tennessee*	44	0.7	0.7	0.8	0.7	0.8 *	0.8 *	0.9 *	1.0 *	1.0 *	0.9 *									
Indiana*	45	0.6	0.7	0.8	0.8 *	0.8 *	1.4 *	1.2 *	1.3 *	1.4 *	1.5 *									
Iowa *	46	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.8	0.7	0.2 *									
Median All States		2.2 %	2.3 %	2.5 %	2.5 %	2.5 %	2.6 %	2.8 %	2.8 %	2.8 %	2.5 %									
AAA Median		1.3	1.5	1.6	1.8	1.9	2.1	2.4	2.3	2.3	2.2									
AAA Average		1.9	2.0	2.0	2.1	2.1	2.3	2.4	2.6	2.5	2.3									

* State was not triple A during entire 2010-2019 period.

(1) Year refers to prior calendar year-end.

(2) Personal income is based on Census data from two years prior to each respective year's debt analyzed.

Net Tax-Supported Debt as Percentage of Personal Income Virginia Versus Moody's U.S. 50-State Median and other AAA States 2010 - 2019



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While these rankings are useful for comparison purposes, it is important to note that many other factors contribute to a state's overall credit rating. For example, while ratios for Delaware appear high compared to other triple-A states, a statutory requirement for a short amortization of debt mitigates the effect of the higher debt levels.

In terms of total net tax-supported debt, California remains at the top of the list with \$86.8 billion outstanding, followed by New York with \$63.4 billion. California has continued to experience a decline in its NTSD due to continued pay down of debt while New York's NTSD debt has increased in the three most recent years. Wyoming remained at the bottom of the list for a second year in a row and experienced a continued decline in NTSD to only \$19.2 million. It should be noted, Wyoming does not issue G.O. debt. Based on Moody's mid-fiscal year 2019 to mid-fiscal year 2018 comparison, Virginia's NTSD declined just over \$38 million to \$12.8 billion outstanding. Given the relatively stable NTSD of Virginia and the nation, Virginia remained the 12th highest NTSD of all states.

Summary

Strong overall financial performance was experienced again in fiscal year 2019. Low unemployment and moderate wage growth contributed to an increase in withholding revenues and the implementation of internet sales tax collection helped to boost sales taxes. While these revenue sources increased strongly compared to the prior year, the categories were slightly below the forecast. However, significant outperformance of nonwithholding taxes, which is thought to be the result of changes to tax policy, more than covered the shortfalls in other revenues. When combined with fewer refunds than anticipated, Virginia concluded fiscal year 2019 with an almost \$800 million surplus. While low unemployment and wage growth are expected to provide a strong base for the future, the volatility of taxpayer behavior creates uncertainty for the current and upcoming biennium.

Assuming interest rates remain fairly steady, Virginia is set to benefit from historically low interest rates as it continues to issue debt from its significant amount of available authorizations. This issuance circumstance creates additional debt capacity to the extent issuances are completed at rates below those assumed in the Model. However, as recent predictions for interest rates have shown, an assumption of rates is anything but certain. Although interest rates are currently low, there are many economic and global factors that could result in changes to the rate environment. It is also important to note that the recent low interest rates result in a low DCAC Model interest rate. When actual issuance rates finally begin to rise, the market rate could exceed the rate used in the Model, given the Model rate is based on the prior three years of data.

While debt capacity has leapt higher from \$671 million to \$765 million a year based on the December 2019 Model, it remains of critical importance to ensure strong financial budgeting practices are maintained. Although stronger forecast revenues create higher debt capacity, certain expense categories such as education and Medicaid have experienced faster growth rates than revenues, which creates an even stronger requirement for thoughtful prioritization of limited

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resources. In addition, rating agencies are monitoring the Commonwealth's budget process to confirm a structurally balanced budget is adopted and reserve fund deposits continue through the economic expansion; a misstep with either of these items could warrant a negative rating action. Preparedness for natural disasters and unfunded pension liabilities will also garner increasing attention from rating agencies and investors alike. A fiscally conservative approach will be needed to balance not only the items under the Commonwealth's control, but also to be prepared to address the many things outside of the state's sphere of influence.

Appendix A

Debt Capacity Calculation, Sensitivity Analysis and Moral Obligation Update

December 18, 2019

Debt Capacity Model – An Explanation of Model and Assumptions

Virginia’s Debt Capacity Measure:

- Calculation:
 - Tax-Supported Debt Service \leq 5% of Blended Revenues.
- Recommendation:
 - Expressed in terms of a ten-year average.

Model Characteristics:

- Covers a 10-year issuance period.
- Incorporates currently authorized but unissued debt.
- Uses Blended Revenues from Official Forecast and for the General Fund Forecast, Department of Taxation has provided amounts for the DCAC Model that remove temporary Tax Cuts and Jobs Act (“TCJA”) revenues.

Model Assumptions:

- Term and structure:
 - 20-year bonds with level debt service payments.
 - Interest rate based on the average of the last twelve quarters of the Bond Buyer 11 Bond Index for GO debt (3.19%) plus 25 basis points for 9(d) debt (3.44%).

Model Includes:

- Blended Revenues from Official Forecast:
 - General fund revenues (adjusted to exclude temporary TCJA revenues), certain recurring non-general fund transfers including ABC profits, state revenues in the Transportation Trust Fund, and Virginia Healthcare Fund revenues.
- Actual and Projected Debt Service:
 - Actual debt service on all issued tax-supported debt, including capital leases and installment purchases.
 - Debt service on authorized but unissued tax-supported debt.
 - Level debt service payments (except 9(b) General Obligation debt).
 - 9(b) General Obligation debt is amortized on a level principal basis.
 - VCBA Equipment Notes amortized over 7-year term.
 - CTB Bonds amortized over 25-year term.

Outstanding Tax-supported Debt as Determined by the DCAC includes:

- General obligation bonds (Section 9(a) and 9(b)). Self-supporting 9(c) projects are not included.
- Obligations issued by the Commonwealth Transportation Board or Virginia Port Authority that are secured by the Transportation Trust Fund.
- Obligations issued by the Virginia Public Building Authority and the Virginia College Building Authority secured, in whole or in part, by general fund appropriations.

- Capital leases (80% of total of first year amounts in Commonwealth CAFR for both primary government and component units).
- Installment purchases (80% of total of first year amounts in Commonwealth CAFR for both primary government and component units).
- Obligations for which the debt service is derived from payments received from the Commonwealth on a capital lease.
- That portion of outstanding moral obligation debt for which the underlying debt service reserve fund has been utilized to pay all or a portion of debt service, and for which the General Assembly has appropriated funds to replenish all or a portion of such debt service reserve.

Authorized but Unissued Tax-supported Debt Included in the DCAC Model:

- Must be authorized by an Act of the General Assembly with no contingency for subsequent General Assembly approval.

Moral Obligation Debt:

- In the event a moral obligation issuer has experienced an event of default on an underlying revenue stream and been forced to draw on the debt service reserve fund to pay debt service, the Committee shall immediately meet and review the circumstances surrounding such event and report its findings to the Governor and the General Assembly.
- In the event this section is invoked, the Committee's Report to the Governor and General Assembly shall include a Model scenario showing annual debt capacity including that portion of the moral obligation debt.
- Inclusion of the moral obligation debt in the Model is in no way intended to bind the Governor or General Assembly to make future appropriations to replenish future draws on the debt service reserve fund(s).
- The subject debt will be removed from the Model once the General Assembly has not appropriated funds to replenish the debt service reserve fund(s).

Currently Authorized Tax-Supported Debt Issuance Assumptions December 18, 2019 (Dollars in Millions)

	<u>9(b)</u>	<u>VPBA</u>	<u>VCBA 21st Century Equipment</u>	<u>VCBA 21st Century Projects</u>	<u>CPR Transportation</u>	<u>NVTD Transportation</u>	<u>Route 58 Transportation</u>	<u>VPA</u>	<u>Total</u>
Authorized & Unissued as of June 30, 2019	\$ -	\$ 1,966.2	\$ 83.0	\$ 1,885.2	\$ 243.2	\$ 24.7	\$ 595.7	\$ -	\$ 4,798.1
Issued Jul 1 - Dec 31, 2019	\$ -	\$ -	\$ -	\$ 134.9	\$ -	\$ -	\$ -	\$ -	\$ 134.9
Assumed Issued:									
FY 2020	\$ -	\$ 350.0	\$ 83.0	\$ 350.0	\$ 96.6	\$ -	\$ -	\$ -	\$ 879.6
FY 2021	\$ -	\$ 400.0	\$ -	\$ 550.0	\$ 146.6	\$ 24.7	\$ 133.0	\$ -	\$ 1,254.3
FY 2022	\$ -	\$ 350.6	\$ -	\$ 550.0	\$ -	\$ -	\$ 236.3	\$ -	\$ 1,136.9
FY 2023	\$ -	\$ 350.2	\$ -	\$ 150.0	\$ -	\$ -	\$ -	\$ -	\$ 500.2
FY 2024	\$ -	\$ 300.0	\$ -	\$ 135.2	\$ -	\$ -	\$ 152.2	\$ -	\$ 587.4
FY 2025	\$ -	\$ 215.4	\$ -	\$ -	\$ -	\$ -	\$ 74.2	\$ -	\$ 289.6
FY 2026	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2027	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2028	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
FY 2029	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Planned	\$ -	\$ 1,966.2	\$ 83.0	\$ 1,735.2	\$ 243.2	\$ 24.7	\$ 595.7	\$ -	\$ 4,648.1
Subtotal Issued & Planned	\$ -	\$ 1,966.2	\$ 83.0	\$ 1,870.1	\$ 243.2	\$ 24.7	\$ 595.7	\$ -	\$ 4,782.9
Authorized Debt Assumed Unissued ¹	\$ -	\$ -	\$ -	\$ 15.1	\$ -	\$ -	\$ -	\$ -	\$ 15.1

⁽¹⁾ Assumed funded from premium from bonds sold

* 9(c) Debt is not included in the table above since it is excluded from the Model

Debt Capacity Model – An Explanation of Solution Pages

Column Descriptions:

- (1) **Blended Revenues** include all general fund revenues (adjusted to remove temporary TCJA revenues), certain recurring non-general fund transfers including ABC profits, state tax revenues in the Transportation Trust Fund, and Virginia Healthcare Fund revenues.
- (2) **Base Capacity to Pay Debt Service** is calculated as 5% of Blended Revenues.
(Column 2 = Column 1 x .05)
- (3) **Annual Payments for Debt Service on Debt Issued** is actual debt service on all tax-supported debt outstanding at the end of the most recent fiscal year (6/30/19), excluding (i) 9(c) debt, (ii) the subsidized portion of interest on Build America Bonds and (iii) non-general fund portion of debt service paid on certain VCBA bonds.
- (4) **Actual Outstanding Debt Service as a % of Revenues** is the percentage of Blended Revenues required for payments on currently issued tax-supported debt included in the model.
(Column 4 = Column 3 ÷ Column 1)
- (5) **Annual Payments for Debt Service on All Planned Debt Issuances** is the estimated amount of debt service for currently authorized and unissued tax-supported debt to be issued within the ten-year period.
- (6) **Actual and Planned Debt Service as a % of Revenues** is the sum of Annual Payments for Debt Service on Debt Issued and Annual Payments for Debt Service on All Planned Debt Issuances as a percentage of Blended Revenues.
(Column 6 = (Column 3 + Column 5) ÷ Column 1)
- (7) **Net Capacity to Pay Debt Service** is the capacity that remains to pay any additional debt service related to subsequent authorized and issued debt and is the Base Capacity to Pay Debt Service less Annual Payments for Debt Service on Debt Issued and less Annual Payments for Debt Service on All Planned Debt Issuances.
(Column 7 = Column 2 – Column 3 – Column 5)
- (8) **Amount of Additional Debt that May Be Issued** is the amount of additional tax-supported debt (above and beyond that which is currently authorized but unissued) that may be issued in any given year without exceeding the Base Capacity to pay debt service.
- (9) **Debt Service on the Amount of Additional Debt that May Be Issued** is the estimated amount of debt service for the Amount of Additional Debt that May be Issued, given the amount is authorized and issued.

(10) Remaining Capacity to Pay Debt Service is the residual amount derived from the Net Capacity to Pay Debt Service less Debt Service on the Amount of Additional Debt that May be Issued.

(Column 10 = Column 7 – Column 9)

(11) Total Debt Service as a % of Revenues is the percentage of Blended Revenues used for the sum of Annual Payments for Debt Service on Debt Issued, Annual Payments for Debt Service on All Planned Debt Issuances and Debt Service on Amount of Additional Debt that May be Issued.

(Column 11 = (Column 3 + Column 5 + Column 9) ÷ Column 1)

Model Solution:

- Model solves for the additional annual capacity above and beyond amounts already authorized and assumed issued over the next ten fiscal years at the base capacity to pay debt service (5%), while maintaining two additional years of capacity at the end of the ten-year period.
- This solution results in an average annual capacity of \$764.72 million.
- Accordingly, the Committee finds the additional tax supported debt that may prudently be authorized in each 2020 and 2021 is \$764.72 million.

DEBT CAPACITY MODEL

(Dollars in Millions)

December 18, 2019

Debt Capacity Maximum Ratio

Debt Service as a % of Revenue =

5.0%

Base Model Solution

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
	Blended	Base	Annual	Actual	Annual	Actual &	Net	Amount of	Debt Service	Remaining	Total
Fiscal Year	Revenues	Capacity to Pay	Payments for Debt Service on Debt Issued	Outstanding Debt Service as a % of Revenues	Payments for Debt Service on All Planned Debt Issuances	Projected Debt Service as a % of Revenues	Capacity to Pay Debt Service	Additional Debt that may Be Issued	on Amount of Additional Debt that may Be Issued	Capacity to Pay Debt Service	Debt Service as a % of Revenues
2010	16,085.70	804.29	633.45	3.94%	N/A	3.94%	170.83	N/A	N/A	170.83	3.94%
2011	16,751.10	837.56	693.64	4.14%	N/A	4.14%	143.92	N/A	N/A	143.92	4.14%
2012	17,787.10	889.36	747.02	4.20%	N/A	4.20%	142.34	N/A	N/A	142.34	4.20%
2013	18,626.30	931.32	820.77	4.41%	N/A	4.41%	110.55	N/A	N/A	110.55	4.41%
2014	18,502.80	925.14	835.53	4.52%	N/A	4.52%	89.61	N/A	N/A	89.61	4.52%
2015	20,040.70	1,002.04	897.38	4.48%	N/A	4.48%	104.65	N/A	N/A	104.65	4.48%
2016	20,382.70	1,019.14	904.30	4.44%	N/A	4.44%	114.83	N/A	N/A	114.83	4.44%
2017	21,162.90	1,058.15	988.33	4.67%	N/A	4.67%	69.82	N/A	N/A	69.82	4.67%
2018	22,351.70	1,117.59	957.97	4.29%	N/A	4.29%	159.62	N/A	N/A	159.62	4.29%
2019	23,403.40	1,170.17	1,008.23	4.31%	N/A	4.31%	161.94	N/A	N/A	161.94	4.31%
2020	24,332.30	1,216.62	1,037.16	4.26%	48.86	4.46%	130.59	1,427.78	98.229	32.37	4.87%
2021	25,328.40	1,266.42	1,031.01	4.07%	137.18	4.61%	98.23	0.00	98.229	0.00	5.00%
2022	26,234.70	1,311.74	981.91	3.74%	216.54	4.57%	113.29	218.79	113.281	0.00	5.00%
2023	27,252.60	1,362.63	949.11	3.48%	278.50	4.50%	135.01	315.85	135.011	0.00	5.00%
2024	28,195.60	1,409.78	923.10	3.27%	321.93	4.42%	164.74	432.14	164.741	0.00	5.00%
2025	29,295.40	1,464.77	869.30	2.97%	356.27	4.18%	239.19	1,082.17	239.192	0.00	5.00%
2026	30,410.90	1,520.55	829.67	2.73%	371.09	3.95%	319.78	1,171.38	319.781	0.00	5.00%
2027	31,489.30	1,574.46	775.96	2.46%	371.09	3.64%	427.41	1,564.38	427.407	0.00	5.00%
2028	32,607.83	1,630.39	730.32	2.24%	358.25	3.34%	541.82	1,434.72	526.113	15.71	4.95%
2029	33,768.02	1,688.40	698.82	2.07%	358.25	3.13%	631.34	0.00	526.113	105.22	4.69%
							10 Year Average:	\$764.72	2 Yrs Excess Avg Capacity:	\$1,529.45	

DEBT CAPACITY MODEL

(Dollars in Millions)

December 18, 2019

Base Model Solution - Average

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Base Capacity to Pay	Annual Payments for Debt Service on Debt Issued	Actual Outstanding Debt Service as a % of Revenues	Annual Payments for Debt Service on All Planned Debt Issuances	Actual & Projected Debt Service as a % of Revenues	Net Capacity to Pay Debt Service	Amount of Additional Debt that may Be Issued	Debt Service on Amount of Additional Debt that may Be Issued	Remaining Capacity to Pay Debt Service	Total Debt Service as a % of Revenues
Fiscal Year	Blended Revenues	Debt Service									
2010	16,085.70	804.29	633.45	3.94%	N/A	3.94%	170.83	N/A	N/A	170.83	3.94%
2011	16,751.10	837.56	693.64	4.14%	N/A	4.14%	143.92	N/A	N/A	143.92	4.14%
2012	17,787.10	889.36	747.02	4.20%	N/A	4.20%	142.34	N/A	N/A	142.34	4.20%
2013	18,626.30	931.32	820.77	4.41%	N/A	4.41%	110.55	N/A	N/A	110.55	4.41%
2014	18,502.80	925.14	835.53	4.52%	N/A	4.52%	89.61	N/A	N/A	89.61	4.52%
2015	20,040.70	1,002.04	897.38	4.48%	N/A	4.48%	104.65	N/A	N/A	104.65	4.48%
2016	20,382.70	1,019.14	904.30	4.44%	N/A	4.44%	114.83	N/A	N/A	114.83	4.44%
2017	21,162.90	1,058.15	988.33	4.67%	N/A	4.67%	69.82	N/A	N/A	69.82	4.67%
2018	22,351.70	1,117.59	957.97	4.29%	N/A	4.29%	159.62	N/A	N/A	159.62	4.29%
2019	23,403.40	1,170.17	1,008.23	4.31%	N/A	4.31%	161.94	N/A	N/A	161.94	4.31%
2020	24,332.30	1,216.62	1,037.16	4.26%	48.86	4.46%	130.59	0.00	0.000	130.59	4.46%
2021	25,328.40	1,266.42	1,031.01	4.07%	137.18	4.61%	98.23	764.72	52.611	45.62	4.82%
2022	26,234.70	1,311.74	981.91	3.74%	216.54	4.57%	113.29	764.72	105.223	8.06	4.97%
2023	27,252.60	1,362.63	949.11	3.48%	278.50	4.50%	135.01	764.72	157.834	(22.82)	5.08%
2024	28,195.60	1,409.78	923.10	3.27%	321.93	4.42%	164.74	764.72	210.445	(45.70)	5.16%
2025	29,295.40	1,464.77	869.30	2.97%	356.27	4.18%	239.19	764.72	263.056	(23.86)	5.08%
2026	30,410.90	1,520.55	829.67	2.73%	371.09	3.95%	319.78	764.72	315.668	4.12	4.99%
2027	31,489.30	1,574.46	775.96	2.46%	371.09	3.64%	427.41	764.72	368.279	59.13	4.81%
2028	32,607.83	1,630.39	730.32	2.24%	358.25	3.34%	541.82	764.72	420.890	120.93	4.63%
2029	33,768.02	1,688.40	698.82	2.07%	358.25	3.13%	631.34	764.72	473.501	157.83	4.53%

10 Year Average:	\$764.72
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DEBT CAPACITY MODEL REVENUE DATA

December 2019

(Dollars In Millions)

Fiscal Year	General Fund	Transportation	General	Transportation	Virginia	Total	Blended
		Trust Fund ⁽⁴⁾	Fund Growth	Trust Fund Growth	Health Care Fund	Blended Revenue ⁽⁹⁾	Revenue Growth Rate ⁽¹⁰⁾
Actual 2005	14,135.70 (1)	846.50 (1)	14.53% (1)	5.85% (1)	N/A (1)	14,982.20	14.00%
Actual 2006	15,318.30 (1)	912.90 (1)	8.37% (1)	7.84% (1)	288.90 (1)	16,520.10	10.26%
Actual 2007	16,028.30 (1)	969.00 (1)	4.63% (1)	6.15% (1)	285.30 (1)	17,282.60	4.62%
Actual 2008	16,261.30 (1)	968.70 (1)	1.45% (1)	-0.03% (1)	298.90 (1)	17,528.90	1.43%
Actual 2009	14,359.20 (1)	1,014.20 (1)	-11.70% (1)	4.70% (1)	307.50 (1)	15,680.90	-10.54%
Actual 2010	14,786.70 (1)	1,006.20 (1)	2.98% (1)	-0.79% (1)	292.80 (1)	16,085.70	2.58%
Actual 2011	15,452.30 (1)	1,015.40 (1)	4.50% (1)	0.91% (1)	283.40 (1)	16,751.10	4.14%
Actual 2012	16,348.00 (1)	1,060.20 (1)	5.80% (1)	4.41% (1)	378.90 (1)	17,787.10	6.18%
Actual 2013	17,109.20 (1)	1,083.60 (1)	4.66% (1)	2.21% (1)	433.50 (1)	18,626.30	4.72%
Actual 2014	16,949.10 (1)	1,189.00 (1)	-0.94% (1)	9.73% (1)	364.70 (1)	18,502.80	-0.66%
Actual 2015	18,369.50 (1)	1,324.50 (1)	8.38% (1)	11.40% (1)	346.70 (1)	20,040.70	8.31%
Actual 2016	18,601.70 (1)	1,367.50 (1)	1.26% (1)	3.25% (1)	413.50 (1)	20,382.70	1.71%
Actual 2017	19,348.40 (1)	1,431.40 (1)	4.01% (1)	4.67% (1)	383.10 (1)	21,162.90	3.83%
Actual 2018	20,509.10 (1)	1,440.60 (1)	6.00% (1)	0.64% (1)	402.00 (1)	22,351.70	5.62%
Actual 2019	21,510.50 (1)	1,497.00 (1)	4.88% (1)	3.92% (1)	395.90 (1)	23,403.40	4.71%
Forecasted for 2020	22,366.00 (2)	1,611.00 (5)	3.98% (2)	7.62% (5)	355.30 (7)	24,332.30	3.97%
Forecasted for 2021	23,176.50 (2)	1,684.00 (5)	3.62% (2)	4.53% (5)	467.90 (7)	25,328.40	4.09%
Forecasted for 2022	24,008.90 (2)	1,745.70 (5)	3.59% (2)	3.66% (5)	480.10 (7)	26,234.70	3.58%
Forecasted for 2023	24,996.40 (2)	1,775.40 (5)	4.11% (2)	1.70% (5)	480.80 (7)	27,252.60	3.88%
Forecasted for 2024	25,913.80 (2)	1,800.20 (5)	3.67% (2)	1.40% (5)	481.60 (7)	28,195.60	3.46%
Forecasted for 2025	27,005.50 (2)	1,807.60 (5)	4.21% (2)	0.41% (5)	482.30 (7)	29,295.40	3.90%
Forecasted for 2026	28,092.80 (2)	1,835.00 (5)	4.03% (2)	1.52% (5)	483.10 (7)	30,410.90	3.81%
Forecasted for 2027	29,142.34 (3)	1,862.89 (6)	3.74% (3)	1.52% (6)	484.07 (8)	31,489.30	3.55%
Forecasted for 2028	30,231.59 (3)	1,891.21 (6)	3.74% (3)	1.52% (6)	485.03 (8)	32,607.83	3.55%
Forecasted for 2029	31,362.07 (3)	1,919.95 (6)	3.74% (3)	1.52% (6)	486.00 (8)	33,768.02	3.56%

(1) Department of Taxation.

(2) December General Fund Forecast for FY 2020-2026 (adjusted to remove temporary TCJA revenues), including

A.B.C. Profits, 0.375% sales tax (enacted 2013), and certain recurring Transfers per the Appropriation Act.

(3) Based on flat growth rates of 3.8% for General Fund Revenues and 1.9% for Sales Tax Transfers. A.B.C. Profits and recurring Transfers per Appropriation Act held flat at \$125.2 million and \$115.0 million, per Department of Taxation.

(4) Does not include Highway Maintenance and Operating Fund, Federal Grants and Contracts or Toll Revenues.

(5) December Commonwealth Transportation Fund Forecast for FY 2020-2026, includes only Transportation Trust Fund Revenues.

(6) Based on flat growth rate of 1.52% for years 2027-2029, per Department of Taxation.

(7) December Virginia Health Care Fund Forecast for FY 2020-2026.

(8) Based on flat growth rate of 0.2% for Virginia Health Care Fund Revenues, per Department of Taxation.

(9) Total Blended Revenue = GF + TTF + Virginia Health Care Fund.

(10) Blended Revenue Growth Rate = (Current FY Total Blended Revenue / Prior FY Total Blended Revenue) - 1.

Debt Capacity Model - Sensitivity Analysis

2-Year Reserve Excess Capacity Sensitivity

- The Base Model solution provides for average debt capacity of \$764.72 million over the model period, with two years of average capacity, beyond the 10-year model period.
 - If the Model solution is altered to reduce the two years of excess capacity to one year of excess capacity, the resulting debt capacity is \$834.24 million.
 - If the Model solution is altered to reduce the two years of excess capacity beyond the model period to no excess capacity, the resulting average debt capacity is \$917.67 million.

Revenue Sensitivity

- If the Model solution is altered to increase or decrease Blended Revenues, the following incremental average debt capacity changes occur:
 - Assuming a change of \$100 million in each and every year, the incremental change is \$6.06 million.
 - Assuming a 1% change of revenues in each and every year, the incremental change is \$20.45 million.

Interest Rate Sensitivity

- If the Model solution is altered to change interest rates, the following changes to average debt capacity occur:
 - Add 100 basis points to base rate, and average capacity decreases by \$88.04 million to \$676.68 million.
 - Subtract 100 basis points from base rate, and average capacity increases by \$100.37 million to \$865.09 million.

Debt of the Commonwealth
(Dollars in Thousands)

	<u>As of</u> <u>June 30, 2019</u>	<u>As of</u> <u>June 30, 2018</u>
Tax-Supported Debt		
9(b) General Obligation ⁽¹⁾	\$ 401,873	\$ 457,764
9(c) General Obligation - Higher Education ⁽²⁾	893,106	836,874
9(c) General Obligation - Transportation ⁽²⁾	6,061	8,914
9(c) General Obligation - Parking Facilities ⁽²⁾	8,567	9,850
Commonwealth Transportation Board	2,966,581	2,875,112
Virginia Public Building Authority	2,863,660	2,663,808
Virginia Port Authority	234,114	243,448
Virginia College Building Authority - 21st Century & Equipment	4,566,772	4,305,134
Virginia Biotechnology Research Park Authority	14,220	18,561
Capital Leases	38,392	42,620
Installment Purchases	170,190	166,705
Virginia Aviation Board	-	-
Economic Development Authority Obligations ⁽³⁾	23,366	30,783
Subtotal Tax Supported Debt	<u>\$ 12,186,902</u>	<u>\$ 11,659,573</u>
Other Tax-Supported Debt		
Compensated Absences ⁽²⁾	\$ 666,786	\$ 631,282
Pension Liability ⁽²⁾	6,254,910	6,732,980
OPEB Liability ⁽²⁾	2,566,963	2,817,710
Pollution Remediation Liability ⁽²⁾	10,430	6,963
Other Liabilities ⁽²⁾	30,322	30,948
Subtotal Tax Supported Debt Not Included in Capacity Model	<u>\$ 9,529,411</u>	<u>\$ 10,219,883</u>
Total Tax-Supported Debt	<u>\$ 21,716,313</u>	<u>\$ 21,879,456</u>

Source: Department of the Treasury and Department of Accounts

⁽¹⁾ Voter approved

⁽²⁾ Not Included in Debt Capacity Model

⁽³⁾ Fairfax County Economic Development Authority Joint Venture with VDOT for Camp 30 Project

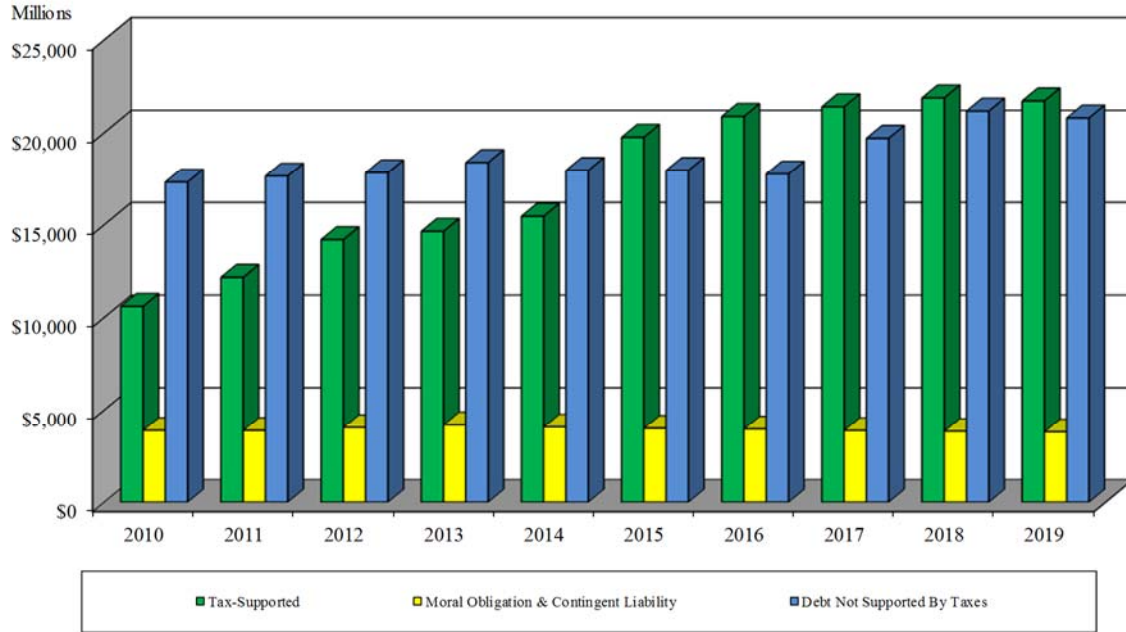
Debt of the Commonwealth
(Dollars in Thousands)

	<u>As of</u> <u>June 30, 2019</u>	<u>As of</u> <u>June 30, 2018</u>
Debt Not Supported by Taxes ⁽¹⁾		
<i>Moral Obligation / Contingent Liability Debt</i>		
Virginia Resources Authority	\$ 926,540	\$ 927,834
Virginia Housing Development Authority	-	-
Virginia Public School Authority - 1997 Resolution	2,322,460	2,347,525
Virginia Public School Authority - School Tax Credit Bond Program	359,566	359,566
Virginia Public School Authority - Equipment Technology Notes	189,935	196,305
Total Moral Obligation/Contingent Liability Debt	<u>\$ 3,798,501</u>	<u>\$ 3,831,230</u>
<i>Other Debt Not Supported By Taxes</i>		
9(d) Higher Education	\$ 2,844,656	\$ 2,817,992
Virginia College Building Authority - Pooled Bond Program	1,674,580	1,579,275
Virginia Public School Authority - Stand Alone Program	688,855	727,850
Virginia Housing Development Authority	3,042,060	3,301,380
Virginia Port Authority	285,782	291,985
Hampton Roads Sanitation District Commission	891,629	891,442
Hampton Roads Transportation Accountability Commission	580,311	582,425
Virginia Resources Authority	2,553,130	2,702,296
Grant Anticipation Notes (GARVEES)	1,151,850	1,153,617
Notes Payable	325,373	172,782
Other Long-Term Debt	337,488	370,284
Foundations	1,712,396	1,686,510
Pension Liability	163,849	174,059
OPEB Liability	121,252	162,931
Capital Lease Obligations	2,305,489	2,289,887
Compensated Absences	11,070	10,546
Installment Purchase Obligations	518	-
Tuition Benefits Payable	1,991,469	2,135,222
Lottery Prizes Payable	112,983	116,484
Total Other Debt Not Supported By Taxes	<u>\$ 20,794,740</u>	<u>\$ 21,166,967</u>
Grand Total of Tax Supported Debt and Debt Not Supported By Taxes	\$ 46,309,554	\$ 46,877,653

Source: Department of the Treasury and Department of Accounts

⁽¹⁾ Not Included In Debt Capacity Model

Outstanding Commonwealth Debt Fiscal Years 2010-2019



Tax-Supported Debt Issued Fiscal Year 2020 Through December 15, 2019

<u>Issuer</u>	<u>Date Issued</u>	<u>Par Amount</u>
Commonwealth of Virginia, General Obligation and Refunding Bonds, Series 2019A, Series 2019B and Series 2019C (Taxable)	August 14, 2019	\$158,620,000
Virginia College Building Authority, Educational Facilities Revenue and Refunding Bonds (21st Century College and Equipment Programs), Series 2019B and Series 2019C	December 5, 2019	\$363,990,000

Moral Obligation and Contingent Liability Debt

Moral Obligation Debt

Moral obligation debt refers to a bond issue structure originally created in the 1960s and utilized primarily by state housing finance agencies or state-administered municipal bond banks as additional credit enhancement for revenue bond issues. A government's moral obligation pledge provides a deficiency make-up for bondholders should underlying project revenues prove insufficient. The mechanics involve funding a debt service reserve fund when the bonds are issued. If a revenue deficiency exists, reserve fund monies are used to pay bondholders. The issuer then informs the legislative body and requests that it replenish the reserve fund before subsequent debt service is due. The legislative body "may", but is not legally required to, replenish the reserve fund. Rating agencies do not include moral obligation debt in tax-supported debt ratios as long as these bonds are self-supporting.

The Virginia Resources Authority (VRA) is the Commonwealth's only remaining moral obligation debt issuer. The VRA issues moral obligation bonds under its financing programs to provide low-cost financing to localities for water, wastewater, public safety, transportation, and other General Assembly authorized project categories. Due to increased demand for VRA's financing programs, the 2009 General Assembly approved an increase to VRA's moral obligation debt limit from \$900 million to \$1.5 billion.

Below are the statutory caps and outstanding amounts (in thousands):

Issuer	Statutory Cap	Outstanding at June 30, 2019	Available Authorization
Virginia Resources Authority	\$1,500,000	\$926,540	\$573,460
Virginia Housing Development Authority	\$1,500,000	\$0	\$1,500,000
Virginia Public School Authority	\$800,000	\$0	\$800,000
Total	\$3,800,000	\$926,540	\$2,873,460

Alternative financing programs were initiated by the Virginia Housing Development Authority and the Virginia Public School Authority. Neither of these entities expect to issue additional moral obligation debt.

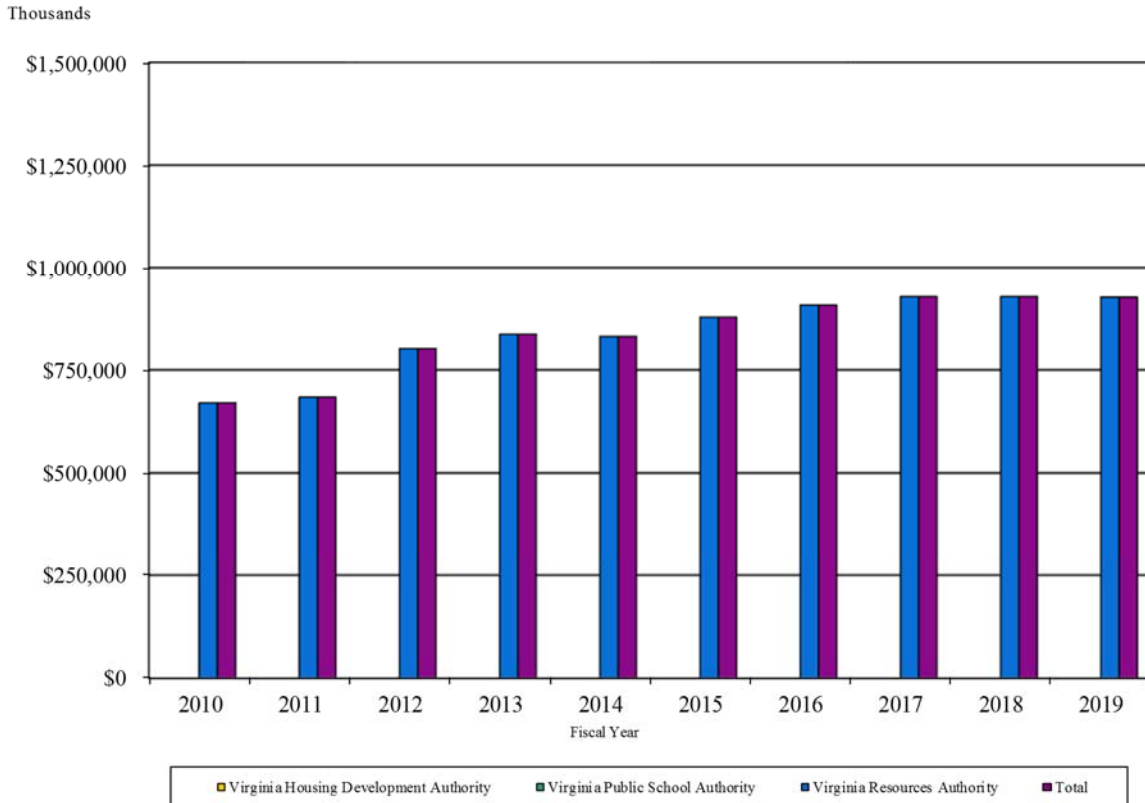
Moral Obligation Debt Sensitivity

A sensitivity analysis was completed for moral obligation debt. The analysis demonstrates the impact on tax-supported debt capacity as a result of the conversion of moral obligation debt to tax-supported debt. The sensitivity analysis is prepared using a worst-case scenario and shows the impact of the conversion of all moral obligation debt. However, conversion would only occur if the General Assembly appropriated funds to replenish a debt service reserve fund shortfall upon the request by a moral obligation issuer. Further, if any such debt were ever converted, it would be only

the amount necessary to cure the default of an underlying revenue stream (e.g., a locality participating in a pooled bond issue).

If the Model solution is altered to assume the conversion of all outstanding moral obligation debt as of June 30, 2019 to tax-supported debt, the resulting average debt capacity is \$687.51 million.

Outstanding Moral Obligation Debt Fiscal Years 2010-2019



Contingent or Limited Liability Debt

The Virginia Public School Authority (VPSA) is the only issuer of non-tax-supported debt that utilizes a sum-sufficient appropriation (SSA) as an additional credit enhancement. SSA debt represents a contingent liability for the Commonwealth. The VPSA had \$2.32 billion of 1997 Resolution bonds outstanding as of June 30, 2019 and an additional \$360 million of School Tax Credit bonds outstanding. Both VPSA programs receive authorization to issue bonds with a SSA credit enhancement from the Code of Virginia, §22.1-167.2.

The use of SSA credit enhancement for VPSA’s issuance of bonds or notes for the purpose of making grants to local school boards was codified during the 2001 General Assembly session (§22.1-167.3, Code of Virginia). As of June 30, 2019, outstanding notes for school technology and security amounted to \$190 million.

VPSA's bonds issued through its Stand Alone Program are secured by the related local government's G.O. pledge. While these bonds are afforded the security enhancement of VPSA's ability to intercept state aid to the obligated locality for VPSA's use towards payment of debt service should the locality default on its payment to VPSA, the Stand Alone Program bonds are not additionally secured by SSA.

Sum-Sufficient Appropriation Sensitivity

A sensitivity analysis was completed for the VPSA's SSA debt. The analysis demonstrates the impact on tax-supported debt capacity as a result of the conversion of SSA debt to tax-supported debt.

If the Model solution is altered to assume the conversion of the VPSA's total outstanding debt secured by a sum sufficient appropriation as of June 30, 2019 to tax-supported debt, the resulting average debt capacity is \$525.39 million.