Effect of Long-term Debt on the Financial Condition of the State

Department of Legislative Services 2020

Effect of Long-term Debt on the Financial Condition of the State

Department of Legislative Services
Office of Policy Analysis
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December 2020

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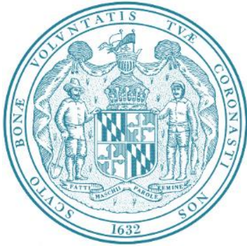

DEPARTMENT OF LEGISLATIVE SERVICES
OFFICE OF POLICY ANALYSIS
MARYLAND GENERAL ASSEMBLY

Victoria L. Gruber
Executive Director

Ryan Bishop
Director

December 2020

The Honorable Craig J. Zucker
Senate Chairman, Spending Affordability Committee

The Honorable Michael A. Jackson
House Chairman, Spending Affordability Committee

Dear Chairman Zucker and Chairman Jackson:

The Department of Legislative Services' annual report on the *Effect of Long-term Debt on the Financial Condition of the State* is presented. This report includes a review of the recommendations of the Capital Debt Affordability Committee (CDAC), an independent affordability analysis, and independent policy recommendations to the Spending Affordability Committee.

CDAC complements the efforts of the Spending Affordability Committee in management of the State's bonded indebtedness. CDAC is required to submit a recommended level of debt authorization to the Governor and the General Assembly by October 20 of each year. The existence of the committee within the Executive Branch means that consideration of debt affordability will occur at the time of formulation of the State's capital program as well as the time of approval of the program by the General Assembly.

The COVID-19 pandemic has created an unprecedented public health and economic crisis, generating an unusually high degree of uncertainty in financial markets. At time of this report's writing, it was unclear how the pandemic will progress and affect the economy. The State has been fortunate that data from the July 2020 general obligation bond sale show that Maryland bonds sold at extraordinarily low interest rates. A deeper analysis of the data suggests that bond markets and rating agencies appreciate Maryland's history of strong and well-embedded debt management policies.

Although there is not yet sufficient data to draw any robust conclusions, this report examines specific issues pertaining to the pandemic's effect on State debt. Chapter 3 discusses transportation bonds, Bay Restoration Bonds, and capital leases. Chapter 4 notes that economic forecasts with similar assumptions vary substantially and analyzes how differences in revenue estimates affect affordability ratios. Chapter 5 examines the impact of the pandemic on State property taxes. Chapter 7 reviews the effect of the pandemic on non-State debt issued by the Department of Housing and Community Development, Maryland Economic Development Corporation, and State universities.

The statistical analysis and data used in developing the recommendations were prepared by Patrick Frank with assistance from Andrew Gray, Emily Haskel, Ian Klein, Matthew Klein, Steven McCulloch, and Robert Rehrmann. The manuscript was prepared by Brett Ogden.

Sincerely,

Victoria L. Gruber
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VLG:RB/bao

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Chapter 1. Recommendations of the Department of Legislative Services

New General Obligation Bond Authorization

The Capital Debt Affordability Committee (CDAC) recommended a limit of $1.095 billion for new authorizations of general obligation (GO) bonds for fiscal 2022. This recommendation is the same as was authorized for fiscal 2021. This is $10 million less than was planned for fiscal 2022 in the 2019 CDAC report. This also reduces out-year planned authorizations by $10 million annually. The Department of Legislative Services (DLS) notes that both the CDAC recommendation and the previously planned amount, which is $1.105 billion, are affordable. DLS estimates that reducing the authorizations by $10 million for each of the next five years reduces the debt service to revenues affordability ratio by 0.01% in fiscal 2026 and debt service costs by $2 million. The effect of these proposed levels of authorizations on ratios and spending are discussed in detail in Chapter 4. **Since the effect of reducing authorizations is minimal and the General Assembly has adopted a policy of 1% annual increases since fiscal 2016, DLS concurs with the planned authorization limit and recommends that the GO bond debt authorizations not exceed $1.105 billion in fiscal 2022.**

State Maintains AAA Bond Ratings and Continues to Issue Bonds at Low Interest Rate during COVID-19 Pandemic

Compared to other AAA-rated states, Maryland is a high-debt state. According to Moody's Investors Service, Maryland's debt service to revenues is the highest among 13 AAA-rated states, and Maryland's debt outstanding to personal income is the second highest. Maryland maintains a AAA rating because rating agencies consistently identify Maryland's strong and well-embedded financial practices when rating State debt. Maryland has also restrained the growth in debt by limiting GO bond increases to 1%.

The statistical analysis in Chapter 6 shows that the interest rate on GO bonds is substantially lower than most other bonds and that this difference is statistically significant. Maryland GO bonds' interest rates are 15% less than the average bonds in *The Bond Buyer's* 20-bond index. Maryland also benefits from the "flight to quality" since the Great Recession as this reduces interest costs by another 81 basis points (0.81%).

The affordability analysis in Chapter 4 shows that the State is close to breaching the 8% debt service to revenues limit, while the debt outstanding to personal income ratio is well below the 4% ratio and steadily declines to 2.77% by the end of the forecast. Should the State breach the debt service ratio, markets and rating agencies might not penalize the State because the reason for the breach is attributable to revenues declining during the pandemic, and the State has a long and strong record of sound financial management and debt policies. As such, keeping a AAA bond

rating and the ability to issue low-interest bonds are likely to be dependent on the State maintaining these sound practices.

DLS recommends that the State continue its sound fiscal management and prudent debt policies and again limit increases in GO bond authorizations to 1%. If the economy worsens to the point that additional authorizations are necessary as part of a larger budget stabilization plan, these increases should be limited to a year or two with the explicit policy to reduce authorizations back to the long-term growth trend before the COVID-19 pandemic.

Review of Capital Leases

The Governmental Accounting Standards Board (GASB) is an independent, nonpolitical organization dedicated to establishing rules that require state and local governments to report clear, consistent, and transparent financial information. In 2013, GASB initiated a project to reexamine issues associated with lease accounting. As a result, new GASB rules will require government lessees to amortize the leased asset over the term of the lease and recognize interest expense related to the lease liability. Exceptions are provided for short-term leases lasting 12 months or less, along with financed purchases. These rules will first impact Maryland in fiscal 2022.

If CDAC were to adopt the new GASB standards for determining which leases are capital leases, debt service and debt outstanding would increase, but the extent of that increase is unclear. In response to narrative in the fiscal 2019 *Joint Chairmen's Report* (JCR), the Department of Budget and Management, the Department of General Services, and the Maryland Department of Transportation (MDOT) prepared a preliminary estimate of debt service costs and debt outstanding under the new GASB guidelines. This estimate is that fiscal 2018 lease debt would total $91 million and debt outstanding $516 million. By contrast, capital lease expenditures reported by CDAC totaled $27 million in fiscal 2018, which is $64 million less than the JCR estimated for fiscal 2018. If the estimate from the JCR report is correct, this adds approximately 0.25% to the debt service to affordability ratio. **DLS recommends that CDAC examine the effects of the new GASB guidelines in 2021 and develop a policy in response to the guidelines.**

Issuance of Transportation Debt

MDOT competes with other State capital projects within debt affordability limits. Transportation debt capacity is limited by the constraints on debt outstanding, debt service coverage, the cash flow needs for projects in the capital program, and overall State debt affordability limits. Lower projected transportation debt issuances in the next few years result in more capacity for the issuance of other types of State tax-supported debt than in recent years. As revenues return to pre-pandemic levels, however, the capacity to issue transportation debt will increase and will need to be managed within the context of overall State tax-supported debt limits. **It is recommended that the General Assembly continue to set an annual limit on the level of**

State transportation debt to ensure transportation needs are appropriately balanced against other State capital needs.

Issuance of Bay Restoration Bond Debt

The Bay Restoration Fund (BRF) was created in 2004 primarily to provide grants for enhanced nutrient removal pollution reduction upgrades at the State's 67 major wastewater treatment plants. In 2012, the General Assembly adopted legislation to increase funding for these projects. Current plans provide sufficient funding for this initiative. DLS projects that a program consistent with current laws and policies can be supported without issuing an additional $100 million in fiscal 2022. Bay bonds are discussed in more detail in Chapter 3. **DLS recommends that the General Assembly continue to limit BRF revenue bond issuances to ensure the needs of this program are appropriately balanced against other State capital needs. In addition, it is recommended that the Maryland Department of the Environment update the General Assembly during the 2021 session on the impact of local financial hardship exemptions on BRF revenues.**

Issuance of Higher Education Academic Debt

CDAC recommends limiting new debt authorization of the University System of Maryland (USM) academic revenue bonds (ARB) to $30 million for the 2021 session. This amount reflects a $2 million decrease from the $32 million authorized in the 2020 session but is consistent with the amount programmed in the 2020 *Capital Improvement Program*. Academic bond issuances are discussed in Chapter 7. **DLS concurs with the committee's assessment that issuing $30 million in new USM ARBs is affordable.**

Chapter 2. Recommendations of the Capital Debt Affordability Committee

Chapter 43 of 1978 created the Capital Debt Affordability Committee (CDAC). The committee is required to recommend an estimate of State debt to the General Assembly and the Governor. The committee is chaired by the State Treasurer, and the other committee voting members are the Comptroller, the Secretary of Transportation, the Secretary of Budget and Management, and an individual appointed by the Governor. The chairs of the Capital Budget Subcommittee of the Senate Budget and Taxation Committee and the Capital Budget Subcommittee of the House Appropriations Committee serve as nonvoting members. The committee meets each year to evaluate State debt levels and recommend prudent debt limits to the Governor and the General Assembly. The Governor and the General Assembly are not bound by the committee's recommendations.

When reviewing State debt, CDAC considers general obligation (GO) bonds, including various taxable, tax-exempt, and tax credit bonds authorized under the federal American Recovery and Reinvestment Act of 2009; consolidated transportation bonds; stadium authority bonds; bay restoration bonds; and capital leases supported by State revenues. Bonds supported by non-State revenues, such as the University System of Maryland's auxiliary revenue bonds or the Maryland Transportation Authority's revenue bonds, are examined but are not considered to be State-source debt and are not included in CDAC's debt affordability calculation.

New General Obligation Debt Authorization

GO bonds support the State's capital program and are backed by the full faith and credit of the State. CDAC recommended a level of GO bond authorizations for the five-year forecast period beginning in fiscal 2022 below both the level recommended by the Spending Affordability Committee (SAC) in December 2019 and the amount currently programmed in the 2020 *Capital Improvement Program* (CIP). The CDAC recommendation holds the fiscal 2022 authorization level at $1,095 million, which is the same amount authorized for fiscal 2021 while maintaining an annual 1% increase through the planning period.

The recommendation to hold the GO bond authorization level in the 2021 session to the same amount authorized in the 2020 session was made by the Secretary of Budget and Management and reflects fiscal concerns about the negative impact that the COVID-19 pandemic is having on State revenues, which could stress affordability limits. The recommendation continues the 1% annual year-over-year increase in authorization level in recognition of the need to account for construction inflation. The Secretary cautioned that the recommended limit and the annual increase should be reevaluated by the committee and factored into the final SAC recommendation after the Board of Revenue Estimates issues its December 2020 revenue estimates.

Higher Education Academic Debt

CDAC recommends a new debt authorization of academic revenue bonds in the amount of $30 million for the 2021 session. This amount reflects a $2 million decrease from the $32 million authorized in the 2020 session but is consistent with the amount programmed in the 2020 CIP.

Chapter 3. State Debt

Maryland has authorized the issuance of the following types of State debt:

- tax-exempt general obligation (GO) bonds backed by the full faith and credit of the State, which include Qualified Zone Academy Bonds (QZAB), Qualified School Construction Bonds (QSCB), Qualified Energy Conservation Bonds (QECB), and Build America Bonds (BAB);

- taxable GO bonds, which are issued in the place of tax-exempt debt and include private activity bonds;

- capital leases, annual payments subject to appropriation by the General Assembly;

- revenue bonds and notes issued by the Maryland Department of Transportation (MDOT), backed by operating revenues and pledged taxes of the department;

- Grant Anticipation Revenue Vehicles (GARVEE), pledging projected future federal transportation grants to support debt service payments. If authorized through legislation, GARVEEs can be issued by MDOT and the Maryland Transportation Authority (MDTA). Chapter 472 of 2005 authorized $750 million to support the Intercounty Connector and, subsequently, $325 million was issued in fiscal 2008, and $425 million was issued in fiscal 2009. These last GARVEEs were retired in March 2020. Additional issuances would require General Assembly authorization;

- revenue bonds issued by the Maryland Stadium Authority (MSA), secured by a lease, which is supported by State revenues;

- bay restoration bonds issued by the Maryland Department of the Environment's (MDE) Water Quality Financing Administration, pledging revenues from the Bay Restoration Fund (BRF); and

- revenue or bond anticipation notes, which may be issued by the Treasurer and which must be repaid within 180 days of issuance. Currently, there are no anticipation notes outstanding.

General Obligation Bonds

GO bonds are authorized and issued to pay for the construction, renovation, or equipping of facilities for State, local government, and private-sector entities. Grants and loans are made to local governments and private-sector entities when the State's needs or interests have been identified. Projects funded with GO bonds include, but are not limited to, public and private

colleges and universities, public schools and community colleges, prisons and detention centers, and hospitals. As shown in **Appendix 1**, the Capital Debt Affordability Committee (CDAC) recommendation would provide $5.575 billion of new GO bond authorizations in fiscal 2022 through 2026. Agency requests for this same period total $7.521 billion, or $1.946 billion more than the recommended authorization level. The higher authorization level currently programmed in the 2020 *Capital Improvement Program* (CIP) would fall $1.646 billion short of fully funding agency requests. This illustrates that at the higher authorization levels programmed in the 2020 CIP, agency requests are still $278 million more than proposed for the 2021 session and $1.65 billion over authorization levels proposed for the five-year planning period. This deficit increases to $338 million for fiscal 2022 and $1.95 billion over the planning period at the lower CDAC recommended authorization level.

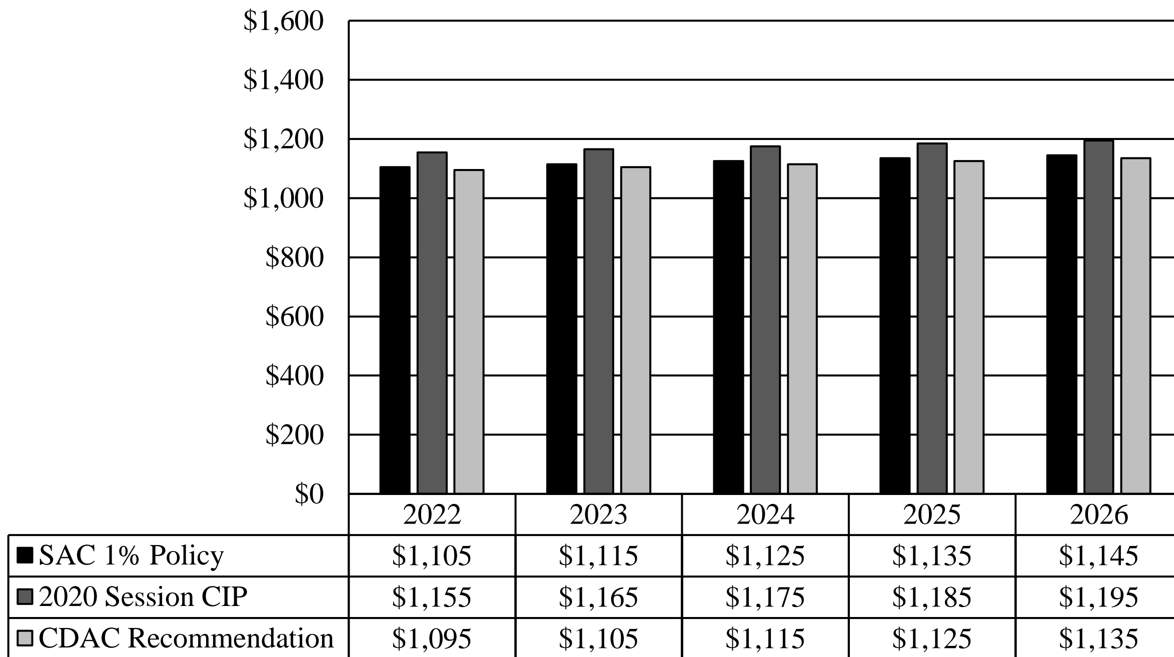
New General Obligation Bond Authorization Levels

GO bonds support the State's capital program and are backed by the full faith and credit of the State. CDAC recommended a level of GO bond authorizations for the five-year forecast period beginning in fiscal 2022 below both the level recommended by the Spending Affordability Committee (SAC) in December 2019 and the amount currently programmed in the 2020 CIP. The CDAC recommendation holds the fiscal 2022 authorization level at $1,095 million, which is the same amount authorized for fiscal 2021 while maintaining an annual 1% increase through the planning period. **Exhibit 3.1** illustrates that the CDAC recommendation results in an authorization level:

- $10 million annually below the SAC recommendation, or $50 million through the five-year planning period, and;

- $60 million annually below the amount currently programmed in the 2020 CIP, or $300 million through the planning period.

Exhibit 3.1
Proposed General Obligation Bond Authorizations
Fiscal 2022–2026
($ in Millions)



	2022	2023	2024	2025	2026
SAC 1% Policy	$1,105	$1,115	$1,125	$1,135	$1,145
2020 Session CIP	$1,155	$1,165	$1,175	$1,185	$1,195
CDAC Recommendation	$1,095	$1,105	$1,115	$1,125	$1,135

CDAC: Capital Debt Affordability Committee
CIP: *Capital Improvement Program*
SAC: Spending Affordability Committee

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*, 2019 and 2020; *Spending Affordability Committee 2019 Interim Report*, December 2019; and Governor's 2020 CIP

While the CDAC recommendation for the 2021 session holds authorization levels to the amount authorized in the 2020 session, the recommendation continues the 1% annual increase in proposed authorization levels rebased to the 2021 session level. CDAC recommended authorization levels are within the debt affordability benchmarks, which limit State tax-supported debt outstanding to no more than 4% of State personal income and debt service to no more than 8% of revenues. However, the COVID-19 pandemic presents fiscal challenges, and the Board of Revenue Estimates' (BRE) September 2020 estimate resulted in a downward revision in State revenues, which could stress affordability limits and presents a level of risk.

General Obligation Bond Issuance Stream and Debt Service Costs

GO bonds authorized in a given year are not all issued the year in which they are authorized. The State Treasurer's Office (STO) reports that just over half of the GO bonds authorized in a year are typically issued within the first two fiscal years. Specifically, CDAC assumes that bonds authorized in a given year will be fully issued over five years (31% in the first year, 25% in the second year, 20% in the third year, 15% in the fourth year, and 9% in the fifth year). This delay in issuance results in a substantial lag between the time that GO bonds are authorized and the time that the bonds affect debt outstanding and debt service levels.

Exhibit 3.2 compares debt service projections for the SAC 1% increase and the 2020 CDAC recommended authorization levels. The lower CDAC authorization level results in very modest debt service savings when compared to the 2019 SAC recommendation.

Exhibit 3.2
Projected Debt Service Costs
Fiscal 2022-2026
($ in Millions)

	2019 SAC 1% Growth Service Cost Estimate	2020 CDAC Debt Service Cost Estimate	Difference CDAC to SAC
2022	$1,387	$1,387	$0
2023	1,430	1,430	0
2024	1,463	1,462	–1
2025	1,489	1,488	–1
2026	1,528	1,526	–2

CDAC: Capital Debt Affordability Committee
SAC: Spending Affordability Committee

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*, 2019 and 2020; Department of Legislative Services

Appendix 2 shows how the proposed authorizations for fiscal 2022 through 2029 would be issued by STO, based on the 2019 SAC recommended annual authorization levels.

General Obligation Bond Refunding

GO bonds recently issued by Maryland are callable after 10 years. Low interest rates provided the State with the opportunity to refund bonds. The bonds were financed by issuing new debt at lower interest rates. The new debt was placed in an escrow account from which debt service payments for the previously issued debt are made until the bonds are callable. This increases gross GO bond debt outstanding, but net debt remains constant. **Exhibit 3.3** shows that refunding has reduced debt service costs by $402 million since fiscal 2010.

Exhibit 3.3
Debt Service Cost Savings Attributable to Refunding Bonds
Fiscal 2010-2021
($ in Millions)

Date of Sale	Type of Issuance	Amount Retired	Savings	Net Present Value of Savings
December 2009	Tax-exempt	$606.3	$25.8	$24.9
February 2010	Tax-exempt	200.4	9.3	8.6
September 2011	Tax-exempt	264.6	12.6	11.1
March 2012	Tax-exempt	140.7	12.6	10.2
August 2012	Tax-exempt	194.5	18.7	16.1
March 2013	Tax-exempt	168.7	10.0	8.1
March 2014	Tax-exempt	245.9	14.2	12.6
July 2014	Tax-exempt	695.2	69.2	58.3
March 2015	Tax-exempt	369.7	29.0	21.8
March 2017	Tax-exempt	490.3	29.0	24.2
August 2017	Tax-exempt	884.5	85.7	75.8
March 2020	Tax-exempt	257.3	24.7	23.5
July 2020	Tax-exempt	151.7	8.1	10.5
July 2020	Taxable	342.6	53.1	48.8
Total		**$5,012.3**	**$402.1**	**$354.6**

Source: Public Financial Management, Inc.; Public Resources Advisory Group

Federal Tax Cuts and Jobs Act Ends Advanced Refunding for Tax-exempt Bonds

STO, with advice from its financial advisor, continually monitors financial markets to determine if refinancing GO debt is advantageous. Should it be determined that market interest rates are sufficient to warrant a refunding, such action would be presented to the Board of Public Works (BPW) for its approval. However, the federal Tax Cuts and Jobs Act (TCJA) of 2017 ended advanced refunding.

Until January 1, 2018, federal tax law allowed the State one advanced refunding for every tax-exempt bond sale. Advanced refunding allowed the State to issue tax-exempt refunding bonds before the call date. The advantages of advanced refunding bonds are that savings can be realized early, advanced refunding provides a hedge against increasing interest rates, and issuances can be bundled to increase efficiencies.

The immediate result of the new law was to suspend refunding issuances, which had become common. From fiscal 2010 to 2018, there were 11 refunding issuances; there were no refunding issuances between August 2017 and March 2020. STO and its financial advisor did not project sufficient savings for a refunding sale. However, there are now refunding opportunities. The State's strategy is to:

- ***Determine If Taxable Bonds Realize Sufficient Savings:*** While the law prohibits advanced refunding with tax-exempt bonds, there is no prohibition on advanced refunding with taxable bonds. Taxable bonds are more expensive than tax-exempt bonds. However, if interest rates decline, taxable bond rates could decline to the point that bonds can be refunded and taxable bonds issued in their place; and

- ***If Taxable Bonds Do Not Provide Sufficient Savings, Refund Bonds at the Call Date:*** If the State waits until bonds are callable, tax-exempt bonds can support retiring the callable bonds.

The first refunding opportunity since the new law was in March 2020. The State retired $257 million in bonds that were callable one month later. There were two refunding issuances in July 2020. The first retired $152 million in bonds that are callable in September 2020. The second issued advanced refunding taxable bonds for bonds that are not callable in calendar 2020.

While this new approach realizes substantial savings, it is certainly not optimal from the State's perspective. The State is not able to lock in savings early from bonds refunded at the call date. With respect to the taxable advanced refunding bonds, the State issues these bonds with a higher true interest cost (TIC) than tax-exempt bonds.

Program Open Space Debt Service Payments

Program Open Space (POS) bonds totaling $70 million were authorized as the POS Acquisition and Opportunity Loan of 2009 (Chapter 419). The bonds were intended to replace funds lost due to the transfer of up to $70 million in POS State share unencumbered fund balance to the General Fund per the Budget Reconciliation and Financing Act (BRFA) of 2009 (Chapter 487). The Prior Authorizations of State Debt to Fund Capital Projects – Alterations Act of 2010 (Chapter 372) allows for the debt to be issued through GO bonds. In the end, POS bonds were not issued; the State issued GO bonds in place of POS bonds to reduce costs due to GO bonds' low interest rates.

The full $70 million in GO bonds was issued as part of two State issuances, February and July 2010, as shown in **Exhibit 3.4**. The first purchases were in August 2010. The Department of Natural Resources (DNR) received $65 million, and the Maryland Department of Agriculture (MDA) received the remaining $5 million. Some of the debt was issued as BABs. The bonds include federal direct payment subsidies that were reduced by sequestration. The reduction is less than $100,000.

Exhibit 3.4

Program Open Space GO Bond Issuances

($ in Thousands)

Issue Date	GO Bond Issuance	Principal
February 2010	First Series A, Build America Bonds	$33,333
July 2010	2010 Second Series A, Tax-exempt (Retail Sale)	11,945
July 2010	2010 Second Series B, Tax-exempt (Competitive Sale)	18,472
July 2010	2010 Second Series C, Taxable Build America Bonds	6,250
Total		**$70,000**

GO: general obligation

Source: Department of Budget and Management

Exhibit 3.5 shows that debt service costs are $6.9 million in fiscal 2021. The debt service is deducted from transfer tax revenues allocated to DNR and MDA proportionately based on the share of the issuance each received. The debt is retired in fiscal 2026.

Exhibit 3.5

Program Open Space GO Bonds Debt Service Payment Schedule

Fiscal 2021-2026

($ in Millions)

	2021	2022	2023	2024	2025	2026
Debt Outstanding	$27.5	$21.4	$15.0	$8.4	$1.6	$0.0
Debt Service	6.9	6.9	7.0	7.0	7.0	1.7

GO: general obligation

Source: Department of Budget and Management

Federal Tax Credit and Direct Payment Bonds

In addition to tax-exempt GO bonds, the State has also taken advantage of federal programs that allow the State to issue bonds whereby the buyers can receive federal tax credits or the State will receive a direct payment to offset interest costs. These bonds are issued in the place of traditional tax-exempt GO bonds. To date, the State has issued QZABs, QSCBs, QECBs, and BABs. QZABs, QSCBs, and QECBs have been issued to support education capital projects. BABs support the same projects that tax-exempt bonds support.

To date, the State has issued $209 million in QZABs, QSCBs, and QECBs. **Exhibit 3.6** shows that the Department of Legislative Services (DLS) estimates that the lower costs associated with these bonds reduced total debt service payments by $66 million. However, some of these bonds are affected by federal sequestration reductions, which reduces the savings by almost $3 million.

Exhibit 3.6
Summary of Special Purpose Issuances

Type	Date Issued	Amount Issued	Debt Service Payments	Payments	Similar GO Payments[1]	Savings	Sequestration Reduction	Net Savings
QZAB	Nov-01	$18,098	$0	$12,432 [2]	$27,182	$14,750	$0	$14,750
QZAB	Nov-04	9,043	0	7,356 [2]	12,393	5,038	0	5,038
QZAB	Dec-06	4,378	0	3,609 [2]	6,132	2,523	0	2,523
QZAB	Dec-07	4,986	0	4,089 [2]	6,967	2,877	0	2,877
QZAB	Dec-08	5,563	6,142	6,142	7,606	1,464	0	1,464
QZAB	Dec-09	5,563	6,275	6,275	7,052	778	0	778
QSCB	Dec-09	50,320	0	49,570 [2]	63,791	14,221	0	14,221
QSCB	Aug-10	45,175	0	44,497	52,731	8,234	-1,544	6,690
QZAB	Dec-10	4,543	0	4,474	5,302	828	-179	649
QZAB	Aug-11	15,900	15,900	15,900	20,267	4,367	-518	3,849
QECB	Aug-11	6,500	7,080	7,080	8,285	1,206	-184	1,021
QZAB	Aug-12	15,230	15,230	15,230	18,303	3,073	-334	2,739
QZAB	Dec-13	4,549	4,549	4,549	5,875	1,326	0	1,326
QZAB	Dec-14	4,625	4,625	4,625	5,971	1,346	0	1,346
QZAB	Dec-15	4,625	4,625	4,625	5,971	1,346	0	1,346
QZAB	Dec-16	4,680	4,680	4,680	5,926	1,246	0	1,246
QZAB	Dec-17	4,823	4,823	4,823	5,922	1,099	0	1,099
Total		**$208,601**	**$73,928**	**$199,954**	**$265,677**	**$65,723**	**-$2,760**	**$62,963**

GO: general obligation
QECB: Qualified Energy Conservation Bond
QSCB: Qualified School Construction Bond
QZAB: Qualified Zone Academy Bond

[1] Similar GO payments vary over time because interest rates vary. The analysis uses the GO true interest cost at the time that the debt is issued.
[2] Sinking Fund payment.

Note: Numbers may not sum to total due to rounding.

Source: Comptroller of Maryland; State Treasurer's Office; Department of Legislative Services

Effect of Sequestration on Direct Payment Bonds

The federal Budget Control Act (BCA) of 2011 imposed caps on federal discretionary spending from federal fiscal 2012 to 2021. The Act also created a Joint Select Committee on Deficit Reduction to further reduce the federal deficit by at least $1.2 trillion over 10 years. The BCA of 2011 established a backup process to achieve the reduction with automatic spending cuts, or "sequestration."

Direct pay bonds are affected by mandatory reductions required through sequestration. STO advises that this reduces federal fund reimbursements for these bonds. Initially, in fiscal 2013, reimbursements were reduced by approximately $51,000 and peaked in fiscal 2019 at $0.8 million. As federal reimbursements decline, this mandatory reduction also declines. The federal fiscal 2019 sequestration rate was 6.2%, and the federal fiscal 2020 rate was 5.9%. **Exhibit 3.7** shows that State fiscal 2020 grants appear to be approximately $563,000 less than anticipated. STO advises that the State may not have received all fiscal 2020 grants due to delays caused by the coronavirus pandemic. Should this be the case, the funds may be received in fiscal 2021.

Exhibit 3.7
Effect of Sequestration on Federal Fund Revenues
Fiscal 2020-2022
($ in Thousands)

Fiscal Year	2020	2021	2022	Total
July 2009 Build America Bonds	$796	$796	$796	$2,389
October 2009 Build America Bonds	942	942	942	2,825
February 2010 Build America Bonds	5,302	4,528	3,713	13,543
July 2010 Build America Bonds	1,094	1,094	1,094	3,281
July 2010 Qualified School Construction Bonds	1,965	1,965	1,965	5,895
December 2010 Qualified Zone Academy Bonds	228	228	228	684
August 2011 Qualified Zone Academy Bonds	660	660	660	1,980
August 2011 Qualified Energy Conservation Bonds	234	234	234	703
August 2012 Qualified Zone Academy Bonds	426	426	426	1,279
Less Sequestration	*-699*	*-631*	*-583*	*-1,913*
Possible Delayed Reimbursement Due to Pandemic	*-563*	*0*	*0*	*-563*
Total	**$10,385**	**$10,243**	**$9,475**	**$30,102**

Source: State Treasurer's Office; Internal Revenue Service; Congressional Budget Office; Department of Legislative Services

Qualified Zone Academy Bonds

QZABs were created under the federal Tax Reform Act of 1997 as a new type of debt instrument to finance specific education projects. In Maryland, the proceeds support the Aging Schools Program. QZABs are issued with the full faith and credit of the State. Consequently, QZABs are considered State debt. For purposes of calculating State debt affordability, QZABs are included in the State's GO bond debt outstanding and debt service.

Prior to 2008, the State did not pay interest on QZAB issuances. Instead, bondholders received a federal income tax credit for each year that the bond was held. The State was not required to make payments on the principal until the bonds were redeemed. For example, under its 2001 agreement with Bank of America, the State, through STO, made annual payments into a sinking fund invested into a guaranteed rate of interest. Since the funds were invested in interest-bearing accounts, the repayment of the principal by the State was less than the par value of QZABs, making QZABs less expensive than GO bonds.

In 2008, STO advised that the federal government amended rules regarding arbitrage that precluded the State from investing sinking funds. As a consequence, the State is no longer able to invest the sinking funds payments, interest earnings will no longer be generated, and the State will need to fully appropriate the principal borrowed. Costs also increased because the State cannot issue all QZABs at par but must instead offer a supplemental coupon. The December 2008 sale offered a 1.6% supplemental coupon. As Exhibit 3.7 shows, even with sequestration, QZABs are still less expensive than GO bonds.

Since 2011, the federal government authorized QZABs with a direct payment to the State. Because interest rates are quite low, the federal payment is sufficient to fully subsidize the interest costs. For example, the State issued $15.2 million in August 2012. The winning bid was submitted by Morgan Stanley & Co., LLC with a TIC that is essentially 0.0% because State debt service costs are reimbursed by the federal government. The net interest cost for the winning bidder was 2.83%.

The federal TCJA eliminated the QZAB program, so no additional issuances are planned. The last QZAB issuance will mature in fiscal 2028.

Qualified School Construction Bonds

QSCBs were created under the federal American Recovery and Reinvestment Act of 2009 (ARRA) as a new type of debt instrument to finance the construction, rehabilitation, or repair of public school facilities. The bonds are issued with the full faith and credit of the State and are debt. For purposes of calculating State debt affordability, QSCBs are included in the State's GO bond debt outstanding and debt service. These bonds were issued in place of tax-exempt bonds. The net effect of the bonds was to reduce the State debt service payments.

QSCBs are tax credit bonds entitling the holder of the bond to a tax credit for federal income tax purposes in lieu of receiving current interest on the bonds, similar to QZABs. The tax credit rate on QSCBs is set by the U.S. Treasury to allow for issuance of QSCBs at par

and with no interest costs to the issuer. Unlike QZABs, tax credits may be stripped from bonds and sold separately, which could increase the marketability of the bonds.

Under ideal circumstances, the bonds sell at par without any interest payments (referred to as a supplemental coupon). Prior to December 2009, QSCBs were sold with supplemental coupon payments (such as the Baltimore County sale that included a 1.25% coupon) or at a discount (such as the Virginia Public School sale that generated proceeds equal to 91.0% of the bonds' principal).

In December 2009, the State sold $50.3 million in QSCBs at par without a supplemental coupon. The bonds generate savings by replacing subsequent GO bond issuances that would have supported public school construction. Since there was no supplemental coupon, the State will not pay any interest on these bonds.

The State's second QSCB bond sale was in July 2010 when the State sold $45.2 million in QSCBs. At the time of the sale, federal direct payments fully subsidized the $29.4 million in debt service payments. Sequestration has reduced the federal subsidy by approximately $1.7 million. The State is not authorized to issue any additional QSCBs. This final QSCB matures in fiscal 2026.

Qualified Energy Conservation Bonds

QECBs were created by the Tax Extenders and Alternative Minimum Tax Relief Act of 2008. The ARRA increased the allocation. The bonds are taxable bonds. The State will receive a direct federal subsidy for 70% of the federal tax credit rate. All the bonds mature in 15 years. The definition of qualified energy conservation projects is fairly broad and contains elements relating to energy efficiency capital expenditures in public buildings, renewable energy production, various research and development applications, mass commuting facilities that reduce energy consumption, several types of energy-related demonstration projects, and public energy efficiency education campaigns.

The State issued the full $6.5 million allocated to the State in July 2011. The proceeds will support the construction of energy conservation projects at a school in St. Mary's County. The winning bid's interest cost was 0.62%. This low rate is attributable to the federal reimbursement. The winning bidders' net interest cost is 4.22%. Insofar as the federal tax credit rate at the day of the sale was 5.15%, and the State will be reimbursed 70.0% of that rate, the effective federal reimbursement is 86.0%. Annual interest payments are approximately $273,000. The federal subsidy is $234,000, requiring a net interest payment that is just over $39,000 from the State. Sequestration reduces the annual federal subsidy by approximately $13,000, resulting in a $52,000 payment by the State. This issuance is retired in fiscal 2027.

Build America Bonds

The ARRA authorized the State to sell BABs. The bonds support the types of projects that traditional tax-exempt bonds support and are issued in place of tax-exempt bonds. The buyers of the bonds do not receive any federal tax credit and are subject to federal taxes. Instead, Maryland

receives a 35% subsidy from the federal government. Unlike QZABs, QSCBs, and QECBs, these bonds can support any project that is eligible to be funded with tax-exempt bonds.

To minimize debt service payments, the State bid the first BABs issuance as both traditional tax-exempt bonds and BABs with the sale awarded to the lowest bid. Nine underwriters bid for BABs, and there were no bids for the tax-exempt bonds. In subsequent bond sales, the State bid them as BABs only.

The federal program expired on December 31, 2010. In 2009 and 2010, the State issued BABs four times: August 2009; October 2009; February 2010; and July 2010. These issuances totaled $583 million. BABs are structured similarly to tax-exempt GO bonds. In January 2011, DLS estimated that BABs reduced State GO bond debt service costs by $39 million over the life of the bonds. Since the estimate was prepared, sequestration has reduced the federal subsidy by $6 million. Final BAB issuance matures in fiscal 2025.

Transportation Debt

MDOT issues 15-year, tax-supported consolidated transportation bonds. Bond proceeds support highway construction and other transportation capital projects. Revenues from taxes and fees and other funding sources accrue to the Transportation Trust Fund (TTF) to pay debt service, operating budget requirements, and to support the capital program. Debt service on consolidated transportation bonds is payable solely from the TTF.

In addition to issuing consolidated transportation bonds, MDOT also has debt referred to as nontraditional debt. Nontraditional debt currently includes Certificates of Participation and debt sold on MDOT's behalf by the Maryland Economic Development Corporation and MDTA. A portion of the financing for the Purple Line transit project will be provided through a federal Transportation Infrastructure Finance and Innovation Act loan, which will be considered MDOT nontraditional debt. The General Assembly annually adopts budget language that imposes a ceiling on MDOT's nontraditional debt.

Impact of the COVID-19 Pandemic

The COVID-19 pandemic has had, and is expected to continue to have, an adverse impact on MDOT's financial condition and operations. Revenue attainment for almost all of the TTF tax and fee revenues has declined as a result of a general reduction in travel related to the stay-at-home order and the economic recession caused by the pandemic. MDOT's operating revenues have also experienced declines due to plummeting transit ridership and passenger air travel.

Federal aid through the Coronavirus Aid, Relief, and Economic Security (CARES) Act provided $392 million for the Maryland Transit Administration and $87.8 million for the Maryland Aviation Administration to help cover operating costs in fiscal 2020 and 2021. However this funding did not make up for the revenue loss caused by the pandemic. As a result, MDOT announced $97 million in operating reductions for fiscal 2021 that are expected to carry forward

into fiscal 2022. The capital program is also impacted, with the draft *Consolidated Transportation Program* released in September 2020 providing $2.9 billion less in programmed spending than the previous six-year program.

Consolidated Transportation Bonds

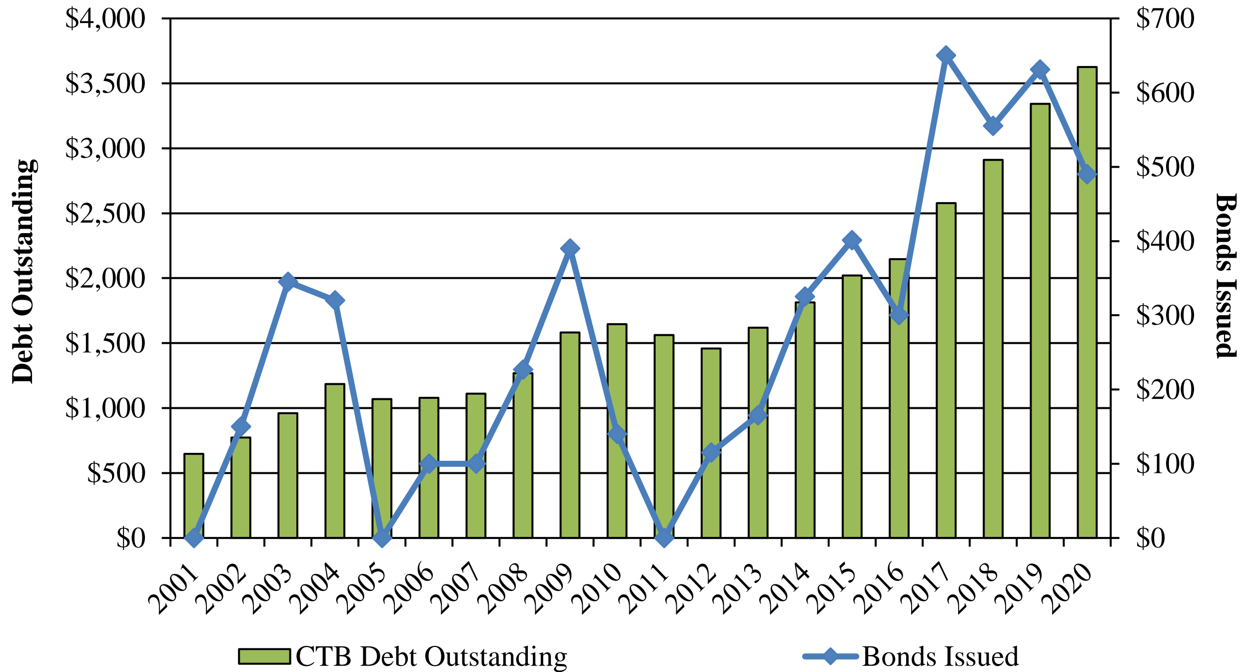
The issuance of transportation bonds is limited by two criteria: an outstanding debt limit; and a coverage test. Section 3-202(b) of the Transportation Article establishes the maximum aggregate and unpaid principal balance of consolidated transportation bonds that may be outstanding at any one time. During the 2013 session, the maximum outstanding debt limit was increased to $4.5 billion (from $2.6 billion) in recognition of the enactment of an increase in motor fuel tax revenue.

Section 3-202(c) of the Transportation Article further requires the General Assembly to establish each year in the State budget the maximum unpaid principal balance in bonds that may be outstanding at the end of the forthcoming year. The fiscal 2021 Budget Bill set the maximum ceiling for June 30, 2021, at $3,877,330,000. DLS estimates that as of June 30, 2021, debt outstanding will total $3,672,330,000.

The bond revenue coverage test, which is established in MDOT's bond resolutions, establishes that the department will maintain net revenues and pledged taxes equal to at least twice (2.0) the maximum future debt service, or MDOT will not issue bonds until the 2.0 ratio is met. MDOT has adopted an administrative policy establishing a minimum coverage of 2.5. Based on projected bond sales, DLS estimates that as of June 30, 2021, MDOT will have a net income coverage of 2.6 and a pledged taxes coverage of 4.3.

As shown in **Exhibit 3.8**, MDOT has issued new (*e.g.*, nonrefunding) consolidated transportation bonds in 18 of the past 20 years. Exhibit 3.8 also illustrates debt outstanding from fiscal 2001 to 2020. In fiscal 2020, MDOT's net debt outstanding was $3.6 billion, well under the $4.5 billion debt outstanding limit.

Exhibit 3.8
Maryland Department of Transportation
Bonds Issued and Net Debt Outstanding
Fiscal 2001-2020
($ in Millions)



CTB: consolidated transportation bonds

Source: Maryland Department of Transportation; Department of Legislative Services

Future Debt Issuance

Each fall, DLS develops a TTF forecast that includes revenue and spending assumptions, which can vary, sometimes significantly, from those included in MDOT's September TTF forecast. These differences can lead to different conclusions on the amount of debt that can be issued to support MDOT's capital program. This year, the differences between the DLS and MDOT forecasts are minor, and the forecasts are in agreement on the amount of debt that can be issued over the next six years. Following is a discussion of the differences between the DLS forecasts with respect to revenues and spending and the planned level of debt issuances common to both forecasts.

The total revenue estimates by MDOT and DLS are substantially the same. The DLS six-year estimate of tax and fee revenues is $59 million lower than MDOT's, but the DLS forecast benefits from being constructed after the fiscal 2021 bond sale and includes the actual amount of bond premiums received, which is $61 million higher than was assumed by MDOT prior to the bond sale. Thus, the net difference in total revenues between the two forecasts is only $2 million. DLS estimates that revenues available to MDOT (after deductions to other agencies) will decrease by 6.8% in fiscal 2021 and increase by 0.7% in 2022. The fiscal 2021 decrease and small fiscal 2022 increase reflect the effects of the pandemic. Over the six-year forecast period, DLS assumes an average annual increase in revenues of 3.1%. This appears to be fairly robust growth but, in reality, it reflects a gradual approach to pre-pandemic levels of revenue attainment. The fiscal 2026 total net revenues projection is nearly $139 million lower than the amount projected for fiscal 2026 in last year's forecast.

On the spending side of the equation, the DLS baseline estimate for MDOT operations in fiscal 2022 is slightly lower than the amount in MDOT's forecast and over the six-year period. MDOT's assumed operational spending remains slightly above the DLS estimate. The lower spending assumptions are not sufficient, however, to indicate an increase in the capacity to issue debt relative to MDOT's forecast.

The DLS and MDOT forecasts usually assume that the MDOT administrative policy of maintaining a minimum debt service coverage ratio of 2.5 (net income to maximum debt service) is adhered to throughout the forecast. Due to the extraordinary challenges caused by the revenue declines being experienced due to the pandemic, however, DLS concurs with the debt issuance levels proposed in the MDOT forecast despite debt service coverage ratios falling below the administrative goal of 2.5 for fiscal 2022 and 2023. This is a risk in the forecasts, that should revenue attainment fall more than projected such that the net income debt service coverage ratio falls below 2.0 times maximum debt service, MDOT will be prohibited under its bond covenants from issuing further debt until the ratio returns to at least 2.0.

In its forecast, the department projects that net income will be 2.2 times maximum debt service in fiscal 2022 and 2.1 times in fiscal 2023. Revenues would need to decline $125 million in fiscal 2021 to cause a breach of the 2.0 debt service coverage number in fiscal 2022, and fiscal 2022 revenues would have to fall a further $87 million for the debt service ratio to fall below 2.0 in fiscal 2023. Those decreases represent 3.9% lower attainment in fiscal 2021 and 2.7% lower attainment in fiscal 2022.

Exhibit 3.9 shows the planned level of debt issuances, debt outstanding, debt service, and net income debt service coverage ratios included in the six-year forecast.

Exhibit 3.9
Consolidated Transportation Bonds
Fiscal 2021-2026
($ in Millions)

	Issued	Outstanding	Debt Service	Net Income Debt Service Ratio
2021	$300	$3,672	$412	2.6
2022	135	3,511	448	2.2
2023	210	3,387	478	2.1
2024	240	3,327	437	2.6
2025	195	3,214	440	2.8
2026	195	3,093	440	2.8
Total	**$1,275**	**$20,204**	**$2,655**	

Note: Numbers may not sum to total due to rounding.

Source: Maryland Department of Transportation; Department of Legislative Services

Conclusions and Recommendations on Transportation Debt

MDOT competes with other State capital projects within debt affordability limits. Transportation debt capacity is limited by the constraints on debt outstanding, debt service coverage, the cash flow needs for projects in the capital program, and overall State debt affordability limits. The lower projected transportation debt issues during this forecast period results in more capacity for the issuance of other types of State tax-supported debt than in recent years. As revenues return to pre-pandemic levels, however, the capacity to issue transportation debt will increase and will need to be managed within the context of overall State tax-supported debt limits. **It is recommended that the General Assembly continue to set an annual limit on the level of State transportation debt to ensure transportation needs are appropriately balanced against other State capital needs.**

Capital Leases Supported by State Revenues

Section 8-104 of the State Finance and Procurement Article requires that capital leases supported by State tax revenues be included in State debt affordability calculations. The law does allow an exception for energy performance contract (EPC) leases, if the savings generated exceed the costs and they are properly monitored.

Beginning in 1987, the State's capital program began utilizing lease/leaseback financing for capital projects. These leases are used to acquire both real property and equipment. Real property leases allow facilities to be purchased through a lease with terms ranging from 15 years to 25 years. The terms of equipment leases are 3, 5, and 10 years. Since fiscal 1994, the State has operated a program involving equipment leases for energy conservation projects at State facilities to improve energy performance.

Sections 8-401 to 8-407 of the State Finance and Procurement Article regulate leases. The law requires that capital leases be approved by BPW and that the Legislative Policy Committee (LPC) has 45 days to review and comment on any capital lease prior to submission to BPW. Chapter 479 of 2008 further regulates capital leases by amending § 12-204 of the State Finance and Procurement Article to require that capital leases that execute or renew a lease of land, buildings, or office space must be certified by CDAC to be affordable within the State's debt affordability ratios or must be approved by the General Assembly in the budget of the requesting unit prior to BPW approval.

All three types of leases (equipment, energy performance, and property) have advantages. Often, equipment leases involve data processing equipment or telecommunications equipment. Equipment leases offer the State more flexibility than purchases, since leases can be for less than the entire economic life of the equipment. Equipment leases are especially attractive in an environment where technology is changing very rapidly. Leases may also be written with a cancellation clause that would allow the State to cancel the lease if the equipment were no longer needed. Currently, the Treasurer's lease-purchase program consolidates the State's equipment leases to lower the cost by reducing the interest rate on the lease. The rate that the Treasurer receives for the State's equipment leases financed on a consolidated basis is less than the rates individual agencies would receive if they financed the equipment leases themselves.

For real property, the transaction generally involves an agreement in which the State leases property to a developer who in turn builds or renovates a facility and leases it back to the State. At the end of the lease period, ownership of the facility is transferred to the State. Equipment leases are generally for shorter periods of time, from three to five years. The primary advantages of property leases, when compared to GO bonds, are that they allow the State to act more quickly if an unanticipated opportunity presents itself. Because of the extensive planning and legislative approval process involved in the State's construction program, it often takes years to finance a project. Lease agreements are approved by BPW after they have been reviewed by the budget committees. Since BPW and the budget committees meet throughout the year, leases may be approved much more quickly than GO bonds, which must be approved by the entire General Assembly during a legislative session. Therefore, property leases give the State the flexibility to take advantage of economical projects that are unplanned and unexpected.

For energy performance projects, agencies make lease payments using the savings that result from implementation of the conservation projects. Using the savings realized in utility cost reductions to pay off energy performance project leases allows projects to proceed that otherwise might not be of high enough priority to be funded, given all of the other competing capital needs

statewide. Under the program, utility costs will decrease; as the leases are paid off, the savings from these projects will accrue to the State.

Exhibit 3.10 shows that projected tax-supported capital lease debt outstanding totals $198 million as of June 30, 2020. Debt service costs are projected to be $30 million on June 30, 2020.

Exhibit 3.10
Tax-supported Capital Lease Debt Outstanding and Debt Service
($ in Millions)

State Agency/Facility	Debt Outstanding June 2020	Debt Service Fiscal 2021
State Treasurer's Office		
Capital Equipment Leases	$13.4	$4.7
Energy Performance Projects	8.7	2.9
Maryland Department of Transportation		
Headquarters Office Building	5.2	2.8
Airport Shuttle Buses	22.3	2.1
Department of General Services		
Prince George's County Justice Center	12.3	1.5
Maryland Transportation Authority		
Annapolis State Office Parking Garage	15.7	1.5
Maryland Department of Health		
Public Health Laboratory	120.4	14.0
Subtotal – Current Leases	***$198.1***	***$29.6***
Proposed Leases		
New Capital Equipment Leases	$0.0	$1.3
Total	**$198.1**	**$30.4**

Note: Numbers may not sum to total due to rounding. Excludes Maryland Stadium Authority leases, since the authority includes them in their balance sheet and debt service calculations.

Source: State Treasurer's Office

Energy Performance Contracts

Chapter 163 of 2011 changed how the State classifies EPCs. Prior to the enactment of the legislation, § 8-104 of the State Finance and Procurement Article required that all capital leases supported by State tax revenues be included in State debt calculations. In 2010, CDAC reviewed this issue and determined that most of these EPC leases yielded savings that exceeded the lease payments. Consequently, these tend to reduce total State spending. STO also surveyed other states about their practices. It is common practice for other states to exclude capital leases that realize savings in excess of the capital cost.

The legislation that was passed allows CDAC to exclude capital leases if the savings they generate equal or exceed the lease payments. It also requires that EPCs be monitored in accordance with the reporting requirements adopted by CDAC. The Department of General Services (DGS) reviews these EPCs to determine if they do in fact generate savings. STO advises that 21 projects are excluded from CDAC calculations. Debt outstanding at the end of fiscal 2020 was $77.5 million, and fiscal 2020 debt service totaled $15.6 million.

Six EPC projects are included as capital leases, specifically two university projects, two MSA projects, a Maryland Department of Veterans Affairs project, and a Maryland Port Administration project. The fiscal 2020 debt outstanding for these projects totals $8.7 million and debt service payments total $2.9 million. The university projects are not State debt, the MSA projects are included in the MSA debt, and the two other projects are included in the leasing affordability calculation.

Lease Accounting Rules

The Governmental Accounting Standards Board (GASB) is an independent, nonpolitical organization dedicated to establishing rules that require state and local governments to report clear, consistent, and transparent financial information. Under current GASB guidelines, leases that meet at least one of the following criteria are considered to be capital leases:

- the lease transfers ownership of the property to the lessee by the end of the lease term;
- the lease allows the lessee to purchase the property at a bargain price at a fixed point in the term of the lease for a fixed amount;
- the term of the lease is 75% or more of the estimated economic useful life of the property; or
- the present value of the lease payments is 90% or more of the fair value of the property.

Many leases that the State enters into are not considered to be capital leases. Even if the leases represent long-term commitments to make payments, no liabilities are reported. Similarly,

no assets are reported on many leases even if the State has long-term rights to receive operating lease payments.

New Lease Accounting Rules

In 2013, GASB initiated a project to reexamine issues associated with lease accounting. The objective of the project was to examine whether operating leases could meet the definitions of assets or liabilities, which could result in new standards for capital leases. A concern was that the current approach to operating leases undervalues liabilities. For example, there are a number of operating leases that include long-term commitments to make payments, but no liabilities are reported.

After much deliberation, GASB unanimously approved Statement 87 that redefines lease rules. The new requirements are scheduled to become effective for fiscal 2022.

New Rules Require Government to Recognize Leases Exceeding 12 Months

The new rules require government lessees to recognize a lease liability and an intangible asset representing their right to use the leased asset with limited exception. Lessees would amortize the leased asset over the term of the lease and recognize interest expense related to the lease liability. Exceptions are provided for short-term leases lasting 12 months or less, along with financed purchases.

The new rules will increase the amount of capital leases, but it is unclear to what extent. In response to narrative in the fiscal 2019 *Joint Chairmen's Report* (JCR), the Department of Budget and Management (DBM), DGS, and MDOT prepared a preliminary estimate of debt service costs and debt outstanding under the new GASB guidelines. This estimate is that fiscal 2018 lease debt would total $91 million and debt outstanding $516 million. This is three times the $30 million capital lease debt estimate in fiscal 2021. Capital lease debt outstanding is $181 million in fiscal 2021. The fiscal 2019 Comprehensive Annual Financial Report estimates that the fiscal 2019 leasing costs totaled just under $100 million. This amount may well overstate leasing costs that would be State debt if the affordability process would adopt GASB 87. For example, State debt measures only include debt supported by State revenues. It is likely that some share of these leases are not supported by State revenues. State agencies should examine leases in detail to more accurately report leases under the GASB guidelines.

Since the new guidelines increase the amount of capital leases, the guidelines affect the debt affordability calculations. In the 2019 interim, a study group that included STO, the Comptroller's Office, DBM, MDOT, and DLS examined how the new guidelines would affect debt affordability. The group recognized that the State cannot accurately determine total debt service and debt outstanding under the new guidelines at this time and recommended that the State maintain the current practice and reexamine this subject.

One issue is that the State has entered into hundreds of small leases, which all require amortization tables to correctly estimate debt outstanding. To do this, the State would need to build

a larger administrative infrastructure that could divert resources from other functions at a time that revenue estimates have been revised downward. One approach could be to exclude leases with an estimated debt outstanding below a certain threshold. This would simplify the administrative process and still acknowledge large leases.

The new GASB guidelines are effective in fiscal 2022. **DLS recommends that CDAC examine the effect of the new GASB guidelines in 2021 and develop a policy in response to the new guidelines.**

Bay Restoration Bonds

The BRF was created in 2004 to provide grants for enhanced nutrient removal (ENR) pollution reduction upgrades at the State's 67 major wastewater treatment plants (WWTP), which are defined as WWTPs with a design capacity of 0.5 million gallons per day or greater. The fund is administered by MDE's Water Quality Financing Administration. The fund is financed by a $60 per year bay restoration fee on users of wastewater facilities (WWTP Fund) and septic systems and sewage holding tanks (Septic Fund). The fees on WWTP users (and users receiving public drinking water) took effect January 1, 2005, and are being collected through water and sewer bills. The fees on septic system and sewage holding tank owners took effect October 1, 2005, and are being collected by the counties. Fees were increased from $30 per year to $60 per year in 2012. The fund has several revenue sources and expends funds for both operating (MDE's operating expenses, operation and maintenance grants, bond expenses, and cost-effective nutrient load reductions) and capital (wastewater facility upgrades, sewer rehabilitation, and stormwater projects) purposes.

CDAC considered whether bay bonds are State debt in 2004. At the time, the committee agreed that the bonds are State debt. The Water Quality Financing Administration's bond counsel reviewed this issue and concurred with this opinion. The bond counsel noted that there is a substantial likelihood that, if challenged in court, the Maryland courts would consider bay bonds to be State debt, since the bonds are supported by an involuntary exaction that serves a general public purpose.

Fund Balance Status

During the 2020 legislative session, DLS noted that the BRF appeared to be running a substantial fund balance based on current law, project schedules reported in the 2020 CIP, and fund data provided by MDE. MDE noted that the DLS observation did not account for updated information on the encumbrance schedule for prior year authorizations and that the funds are necessary to support the cash flow needs of projects already approved by the General Assembly. Data provided by the Comptroller's Office shows that fiscal 2020 closed with a $116.1 million fund balance.

Revenue Bond Schedule

While the BRFA of 2017 (Chapter 23) expanded the eligible uses of the BRF to include Biological Nutrient Removal (BNR)[1] projects and authorized the use of up to $60 million of tax-supported BRF revenue bonds for this purpose, which increased the overall revenue bond authorization from $530 million to $590 million, MDE's projected total issuance need is now $330 million which, when combined with the fee revenues deposited into the fund, is projected to be sufficient to cover fund expenses. MDE has reported in the past that the decrease in overall revenue bond issuances from $590 million to $330 million and the shift in the timing of issuances is at least partially attributable to the fact that more cash has been used in place of debt as a result of changed assumptions about local government reimbursement schedules. The Septic Fund is operated on a pay-as-you-go basis and does not involve revenue bond proceeds.

Based on the current issuance stream, the debt outstanding peaked at $301.6 million in fiscal 2016 and has decreased steadily since then as shown in **Exhibit 3.11**. Debt service costs increased to $31.8 million in fiscal 2020. Overall, issuances are limited by the revenues generated by the WWTP share of the funds, overall State debt considerations, and limitations on uses. The current plan is to retire all debt by the end of fiscal 2030, when the fee is reduced to $30 per year. This would limit any final issuance to an eight-year maturity if bonds are issued in fiscal 2022. Based on current law and project schedules reported in the 2020 CIP, it does not appear necessary to issue revenue bonds in fiscal 2022, and DLS does not forecast that these bonds will be issued under current laws and policies.

Exhibit 3.11
Bay Restoration Wastewater Treatment Fund
Fiscal 2020-2026
($ in Millions)

	2020	2021	2022	2023	2024	2025	2026
Debt Outstanding	$232.1	$209.7	$186.2	$161.6	$140.4	$118.1	$94.7
Debt Service	31.8	31.8	31.8	31.8	27.2	27.2	27.1

Source: Maryland Department of the Environment

[1] The BRFA of 2017 (Chapter 23) authorized the use of up to $60 million of tax-supported revenue bonds and the funds in the BRF to fund BNR projects. Chapters 368 and 369 of 2017 (Bay Restoration Fund – Eligible Uses – Expansion) permanently expanded the allowable uses of the BRF to include BNR projects.

Prioritization

As of fiscal 2021, the funding prioritization schedule, in order of priority, is as follows:

- funding an upgrade of a wastewater facility with a design capacity of 0.5 million gallons or more per day from no upgrade all the way to ENR per Chapters 368 and 369;

- funding for the most cost-effective ENR upgrades at WWTP with a design capacity of less than 0.5 million gallons per day from no upgrade all the way to ENR per Chapters 368 and 369; and

- as determined by MDE and based on water quality and public health benefits for the following:

  - funding up to 100.0% for ENR upgrades at WWTPs that discharge into the Atlantic Coastal Bays or other waters of the State;

  - funding future upgrades of WWTPs to achieve additional nutrient removal or water quality improvement that is greater than ENR treatment levels;

  - funding up to 87.5% of the cost for combined sewer overflows abatement, rehabilitation of existing sewers, and upgrading conveyance systems, including pumping stations;

  - costs associated with upgrading septic systems and sewage holding tanks;

  - funding up to 50% for grants for local government stormwater control measures – including projects relating to water quality, climate resiliency, or flood control per Chapter 44 of 2020 – for jurisdictions that have implemented a specified system of charges under current authority, and

  - funding up to 100% for stormwater alternative compliance plans.

Outside of the prioritization schedule noted above, the BRF is authorized to purchase cost-effective nitrogen, phosphorus, or sediment load reductions in support of the State's efforts to restore the health of the Chesapeake Bay per Chapters 366 and 367 of 2017. This authorization is for up to $4 million in fiscal 2018, $6 million in fiscal 2019, and $10 million per year in fiscal 2020 and 2021.

Resolution of the Unusual Revenue Fluctuations for a Usually Stable Revenue Source

It was noted at the BRF Advisory Committee meeting on October 10, 2019, that the BRF wastewater fee revenue decreased from $115.3 million in fiscal 2018 to $107.5 million in fiscal 2019. The reason for the decrease was not readily apparent at the time but was thought to have been related to the May 7, 2019 ransomware attack in Baltimore City, which temporarily delayed tax collection. Therefore, the revenue collection was anticipated to be shifted to fiscal 2020. This is largely in fact what happened as the fiscal 2020 revenues came in at $121.2 million. The average of the fiscal 2019 and 2020 revenues is $114.4 million, which is roughly on par with the $115.3 million received in fiscal 2018. Fiscal 2020 closed with a $116.1 million fund balance.

Impact of the COVID-19 Pandemic

The COVID-19 pandemic appears to have had a limited impact on MDE's permitting and funding of BRF projects as projects continue to be taken to BPW for approval, although recent actions have been taken that could result in revenue stream delays. Governor Lawrence J. Hogan, Jr. issued executive orders prohibiting termination of residential services and late fees on March 16, 2020, and then amended and restated this order on April 29, 2020, May 29, 2020, June 29, 2020, and July 31, 2020. The final July 31, 2020 executive order terminated on September 1, 2020. Subsequently, on August 31, 2020, the Public Service Commission prohibited residential utility service terminations through November 15, 2020.

Statute authorizes billing authorities to establish financial hardship exemption programs for certain residential dwellings that demonstrate substantial financial hardship, subject to MDE approval. In terms of local actions, Baltimore City took action on April 22, 2020, instituting a water bill discount effective May 8, 2020, that was to remain effective until either 90 days after the end of the current state of emergency or on December 31, 2020, whichever occurred first. This water bill discount was to be consistent with Baltimore City's existing BH20 Assists program, which provides a 43% discount on water and sewer use charges and the removal of bay restoration and stormwater remediation fees on water bills. As a result of this program and other financial hardship exemption programs instituted by local jurisdictions, there is a potential indeterminate loss of BRF revenues, but such a loss of revenue has not been seen to date. Since fiscal 2020 closed with a $116.1 million balance, it appears that BRF has the cash flow to manage debt service payments through fiscal 2021.

DLS recommends that the General Assembly continue to limit BRF revenue bond issuances to ensure that the needs of this program are appropriately balanced against other State capital needs. In addition, it is recommended that MDE update the General Assembly during the 2021 session on the impact of local financial hardship exemptions on BRF revenues.

Maryland Stadium Authority

Chapter 283 of 1986 created MSA to construct and operate stadium sites for professional baseball and football in the Baltimore area. MSA is authorized to issue taxable and tax-exempt revenue bonds for property acquisition and construction costs related to two stadiums at Baltimore's Camden Yards. The authority may also participate in the development of practice fields, team offices, parking lots, garages, and related properties.

In subsequent years, MSA's role was expanded to include managing and issuing revenue bonds to renovate and expand convention centers in Baltimore and Ocean City, construct a conference center in Montgomery County, renovate the Hippodrome Performing Arts Center, and renovate Camden Station. Most recently, MSA's role has been expanded to issue debt for the purpose of constructing and improving public school facilities in Baltimore City and improving racing facilities at Pimlico and Laurel Park. The Baltimore City school debt is not considered a debt of the State. **Exhibit 3.12** lists MSA's current tax-supported authorized debt, debt outstanding, and annual debt service. MSA also issues non-State debt for stadiums. This is discussed in the non-State debt section at the end of this chapter.

Exhibit 3.12
Maryland Stadium Authority
Revenue Debt Authorizations, Debt Outstanding, and Debt Service
($ in Millions)

Project	Revenues Supporting Debt	Authorized	Outstanding as of July 1, 2020	Debt Service Fiscal 2021
State Debt				
Baseball and Football Stadiums[1]	Lottery and MSA	$235.0	$34.1	$7.5
Montgomery County Conference Center	General Fund	23.2	5.5	1.6
Ocean City Convention Center	General Fund	24.5	20.9	0.9
Hippodrome Performing Arts Center	General Fund and Ticket Surcharge	20.3	3.1	1.6
Camden Station[1]	Lottery and MSA	n/a	3.5	0.8
Subtotal		***$302.9***	***$67.1***	***$12.3***
Non-State Debt				
Baseball and Football Stadiums[1]	Lottery and MSA	n/a	$62.1	$6.9
Baltimore City Public Schools	Lottery, Baltimore City, State grants to Baltimore City	$1,100.0	704.8	60.0
Horse Racing Facilities	Lottery	375.0	0.0	0.0
Subtotal		***$1,475.0***	***$766.9***	***$66.9***
Total		**$1,777.9**	**$834.0**	**$79.3**

MSA: Maryland Stadium Authority

[1] Authorization limit for Camden Complex includes the stadiums and Camden Station. The authorization does not specify between State and non-State debt. Total debt is limited to $235 million.

Note: Numbers may not sum to total due to rounding.

Source: Maryland Stadium Authority

Revenues Supporting Maryland Stadium Authority Debt

The revenue sources supporting State debt are lottery revenues, stadium authority revenues, general funds, and revenues pledged by Baltimore City. This section provides a short summary of the revenues. The bonds are discussed in more detail later in the chapter.

Lottery Revenues

There are three commitments for supported by lottery[2] revenues:

- The first lottery commitment is for Camden Yards and the baseball and football stadiums with a $20 million cap. There are two small bank loans that get first priority, the Series 2013 and Series 2014, about $2.0 million in total debt service. The remaining bonds are lease-backed revenue bonds with the Master lease as the pledge to the bondholders. These are parity bonds, so all bondholders have equal claims without any preference for any particular issuance.

- The second commitment is for Baltimore City Public Schools (BCPS) with a $20 million cap. The financing fund is the pledge to the bond holders. These are parity bonds.

- The third commitment is for the Racing and Community Development Financing Fund with a $17.5 million cap. This will be structured the same as BCPS bonds with the financing fund being pledged to the bondholders. These will be parity bonds.

MSA Revenues

Since lottery revenues for the stadiums and Camden Yards are capped at $20 million, MSA's revenues are used to support debt service if the debt service exceeds $20 million. Stadium authority debt is expected to be $15 million in fiscal 2021 and 2022, so no general fund appropriations are needed.

General Fund and Hippodrome Ticket Surcharge

Issuances for the Ocean City Convention Center, Montgomery County Convention Center, and Hippodrome Performing Arts Center are supported by general fund appropriations to MSA. The Hippodrome's debt service is partially offset by a $2 per ticket surcharge for events at the Hippodrome.

Baltimore City

In addition to the lottery revenues previously mentioned, Baltimore City School construction bonds are also supported by Baltimore City funds. These include diverting State school aid and revenues from container taxes. Funding for Baltimore City school revitalization is discussed in more detail later in this chapter.

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[2] In October 2020, BRE estimates that fiscal 2021 lottery revenues total $572 million.

State Debt Issuances

Camden Yards Sports Complex

Provisions of the Financial Institutions Article limit the amount of bonds that the authority may issue at the Camden Yards Sports Complex and the allocation of outstanding tax-supported debt. The authority may only exceed the limit with approval of BPW and notification to LPC. During the construction of the baseball and football stadiums, MSA remained within the statutory limit of $235 million in outstanding debt; however, BPW has, on several occasions, reallocated the specific statutory project limits to meet the cash flow needs of the construction efforts. Debt service is supported by lottery revenues.

Montgomery County Conference Center

In July 2003, MSA issued $23.2 million in tax-supported bonds to support construction of the Montgomery County Conference Center. Of this amount, $20.3 million represents the State's contribution to construction costs that totaled $66 million. The remaining bond proceeds funded a capitalized interest account established as part of the financing plan to fund interest-only debt service payments beginning on June 15, 2003, and continuing through June 15, 2004. Debt service payments thereafter and continuing through June 15, 2024, are paid from funds subject to appropriation by the State. Montgomery County contributed $13.7 million for construction and another $2.5 million for project-related enhancements. The project opened in 2004. In 2012, MSA submitted an Amended Comprehensive Plan of Financing for the center to refund the existing issuance at a lower rate.

Ocean City Conference Center

Chapters 217 and 218 of 2019 authorized additional bonds to expand the Ocean City Conference Center. In October 2019, MSA issued $20.9 million in tax-supported bonds to support construction of the expansion. The sale generated $3.8 million in premiums and proceeds totaled $24.7 million. To support the first two years of debt service interest payments, $1.9 million was deposited into a capitalized interest fund. Principal payments begin in the third year with the final debt service payment in fiscal 2040. The renovation project is also receives $15 million from the Town of Ocean City and $500,000 from the State capital budget. Debt service payments will be $1.7 million beginning in fiscal 2023.

Hippodrome Performing Arts Center

On July 10, 2002, the authority issued $20.25 million in taxable revenue bonds for the renovation of the Hippodrome Performing Arts Center in Baltimore City. The total cost of the Hippodrome project was $63 million, excluding capitalized interest expense. Funding for the project was provided by the State, MSA revenue bonds, Baltimore City, Baltimore County, private contributions, the performing arts center's operator, historic tax credits, and interest earnings. The project was completed in February 2004.

The Hippodrome is leased to the State and, subsequently, leased back to MSA. The rent paid under the lease by the State is equivalent to the debt service on the revenue bonds and is derived from the State's General Fund. Debt service payments are subject to appropriation and were averaging $1.8 million annually for the 20-year term of the bond. The debt service is partially offset by a required $2 per ticket surcharge for events at the Hippodrome. The bonds will be retired in fiscal 2022.

Camden Station

Section 13-708.1 of the Financial Institutions Article provides that MSA may develop any portion of Camden Yards to generate incidental revenues for the benefit of the authority subject to approval of BPW and LPC. MSA received LPC approval in January 2003 and BPW approval in December 2003 to renovate Camden Station, a historic four-story building next to the baseball stadium.

In February 2004, MSA issued $8.7 million in 20-year taxable revenue bonds to renovate Camden Station. Of that amount, $8 million is to pay for capital construction associated with the development of the project. The remaining bond proceeds were used to pay capitalized interest, costs of issuance, and bond insurance. The capital interest period covered biannual debt service payments through June 15, 2006. The bonds will be retired in fiscal 2025.

Non-State Debt

MSA also issues bonds to support baseball and football stadiums, Baltimore City school construction, and horse racing facilities that is not considered to be State debt.

Non-State Debt Issued for the Camden Yards Sports Complex on Advice of Bond Counsel

Since 2010, MSA has issued Sports Facilities Taxable Lease Revenue Bonds to fund capital improvement projects at the Camden Yards Sports Complex. The most recent issuance was $55 million in May 2019. The bonds have been secured by lottery revenues and, in the opinion of bond counsel, did not constitute tax-supported debt. An agreement with the Comptroller ensures that lottery proceeds are deposited with a trustee for the benefit of the holders of the bonds.

In 2012, MSA issued approximately $105 million in fixed-rate lease revenue bonds that were used to refund the 1998 and 1999 variable-rate bonds. This transaction eliminated exposure risks and some annual fees associated with the current variable-rate debt. MSA also issued $55 million in 2019 to support improvements to the M&T Bank Stadium and Camden Yards warehouse.

While the State does not consider this to be State debt, this interpretation of State debt is not universal. For example, Moody's considers all debt from lottery revenues to be debt of the State that issued the debt. Moody's estimates of Maryland's debt service to revenues affordability

ratio tends to be higher than the CDAC ratio, and this is one factor that results in a lower calculation by CDAC than Moody's.

Baltimore City School Revitalization Program

In 2013, the General Assembly adopted House Bill 860 (Chapter 647) authorizing MSA to issue up to $1.1 billion in debt for the purpose of constructing and improving public school facilities in Baltimore City. Any debt issued by MSA to finance construction or improvement of Baltimore City public school facilities is not a debt, liability, or pledge of the faith and credit or taxing power of the State. Sources of revenue to pay the debt service and other project costs are:

- all revenues generated by the Baltimore City beverage container tax;
- Baltimore City's proceeds from table games at the video lottery facility located in Baltimore City that are dedicated to school construction and 10% of the participation rent paid by the video lottery facility operator to Baltimore City;
- $10 million in State education aid due to the Baltimore City Board of School Commissioners (BCBSC) from forgone Baltimore City expenses attributable to recurring retiree health care costs shifted from Baltimore City to BCBSC (beginning in fiscal 2017);
- $20 million in annual proceeds from the State lottery (beginning in fiscal 2016);
- $10 million diverted from State education aid to BCBSC in fiscal 2016 and $20 million in each fiscal year thereafter (beginning in fiscal 2017);
- proceeds from the sale of bonds to finance improvements to BCPS facilities; and
- any other funds or revenues received from or dedicated by any public source to support the initiative.

MSA is responsible for managing all public school construction and improvement projects in Baltimore City that are financed under the Act. However, MSA may not use any of its own funds, whether appropriated or nonbudgeted, to pay for any costs or expenses related to its role as project manager.

In April 2016, MSA issued the first round of debt dedicated to the first phase (Year 1 schools) of the school construction program. The 30-year, tax-exempt revenue bonds totaled $320.0 million and garnered a premium of $66.1 million to be used for construction costs for 11 schools. The annual debt service is approximately $20.8 million.

The second bond issuance supporting Year 2 schools was issued in February 2018. A total of $426.4 million was issued. The sale generated a $70 million premium that supports construction.

The annual debt service costs total $48.1 million. MSA issued $525 million in bonds in three series in July 2020. Series A was $194 million in tax-exempt bonds. Series B was $34 million in tax-exempt green revenue bonds. Series C was $296 million in taxable refunding bonds. Total annual debt service costs are limited to $60 million, and debt service costs from prior sales totaled $48 million. Refunding Series C did not generate any proceeds for the project fund. Rather, the series reduced debt service costs of prior bond sales, which increased how much could be issued in Series A. The par value and premiums for Series A and B are deposited into the project fund. In addition to the par value, the premium for Series A was $98 million, and the premium for Series B was $16 million, bringing the total proceeds deposited into the project fund from this sale to $342 million.

Racing and Community Development Act of 2020

The Racing and Community Development Act (Chapter 590 of 2020) authorizes MSA to issue up to $375 million in bonds for financing planning, design, construction, and related expenses for racing facilities at Pimlico and Laurel Park. The bonds support improvements to both facilities, including the clubhouse, racetracks, stables and barns, and associated roads and walkways. The Pimlico site will be conveyed to Baltimore City, the Baltimore Development Corporation, or a designated entity. The legislation requires that the Preakness Stakes remain at Pimlico. An interest in Laurel Park site, in whole or in part, will be granted to Anne Arundel County or an entity designated by the county. The Maryland Jockey Club will operate the facility, and the Maryland Million will continue to be held at Laurel Park.

The bill requires that a minimum of $180 million support Pimlico and $155 million support Laurel Park. BPW approval is required prior to any bond issuance, and MSA must provide the fiscal committees of the General Assembly financing plans 45 days prior to BPW approval.

The Racing and Community Development Financing Fund (Financing Fund) is established as a revolving fund for implementing provisions of law concerning racing and community development projects and for the payment of debt service expenses incurred by MSA, or otherwise approved by MSA, concerning the projects. The fund will issue 30-year bonds. Beginning in fiscal 2022, the bill requires the transfer of $17 million from the State Lottery Fund to the Financing Fund for each fiscal year until the bonds issued for a racing facility have matured.

MSA anticipates issuing $331 million by fiscal 2022. As of November 2020, no debt has been issued.

Built to Learn Act of 2020

The Built to Learn Act (Chapter 20 of 2020) authorizes the MSA to issue up to $2.2 billion in revenue bonds, backed by annual payments from the Education Trust Fund beginning in fiscal 2022, for public school construction projects in the State, including to support a possible public-private partnership agreement for Prince George's County. The bill also expands school construction costs eligible for State funding and increases or establishes new mandated State funding for other public school construction programs. This Act was contingent on the enactment

of Senate Bill 1000 or House Bill 1300, the Blueprint for Maryland's Future. The General Assembly passed House Bill 1300, but Governor Hogan vetoed the bill, so the bill has not become law. However, the General Assembly has the opportunity to override the veto at the 2021 session.

Local Project Assistance and Feasibility Studies

The 1998 capital budget bill (as amended by Chapter 204 of 2003 and Chapter 445 of 2005) authorizes MSA to assist State agencies and local governments in managing construction projects. The budget committees must be notified, and funding must be provided entirely by the agency or local government requesting assistance unless funding is specifically provided in the budget for the project. The 1998 bill also authorizes the authority to conduct feasibility studies. The budget committees must give approval for the studies, and costs must add to no more than $500,000 annually of MSA's nonbudgeted funds.

Several studies are currently in various stages of completion by the authority. Studies that MSA is currently conducting include master plan improvements to a minor league ballpark in Hagerstown, St. Mary's County Complex, Ocean City Outdoor Field Complex, and Wicomico Civic Center.

Feasibility studies represent projects still in the planning stages. Since the projects are in a planning stage and are quite speculative, they are excluded from the affordability analysis and long-term debt projections. However, if any of these projects were to be developed and funded by the State, it would add to the State debt load and reduce the State's debt capacity.

Chapter 4. Affordability Analysis

The Capital Debt Affordability Committee's (CDAC) mission is to advise the Governor and the General Assembly regarding the maximum amount of debt that can prudently be authorized. To evaluate debt affordability, the committee has adopted these two criteria:

- State debt outstanding should be limited to 4% of Maryland personal income; and
- State debt service should be limited to 8% of revenues supporting the debt service.

These criteria compare debt to economic factors that relate to the wealth of Maryland citizens (personal income) and the resources of the State (revenues). Maintaining debt levels within the guidelines set by the committee helps the State to maintain its AAA bond rating and support a growing capital program that is sustainable.

The criteria are flexible enough to allow the State to adjust the program as the State's fiscal condition changes. The flexibility allowed the State to prudently increase the capital program when operating funds became scarce during the recession earlier this decade. The criteria also offer the State a predictable, stable, and transparent process.

This section examines the economic factors that measure debt affordability and evaluates the Spending Affordability Committee (SAC) recommendation to determine affordability.

Personal Income

Exhibit 4.l shows the official Board of Revenue Estimates (BRE) September 2020 personal income estimates. BRE expects personal income to decline in 2021. In spite of this decline, the average growth rate from 2020 to 2026 is 3.2%. BRE also prepared an alternate personal income estimate that is discussed later in the chapter.

Revenue Projections

Exhibit 4.2 shows the out-year revenue projections through fiscal 2026. These are the official BRE general fund estimates that will be used in this section. BRE has also prepared an alternate general fund estimate, which is discussed later in this chapter. In the past, the Department of Legislative Services (DLS) has prepared a separate estimate of Transportation Trust Fund (TTF) revenues. These differences can lead to different conclusions on the amount of debt that can be issued to support the Maryland Department of Transportation's (MDOT) capital program. As discussed in Chapter 3, the differences between the DLS and MDOT forecasts are minor, and the forecasts are in agreement on the amount of debt that can be issued over the next six years. As such, DLS will use the MDOT forecast that CDAC is also using.

Exhibit 4.1
Maryland Personal Income
Calendar 2020-2026
($ in Billions)

Year	Personal Income Estimate	% Change
2020	$413	5.67%
2021	406	-1.71%
2022	424	4.46%
2023	441	4.09%
2024	459	3.93%
2025	479	4.42%
2026	500	4.33%

Source: Board of Revenue Estimates

Exhibit 4.2
Revenue Projections
Fiscal 2021-2026
($ in Millions)

Fiscal Year	General Funds	Property Tax	Other ABF	ETF Gaming	Transfer Taxes	TTF	Stadium	BRF	Total
2021	$18,710	$893	$235	$516	$228	$3,260	$15	$109	$23,965
2022	19,666	899	154	543	248	3,318	15	110	24,953
2023	20,519	903	113	550	253	3,585	15	111	26,049
2024	21,323	912	24	557	258	3,695	14	112	26,894
2025	22,065	921	8	564	265	3,762	13	113	27,711
2026	22,821	931	5	571	273	3,785	11	114	28,511

ABF: Annuity Bond Fund
ETF: Education Trust Fund (supported by gaming revenues)
TTF: Transportation Trust Fund
BRF: Bay Restoration Fund

[1] BRF revenues only include revenues for wastewater treatment and exclude septic revenues.

Source: Board of Revenue Estimates; Maryland Department of Transportation; State Treasurer's Office; Capital Debt Affordability Committee

Affordability Analysis

DLS has prepared a revised estimate of State debt outstanding to personal income and State debt service to revenues. This analysis assumes a fiscal 2020 general obligation (GO) bond authorization totaling $1,105 million. This is consistent with the debt levels recommended by CDAC and SAC in their 2019 reports. CDAC has revised its recommendation to keep the fiscal 2022 recommendation to authorize $1,095 million, which is the same level as fiscal 2021. The effect of the CDAC recommendation is discussed later in the chapter.

Exhibit 4.3 shows affordability calculation assumptions for GO bond authorizations, transportation bonds, and capital leases. There are no planned Maryland Stadium Authority (MSA) or bay restoration bond issuances, although they are authorized to issue additional bonds. The MSA issuances are consistent with CDAC estimates as MSA has been issuing non-State debt instead of State debt in recent years. As discussed in Chapter 3, bay restoration funds are sufficient to support the currently authorized projects, so no additional issuances are anticipated at this time.

Exhibit 4.3
Projected New Debt Issuances
Fiscal 2021-2026
($ in Millions)

	General Obligation Bond Authorizations	General Obligation Bond Issuances	Transportation Bonds	Capital Leases
2021	$1,095	$1,075	$300	$5
2022	1,105	1,049	135	3
2023	1,115	1,045	210	24
2024	1,125	1,053	240	24
2025	1,135	1,069	195	20
2026	1,145	1,139	195	15

Source: Capital Debt Affordability Committee; Maryland Department of Transportation; State Treasurer's Office; Department of Legislative Services

CDAC policy is that tax-supported State debt outstanding not exceed 4% of personal income. **Exhibit 4.4** shows that for the forecast period, debt outstanding as a percent of personal income peaks at 3.48% in fiscal 2021, as the ratio steadily declines.

Exhibit 4.4
State Tax-supported Debt Outstanding
Components and Relationship to Personal Income
Fiscal 2021-2026
($ in Millions)

	General Obligation Bonds	MDOT Bonds	Capital Leases	Stadium Authority Bonds	Bay Restoration Bonds	Total Tax-supported Debt
2021	$9,996	$3,672	$181	$58	$210	$14,116
2022	10,094	3,511	160	49	186	14,000
2023	10,152	3,387	159	41	162	13,901
2024	10,197	3,327	148	33	140	13,846
2025	10,191	3,214	127	25	118	13,676
2026	10,272	3,092	105	19	94	13,582
State Tax-supported Debt Outstanding as a Percent of Personal Income (Affordability Criteria = 4.0%)						
2021	2.46	0.90	0.04	0.01	0.05	3.48
2022	2.38	0.83	0.04	0.01	0.04	3.30
2023	2.30	0.77	0.04	0.01	0.04	3.15
2024	2.22	0.73	0.03	0.01	0.03	3.02
2025	2.13	0.67	0.03	0.01	0.02	2.86
2026	2.06	0.62	0.02	0.00	0.02	2.72

MDOT: Maryland Department of Transportation

Note: Numbers may not sum to total due to rounding.

Source: Capital Debt Affordability Committee; Maryland Department of Transportation; State Treasurer's Office; Department of Legislative Services

With respect to debt service, the policy is that State tax-supported debt service not exceed 8% of tax revenues supporting debt service. **Exhibit 4.5** shows that the debt service as a percent of revenues fluctuates between 7.2% and 7.7%, peaking in fiscal 2022.

Exhibit 4.5
State Tax-supported Debt Service Components and Relationship to Revenues
Fiscal 2021-2026
($ in Millions)

	General Obligation Bonds	MDOT Bonds	Capital Leases	Stadium Authority Bonds	Bay Restoration Bonds	Total Tax-supported Debt Service
2021	$1,278	$412	$30	$15	$32	$1,767
2022	1,387	448	31	15	32	1,913
2023	1,430	478	32	15	32	1,987
2024	1,463	437	35	14	27	1,976
2025	1,489	440	34	13	27	2,004
2026	1,528	442	35	11	27	2,043
State Tax-supported Debt Service as a Percent of Revenues (Affordability Criteria = 8.0%)						
2021	5.33	1.72	0.13	0.06	0.13	7.37
2022	5.56	1.80	0.12	0.06	0.13	7.66
2023	5.49	1.84	0.12	0.06	0.12	7.63
2024	5.44	1.62	0.13	0.05	0.10	7.35
2025	5.37	1.59	0.12	0.05	0.10	7.23
2026	5.36	1.55	0.12	0.04	0.10	7.17

MDOT: Maryland Department of Transportation

Note: Numbers may not sum to total due to rounding.

Source: Capital Debt Affordability Committee; Maryland Department of Transportation; State Treasurer's Office; Department of Legislative Services

State Debt Is Also Affordable If the Alternate Revenue Estimates Are Assumed

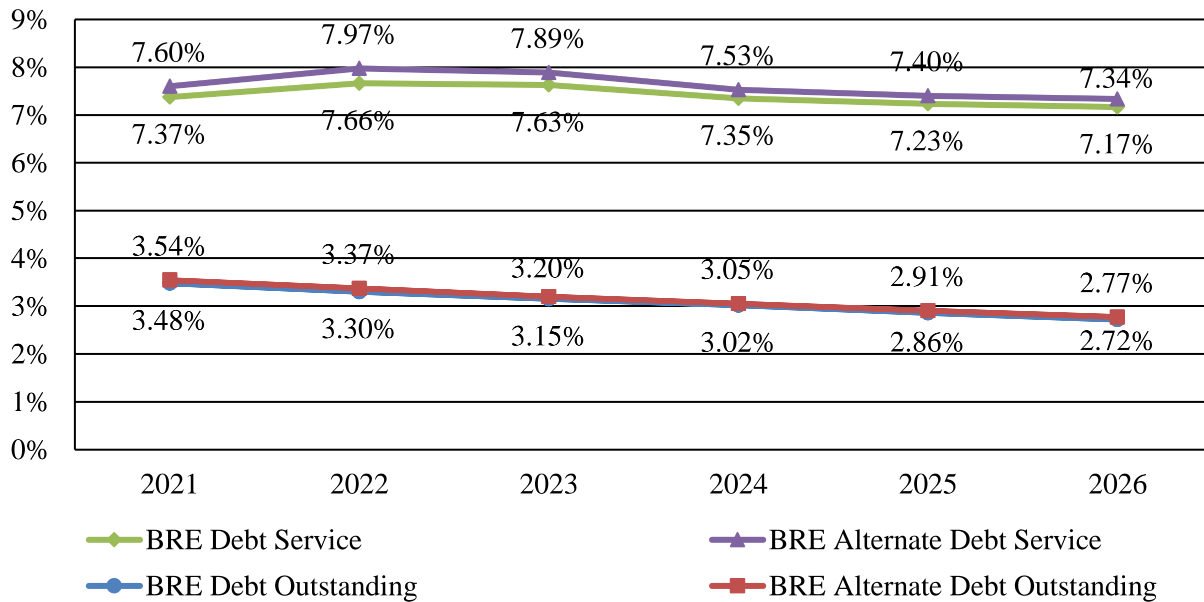
BRE's official September 2020 forecast relied on U.S. and Maryland economic forecasts from IHS Markit. The State also uses forecasts from Moody's Analytics. Although the Moody's forecast used similar assumptions with regard to the coronavirus pandemic, such as the availability of a vaccine (widely available in summer 2021) and the federal government enacting another stimulus bill (another package is assumed in calendar 2020), the two forecasts diverge more than expected. This suggests a high level of uncertainty about the economy during the pandemic.

Reflecting this uncertainty, BRE also prepared an alternate forecast of personal income, corporate income, and sales and use tax revenues. The alternate forecast based on Moody's estimates expects considerably less revenues than the official forecast. The alternate forecast's fiscal 2022 revenue from these three sources was $969 million less than the official forecast. This is 4.9% less than the official forecast, which estimates $19.666 billion in fiscal 2022.

BRE also prepared an alternate personal income forecast. This difference was more modest. Calendar 2022 personal income declined from $423.9 billion to $415.1 billion, which is 2.1% less than the official forecast.

DLS compared the affordability ratios using both the official and alternate BRE estimates. **Exhibit 4.6** shows that debt is just barely affordable with the alternate BRE revenue estimates.

Exhibit 4.6
Comparing Affordability Ratios
BRE Official and Alternate Estimates
Fiscal 2021-2026



BRE: Board of Revenue Estimates

Source: Board of Revenue Estimates; Maryland Department of Transportation; State Treasurer's Office; Capital Debt Affordability Committee

$10 Million Reduction in Authorizations Reduces Debt Service Affordability Ratio by One Basis Point

CDAC has recommended maintaining the fiscal 2022 capital program at $1,095 million and then increasing the program $10 million annually beginning in fiscal 2023. **Exhibit 4.7** shows that this reduces authorizations by $50 million over the forecast period. Because bond issuances are predicated by cash flow needs, and all spending does not occur in the first year, the reduction in actual spending is somewhat lower; DLS estimates that issuances are reduced by $35 million.

Exhibit 4.7
Effect of $10 Million Reduction in Issuances on Authorizations
Fiscal 2022-2026
($ in Millions)

	SAC GO Bond Authorizations	CDAC GO Bond Authorizations	Difference	SAC Issuances	CDAC Issuances	Difference
2022	$1,105	$1,095	-$10	$1,049	$1,045	-$4
2023	1,115	1,105	-10	1,045	1,040	-5
2024	1,125	1,115	-10	1,053	1,045	-8
2025	1,135	1,125	-10	1,069	1,060	-9
2026	1,145	1,135	-10	1,139	1,130	-9
Total	**$5,625**	**$5,575**	**-$50**	**$5,355**	**$5,320**	**-$35**

CDAC: Capital Debt Affordability Committee
GO: general obligation
SAC: Spending Affordability Committee

Source: Department of Legislative Services

There are modest savings associated with reducing the capital program by $10 million. **Exhibit 4.8** shows that by fiscal 2026, debt service costs are almost $2 million less. The debt service affordability ratio is almost 1 basis point less.

Exhibit 4.8
Effect of $10 Million Reduction in Authorizations on Debt Service Costs and Affordability Ratios
Fiscal 2022-2026
($ in Millions)

	SAC GO Bonds Debt Service	CDAC GO Bonds Debt Service	Difference	SAC Debt Service Ratio	CDAC Debt Service Ratio	Difference
2022	$1,387	$1,387	$0	7.66%	7.66%	0.00%
2023	1,430	1,430	0	7.63%	7.63%	0.00%
2024	1,463	1,462	-1	7.35%	7.35%	0.00%
2025	1,489	1,488	-1	7.23%	7.23%	0.00%
2026	1,528	1,526	-2	7.17%	7.16%	0.01%

CDAC: Capital Debt Affordability Committee
GO: general obligation
SAC: Spending Affordability Committee

Source: Department of Legislative Services

Chapter 5. Long-term Cost Forecasts

In the previous chapter, the affordability of bonds was examined utilizing the Capital Debt Affordability Committee's debt affordability criteria. The committee compares debt outstanding to personal income and debt service costs to revenues.

While this debt affordability approach is enlightening, it is not comprehensive. This chapter provides an analysis of out-year costs and the effect of these costs on general fund spending. Specific issues examined are:

- the Annuity Bond Fund (ABF), which provides revenues that support general obligation (GO) bond costs;
- general fund spending on debt service since the affordability process began in fiscal 1979;
- pension costs, which are the State's other large long-term liability that are also examined by rating agencies; and
- cost of other post employment benefits (OPEB).

General Fund Appropriations Are Necessary to Support Debt Service

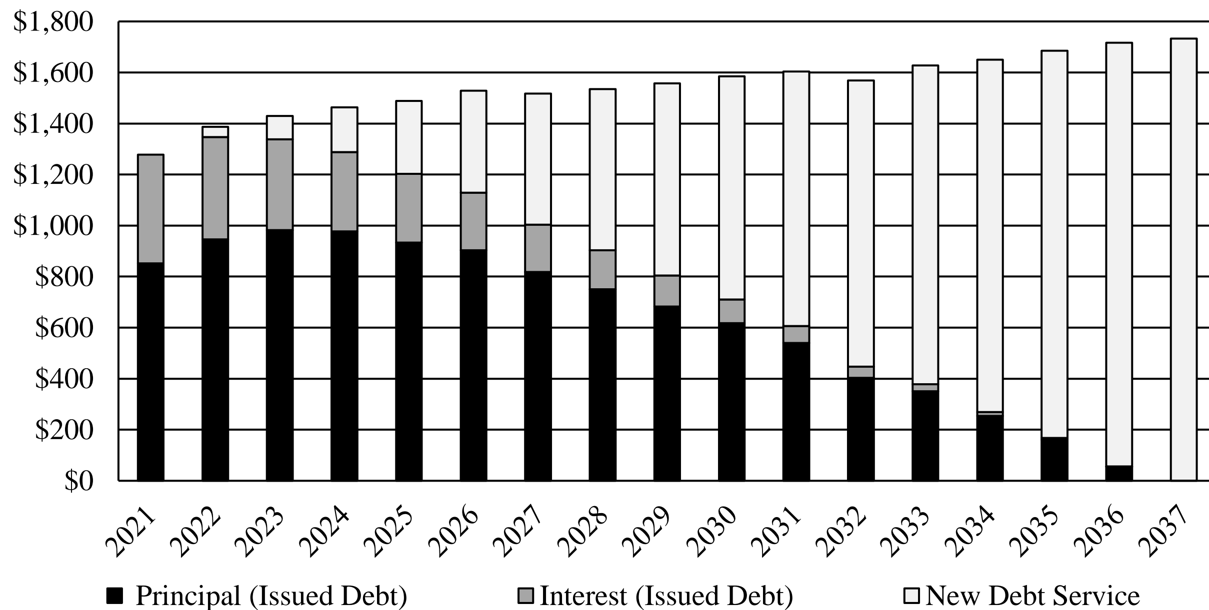
GO bond debt service is primarily supported by State property tax revenues and general funds. The State property tax rate is insufficient to support all debt service costs, so general funds are appropriated to subsidize the shortfall. This analysis assumes that the State authorizes $1.105 billion in GO bonds in fiscal 2022 and authorizations increase $10 million annually.

Out-year Debt Service Costs Expected to Increase Steadily

The Maryland Constitution limits State debt maturities to 15 years. State policy is to pay interest only in the first 2 years and have level debt service payments from years 3 to 15. Because Maryland bonds have short maturities, debt is retired quickly, and all bonds issued in fiscal 2021 will be retired before fiscal 2038. **Exhibit 5.1** shows the principal and interest costs for bonds sold prior to October 2019 as well as the debt service costs for anticipated bond sales. From fiscal 2022 to 2037, debt service costs increase from $1.39 billion to $1.73 billion, an annual increase of 1.5%.

The short maturities mean that interest costs are more modest than if the State issued bonds with longer maturities. Fiscal 2021 interest costs total $400 million, which is 30% of the $1,323 million in total debt service. The share of interest costs to debt service payments decreases steadily throughout the forecast period for previously issued bonds.

Exhibit 5.1
General Obligation Bonds
Debt Service Costs
Fiscal 2021-2037
($ in Millions)



Source: State Treasurer's Office; Department of Legislative Services

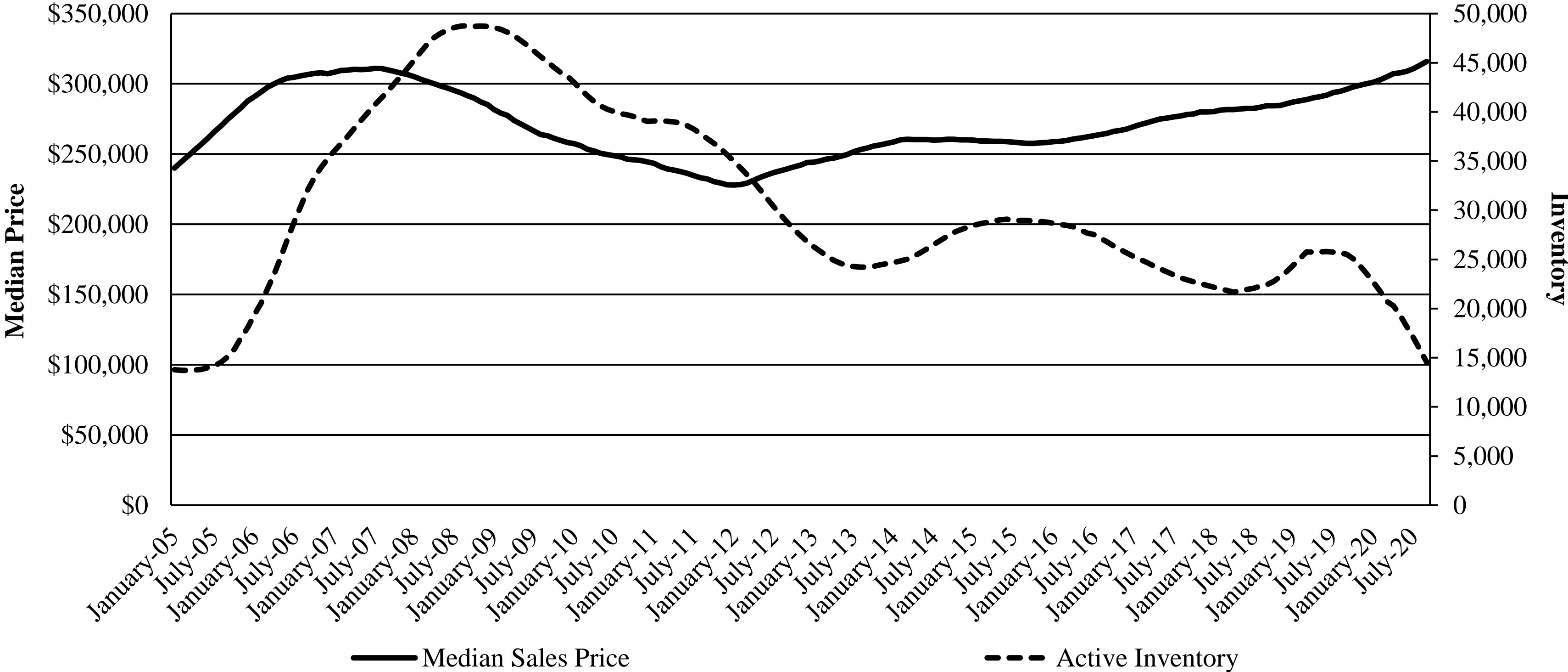
Home Values Have Increased Modestly and Steadily in Recent Years

GO bond debt service costs are supported by the ABF. The fund's largest revenue source is the State property tax. In April 2006, the State property tax rate was set at $0.112 per $100 of assessable base and has remained at that level since fiscal 2007. Other revenue sources include proceeds from bond sale premiums, interest and penalties on property taxes, and repayments for local bonds. When the ABF has not generated sufficient revenues to fully support debt service, general funds have subsidized debt service payments.

State property tax collections are influenced by trends in the housing market. **Exhibit 5.2** shows that the median home price has increased steadily since 2012. This was preceded by a substantial increase in real estate values, which peaked in summer 2007, followed by a decline in values.

Inventories went through a similar increase and decline. However, they have often lagged behind the pattern seen in home prices.

Exhibit 5.2
Maryland Housing – Median Prices and Inventory
12-month Moving Average
January 2005 to September 2020



Note: There were some substantial revisions of calendar 2019 inventory data as some months increased by as much as 20%.

Source: Maryland Association of Realtors; Department of Legislative Services

Effect of COVID-19 Pandemic on Home Values: Short-term Increase Observed with Longer Term Unclear

While recessions generally keep home prices down, the recession caused by the pandemic has been unusual in that a number of industries with higher-paid employees, such as finance and insurance, professional/business services, and manufacturing have increased personal income tax withholding collections when the first nine months of calendar 2019 are compared with the same period in 2020. Increased wages for higher income workers and extremely low interest rates appear to be contributing to the increase in home prices observed in the early months of the pandemic. However, if the pandemic persists and currently growing industries are affected by the recession, it is possible that this could depress demand for housing and lead to reduced home prices.

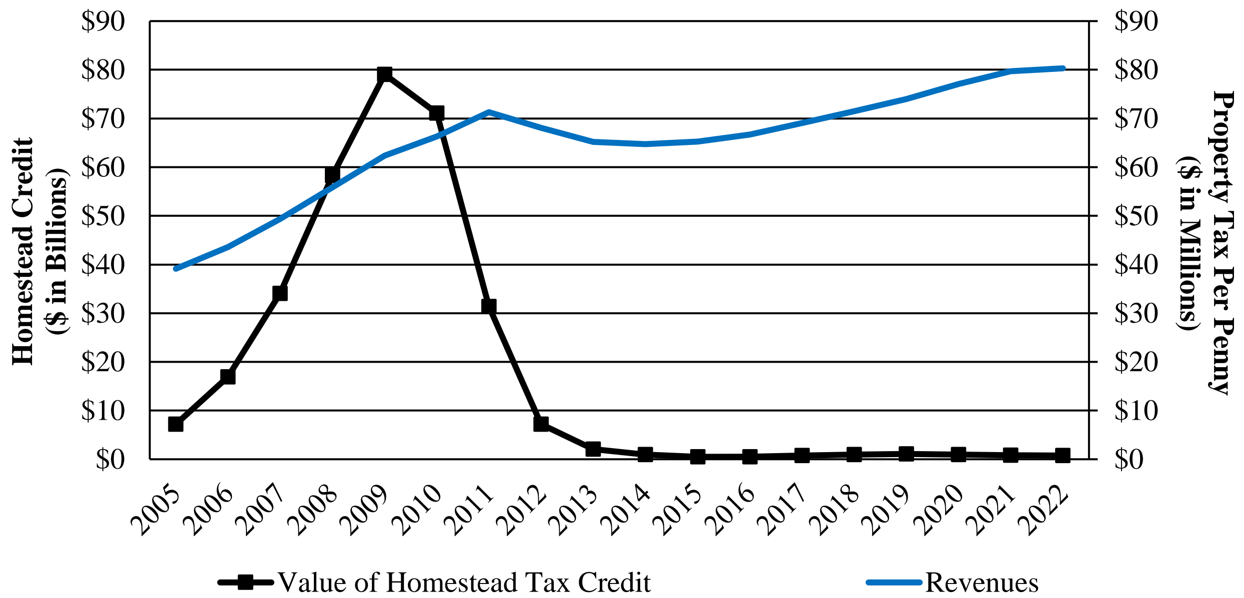
Homestead Tax Credit

As expected, the rising property values from 2002 to 2007 increased State property tax receipts. **Exhibit 5.3** shows how much revenue one cent on the State property tax has generated since fiscal 2005. State property tax receipts generate by one cent of revenues continued to increase from fiscal 2004 to 2011, even as home values peaked in fiscal 2007. Revenues declined from fiscal 2011 to 2014 and generally increased since fiscal 2015.

Assessment policies and the Homestead Tax Credit account for the lag between changes in the real estate market and tax receipts. Property values are assessed every three years, and increases are phased in over three years. The Homestead Tax Credit limits the annual increase in State property assessments subject to the property tax to 10%. If reassessing a resident's assessed property value results in an increase that exceeds 10%, the homeowner receives a credit for any amount above 10%. This limits revenue growth when property values rise quickly. Taken together, the three-year assessment process and Homestead Tax Credit slowed the revenue increases during the real estate boom and delayed the peak until after the decline in property values.

The Homestead Tax Credit also provides the State a hedge against declining property values. As home values declined, the value of homestead credit declined, and revenues continued to increase slowly. The result was to smooth State revenues; State property tax revenue growth was slower as home values increased, and there was no decline in revenues when home values decreased until fiscal 2011, which was four years after peak home prices. Exhibit 5.3 shows that State credits increased to $79 billion in fiscal 2009, in response to increases in assessments. Since fiscal 2014, aggregate homestead credits have been about $1 billion each year. Since the homestead credit is much smaller in 2020 than it was in 2008, a recession that leads to a reduction in home values could slow increases in property tax collections much sooner than during the Great Recession.

Exhibit 5.3
State Property Tax Homestead Tax Credits and Revenues Per Penny of State Property Taxes
Fiscal 2005-2022

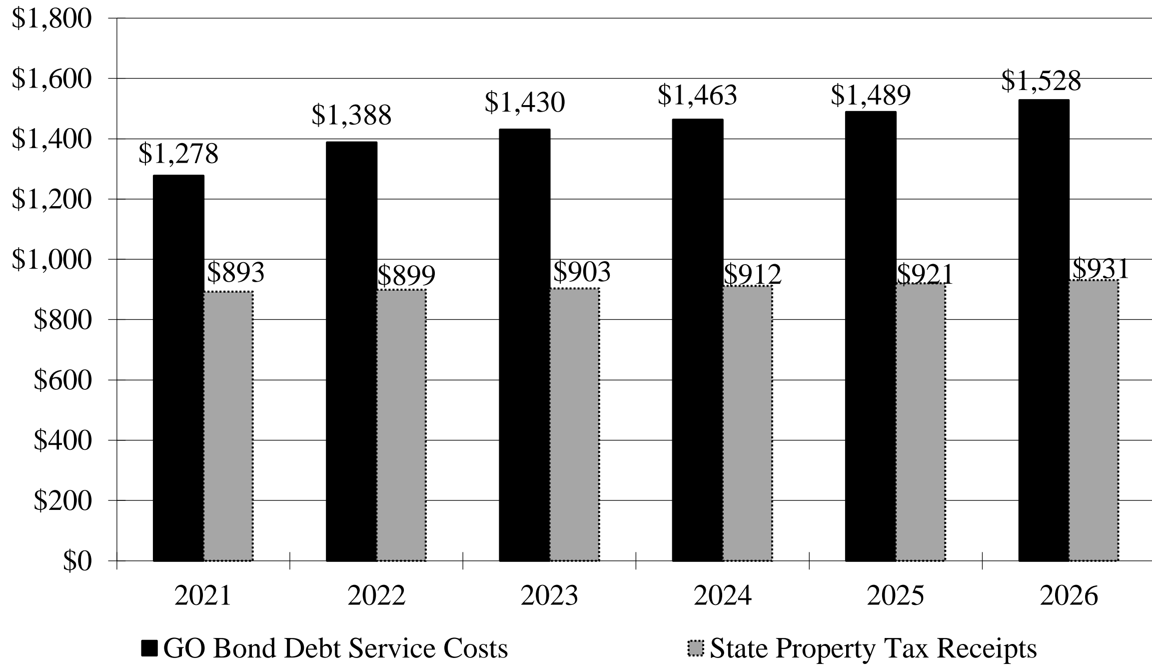


Source: State Department of Assessments and Taxation; Department of Legislative Services

General Funds Are Appropriated to Keep State Property Tax Rate Steady

Exhibit 5.4 shows how State property tax revenues, which are $385 million less than debt service costs in fiscal 2021, are expected to be $597 million less than debt service costs in fiscal 2026. Despite projected annual growth of 3.6% in property tax receipts over the period shown, the share of debt service costs funded by property tax receipts falls from 70% in fiscal 2021 to 60% of costs by fiscal 2026.

Exhibit 5.4
GO Bond Debt Service Costs and State Property Tax Revenue Collections
Fiscal 2021-2026
($ in Millions)



GO: general obligation

Note: Fiscal 2022 includes $1 million in possible arbitrage rebates.

Source: State Department of Assessments and Taxation; Department of Legislative Services

Exhibit 5.5 shows that estimates of required general fund subsidies to the ABF increase from $131 million in fiscal 2021 to $590 million in fiscal 2026. Estimates for premiums supporting debt service decline from $222 million in fiscal 2022 to $0 by fiscal 2025.

Exhibit 5.5
Revenues Supporting Debt Service
Fiscal 2021-2026

	2021	2022	2023	2024	2025	2026	Annual % Change
Special Fund Revenues							
State Property Tax Receipts	$893	$899	$903	$912	$921	$931	0.9%
Bond Sale Premiums[1]	120	142	102	14	0	0	-100.0%
Other Revenues	2	2	2	2	2	2	0.0%
ABF Fund Balance Transferred from Prior Year	108	95	1	1	1	1	-65.1%
Subtotal Special Fund Revenues	***$1,225***	***$1,139***	***$1,009***	***$929***	***$924***	***$935***	***-6.8%***
General Funds	$131	$234	$407	$520	$554	$590	35.1%
Transfer Tax Special Funds[2]	7	7	7	7	7	2	-24.8%
Federal Funds	10	9	8	7	5	3	-24.2%
Total Revenues	**$1,373**	**$1,389**	**$1,431**	**$1,464**	**$1,490**	**$1,529**	**2.2%**
Debt Service Expenditures[3]	**$1,278**	**$1,388**	**$1,430**	**$1,463**	**$1,489**	**$1,528**	**3.6%**
End-of-year ABF Balance	**$95**	**$1**	**$1**	**$1**	**$1**	**$1**	

ABF: Annuity Bond Fund

[1] July 2020 and estimated winter 2021 premiums total $252 million. This is reduced by $132 million that supports capital projects instead of debt service.
[2] Supports $70 million of general obligation bonds issued in 2010 for Program Open Space.
[3] Fiscal 2022 includes an arbitrage rebate.

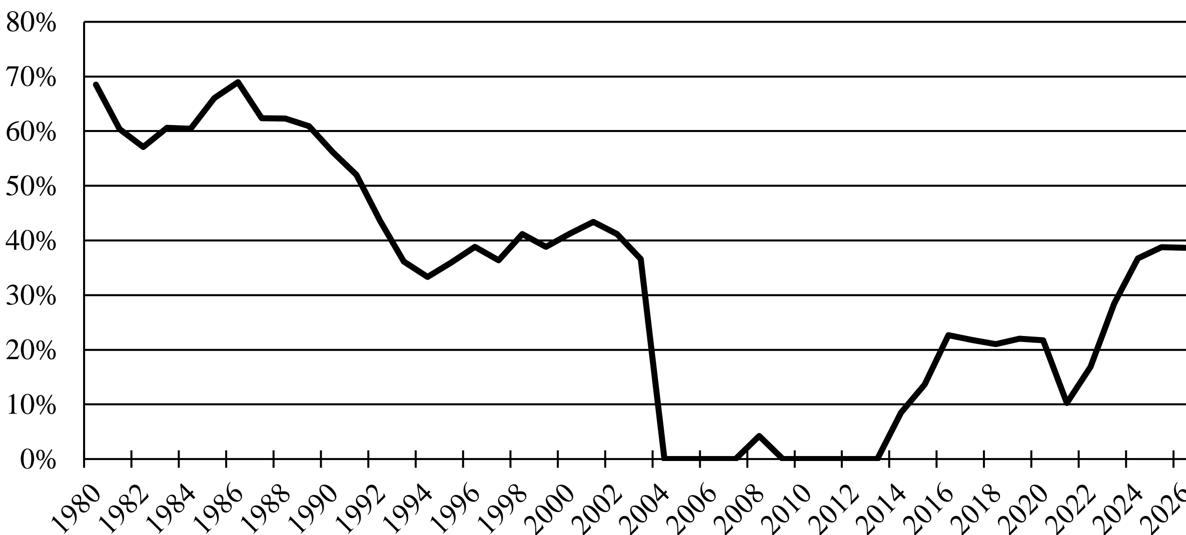
Source: Department of Legislative Services

General Fund Appropriations for Debt Service Over Time

In most years, State policy has been to keep State property tax rates low. To fund debt service, the State has appropriated general funds in all but nine years since fiscal 1980.

Exhibit 5.6 shows that the Department of Legislative Services (DLS) projects that general fund appropriations for debt service will exceed 30% of debt service appropriations by fiscal 2021. Since the affordability process began in fiscal 1979, the level of general fund support has varied considerably; general fund support peaked at 69% in fiscal 1986, while no support was provided from fiscal 2004 to 2007 and from fiscal 2009 to 2013.

Exhibit 5.6
General Fund Appropriations as a Percent of Debt Service Appropriations
Fiscal 1980-2026

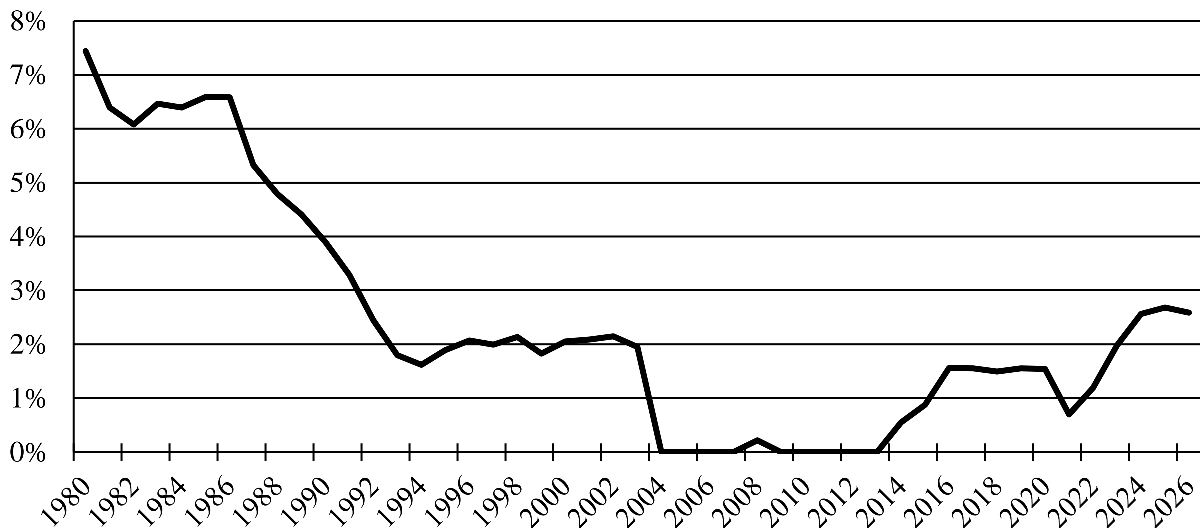


Note: Fiscal 1985 to 2003 includes general funds appropriated in the Maryland State Department of Education for capital school construction. Fiscal 2002 and 2003 are adjusted to remove proceeds from refunding bonds.

Source: Department of Budget and Management

Exhibit 5.7 shows that current estimates expect that the general fund costs for debt service will be 2.4% of total general fund revenues by fiscal 2024. This is about the same level as in the 1990s but well below the previous peaks in the 1980s. From fiscal 2004 to 2013, the State appropriated general funds only once. The State property tax rate was increased from $0.084 to $0.132 per $100 of assessable base in fiscal 2004. The State also benefited from low interest rates, which generated large bond sale premiums that were used to support debt service payments. The State property tax rate was reduced to its current rate of $0.112 per $100 of assessable base in fiscal 2007.

Exhibit 5.7
General Fund Debt Service Appropriations as a Percentage of General Fund Revenues
Fiscal 1980-2026



Note: Fiscal 1985 to 2003 includes general funds appropriated in the Maryland State Department of Education for capital school construction. Fiscal 2002 and 2003 are adjusted to remove proceeds from refunding bonds.

Source: Department of Budget and Management; State Treasurer's Office; Department of Legislative Services

Rating Agencies Are Concerned about Pension and Other Post Employment Benefit Liabilities

Maryland's bonds are rated AAA from the three major rating agencies, and it has been State policy to maintain this rating. High ratings tend to reduce interest costs. The traditional estimate is that the AAA rating reduces interest rates by about 0.2% (20 basis points) compared to the AA+ rating. This reduction may be larger now. The interest cost analysis in Chapter 6 suggests that Maryland's bonds are 0.81% (or 81 basis points) less due to a flight to quality since the Great Recession, which is approximately $400,000 per year annual debt service for a typical $500 million bond sale. A ratings downgrade also could reduce this advantage that Maryland bonds have over lesser rated bonds. When reviewing debt, rating agencies have commented on pension liabilities. Pension costs and debt service represent the State's two largest long-term liabilities. High pension liabilities are often cited when rating agencies downgrade a state or municipality's debt. For example, Standard & Poor's cited pension liabilities when the state of Illinois' debt rating was recently downgraded. Pension concerns were also cited when ratings for the city of Fort Worth, Texas and the state of Connecticut were downgraded.

This section examines trends in State pension and OPEB liabilities. The good news for Maryland is that all three rating agencies have acknowledged Maryland's efforts to achieve adequate pension funding.

Overview of Defined Benefit Pension Plans

The State provides defined benefit pension plans. These plans require the State to make annual payments that represent the normal cost (the cost of the annual increase in benefits earned by employees) and a share of the unfunded liability. These pension payments are made to employees for years after they retire and represent a long-term liability to the State. Pension costs are supported with general, special, and federal funds.

About 97% of the teachers' pension fund supports the staff of the local school boards. By statute, the local school boards pay the normal costs (which is the annual increase in the pension liability), and the State is responsible for any remaining costs (which is the unfunded liability).

Annual Pension Costs Increased after the Great Recession

Pension contributions increased from $1.0 billion in fiscal 2010 to $1.7 billion in fiscal 2020. The primary reason for the increased costs are market losses suffered in fiscal 2008 and 2009 when the pension fund lost 5.4% and 20%, respectively. This reduced the funded ratio from 80.4% at the beginning of fiscal 2008 to 65% at the end of fiscal 2009. To reduce the unfunded liability, higher appropriations are necessary from the State. The amount that the State appropriates each year is determined by the actuarial funding method. It is State practice for the Governor to propose and the General Assembly to appropriate the amount certified by the State Retirement and Pension System Board.

Potential Effect of COVID-19 Pandemic on Defined Benefit Pension Plans

It is difficult to make any predictions about how the pandemic will affect pension benefits. If a vaccine is widely distributed by summer 2021, the long-term effects on costs could be limited. However, if there is a long and deep recession, investment returns could underperform. During fiscal 2020, markets were volatile, and asset values depreciated sharply in March before recovering most of their value before the end of the fiscal year on June 30. The State Retirement Agency (SRA) estimates that the value of the pension plans assets declined by $5.3 billion from June 30, 2019, to March 13, 2020. By April 28, 2020, the plans had recovered $4.2 billion in value. The plans ended fiscal 2020 with a 3.6% market value return (5.78% on an actuarial basis) and asset values for State plans totaling $49.8 billion. These returns are still below the fiscal 2020 target rate of return of 7.40%. Should the pandemic persist and the economy not rebound, losses could be substantial, which could require higher levels of contributions in subsequent years as they did after the Great Recession.

Pension Costs Contained in Response to Increasing Liabilities

In response to increasing liabilities, the State has reduced benefits, increased contributions, and required local jurisdictions to share in the costs of teacher pensions.

The most significant pension reform was enacted in 2011. Key provisions include:

- reducing cost-of-living adjustments earned after fiscal 2011;
- increasing employee contributions from 5.0% to 7.0% for most employees (judges, for example, were excluded);
- increasing the vesting period for employees hired after June 30, 2011, from 5 years to 10 years;
- reducing the multiplier for employees hired after June 30, 2011, to 1.5% of salary per year worked; and
- appropriating a share of savings to overfund pension contributions.

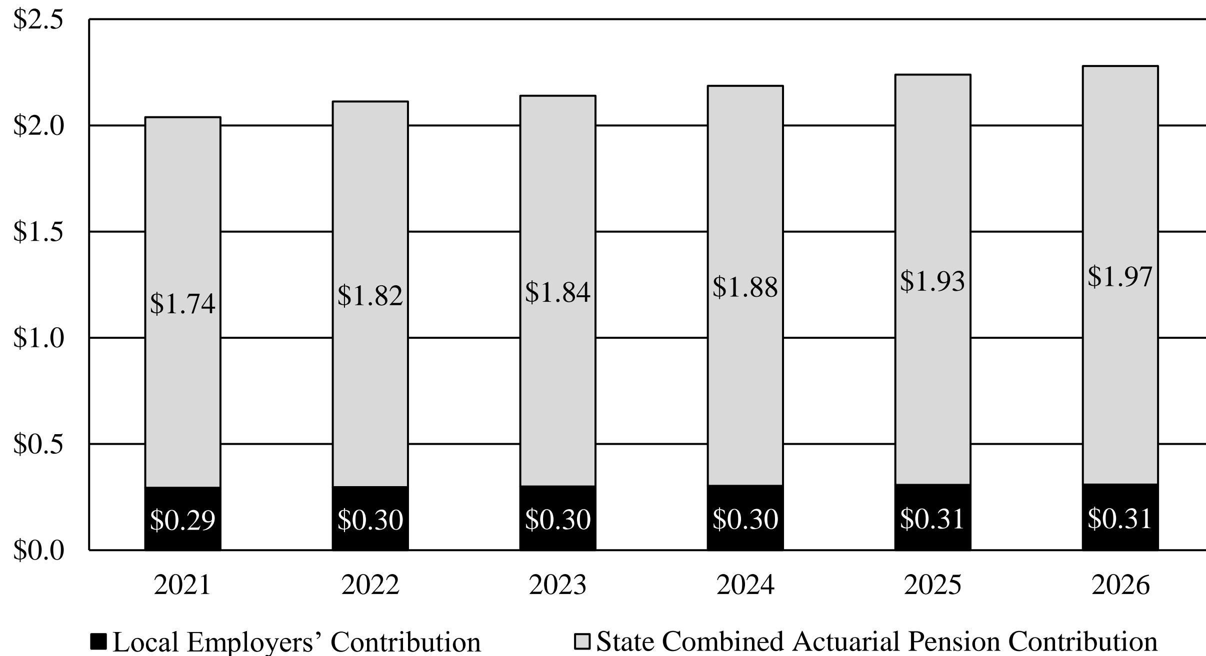
The State also required local governments to begin sharing in teacher pension costs in fiscal 2013.

Current law requires supplemental pension contributions. The Administration is required to include $75 million in supplemental contributions and to appropriate unassigned general fund balances of up to $25 million in the next budget submitted to the General Assembly. In fiscal 2020, the unassigned general fund balance totaled $586 million of which $25 million is to be appropriated in fiscal 2022. Taken together, these reforms reduce the State's out-year unfunded liabilities.

Pension Cost Outlook

Exhibit 5.8 shows that the State's annual actuarially required contribution is expected to increase from $1.74 billion in fiscal 2021 to $1.97 billion in fiscal 2026. Total pension costs, which include local contributions, increase from $2.04 billion in fiscal 2021 to $2.28 billion in fiscal 2026. Total costs increase by 2.26% annually. Should the recession deepen and investment returns underperform, these estimates could understate out-year costs.

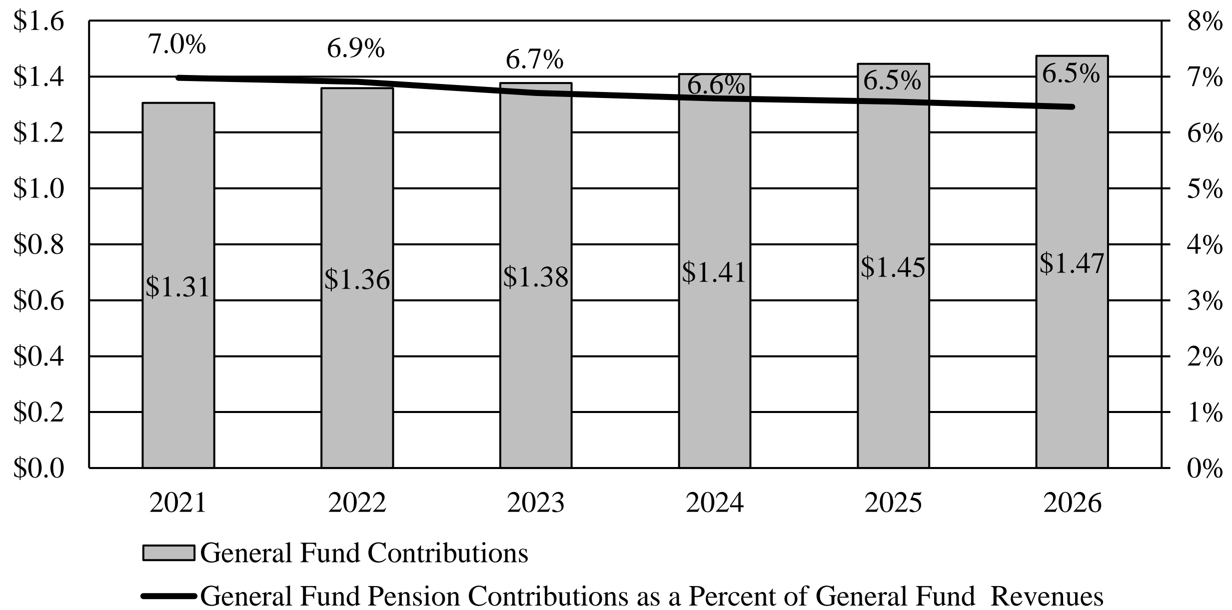
Exhibit 5.8
Total State Pension Costs
Fiscal 2021-2026
($ in Billions)



Source: Gabriel, Roeder, Smith and Company; Department of Legislative Services

Exhibit 5.9 shows' that general fund costs for pensions are expected to be 7% of general fund revenues in fiscal 2021 and steadily decline to 6.5% in fiscal 2026. General fund pension contributions are expected to increase 2.26% annually from fiscal 2021 to 2026, which is less than in prior years. Increases in pension costs have slowed, in large part due to pension reforms. Rapid turnover in system membership has accelerated the benefits of pension reform. The turnover has resulted in nearly one-third of teachers and employees participating in the reformed pension plan.

Exhibit 5.9
General Fund Pension Costs as a Percentage of General Fund Revenues
Fiscal 2021-2026
($ in Billions)



Source: Gabriel, Roeder, Smith and Company; Department of Legislative Services

Other Post Employment Benefits Outlook

The State also offers retirees subsidized health care. Retirees participate in the same medical plan as active employees. Retirees can also participate in Medicare. These plans are not subject to the same benefit protections as pension plans, which have a defined benefit formula that cannot be reduced retroactively and that determines the liability. Instead, retirees participate in a plan that the State can, and does, regularly modify. Retirees pay premiums, copayments, and coinsurance that offset the State's costs. In recent years, there have been changes to all these retiree costs. In addition, medical and pharmaceutical inflation rates change from year to year.

2010 Public Employees' and Retirees' Benefit Sustainability Commission Recommendations and 2011 Legislative Action

In 2004, the Governmental Accounting Standards Board (GASB) issued new accounting standards that required State and municipal governments to recognize OPEB liabilities on their balance sheets as they accrue, rather than on a pay-as-you-go basis. In effect, the new standards

required public employers to account for OPEB liabilities in a manner similar to the way pension liabilities were treated. While GASB does not have the authority to enforce these standards, State compliance is considered by bond rating agencies.

In 2010, the Public Employees' and Retirees' Benefit Sustainability Commission, tasked to study and make recommendations with respect to State-funded health care and pension benefits, identified the State's high unfunded OPEB liability, which totaled $15.9 billion, as an issue that the State should address. The commission expressed concern that failure to reduce the high unfunded OPEB liability could endanger the State's AAA bond rating and result in higher costs to borrow money for State projects and needs. The commission specifically recommended that the State establish a goal of reducing its unfunded liability for OPEB by 50% and commit to fully funding its OPEB liabilities within 10 years.

Medicare-eligible retirees' prescription drug cost was determined to be a primary contributor to the State's OPEB liability. The commission proposed fully transitioning Medicare-eligible retirees onto the Medicare Part D prescription drug program and eliminating State prescription drug coverage to these retirees. The recommendation was intended to reduce the OPEB liability substantially while still ensuring that retirees had access to prescription drug coverage through Medicare. Fiscal 2020 was chosen as the effective date of transition to align with a provision in the 2010 Patient Protection and Affordable Care Act, which eliminated the Medicare Part D coverage gap by calendar 2020. Aligning the transition with the elimination of the Medicare Part D coverage gap was intended to mitigate the financial impact on State retirees. Chapter 397 of 2011 (the Budget Reconciliation and Financing Act), as enacted, included the planned transition recommended by the commission. As a result, the State's unfunded OPEB liability decreased from $15.9 billion to $9.5 billion.

Cost Estimates Complicated by 2018 Lawsuit and 2019 Legislation

In September 2018, a lawsuit was filed in the Circuit Court for Baltimore City challenging the planned transition of prescription drug coverage required by Chapter 397. In October 2018, a federal judge granted a temporary restraining order and preliminary injunction, delaying the transition until the lawsuit is resolved. As a result, there was no change in coverage for Medicare-eligible retirees in calendar 2019. The timeframe for when the lawsuit will be resolved is indeterminate.

In response to concerns raised by retirees about the cost of prescription drugs, Chapter 767 of 2019 establishes prescription drug out-of-pocket reimbursement or catastrophic coverage programs for specified State retirees, dependents, or surviving dependents who are enrolled in a Medicare prescription drug benefit plan. State employees hired after June 30, 2011, remain ineligible for retiree prescription drug coverage from the State when they reach Medicare eligibility.

The actuary estimates that changes in the benefit terms from June 30, 2018, to June 30, 2019, including the prolonged coverage due to the injunction and the enactment of the reimbursement and catastrophic coverage programs, increase the OPEB liability by $2.5 billion.

The increase in the actuarially determined contribution, from $522 million in fiscal 2019 to $645 million in fiscal 2020, is almost entirely attributable to changes in benefits. Since the 2019 valuation, the actuary has calculated that extending the retiree prescription drug coverage by another year, through December 31, 2022, adds an estimated $97 million to the OPEB liability.

State Does Not Provide Full Actuarial Funding

At the end of fiscal 2020, the State's net OPEB liability was $16.8 billion, representing a funded ratio of 2% ($355 million in assets). The State has not met the commission's recommendation regarding payments to prefund the OPEB liability. The State provided payments from fiscal 2007 to 2009 but eliminated payments in fiscal 2010 for budgetary reasons. The actuarial report notes that prefunding the OPEB liability on an annual basis requires a $601 million appropriation in fiscal 2021. By contrast, fiscal 2021 appropriations for health insurance total $351 million.

Beginning in fiscal 2022, the Administration is required to appropriate unassigned general fund balances of up to $25 million into the Postretirement Health Benefits Trust Fund. In fiscal 2020, the unassigned general fund balance totaled $586 million, so the full $25 million should be appropriated in fiscal 2022. However, this supplemental payment could be suspended if the Administration and General Assembly determine that these funds are needed to balance the State budget.

Rating Agency Comments

To date, rating agencies have not downgraded Maryland in response to underfunding OPEB. The agencies are aware of the State's effort to reduce unfunded OPEB and pension liabilities. Agencies regularly comment that actions that increase liabilities, either by reducing funding or increasing benefits without increasing appropriations, would be viewed as a credit weakness that could result in a credit downgrade. Rating agencies do not provide specificity as to how much an unfunded liability can be increased without resulting in a credit downgrade. Instead, agencies react after actions are taken.

Impact of COVID-19 Pandemic on OPEB

It is unclear how the pandemic will affect health care costs. In the short term, employees and retirees reduced aggregate health care usage. Some of this is expected to return. The State's OPEB actuary advises that the 2020 valuation does not include the direct or indirect effects of COVID-19 on short-term health plan costs, except to the extent they are reflected in 2021 retiree contribution rates. Due to incomplete claims and enrollment experience for the first two quarters of 2020, as well as the potential fluctuations in claim experience that may have occurred during the second quarter as a result of COVID-19 and its indirect effects, DLS has excluded experience from this period in determining its long-term assumptions for healthcare costs.

Chapter 6. Analysis of Factors Influencing Bonds' Interest Cost

The interest rate that Maryland pays for the bonds that it sells is referred to as the true interest cost (TIC). This rate is derived by calculating a bond sale's Internal Rate of Return. The TIC is calculated at each bond sale, and the bidder with the lowest TIC is awarded the bid.

The financial literature provides information about factors that influence the TIC of State and municipal bond sales. Since 2006, the Department of Legislative Services (DLS) has prepared a statistical analysis to evaluate these financial factors. In this chapter, the sum of least squares regression is used to evaluate what factors influence the TIC that Maryland receives on general obligation (GO) bond sales.

Financial Theory and Research Identifies Factors That Influence the True Interest Cost

Financial theory suggests factors that could influence Maryland's GO bonds' TIC. Research has confirmed a number of significant influences in other states and in national studies that include Maryland. To build the sum of least squares regression equation, data was collected and analyzed for the 73 bond issuances since March 1991 (refunding sales are excluded): 65 competitively bid, tax-exempt bond issuances; and 8 negotiated, retail bond issuances. The data collected includes:

- the TIC;
- *The Bond Buyer* 20-bond index;[3]
- date of the bond sale, fiscal year, and calendar years that the bonds were sold;
- if the bond sale includes one of the various call provisions offered since 1991;
- average years to maturity;
- amount of debt sold;
- Consumer Price Index to examine if inflation affected the market's perception of the amount of debt sold;

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3 *The Bond Buyer* is a trade publication that gathers data about the yield on State and municipal bonds. The 20-bond index includes 20 GO State and municipal bonds maturing in 20 years. These bonds have an average rating equivalent to AA by Standard & Poor's and Aa2 by Moody's Investors Service, Inc. The data is reported weekly every Friday and reflects the yields from the previous day.

- use of a financial advisor;
- ratio of Maryland personal income to U.S. personal income; and
- ratio of Maryland gross State product to U.S. gross domestic product, both nominal and adjusted for inflation.

The Equation Identifies Statistically Significant Factors Influencing Interest Costs

The sum of least squares regression analysis dependent variable is the TIC. All the other variables are independent variables that are included to control the factors that could influence the TIC. The question that the regression equation addresses is which of the independent variables influence the dependent variable, which is the TIC. The regression equation examines the variables previously listed and identifies four statistically significant variables at the 95% confidence level that affect the TIC.[4] **Exhibit 6.1** shows the data for the statistically significant variables. **Appendix 3** provides a summary of the data.

- ***Bond Buyer 20-bond Index:*** The key variable is the 20-bond index. This rates 20 different State and municipal issuances with 20-year maturities that have an average rating equivalent to AA.
- ***Ratio of Maryland Total Personal Income to the U.S. Total Personal Income:*** One perspective on interest rates is to consider them as a return for risk. The higher the risk, the higher the interest rate investors will expect. One factor of risk is the fiscal health of the entity selling the debt. In the DLS regression equation, State personal income is used as a proxy for fiscal health. The equation uses a ratio that compares State personal income to U.S. personal income. If the ratio increases, Maryland is doing relatively better than the rest of the United States, and a GO bond issuance's TIC tends to decline.
- ***Years to Maturity:*** Under normal economic conditions, bonds with shorter maturities have lower interest costs than bonds with longer maturities. This is referred to as a positive yield curve. The analysis estimates that every year adds 0.145% (15 basis points) to the TIC.

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4 The statistical analysis of the equation suggests that the equation explains GO bond sales' TICs very well. For example, 25% of the equation's estimates are within 6 basis points (0.06%) of the TIC, 52% are within 12 basis points (0.12%) of the TIC, and 77% are within 23 basis points (0.23%). The R-square, which measures how much of the TIC is explained by the equation, is 0.975. The F Statistic, which measures if this group of variables is jointly significant, is 532, which is more than 99.9% significant. DLS ran the Durbin Watson statistic, which measures autocorrelation between variables, and it is 1.603, which is reasonable, but does suggest some positive autocorrelation.

- ***Issuing Callable Bonds:*** A call is an option that allows the seller to retire debt early. This can be advantageous if interest rates decline below the rate the seller is paying. Consequently, buyers often require higher interest rates if an issuance includes a call provision. This analysis estimates that callable bonds add 0.349% (35 basis points) to the cost of a bond. In the July 2020 sale, Maryland bonds were callable on August 1, 2030. Bonds maturing after that date can be called and refunded.

- ***Post-financial Crisis:*** This is a variable that indicates if a bond was sold before or after the financial crisis of 2008. The financial press has noted a "flight to quality" since the crisis. Statistical data from Maryland bond sales suggests that there has been a flight to quality with respect to bonds sold after March 2008. This date may be related to the collapse of Bear Stearns, which resulted in a Federal Reserve bailout and sale to JPMorgan Chase. The equation estimates that Maryland bond yields are 0.81% (81 basis points) less than *The Bond Buyer* 20-bond index since the financial crisis.

Exhibit 6.1

TIC Regression Equation – Evaluating the Independent Variables

Independent Variable	Coefficient	Std. Error	t-test	Sig.	Tol.	Comment
The Bond Buyer 20-bond Index	0.853	0.038	22.730	0.000	0.398	Highest t-test suggests that this is a most significant independent variable and that Maryland bonds are priced at 85% of the index.
Maryland Personal Income to US Personal Income	-1.094	0.491	-2.228	0.029	0.733	Stronger Maryland personal income tends to reduce the TIC.
Years to Maturity	0.145	0.022	6.504	0.000	0.548	Positive coefficient means that longer maturities tend to have higher TICs.
Callable Bonds	0.349	0.088	3.979	0.000	0.559	Callable bonds' average TIC is 35 basis points (0.35%) higher than noncallable bonds.
Post-financial Crisis	-0.814	0.081	-10.055	0.000	0.406	Maryland bonds' yields are reduced since the crisis.
Constant	0.754					

Sig.: significance or confidence interval
Std.: standard
TIC: true interest cost
Tol.: tolerance, a test of multicollinearity

Source: Department of Legislative Services

Equation Suggests That the Cost of Issuing Callable Bonds Is Now Substantially Higher Than in Prior Years

Chapter 3 reports on the savings that the State has realized by refunding bonds. Since fiscal 2010, refunding issuances have reduced debt service costs by $402 million. The State is able to realize these savings because callable bonds are issued. If market rates are lower than the coupon rate, the State can retire callable bonds and issue lower cost debt in its place. As previously mentioned, the bonds issued in July 2020 are callable beginning in the eleventh year.

Historically, the rule-of-thumb is that issuing callable bonds adds 0.05% to 0.10% (5 to 10 basis points) to the bond's TIC. When DLS examined the cost of issuing callable bonds in 2007, the coefficient for a call was 0.079 with a standard error of 0.039. In other words, calls added 0.04% to 0.12% (or 4 to 12 basis points) to a bond's yield, which is somewhat broader than the rule-of-thumb but still consistent with it.

However, this analysis estimates that the coefficient for callable bonds is 0.349 with a standard error of 0.088. The estimated cost of a call now ranges from 0.26% to 0.44% (26 to 44 basis points). This is four to six times the cost that was estimated in 2007.

While this level of change is uncommon, there is a plausible explanation for this change. Maryland GO bonds have been selling at a premium in recent years. Since premium bonds have a coupon rate above the market rate, premium bonds are more likely to be called, and this is why refunding savings have been unusually large in recent years. In the past, investors required a small increase in the TIC for an event that may not may not happen. Now bonds are structured in such a way that bonds are highly likely to be called, so investors want a higher TIC.

In July 2020, the State issued $249.9 million in callable bonds maturing in 11 to 15 years. The bonds realized a $95.4 million premium. The model estimates that, since the coefficient for call is 0.35% (35 basis points), issuing these bonds without a call would have reduced the TIC from 1.74% to 1.39%. DLS estimates that this lower TIC would have increased the bond sale premium by $10 million. This lost premium is about 4% of the bonds par value. Savings from refunding bonds have averaged about 8% of par value, the present value of which is 7%. This suggests that there is still value in issuing callable bonds.

For this analysis, DLS used data from actual Maryland bond sales over three decades. As such, the analysis may not appreciate the latest market trends. The State Treasurer's Office and its financial advisor should continuously examine the projected costs and benefits of issuing callable bonds. Since the financial advisor has access to current data from many more State and municipal bond sales, it may be able to provide valuable analysis for minimizing the long-term costs of State debt and the State's capital program.

Chapter 7. Nontax-supported Debt

In addition to the tax-supported debt that Maryland issues, there are various forms of nontax-supported debt that are issued by State agencies and non-State public purpose entities. While this debt is not backed by the full faith and credit of the State and is not included within the tax-supported debt limits, concerns have been raised that a default in payment of debt service on this debt could negatively impact other Maryland debt.

Nontax-supported debt generally takes the form of either a project/program revenue debt or conduit debt, as discussed below:

- ***Revenue Bonds:*** Revenue bonds are bonds issued to raise funds for a specific project or program. The debt service on these bonds is generally repaid using revenues generated through the operation of the project or program for which the bonds were sold. For example, the Maryland Transportation Authority (MDTA) issues project revenue bonds to finance the cost of constructing revenue-generating transportation facilities, and MDTA then repays the bonds using the revenues generated through the tolls charged to drivers for the use of the facilities.

- ***Conduit Debt:*** Conduit debt is debt that agencies or authorities issue on behalf of clients. Clients could include local governments, nonprofit organizations, or private companies. When an agency or authority serves as a conduit issuer, the bonds that it issues may not be obligations of the issuing entity. Should the client for whom the bonds are issued be unable to meet debt service obligations on their bonds, the issuing entity is not necessarily obligated to make the debt payments. In such circumstances, the issuing agency may take the client's property into receivership or exercise other contractual provisions to meet the debt service. Agencies and authorities in the State that serve as conduit issuers include MDTA, the Maryland Economic Development Corporation (MEDCO), the Maryland Health and Higher Educational Facilities Authority, and the Maryland Industrial Development Financing Authority (MIDFA).

Debt Outstanding

Exhibit 7.1 summarizes the change in debt outstanding for different types of debt between fiscal 2010 and 2020:

- ***Agency Debt Subject to State Regulatory Cap:*** This category includes debt held by State agencies on which the State sets limits. The debt is not backed by State taxes.

- ***Agency Debt Not Subject to State Regulatory Cap:*** This type of debt is held by State agencies that do not have limits set by the State. The debt is not backed by State taxes.

- ***Tax-supported Debt:*** State debt that is supported by taxes.

- ***Authorities and Corporations:*** Debt held by non-State agencies that is not subject to any debt ceiling or allocation caps.

Exhibit 7.1
Debt Outstanding as of June 30
Fiscal 2010 and 2020
($ in Millions)

	2010	2020	Total Change	Annual % Change
Agency Debt Subject to State Regulatory Cap	$2,863	$1,952	-$911	-3.8%
Agency Debt Not Subject to State Regulatory Cap	5,177	4,861	-316	-0.6%
Tax-Supported Debt	9,350	13,897	4,546	4.0%
Authorities and Corporations without Caps	10,991	10,793	-197	-0.2%
Total	**$28,381**	**$31,504**	**$3,123**	**1.0%**

Note: Numbers may not sum to total due to rounding.

Source: Department of Legislative Services

A table containing debt outstanding by year for individual agencies is included as **Appendix 4**.

Revenue and Private Activity Bonds

Debt service on revenue bonds is generally paid from the revenue generated from facilities built with the bond proceeds. The Department of Housing and Community Development's (DHCD) Community Development Administration (CDA) makes housing loans with revenue bond proceeds, and the mortgage payments help pay debt service. Likewise, MDTA constructs toll facilities with bond proceeds, and the tolls collected pay off the bonds. Other State agencies issue bonds for various purposes. This agency debt is funded through what are referred to as private activity bonds.

The U.S. Tax Reform Act of 2006 established an annual limit on the amount of tax-exempt private activity bonds that may be issued by any state in any calendar year. This limit is based on a per capita limit adjusted annually for inflation. Maryland's 2020 allocation totaled $634.8 million.

The federal Tax Reform Act of 1986 specifically allows states to set up their own allocation procedures for use of their individual bond limit. Bond allocation authority in Maryland is determined by §§ 13-801 through 13-807 of the Financial Institutions Article. The Secretary of Commerce is the responsible allocating authority. Each year's bond issuing ability is initially allocated in the following manner: 50.0% to all counties (35.0% for housing bonds allocated to each county based on population and 15.0% for bonds other than housing allocated to each county based on average bond issuances); 2.5% to the Secretary for the purpose of reallocating the cap to municipalities; 25.0% to CDA for housing bonds; and 22.5% to what is referred to as the Secretary's Reserve. This reserve may be allocated to any State or local issuer as determined at the sole discretion of the Secretary and pursuant to the goals listed under § 13-802(4)(iii).

In practice, most localities transfer much of their allocation authority to CDA because CDA can more efficiently and cost effectively issue mortgage revenue and multifamily housing bonds than any individual jurisdiction. The debt belongs to the county that received the initial allocation and is not backed by CDA. State issuers, such as MIDFA and MEDCO, as well as counties who need bond allocations in excess of their initial allocation, may request allocations from the Secretary's Reserve.

Private activity bonds are subject to the unified volume cap set by Congress in the Tax Reform Act of 1986. Allocations, however, may be carried forward by eligible users and for specific purposes but expire at the end of three years if not issued. Unused cap, other than that which has been allocated to CDA or transferred to CDA by local governments, reverts back to the Department of Commerce (Commerce) on September 30 of each year. Commerce then determines what amount to carry forward in support of existing projects or endeavors. Historically, any remaining non-housing allocations have been reallocated to CDA at year end for carry-forward purposes.

Reporting of Bond Activity

As the State's single allocating authority agency, Commerce is required to collect and submit allocation and issuance data annually to the Internal Revenue Service. Statute requires each agency that issues private activity bonds to annually submit to Commerce by September 15 the following information:

- the amount of the total allocation of the Maryland ceiling allocated in that year to the issuer;
- the amount and type of bonds issued in that year pursuant to the total allocation to the issuer in that year;
- the amount and type of bonds not issued but anticipated to be issued on or before September 30 of that year pursuant to the total allocation to the issuer in that year; and
- any other information that the Secretary may request.

Allocation of Private Activity Bonds

Exhibit 7.2 provides the calendar 2016 through 2020 figures for the amount of available tax-exempt bond authority and the level of issuances made under the volume cap limits. Total carry forward remains high because it has outpaced annual issuances recently; in some years, CDA does not issue any debt directly against that year's allocation if sufficient amounts of carry forward are available to support program activity.

Exhibit 7.2
Allocation of Private Activity Bonds
Calendar 2016-2020 YTD
($ in Millions)

	2016	2017	2018	2019	YTD 2020
Fund Sources					
Annual Cap	$600.6	$601.6	$635.5	$634.5	$634.8
Carry Forward from Prior Years	1,596.5	1,632.2	1586.1	1,668.7	1,271.4
Total Capacity Available	**$2,197.1**	**$2,233.8**	**$2,221.6**	**$2,303.2**	**$1,906.2**
Issuances					
Single-family Housing	$19.5	$16.4	$204.6	$691.3	$240.0
Mortgage Credit Certificates[1]	236.4	262.1	72.0	0.0	0.0
Multifamily Housing	228.9	227.5	265.6	340.5	219.4
Industrial Development Bonds	8.0	6.5	0.0	0.0	0.0
Total Issuances	**$492.8**	**$512.5**	**$542.2**	**$1,031.7**	**$459.4**
Prior Year Carry Forward Abandoned	$71.2	$135.1	$10.8	$0.02	$0.0
Carry Forward	$1,632.2	$1,586.1	$1,668.7	$1,271.4	$1,446.8

YTD: year to date

[1] Mortgage Credit Certificates are not debt issuances. However, federal rules require that they be counted against the State's private activity bond allocation cap.

Note: Numbers may not sum to total due to rounding.

Source: Department of Commerce

Due to the decrease in interest rates as well as increased marketing of DHCD's mortgage programs, CDA has drastically increased its single-family housing private activity debt issuances, going from just $16.4 million in calendar 2017 to $691.3 million in calendar 2019 and $240 million

in calendar 2020 through September. This has driven down the agency's issuances of credit certificates as the reduced rates made possible by CDA's private activity bond subsidy are more attractive to home buyers.

Impact of the COVID-19 Pandemic

This section discusses the impact of the pandemic on DHCD and MEDCO bonds.

DHCD Bonds

DHCD advises that the COVID-19 pandemic has not had a significant adverse impact on the department's financial condition at this time and that CDA issuances of bonds and mortgage-backed securities are at an all-time high. Demand has remained high for the Maryland Mortgage Program as well as DHCD's multifamily financing programs. DHCD provided temporary forbearance on loans to small businesses under the Neighborhood BusinessWorks program, which may affect revenues from loan repayments in fiscal 2021. Overall revenues in DHCD's homeownership, rental housing, and business assistance programs are not expected to decline, and all obligations to bondholders are currently being met. However, it is worth noting that the effects of the pandemic are still uncertain.

MEDCO Corporation Bonds

The COVID-19 pandemic and resulting business and school closures have impacted revenues for many of MEDCO's projects, especially the student housing facilities that make up the majority of MEDCO-operated projects. All of MEDCO's projects temporarily suspended operations or reduced capacity from March to June 2020. While the continued impacts of COVID-19 are still uncertain, MEDCO believes that all projects other than the Chesapeake Bay Conference Center (CBCC) will be able to meet their operating needs and make required principal and interest payments in the current fiscal year, although many will need to use their reserve funds to make full debt service payments.

CBCC was already a nonperforming project prior to the pandemic, and revenues were further reduced by the closure of the facility in March and the limited capacity following reopening of the hotel in June. Investors are in the process of working out short-term forbearance extensions and have allowed reserve funds to be used to support daily operational costs. The Baltimore City Garages project operated by MEDCO entered "Watch" status during the pandemic when Standard & Poor's downgraded the ratings on several series of bonds for the project to BB-negative. This is not an investment grade rating.

Student Housing Bonds

In March 2020, the University System of Maryland (USM) transitioned from in-person to remote learning for the remainder of the spring semester, and MEDCO worked with the system to issue refunds to students living in MEDCO-operated housing projects. Occupancy in some projects has remained low in the fall 2020 semester. As a result, several of MEDCO's student housing

projects were classified in "Watch" status during the pandemic: University of Maryland, College Park Campus; University of Maryland Baltimore County; University of Maryland, Baltimore Campus; Salisbury University (SU); Towson University; and Bowie State University. SU was later removed from "Watch" status in September 2020. Each of the projects classified as "Watch", with the exception of SU, failed to meet the required debt coverage ratio of 1.20 as of the last day of the fiscal year, and MEDCO will retain a management consultant for these projects, as required.

Exhibit 7.3 shows the debt coverage ratio at the end of the last three fiscal years, the maximum debt service, and outstanding balance at the end of fiscal 2020 for each housing project as well as the occupancy rates for October 2020. MEDCO anticipates that as long as occupancy for the spring 2021 semester is the same or better than for fall 2020, the student housing projects will be able to fund operating expenses and meet all debt service obligations for fiscal 2021.

Exhibit 7.3
Status of MEDCO-operated Student Housing Projects
($ in Millions)

	Debt Coverage Ratio[1]			Max. Debt	Outst. Balance	Occupancy Rate October 2020	
Project	**Fiscal 2020**	**Fiscal 2019**	**Fiscal 2018**	**Service Payments**	**June 2020**	**Cont.**	**Physical**
Bowie State University	1.33	1.58	1.55	$1.4	$13.5	86.5%	70.0%
Frostburg State University	1.38	1.57	1.51	1.2	11.8	81.8%	81.3%
Capitol Technology University	1.66	1.78	n/a	0.9	13.9	65.0%	65.0%
Morgan State University[2]	1.68	1.56	1.59	2.4	25.6	82.0%	50.9%
Salisbury University	1.49	2.16	2.00	2.2	18.0	97.3%	94.9%
Towson University	1.06	1.59	1.59	3.5	39.5	89.0%	56.0%
University of Maryland, Baltimore Campus[2]	1.16	1.39	1.31	1.9	23.9	54.3%	54.3%
University of Maryland Baltimore County	1.05	1.79	1.66	1.2	16.7	53.6%	53.6%
University of Maryland, College Park Campus	1.14	1.76	1.76	10.1	118.3	90.0%	78.0%
University Village at Sheppard Pratt	2.27	2.91	2.91	1.6	17.0	66.8%	66.8%

Cont: Contracted
MEDCO: Maryland Economic Development Corporation
Outst.: Outstanding
Max.: Maximum

[1] Debt coverage ratio is the ratio of net operating income to debt service payments. The required coverage ratio is 1.2

[2] Morgan State University and University of Maryland, Baltimore requested that MEDCO allow students to be released from their contracts and provided payments to MEDCO for the released students.

Source: Maryland Economic Development Corporation

Debt Service on University Academic and Auxiliary Revenue Bonds

Chapter 93 of 1989 gave Morgan State University (MSU), St. Mary's College of Maryland (SMCM), and USM the authority to issue bonds for academic and auxiliary facilities. Chapter 208 of 1992 gave Baltimore City Community College (BCCC) the authority to issue bonds for auxiliary facilities, and Chapter 213 of 2009 extended its authority to include academic revenue bonds (ARB) as well. Academic facilities are primarily used for the instruction of students, while auxiliary facilities are those that produce income from fees charged for the use of the facility. A residential dormitory is an example of an auxiliary facility. Debt service on auxiliary and academic debt may be paid from auxiliary and academic fees; a State appropriation expressly authorized for that purpose; or revenues from contracts, gifts, and grants.

Statute specifies that academic facilities must be expressly approved by an act of the General Assembly that determines both the project and bond issue amount. Each year, USM introduces legislation entitled the Academic Facilities Bonding Authority, listing the specific academic projects requiring authorization. Legislation may also increase the total debt limit for institutions when warranted. Section 13-102 of the Education Article limits debt outstanding to $1.4 billion for USM, $88 million for MSU, $65 million for BCCC, and $60 million for SMCM.

University System of Maryland

USM historically has issued 20-year bonds with serial maturities and level debt service payments. USM also recently added the ability to issue 10-year serial maturities for facilities renewal projects and 30-year bonds to the portfolio for student housing projects. The first year is interest only, and the principal is retired in the remaining years. USM's debt management policies aim to reassure investors and the rating agencies of the system's financial stability and control over debt. The policy was last revised in April 2018 to reflect the current planning metrics used by USM. USM aims for debt service that includes payments on capital lease obligations, but not operating lease payments, to be less than 4.0% of operating revenues plus State appropriations including grants and contracts. This ratio was developed after discussions with its financial advisor (Public Financial Management's Higher Education Office), rating agencies, and investors.

USM reports that it expects to maintain the current rating of AA1 (stable) from Moody's and the equivalent AA+ from both Fitch (stable) and Standard & Poor's (which removed the system from negative watch). The most recent credit reviews by the rating agencies were in August 2020 (Fitch), August 2019 (Moody's), and September 2019 (Standard & Poor's). The next full rating meetings will take place in January 2021.

Exhibit 7.4 shows that USM will be under the 4% debt service goal for fiscal 2021 to 2026. Including debt issued in fiscal 2019, total debt service will be approximately $154 million, or 3.1%, of fiscal 2019 operating revenues plus State appropriations, including grants and contracts. As shown in the exhibit, USM expects a roughly 11.5% decrease in operating revenues and State appropriations in fiscal 2021 with a rebound to occur in fiscal 2022 and growth in future years. The forecast indicates that the ratio will stay at or below 3.1% through the fiscal 2025 projection.

Exhibit 7.4
University System of Maryland Debt Service as Related to Operating Funds Plus State Appropriations
Fiscal 2011-2026 Estimated
($ in Millions)

Year	Total Debt Outstanding	Total Debt Service	Operating Revenues Plus State Appropriations	Ratio of Debt Service to Operating Revenues Plus State Appropriations
2011	$1,129	$127	$4,065	3.1%
2012	1,170	124	4,204	3.0%
2013	1,217	139	4,256	3.3%
2014	1,290	130	4,478	3.0%
2015	1,199	141	4,472	3.2%
2016	1,270	146	4,644	3.1%
2017	1,298	142	4,811	3.0%
2018	1,286	145	4,931	2.9%
2019	1,304	154	4,929	3.1%
2020	1,202	154	5,114	3.0%
2021 Estimated	1,136	142	4,528	3.1%
2022 Estimated	1,155	137	5,028	2.7%
2023 Estimated	1,172	141	5,129	2.7%
2024 Estimated	1,188	141	5,232	2.7%
2025 Estimated	1,214	135	5,336	2.5%
2026 Estimated	1,236	138	5,443	2.5%

Note: Total debt outstanding and total debt service include academic, auxiliary, and capital lease debt.

Source: University System of Maryland

USM also has a goal for the ratio of expendable resources (defined as unrestricted assets of USM and the affiliated foundation with adjustments for certain long-term liabilities) to debt outstanding. With advice from its financial advisor, USM's goal is for expendable resources to be no less than 90% of total debt outstanding, adjusted for outstanding commitments.

Exhibit 7.5 shows USM's expendable resources to debt outstanding ratio for fiscal 2011 to 2026. USM also makes adjustments to this ratio in its internal cash management analysis. Adjustments include expanding debt outstanding to include anticipated issuances for projects that the system is committed to completing. This reduces the ratio of available resources to debt outstanding by increasing the denominator of the fraction. USM advises that after adjustments are made, the fiscal 2020 ratio is 218%. USM has exceeded the target minimum 90% throughout the entire period. The ratio has grown in recent years, indicating capacity to issue more debt under the criterion. In the 2021 session, the system will seek authorization for a total of $30 million in ARBs

to provide facility renewal and capital project funding for USM institutions for fiscal 2022. Future legislative requests to issue ARBs are expected to be $30 million per year for fiscal 2023 through 2026. The decline in available resources beginning in fiscal 2021 reflects the use of fund balance to deal with the fiscal crisis associated with State general fund reductions, concurrently with auxiliary enterprise revenue reductions resulting from the institution's social distancing arrangements, combined with the spend of several hundred million of previously authorized and ongoing cash-funded capital projects over time.

Exhibit 7.5

Summary of Available Resources to Debt Outstanding for the University System of Maryland

Fiscal 2011-2026 Estimated
($ in Millions)

Year	Available Resources	Debt Outstanding	Ratio of Available Resources to Debt Outstanding
2011	$1,432	$1,129	126.9%
2012	1,622	1,170	138.6%
2013	1,752	1,217	144.0%
2014	1,748	1,290	135.5%
2015	1,902	1,199	158.6%
2016	2,067	1,270	162.8%
2017	2,178	1,298	167.8%
2018	2,384	1,286	185.5%
2019	2,576	1,304	197.6%
2020	2,617	1,202	217.7%
2021 Estimated	2,358	1,136	207.6%
2022 Estimated	2,317	1,155	200.6%
2023 Estimated	2,263	1,172	193.1%
2024 Estimated	2,209	1,188	185.8%
2025 Estimated	2,119	1,214	174.5%
2026 Estimated	2,050	1,236	165.8%

Note: Debt outstanding includes auxiliary, academic, and capital lease debt.

Source: University System of Maryland

Impact of COVID-19 Pandemic

As a result of the pandemic, USM, along with other higher education institutions, is facing multiple challenges: reductions in State and auxiliary funding; temporary expense increases to comply with State and federal guidelines; and a decline in enrollment have all impacted the financial position of USM. In March 2020, in-person classes were canceled for the remainder of the spring semester and moved to a remote learning environment. Revenue lost by USM in fiscal 2020 totaled $240 million as a result of refunds to students for housing and other fees, federal contract and grant losses, auxiliary operations revenue losses, and other contract and services losses. Instruction was adjusted for the fall semester; some institutions moved to a fully remote learning environment, while others adopted a hybrid model with some in-person and some remote instruction; additionally, tuition and fees were frozen for the 2020-2021 academic year.

Coronavirus Aid, Relief, and Economic Security (CARES) Act funding was provided to USM totaling $182.5 million beginning in April 2020 of which $83.4 million was recognized as revenue in fiscal 2020, while $99.1 million will be recognized in fiscal 2021. Of this funding, $90.6 million was Higher Education Stabilization funding. Half of this funding was provided to students in the form of emergency financial aid grants, while the other half was provided to institutions to cover any costs associated with significant changes to the delivery of instruction due to the COVID-19 pandemic. USM was also provided with $26.1 million in Section 18004(a)(2) funding designated for Historically Black Colleges and Universities (HBCU). Additionally, $75.8 million was provided from the State from the Coronavirus Relief Fund to cover expenditures incurred for additional public safety enhancements.

In response to these challenges, USM decided to use reserves to cover some expenses and one-time and ongoing spending cuts to bridge the gap. A moratorium was placed on cash-funded capital projects over $1 million along with shifting previously authorized cash funded projects to debt funding to preserve cash balances.

St. Mary’s College of Maryland

SMCM’s outstanding debt consists of auxiliary and capital lease debt. SMCM has no outstanding academic debt. The total debt in fiscal 2020 is $24.3 million and is expected to increase to $52.1 million in fiscal 2021, declining to $43.0 million by fiscal 2026. As shown in **Exhibit 7.6**, the college’s ratio of debt service to unrestricted expenditures is also expected to increase from 4.1% in fiscal 2020 to 4.6% in fiscal 2026. In fiscal 2010, SMCM was at its 5.5% debt ratio goal in order to construct additional residential buildings to house increasing enrollment.

Exhibit 7.6

St. Mary's College of Maryland Debt Service Related to Unrestricted Funds

Fiscal 2011-2026 Estimated
($ in Thousands)

Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures	Ratio of Debt Service to Unrestricted Expenditures
2011	$41,753	$3,500	$65,187	5.4%
2012	38,313	3,416	66,817	5.1%
2013	38,311	3,211	63,082	5.1%
2014	36,387	3,208	61,031	5.3%
2015	34,268	3,200	65,858	4.9%
2016	33,904	3,436	70,310	4.9%
2017	31,735	3,682	68,414	5.4%
2018	31,390	3,516	64,059	5.5%
2019	25,760	4,044	66,490	6.1%
2020	24,340	2,708	66,286	4.1%
2021 Estimated	52,135	3,121	66,327	4.7%
2022 Estimated	49,865	3,804	71,254	5.3%
2023 Estimated	47,535	3,779	72,679	5.2%
2024 Estimated	47,535	3,774	74,133	5.1%
2025 Estimated	45,115	3,417	75,615	4.5%
2026 Estimated	42,965	3,020	77,128	3.9%

Note: Total debt outstanding and total debt service includes auxiliary and capital lease debt only. St. Mary's College of Maryland does not have any academic debt.

Source: St. Mary's College of Maryland

In August 2019, SMCM's bond rating was affirmed by Moody's at A2 with a negative outlook. In spite of a history of strong State support to the college, there are concerns about declining enrollment. Because the college's bonds are issued at a fixed rate, there is no effect on existing bonds.

Impact of COVID-19 Pandemic

The SMCM campus was closed in March 2020 with instruction continuing online as a consequence of the COVID-19 pandemic. SMCM made refunds to students approximating $3.6 million related to unused remaining meal plans and proportional residence hall rental charges. Various federal support revenues and reduced operating expenses during the period of March through June largely, although not completely, offset the amounts refunded to students. Over the

summer, the college developed remote teaching and learning methods, a hybrid synchronous mode of instruction and, with board approval, reopened for instruction in August. On campus residence hall occupancy is lower than previously expected.

SMCM received $1.2 million in Higher Education Stabilization Funding of which half was provided directly to students as grants to reimburse housing and university fee expenses. In addition to Higher Education Stabilization Funding, SMCM also received $6.7 million in Paycheck Protection Program Funding with the vast majority of that funding being applied toward fiscal 2020.

Morgan State University

As shown in **Exhibit 7.7**, MSU had $40.9 million of debt in fiscal 2020. This figure includes academic, auxiliary, and capital lease debt. Auxiliary debt is the largest of the three, totaling $22.6 million. The ratio of debt service to unrestricted expenditures will be 3.7% in fiscal 2020, below MSU's 5.5% goal ratio. MSU is planning to issue more debt in the next five years, and the college's projected debt ratio is expected to stay between 1.3% and 3.7% through fiscal 2026. MSU advises that the 1993 series bonds fully matured on July 1, 2020, and that this is in line with the institution's financial planning.

MSU was most recently affirmed A+ by Standard & Poor's with the outlook downgraded to Negative in July 2020. Moody's last review was in December 2018 with an A1 rating and Stable outlook. Discussions are ongoing with Moody's concerning the next review but have been pushed back due to the COVID-19 pandemic; expectations are that the next review will occur sometime within the next several months.

Exhibit 7.7

Morgan State University Debt Service as Related to Unrestricted Funds

Fiscal 2011-2026 Estimated

($ in Thousands)

Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures	Ratio of Debt Service to Unrestricted Expenditures
2011	$59,556	$8,034	$150,429	5.3%
2012	55,165	7,429	157,647	4.7%
2013	47,761	5,776	165,502	3.5%
2014	43,770	6,422	164,211	3.9%
2015	43,145	6,078	177,568	3.4%
2016	54,409	7,100	183,346	3.9%
2017	48,481	8,312	198,116	4.2%
2018	46,465	8,332	204,057	4.1%
2019	44,434	7,980	211,507	3.8%
2020	40,973	8,081	217,853	3.7%
2021 Estimated	42,770	7,636	224,388	3.4%
2022 Estimated	48,983	2,925	231,120	1.3%
2023 Estimated	85,396	3,490	238,053	1.5%
2024 Estimated	81,200	5,938	245,195	2.4%
2025 Estimated	76,902	5,938	252,551	2.4%
2026 Estimated	73,575	5,938	260,128	2.3%

Note: Total debt outstanding and total debt service include academic, auxiliary, and capital lease debt.

Source: Morgan State University

Like USM, MSU generally issues 20-year bonds with serial maturities and level debt service payments with the first-year interest only and the principal retired over the remaining 19 years. However, most recently, MSU has taken advantage of the HBCU Capital Financing Program through the U.S. Department of Education. This program provides low-cost capital to finance improvements to the infrastructure of the nation's HBCUs. During fiscal 2021, MSU, in conjunction with MEDCO, will be undertaking a development project for 670 beds of replacement housing and an approximately 30,000 square foot replacement dining facility. The student housing facility will be financed through a privatized financing structure by MEDCO, issuing tax-exempt bonds. MSU will be borrowing $69.75 million from the HBCU Capital Financing Program for the following projects:

- $32.0 million for the design and construction of the dining facilities;

- $21.25 million to refund all of the outstanding 2012 Auxiliary and Academic Facilities Revenue Bonds (at an expected net present value savings of approximately $2.6 million,); and

- $16.5 million refinancing the unadvanced portion of the 2018 $25 million HBCU Capital Financing Program loan (of which $8.4 million is outstanding).

Upon closing of this transaction, which was on October 29, 2020, and the defeasance of the 2012 Auxiliary and Academic Facilities Revenue Bonds, all MSU Bond debt will be financed through the HBCU Capital Financing Program. HBCU Capital Financing Program debt is not considered revenue bonds outstanding as it is a general obligation of the University.

Impact of COVID-19 Pandemic

During 2020, all higher education institutions experienced challenges due to COVID-19. In March, MSU moved to a 100% remote learning and work environment. MSU opted for teaching primarily online, as COVID-19 cases in Maryland continued to rise in March 2020, and finished the semester online. For fall 2020, MSU has opted to offer primarily online instruction except for research and laboratory programs due to the pandemic.

The financial impact for the spring in fiscal 2020 resulted in a decrease of student fee revenues, which resulted in student refunds of approximately $5 million. There were facilities and technology upgrades resulting in increased costs for a remote learning environment and a safe work environment for essential employees. These additional costs totaled approximated $4 million for fiscal 2020. In April 2020, MSU was awarded CARES Act funding from the federal government in Education Stabilization funding and Section 18004(a)(2) funding, which was awarded to HBCUs, that totaled approximately $28 million and helped to mitigate these costs. Of this amount, $9.2 million was awarded in Higher Education Stabilization funding with $4.6 million designated for students and $4.6 million for the university, most of which supports technology needs for remote learning. Section 18004(a)(2) funding totaled $19 million and was designated to support and mitigate the COVID-19 impact.

In addition, MSU received CARES Act funding from the State through an operating budget amendment that totaled approximately $2.5 million for fiscal 2020. These funds were primarily used for additional security expenses and technology needs. MSU's Board of Regents rescinded the fiscal 2020-2021 tuition increase. MSU also made the decision to reduce its mandatory fees by 15% for the fall semester. Due to the 100% remote instruction modality, room and board fee revenues have declined as well. MSU has taken spending reduction measures such as a hiring freeze, furloughs, and salary reductions.

Baltimore City Community College

To date, BCCC has not taken advantage of its ability to issue auxiliary or academic debt but is authorized to issue up to $65 million. Since both the amount and eligible uses of its debt authorization

were expanded in the 2009 session, BCCC has not initiated the bond rating process to issue debt. BCCC more recently decided to assess its position to issue debt before pursuing the rating process. This position will be reviewed by its Board of Trustees, which was reformed by legislation (Chapter 848 of 2017) in fiscal 2018 and is tasked with reviewing the institution's capital planning needs.

Impact of COVID-19 Pandemic

As a result of the COVID-19 pandemic, BCCC is facing challenges. The reduction in State and auxiliary appropriations has resulted in vacancies that would otherwise support programs and business operations. BCCC is reevaluating the options to defer maintenance, considering the operating budget impact. BCCC moved all courses to an online format through the end of the fall semester with a decision on holding any in person classes for the spring semester pending additional updates. BCCC received $2.9 million in Higher Education Stabilization Funding of which half was provided directly to students as grants to reimburse housing and university fee expenses. BCCC also received Section 18004(a)(2) funding as a minority serving institution which totaled $191,554.

Chapter 8. Issues

Key issues examined in this chapter are:

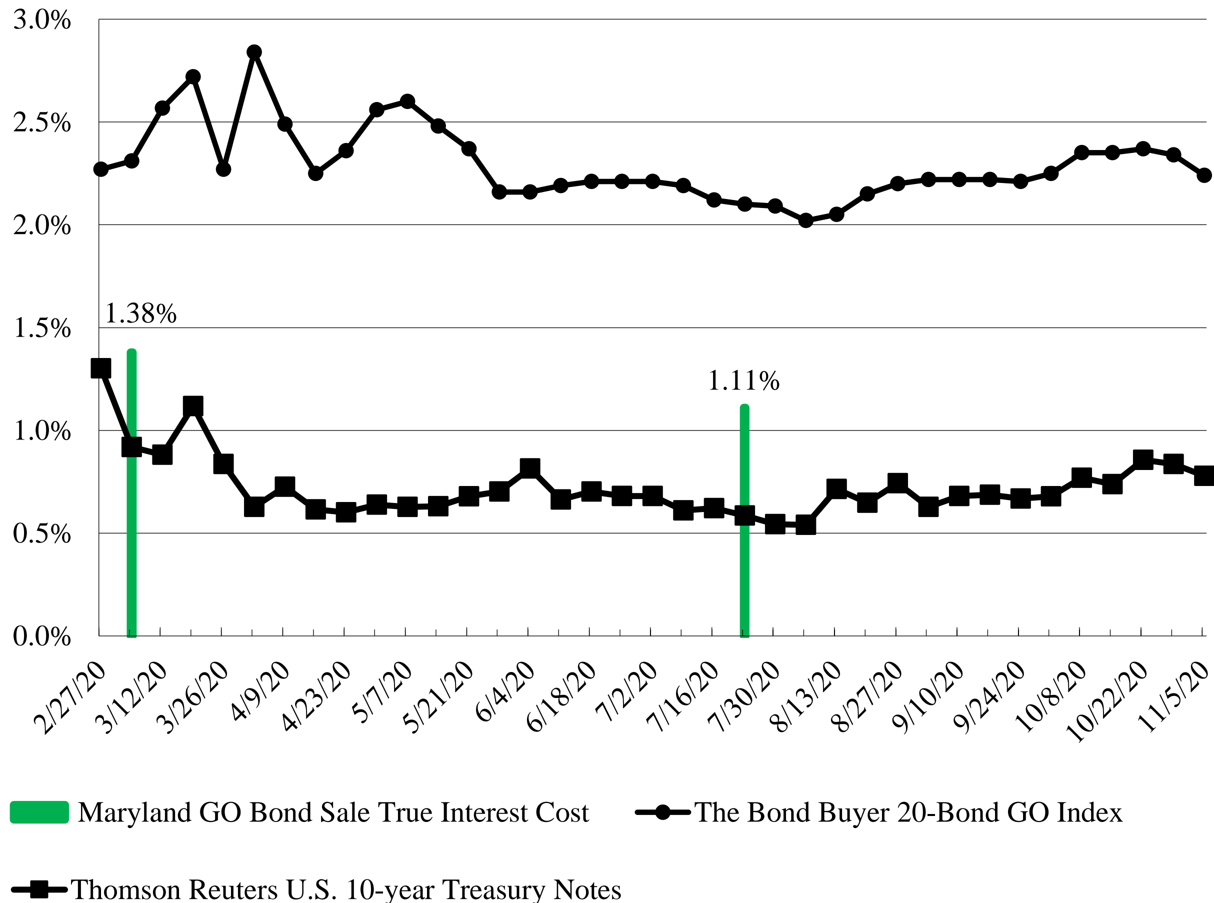
- bond market and Maryland general obligation (GO) bond performance since the beginning of the COVID-19 pandemic;
- how Maryland manages to keep a top bond rating while being a high-debt State;
- new bond counsel advice regarding the use of bond sale premiums.

Impact of COVID-19 Pandemic on Bond Markets and General Obligation Bond Sales

The COVID-19 pandemic led to a recession and turmoil in financial markets in 2020. **Exhibit 8.1** shows how volatile markets were early in the pandemic as numerous states were taking actions to limit gatherings and begin sheltering in place. The most volatile period was from March 12, 2020, to April 9, 2020. For example, *The Bond Buyer* Index declined 17% from March 19, 2020, to March 26, 2020; increased 25% from March 26, 2020, to April 2, 2020; and declined 12% from April 2, 2020, to April 9, 2020. This level of volatility is uncommon in the bond market, which is dominated by low-risk securities.

On March 4, 2020, the State sold $777 million in GO bonds that included $495 million in tax-exempt GO bonds, $50 million in taxable GO bonds, and $232 million in refunding bonds. The timing of the sale was fortunate in that it was a week before the market volatility began. The true interest cost (TIC) for the sale was 1.38%, compared to 1.66% for the previous sale in August 2019.

Exhibit 8.1
Bond Market Volatility and General Obligation Bond Sales
February 2020 to November 2020



Source: *The Bond Buyer*; Public Resources Advisory Group; Department of Legislative Services

Rates at the July 22, 2020 bond sale were even lower with a TIC of 1.11%. At this sale, the State issued $1,011.4 million in GO bonds for capital projects. This included $540 million in new tax-exempt bonds, $115.8 million in tax-exempt refunding bonds, and $355.6 million in taxable refunding bonds.

Federal Government Response to Pandemic

Actions were taken by the federal government to shield the economy from the pandemic. A stimulus bill was enacted, and the Federal Reserve established the Municipal Liquidity Facility (MLF). These actions helped stabilize the economy and financial markets.

On March 27, 2020, the President signed into law the Coronavirus Aid, Relief, and Economic Security Act, which provided $2.2 trillion in relief that included direct payments to individuals and organizations and grants to State and local governments. This allowed businesses to retain employees after governors issued mandatory shutdown orders, provided grants to unemployed individuals, and supported increased government costs attributable to the pandemic. The result was a more stable economy and less economic dislocation.

Established on April 9, 2020, the MLF provides up to $500 billion in loans of up to two years to state and local governments. States and counties with a population of more than 500,000 residents and cities with a population of more than 250,000 residents are eligible. This provides a lender of last resort for distressed state and local governments. As is often the case with lenders of last resort, the rates are high. The first issuance was for Illinois, which borrowed $1.2 billion for one year at the rate of 3.82%. This rate is in part a function of the Illinois' bond rating, which was BBB-minus from the rating agencies. Since Maryland has had success issuing bonds during the pandemic, Maryland did not use the MLF. On November 19, 2020, the U.S. Treasury Secretary asked the Federal Reserve to sunset MLF on December 31, 2020, and return all unused funds to the U.S. Treasury Department to be reallocated. The Federal Reserve expressed concerns about such an action, saying that it "would prefer that the full suite of emergency facilities established during the coronavirus pandemic continue to serve their important role as a backstop for our still–strained and vulnerable economy." In spite of these concerns, the Federal Reserve agreed to return unused funds.

July General Obligation Refunding Bond Sale Restructures Debt Service Payments

At the July 2020 bond sale, the State issued $471.4 million to refund $494.3 million in previously issued bonds. In prior refunding bond sales, the State structured bond sales so that the maturities of the new bonds roughly corresponded with the refunded bonds. This maximizes total savings and keeps debt service payments even. However, this sale was structured so that fiscal 2021 savings were maximized. This was done by issuing longer term bonds in the tax-exempt sale. The average life of this sale, which totaled $115.8 million, increased from 3.5 years to 7.4 years. **Exhibit 8.2** shows that this reduced fiscal 2021 debt service costs by almost $61 million.

Exhibit 8.2
Effect of Refunding Sale on Debt Service Costs
Fiscal 2021-2029
($ in Millions)

	Prior Debt Service	Refunding Debt Service	Difference
2021	$64.9	$4.0	-$60.9
2022	15.0	14.7	-0.2
2023	15.1	15.1	0.0
2024	59.7	59.7	0.0
2025	104.2	104.2	0.0
2026	97.7	97.7	0.0
2027	56.9	56.9	0.0
2028	126.7	126.7	0.0
2029	47.7	47.7	0.0
Total	**$587.9**	**$526.7**	**-$61.2**

Source: Public Resources Advisory Group; Department of Legislative Services

Maryland Is a High-debt State with Strong Financial and Debt Management Policies That Are Recognized by the Bond Market and Rating Agencies

This issue examines how Maryland debt compares to other AAA-rated states, State debt management policies, the State's credit strengths, and the results from the bond sale during the pandemic.

Maryland Is a High-debt State That Has Expanded Its Capital Program to Support Local Jurisdictions and Nonprofit Organizations

Maryland is somewhat unusual among AAA-rated states. The State authorizes and issues higher levels of debt than most states including most AAA-rated states. Maryland has used these high levels of debt to expand its capital program beyond only supporting State agency facilities. More than half of Maryland's capital program supports non-State programs and projects, the largest of which support public education and health.

Each year, Moody's Investors Service compares State debt levels. Two of the measures estimated by Moody's are measures that the State uses when evaluating debt: debt outstanding to personal income; and debt service to revenues.

Exhibit 8.3 shows that Moody's ranked Maryland the fourteenth highest State with respect to debt outstanding, which is 3.5% of personal income. This is the second highest level among AAA-rated states. Altogether, there are 19 states above the mean and 30 below the mean.[5] The mean is skewed because there are states with exceptionally high levels of debt outstanding. For example, the state with the highest ratio, Hawaii at 9.6%, has a ratio that is more than twice Maryland's ratio.

Exhibit 8.3

Ranking AAA-rated States
Net Debt Outstanding as a Percent of Personal Income

Fiscal 2019

Rank	State	Ratio
4	Delaware	6.1%
14	**Maryland**	**3.5%**
19	Virginia	2.8%
20	**Mean**	**2.6%**
25	Georgia	2.0%
30	Florida	1.5%
31	Utah	1.5%
32	North Carolina	1.2%
40	Missouri	0.9%
41	South Dakota	0.9%
42	Texas	0.7%
44	Tennessee	0.6%
45	Indiana	0.5%
46	Iowa	0.3%

Note: Moody's estimate of net tax-supported debt outstanding excludes non-State debt supported by revenues other than State taxes. Moody's includes all lottery bonds, while Maryland excludes some lottery bonds. Consequently, Moody's estimates are usually a few tenths of a percent higher than Maryland's estimates.

Source: Moody's Analytics

Exhibit 8.4 shows that Maryland's debt service to revenues is the highest among AAA-rated states, at 6.8%. Maryland bonds have relatively short maturities since the State constitution limits State debt to 15 years. The average maturity for each issuance is 10 years. This increases debt service costs since principal is retired earlier. Rating agencies consider this

5 Pennsylvania was at the mean.

advantageous; the State retires debt more quickly and is burdened less by prior issuances. However, this leads to higher debt service payments in the short term, which is reflected in this ratio.

Exhibit 8.4
Ranking AAA-rated States
Debt Service to Revenues
Fiscal 2019

Rank	State	Ratio
9	**Maryland**	**6.8%**
12	Delaware	5.7%
14	Georgia	5.4%
20	Virginia	4.6%
21	**Mean**	**4.3%**
27	Utah	3.7%
28	Florida	3.6%
30	Missouri	3.3%
33	North Carolina	2.9%
34	Texas	2.5%
36	Iowa	2.2%
39	South Dakota	2.0%
45	Tennessee	1.2%
46	Indiana	1.1%

Source: Moody's Analytics

Maryland's bond program supports various State and non-State projects and programs. The fiscal 2021 capital budget introduced by the Administration provided that 58% of proposed GO bond authorizations support non-State projects and programs. The three largest areas of support receive $549 million; these areas are public school construction (receiving $330 million), housing ($122 million), and community colleges ($97 million). Maryland has expanded its capital program to support non-State organizations.

Maryland Is a AAA-rated State with High Debt Because State Debt Is Managed Well

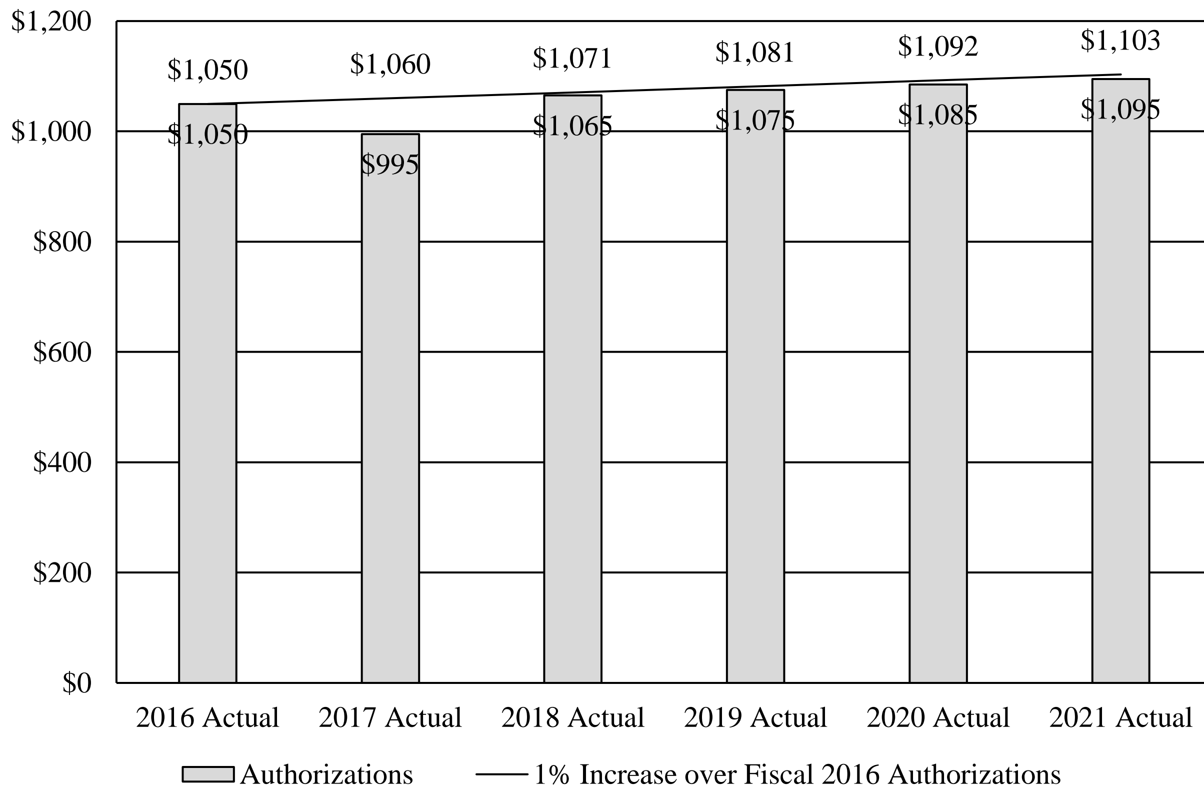
Exhibits 8.3 and 8.4 show that most AAA-rated states' debt ratios are below the mean. Maryland is one of three AAA-rated states with debt service to revenues above the mean, while 10 states are below the mean. Similarly, Maryland is one of four states with debt outstanding to

revenues above the mean. Maryland has a high rating because the State has restrained its capital program, the State has strong, well-embedded financial practices, and Maryland is a wealthy state.

General Assembly Has Limited Authorizations So That Recent Increases in Authorizations Have Been Modest

Increases in bond authorizations for the capital program have been restrained as the General Assembly has adopted a policy of limiting increases to 1%. Since calendar 2015, the Spending Affordability Committee has recommended that increases in authorizations be limited to 1%. The General Assembly has abided by this recommendation. **Exhibit 8.5** shows that annual increases in authorizations have been less than 1% over the fiscal 2016 recommendation.

Exhibit 8.5
General Obligation Bond Authorizations
Fiscal 2016-2021
($ in Millions)



Source: Department of Legislative Services

The State also exhibited discipline in the past when ratios were close to breaching the affordability limits. During the Great Recession, revenues declined so substantially that the State debt service to revenues was expected to exceed 8% of revenues in the out-years. In response, GO bond authorizations were reduced from $1.14 billion in fiscal 2011 to $925 million in fiscal 2012. The prior plan had been to increase the fiscal 2012 authorizations to $1.17 billion.

Rating Agencies Give Maryland AAA Rating and Identify Credit Strengths

Maryland has been rated AAA from the three major rating agencies – Fitch Ratings, Moody's Investors Service, and S&P Global Ratings – for decades. The rating agencies have consistently noted Maryland's credit strengths. Prior to the July 2020 bond sale, the three major rating agencies reaffirmed the State's AAA bond rating for GO bonds. All three agencies consider the rating stable. The rating agencies identified the following strengths:

- ***Wealth and Income Levels***: Maryland's per capita personal income was 116% of the national average in 2019;

- ***Broad and Diverse Economy:*** Strengths include a concentration of employment in higher paying sectors such as business services, education and health services, and government. Moody's notes that Maryland has a highly educated workforce whereby 40% of the population over 25 has at least a bachelor's degree, compared to about 32% nationwide; and

- ***Strong and Well-embedded Financial Practices:*** Maryland State government has a long history of managing debt prudently. Comments from rating agencies include:

  - Fitch notes that the State has "very strong fiscal management with consensus-oriented long-term planning and multiple sources of flexibility, all of which position the state to address implications of the ongoing coronavirus pandemic."

  - Moody's considers Maryland's "proactive financial management" to be a credit strength and that the Board of Public Works "is able to respond swiftly to midyear budget challenges."

  - S&P considers that Maryland's financial "practices are strong, well embedded, and likely sustainable."

  - The agencies also noted that the State has made numerous attempts to address the unfunded pension liability, such as increasing State and employee retirement contributions, moving to an actuarially approved approach, reducing benefits, and increasing the length of time that it takes new employees to vest. Strengths of the capital budget process include the Capital Debt Affordability Committee (CDAC) process.

Dynamics of the Affordability Ratios

If the State were to breach the affordability ratios, it would be the debt service to revenues ratio that is most likely to be breached. This is attributable to potential revenue underperformance during the pandemic and short maturities, which increase debt service and retire debt quickly. Chapter 4 reviews the affordability ratios.

Revenues Are the Source of Most of the Affordability Risk

Under current conditions, the largest risk that the State could breach one of the affordability ratios is underperforming revenues. Exhibit 4.6 compares the debt service to revenue ratio using the official and alternate Board of Revenue Estimates (BRE) general fund estimates. Using the alternate estimate, which projects lower revenues, increases the fiscal 2022 debt service to revenues ratio to 7.97%, which is just under the 8% limit. This is an increase of 0.37% over the official estimate of 7.66%.

By contrast, Exhibit 4.8 compares the CDAC' recommended $10 million reduction in annual authorizations from fiscal 2022 to 2026 to the previously planned level of authorizations, which reduces total authorization by $50 million over the forecast period. This has no effect on the debt service to revenues ratio until fiscal 2026, when the ratio is reduced by 0.01%. Although this change is modest, this analysis gets at the larger point that it is difficult to reduce the debt service to revenue ratio in the short term. The reasons for this are twofold:

- since the State does not retire debt until the third year, the first two years of debt service are low, and little is gained by reducing authorizations until the third year; and

- debt is authorized on a project basis and issued on a cash flow basis, so there is a lag between authorizations and issuances. The Department of Legislative Services (DLS) and the State Treasurer's Office (STO) assume that only 31% of debt authorized in a year is issued in the same year; the other 69% is issued over the remaining four years of the forecast period.

BRE also prepared an alternate estimate of personal income. Using the alternate estimate increases the debt outstanding to personal income ratio from 3.30% to 3.37% in fiscal 2022. Since the change is more modest and the ratio is well below the 4% limit, the State is unlikely to breach this limit.

Short Maturities Push Up One Affordability Ratio While Pushing Down the Other Affordability Ratio

The affordability ratios measure the total State debt burden, which is debt outstanding to personal income, and the immediate cost of State debt, which is debt service to revenue. Paradoxically, these affordability ratios are moving in opposite directions through fiscal 2023. Exhibit 4.6 shows that debt outstanding to personal income is projected to consistently decrease

from fiscal 2021 to 2026, while debt service to revenues is set to increase in fiscal 2022 and 2023 above the fiscal 2021 ratio. As previously discussed, this is in part due to changes in the denominators of the ratios, revenues, and personal income. However, this is also attributable to how bonds are structured.

The Maryland Constitution limits State debt to 15 years. State debt maturities range from 3 to 15 years, with an average maturity of about 10 years. These are unusually short maturities; it is common for other states to issue 30-year bonds with average maturities approaching 20 years. This explains why Maryland ranks fourteenth in debt outstanding to personal income and ninth in debt service to revenues. The high debt service payments retire debt more quickly. This tends to push up the debt service ratios and push down debt outstanding ratios.

Credit rating agencies see these short maturities as a credit plus. The agencies frequently comment that about the short maturities. In the July 2020 rating, Moody's noted that the 15-year maturities "quickly replenishes the state's debt capacity and helps retrain growth in the outstanding balance." However, this also increases short-term debt service costs and the debt service to revenues ratio.

Markets Have Not Punished Maryland during the Pandemic; Maryland's Credit Strengths Are Well-known and Appreciated

The State currently pays one of the lowest interest rates of all issuers of state and municipal debt. Each year, DLS measures the factors that influence GO bonds' interest rates. This analysis compares Maryland bonds' TIC to *The Bond Buyer* 20-bond index.[6] The analysis of the July 2020 GO bond sale in Chapter 6 shows that the State's cost of capital is low. DLS estimates of the sum of least squares regression coefficients suggest that:

- State bonds sell at 85% of *The Bond Buyer's* index of 20 state and municipal bonds, which is well below the average; and

- the "flight to quality" since the Great Recession reduces the interest rate by another 0.81% (81 basis points). The market has been more discriminating of credit quality since the Great Recession, which has reduced Maryland rates compared to average and lowered quality issuances.

These trends have continued since the pandemic began. Bond markets have continued to value Maryland GO bonds.

6 The index includes 20 bonds with an average rating of AA. It includes five AAA-rated states from all three rating agencies (Florida, Georgia, Maryland, North Carolina, and Texas) and two AAA-rated municipalities (Denver and Seattle). The lowest rated municipality has a rating of A1 (Milwaukee).

Conclusions

A top credit rating and good reputation keeps Maryland GO bonds' interest rates low and debt service costs down. The analysis estimates that Maryland's bonds are 15% less expensive than the average AA-rated bonds. The analysis also estimates that Maryland's interest rate has been reduced an additional 0.81% (81 basis points) since the Great Recession. This is consistent with a "flight to quality" since the Great Recession. Investors are willing to pay more for higher-grade bonds in their portfolios and are thus bidding down interest rates of higher-rated bonds. Should investors or credit rating agencies lose confidence in Maryland bonds, the State's GO bonds would no longer benefit from its high rating and realize lower costs associated with the "flight to quality."[7]

From this review of the State's debt ratios and credit rating compared to other states, the following conclusions can be drawn:

- ***Most AAA-rated States Have Debt Levels Below the Median:*** While high debt levels do not disqualify states from receiving the AAA rating, most AAA-rated states have debt levels below the median on two key measures. Only 4 of 13 states with AAA ratings from the three major rating agencies have debt outstanding ratios above the median, and 3 of 13 states have debt service ratios above the median. It is clear that AAA-rated states are not authorizing and issuing as much debt as lower-rated states.

- ***Maryland's Affordability Process Is a Credit Strength:*** All three rating agencies comment favorably about Maryland's affordability process. The agencies consider Maryland's financial and debt management processes to be strong, well-embedded, and sustainable. The agencies recognize that the State develops long-term forecasts through a collaborative approach. The process is proactive as the State addresses budget shortfalls quickly and is prepared to make mid-year adjustments. Maryland has also taken actions to reduce long-term liabilities.

- ***Process Matters More:*** As a high-debt, AAA-rated State, process matters more for Maryland than other states. Each of the three major rating agencies is concerned about the high levels of long-term liabilities. If ratings were only about debt levels, Maryland would not get the AAA-rating from all three agencies. Fortunately, the agencies also consider Maryland's financial and debt management processes. These have an excellent reputation

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[7] Since the State has always had the AAA rating, there is no analysis of the cost of losing the AAA rating. However, there is an example of when the State was put on credit watch. Two days before the July 2011 bond sale totaling $512.3 million, Moody's announced that it would review the credit ratings of five AAA-rated states, including Maryland. Moody's believed these states to be especially vulnerable to a downgrade of the U.S. government's credit (or actions possibly taken to preserve it). At the time, there was uncertainty about the federal government passing a budget, and there were concerns that the federal government could default on its debt. The regression analysis provided evidence that Moody's action did have an effect on the bonds' TIC. It estimated that credit review added 0.23% (23 basis points) to the TIC. Based on these results, DLS calculated that being under credit watch added $11.1 million to debt service costs, assuming similar maturities and retail bond issuances. From fiscal 2015 to 2026, being on credit watch is estimated to add an average of a little over $800,000 to annual debt service costs.

for being thorough and adhered to consistently. Rating agency comments suggest that Maryland will need to maintain these high standards to keep the highest ratings for Maryland debt.

DLS recommends that the State should continue its sound fiscal management and prudent debt policies of limiting increases in GO bond authorizations to 1%. If the economy worsens to the point that additional authorizations are necessary as part of a larger budget stabilization plan, these increases should be limited to a year or two with an explicit policy to reduce authorizations back to the long-term growth trend that was State policy before the COVID-19 pandemic.

Bond Counsel Reinterprets Uses of Bond Sale Premiums

Background about Bond Sale Premiums

When bonds are sold, they have a par value (principal) and a coupon rate (interest rate paid to the bondholder based on par value). When the bonds are bid, STO determines how many bonds are sold (par value of the bonds) and when the bonds mature.[8] The underwriter determines the coupon rate (interest rate that the issuer pays) and the sale price of the bonds, which is awarded to the underwriter with the lowest interest cost.[9] If the coupon rate is greater than the market rate, the bonds sell at a premium, and the State's bond proceeds exceed par value of the bonds.

Economic theory suggests that in a world without uncertainty, there will be no difference in value between bonds selling at a high coupon rate or bonds selling at a low coupon rate. If bonds sell at a high coupon rate, the seller receives a large premium that offsets the high interest cost.

However, since there is uncertainty, investors may see advantages in purchasing bonds at a premium. For investors of Maryland bonds, the primary risk is that the bonds will lose value if interest rates rise. Since Maryland bonds offer a fixed interest rate, the value of Maryland bonds decline if interest rates rise.

How investors value bonds is relative and depends on what interest rates the market offers. If rates on low-risk bonds, such as U.S. government bonds, are low, the State will be able to issue bonds at a lower rate than if these interest rates are high. In other words, a 2% interest rate can be a good deal if everyone else is offering less than 2%, but it is not such good deal if everyone else is offering 3% or more.

In the current environment, interest rates are more likely to increase than decrease. Current interest rates are historically low. In this environment, it certainly makes sense for investors to protect themselves against rising interest rates, and this is done by purchasing bonds at a premium.

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[8] Section 34 of Article III of the Constitution of Maryland limits State debt to 15 years.

[9] Chapter 6 of this report includes a discussion of factors that influence the true interest cost of Maryland's GO bonds.

Bond Counsel Changes Advice on the Use of Bond Sale Premiums

In October 2020, STO advised DLS that bond counsel had changed its advice regarding the use of bond sale premiums to pay debt service. There are statutory provisions regarding the use of bond sale premiums realized from tax-exempt bond sales, but regulations and case law are sparse. Hence, the State relies on bond counsel to guide the State.

Bond sale premiums can only support debt service payments for capitalized interest. Maryland GO bonds do not have principal payments until the third year after the sale. These first three years' interest payments can be considered capitalized interest. Previously, the interpretation was that premiums could support debt service payments for capitalized interest from other bond sales. Bond counsel's new interpretation is that premiums can only support capitalized interest from that particular bond sale and premiums may not be applied to other bond sales.

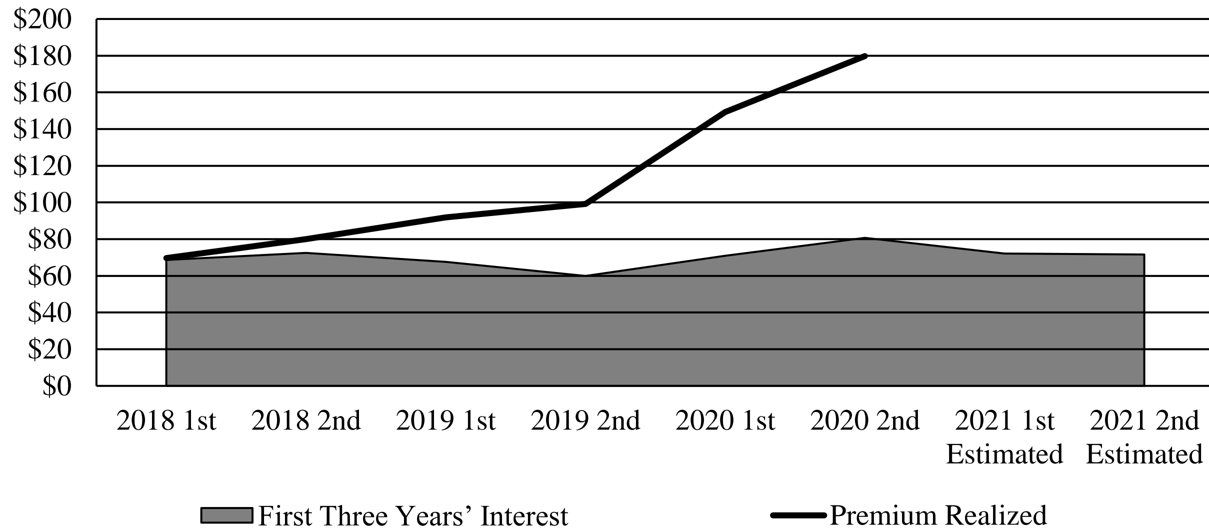
STO periodically rebids its contracts for bond counsel and financial adviser. The office is currently rebidding. It is possible that there could be new bond counsel at some point next year. If new counsel is retained, and the new counsel interprets the use of premiums differently than current counsel, it is possible that this advice could change again. However, STO has indicated that it plans to adhere to the new guidance going forward.

Ceiling on the Amount of Premium Used to Support Debt Service

The new interpretation provides a stricter ceiling on the amount of bond sale premiums that can be used for debt service. Bond sale premiums have increased in recent years. **Exhibit 8.6** shows that premiums realized exceeded three years' interest in 2019 and 2020. DLS estimates that three years' interest on 2021 will be approximately $72 million for each sale.

If premiums from 2021 bond sales are in fact greater than the current advice concerning capitalized interest, the State will have excess bond premiums. The State should consider either resizing the bond sale to reduce the premiums or using premiums for additional capital projects.

Exhibit 8.6
Premiums and Three Years' Interest Payments
Calendar 2018-2021
($ in Millions)



Source: Public Resources Advisory Group; Department of Legislative Services

Resizing Bonds to Reduce Authorizations Reduces Out-year Debt Service Costs

High bond sale premiums provide short-term budget relief at the expense of higher out-year debt service costs. For example, the State issued $500 million in new tax-exempt GO bonds in August 2019. The bonds generated a $99 million premium. Instead of issuing the full $500 million, the State could have resized the bond sale to issue $420 million. The resized sale would have generated an $82 million premium at the bond sales' TIC and provided $502 million in proceeds. The larger $500 million issuance's advantage is that it offers a large amount of cash in the short term that can fund additional capital projects and relieve pressure to increase debt authorizations. However, the resized bonds reduce debt service costs over the 15 years until the bonds mature. **Exhibit 8.7** shows that from fiscal 2020 to 2035, resizing reduces debt service costs by $110 million. In the peak debt service cost years fiscal 2023 to 2035, resizing saves over $7 million annually.

Exhibit 8
Out-year Costs of August 2019 Bond Sale Premium
($ in Millions)

	Actual Bond Sale	Resized Bond Sale	Difference
Total Principal Payments	$500.0	$420.0	-$80.0
Total Interest Payments	187.9	157.8	-30.1
Total Debt Service Payments	**$687.9**	**$577.8**	**-$110.1**
Annual Peak Debt Service	$49.3	$41.9	-$7.4

Source: Public Resources Advisory Group; Department of Legislative Services

Possible Arbitrage Rebates Due

The new advice also changed how STO used the proceeds from the July 2020 sale. The sale generated $180 million in premiums. Since this exceeded the initial three years of interest on the bonds, the full amount could not be applied to GO bond debt service costs. STO applied $149 million to debt service costs, and the remaining $31 million will support capital projects to be authorized in 2021 session capital budget bill.

After all tax-exempt bond proceeds have been allocated, the issuer must complete an arbitrage calculation. If the interest earned on the bond proceeds exceeds the bond yield and certain spending exceptions have not been met, the excess amounts must be rebated to the Internal Revenue Service. STO expects that the State will not meet all the arbitrage spending exceptions beginning with the 2016 1st Series. If this is the case, STO will need to complete the arbitrage calculation. If a rebate is required, it will be due in September 2021. In this low interest rate environment, STO does not anticipate that these rebates will be large. The DLS forecast includes $1 million in fiscal 2022 to recognize that some rebates may be required.

Appendix 1
General Obligation Bond Requests
Fiscal 2022-2026
($ in Millions)

	2022	2023	2024	2025	2026	Total	Category Totals
State Facilities							**$561.8**
Board of Public Works	$75.6	$116.4	$101.4	$50.1	$104.5	$447.8	
Veterans Affairs	0.0	2.7	10.0	19.6	3.6	36.0	
Military	13.1	8.5	2.6	5.0	6.6	35.8	
Disabilities	1.8	1.6	1.6	1.6	1.6	8.2	
Maryland Public Broadcasting	0.0	0.0	0.0	0.0	0.0	0.0	
Information Technology	5.3	5.5	9.0	8.7	5.5	34.0	
Health and Social Services							**$520.3**
Health	$11.4	$30.3	$34.2	$13.9	$9.8	$99.6	
University of Maryland Medical System	14.5	30.5	30.0	30.0	20.0	125.0	
Senior Citizen Activity Center	1.1	1.6	1.6	1.6	1.6	7.5	
Juvenile Justice	12.8	35.2	44.9	15.6	78.3	186.8	
Private Hospital Grant Program	6.0	6.5	7.0	7.0	75.0	101.5	
Environment							**$262.3**
Natural Resources	$23.0	$19.4	$9.0	$6.3	$6.4	$64.1	
Agriculture	5.0	6.0	7.0	8.0	8.0	34.0	
Environment	21.2	20.8	20.8	22.8	22.8	108.4	
Maryland Environmental Service	11.6	8.0	7.4	15.1	13.8	55.8	
Education							**$2,235.5**
Education Other	$5.0	$5.0	$5.0	$5.0	$5.0	$25.0	
Maryland School for the Deaf	1.9	14.7	2.2	0.6	5.6	24.9	
Public School Construction	413.1	433.1	453.1	433.1	453.1	2,185.5	
Higher Education							**$2,203.5**
University System of Maryland[1]	$289.2	$202.5	$155.1	$171.6	$111.3	$929.7	
Baltimore City Community College	8.1	32.5	23.5	4.0	4.0	72.0	
St. Mary's College of Maryland	23.4	3.3	2.3	4.5	13.5	47.0	
Morgan State University	51.4	115.4	96.8	100.6	140.2	504.6	
Community Colleges	127.2	75.0	86.3	110.9	190.9	590.3	
Private Facilities Grant Program	12.0	12.0	12.0	12.0	12.0	60.0	
Public Safety							**$762.4**

	2022	2023	2024	2025	2026	Total	Category Totals
Public Safety	$47.7	$70.1	$137.1	$199.1	$229.8	$683.9	
State Police	6.3	17.6	10.3	12.0	12.9	59.1	
Local Jails	11.8	0.6	3.4	3.6	0.0	19.4	
Housing and Economic Development							**$525.6**
Housing and Community Development	$127.2	$112.2	$84.7	$75.5	$75.5	$475.0	
Historic St. Mary's City	5.2	13.9	1.7	5.5	5.3	31.7	
Planning	11.2	1.9	1.9	1.9	1.9	18.8	
							$450.0
Legislative Initiatives[2]	$30.0	$30.0	$30.0	$30.0	$30.0	$150.0	
Miscellaneous[3]	60.0	60.0	60.0	60.0	60.0	300.0	
Subtotal Request	***$1,433.0***	***$1,492.9***	***$1,451.8***	***$1,435.2***	***$1,708.5***	***$7,521.4***	***$7,521.4***
Debt Affordability Limits 2020 CDAC	**$1,095.0**	**$1,105.0**	**$1,115.0**	**$1,125.0**	**$1,135.0**	**$5,575.0**	
Amount Programmed in 2020 CIP	**$1,155.0**	**$1,165.0**	**$1,175.0**	**$1,185.0**	**$1,195.0**	**$5,875.0**	
Variance 2020 CDAC	**$338.0**	**$387.9**	**$336.8**	**$310.2**	**$573.5**	**$1,946.4**	
Variance 2020 CIP	**$278.0**	**$327.9**	**$276.8**	**$250.2**	**$513.5**	**$1,646.4**	

CDAC: Capital Spending Affordability Committee
CIP: *Capital Improvement Program*

[1] In addition to the general obligation bond request, the University System of Maryland has requested academic revenue bond funding of $30.0 million annually for fiscal 2022 through fiscal 2026.
[2] Figures represent the average total funding requests received through local legislative bond initiatives (fiscal 2018 to 2021).
[3] Figures represent the average total funding for miscellaneous projects sponsored by the Governor (fiscal 2018 to 2021).

Note: Numbers may not sum to total due to rounding.

Source: Department of Budget and Management; Department of Legislative Services

Appendix 2

Estimated General Obligation Bond Issuances

Fiscal 2021-Post 2030

($ in Millions)

Fiscal Year	Proposed Auth.	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Post 2030	Total Issued
		Estimated Issuances During Fiscal Year (a) ====>											
2022	$1,105	$0	$343	$276	$221	$166	$99						$1,105
2023	1,115		0	346	279	223	167	$100					1,115
2024	1,125			0	349	281	225	169	$101				1,125
2025	1,135				0	352	284	227	170	$102			1,135
2026	1,145					0	355	286	229	172	$103		1,145
2027	1,155						0	358	289	231	173	$104	1,155
2028	1,165							0	361	291	233	280	1,165
2029	1,175								0	364	294	517	1,175
2030	1,185									0	367	818	1,185
Total New Authorization		**$0**	**$343**	**$622**	**$849**	**$1,022**	**$1,130**	**$1,140**	**$1,150**	**$1,160**	**$1,170**	**$1,719**	
Previously Authorized GO Bonds	$2,483	$1,075	$706	$423	$204	$47	$9	$5	$5	$5	$4	$0	$2,483
Total Issuances		**$1,075**	**$1,049**	**$1,045**	**$1,053**	**$1,069**	**$1,139**	**$1,145**	**$1,155**	**$1,165**	**$1,174**	**$1,719**	**$12,788**

Percentage Issuance Assumptions by Fiscal Year

Fiscal Year Following Year of Authorization	1st	2nd	3rd	4th	5th
Percent of Authorization Issued	31%	25%	20%	15%	9%

GO: general obligation

Source: Department of Legislative Services

Appendix 3

Maryland General Obligation Bond Debt True Interest Cost Analysis

Statistically Significant Variables

Bond Sale Date	TIC	20-bond Index	MD/US PI	YTM	Call	Post-crisis
03/13/91	6.31%	7.32%	2.261	9.84	Yes	No
07/10/91	6.37%	7.21%	2.240	9.85	Yes	No
10/09/91	5.80%	6.66%	2.230	9.80	Yes	No
05/13/92	5.80%	6.54%	2.220	9.80	Yes	No
01/13/93	5.38%	6.19%	2.221	9.73	Yes	No
05/19/93	5.10%	5.77%	2.212	9.73	Yes	No
10/06/93	4.45%	5.30%	2.206	9.73	Yes	No
02/16/94	4.48%	5.42%	2.208	9.74	Yes	No
05/18/94	5.36%	6.14%	2.199	9.74	Yes	No
10/05/94	5.69%	6.50%	2.191	9.72	Yes	No
03/08/95	5.51%	6.18%	2.184	9.78	Yes	No
10/11/95	4.95%	5.82%	2.163	9.65	Yes	No
02/14/96	4.51%	5.33%	2.159	9.65	Yes	No
06/05/96	5.30%	5.94%	2.144	9.69	Yes	No
10/09/96	4.97%	5.73%	2.144	9.70	Yes	No
02/26/97	4.90%	5.65%	2.136	9.68	Yes	No
07/30/97	4.64%	5.23%	2.135	9.68	Yes	No
02/18/98	4.43%	5.07%	2.119	9.68	Yes	No
07/08/98	4.57%	5.12%	2.128	9.68	Yes	No
02/24/99	4.26%	5.08%	2.134	9.60	Yes	No
07/14/99	4.83%	5.36%	2.146	9.60	Yes	No
07/19/00	5.05%	5.60%	2.157	9.72	Yes	No
02/21/01	4.37%	5.21%	2.178	9.71	No	No
07/11/01	4.41%	5.22%	2.201	9.68	No	No
03/06/02	4.23%	5.19%	2.233	9.61	No	No
07/31/02	3.86%	5.00%	2.241	9.66	No	No
02/19/03	3.69%	4.79%	2.235	9.60	No	No
07/16/03	3.71%	4.71%	2.250	9.67	Yes	No
07/21/04	3.89%	4.84%	2.254	9.70	Yes	No
03/02/05	3.81%	4.50%	2.259	9.70	Yes	No
07/20/05	3.79%	4.36%	2.268	9.69	Yes	No
03/01/06	3.87%	4.39%	2.242	9.68	Yes	No
07/26/06	4.18%	4.55%	2.238	9.64	Yes	No
02/28/07	3.86%	4.10%	2.228	9.64	Yes	No
08/01/07	4.15%	4.51%	2.218	9.65	Yes	No
02/27/08	4.14%	5.11%	2.208	9.64	Yes	No
07/16/08	3.86%	4.65%	2.213	9.60	Yes	Yes
03/04/09	3.39%	4.96%	2.287	9.01	Yes	Yes

Bond Sale Date	TIC	20-bond Index	MD/US PI	YTM	Call	Post-crisis
03/02/09	3.63%	4.87%	2.287	10.04	Yes	Yes
08/05/09	2.93%	4.65%	2.303	8.96	Yes	Yes
08/03/09	3.20%	4.69%	2.303	9.01	Yes	Yes
10/21/09	2.93%	4.31%	2.242	7.91	Yes	Yes
07/28/10	1.64%	4.21%	2.259	5.34	No	Yes
07/28/10	1.91%	4.21%	2.259	6.20	Yes	Yes
03/07/11	2.69%	4.90%	2.286	6.86	No	Yes
03/09/11	3.49%	4.91%	2.286	10.51	Yes	Yes
07/25/11	1.99%	4.46%	2.299	5.65	No	Yes
07/27/11	3.08%	4.47%	2.299	10.05	Yes	Yes
03/02/12	2.18%	3.72%	2.306	8.33	Yes	Yes
03/07/12	2.42%	3.84%	2.306	9.71	Yes	Yes
07/27/12	2.52%	3.61%	2.277	9.10	Yes	Yes
08/01/12	2.17%	3.66%	2.277	9.71	Yes	Yes
03/06/13	2.35%	3.86%	2.288	9.61	Yes	Yes
07/24/13	3.15%	4.77%	2.284	10.20	Yes	Yes
03/05/14	2.84%	4.41%	2.265	10.14	Yes	Yes
07/18/14	1.27%	4.36%	2.240	4.69	No	Yes
07/23/14	2.65%	4.29%	2.240	10.16	Yes	Yes
03/05/15	2.65%	3.68%	2.232	9.63	Yes	Yes
07/16/15	2.83%	3.82%	2.238	10.33	Yes	Yes
06/08/16	2.17%	3.03%	2.207	9.62	Yes	Yes
03/08/17	2.84%	4.02%	2.205	10.59	Yes	Yes
08/16/17	2.29%	3.57%	2.200	9.59	Yes	Yes
03/07/18	2.83%	3.88%	2.129	10.29	Yes	Yes
08/01/18	2.33%	3.95%	2.124	6.72	No	Yes
08/01/18	3.12%	3.95%	2.124	13.05	Yes	Yes
03/26/19	1.78%	3.79%	2.138	6.69	No	Yes
03/26/16	2.71%	3.79%	2.138	13.02	Yes	Yes
08/14/19	1.13%	3.10%	2.128	7.35	No	Yes
08/14/19	1.98%	3.10%	2.128	13.00	Yes	Yes
03/04/20	0.89%	2.31%	2.107	7.41	No	Yes
03/04/20	1.85%	2.31%	2.107	13.01	Yes	Yes
07/22/20	0.55%	2.10%	2.090	6.75	No	Yes
07/22/20	1.74%	2.10%	2.090	13.09	Yes	Yes

MD/US PI: ratio of Maryland personal income to U.S. personal income
TIC: true interest cost
YTM: years to maturity

Source: *The Bond Buyer*; Federal Bureau of Economic Analysis; Bond Sale Official Statements

Appendix 4

Agency Debt Outstanding

Fiscal 2010-2020

($ in Millions)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Change 2010-20	Average Annual % Change 2010-20
Agency Debt Subject to Ceiling and Allocation Caps													
Maryland Environmental Service	$28.5	$31.2	$27.5	$25.2	$27.9	$26.4	$24.8	$23.1	$21.4	$27.8	$26.8	-$1.7	-0.6%
Maryland Transportation Authority	2,708.2	3,292.9	3,279.7	3,303.2	3,179.3	3,176.4	3,062.0	2,928.4	1,588.6	1,552.8	1,910.4	-797.8	-3.4%
Maryland Water Quality Financing Administration[1]	126.3	112.0	57.7	47.2	36.7	33.2	29.2	24.7	20.3	17.8	15.2	-111.1	-19.1%
Revenue Cap Total	**$2,863.0**	**$3,436.1**	**$3,364.9**	**$3,375.6**	**$3,243.9**	**$3,235.9**	**$3,116.0**	**$2,976.2**	**$1,630.3**	**$1,598.4**	**$1,952.4**	**-$910.6**	**-3.8%**
% Change/Prior Year	**18.9%**	**20.0%**	**-2.1%**	**0.3%**	**-3.9%**	**-0.2%**	**-3.7%**	**-4.5%**	**-45.2%**	**-2.0%**	**22.1%**		
Agency Debt Not Subject to Ceiling and Allocation Caps													
Baltimore City Community College	$0.7	$1.2	$1.0	$0.9	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	-$0.7	-100.0%
Department of Housing and Community Development[2]	3,345.9	3,238.7	3,106.5	2,979.0	2,783.2	2,557.0	2,535.9	2,445.4	2,295.9	2,601.2	3,038.8	-307.1	-1.0%
Local Government Infrastructure (CDA)	109.7	127.2	122.8	129.6	137.1	164.1	156.1	167.8	184.0	191.9	195.9	86.2	6.0%
Maryland Industrial Development Financing Authority	375.7	484.8	492.6	347.7	335.1	312.6	288.3	286.4	265.8	237.0	223.6	-152.1	-5.1%
MDOT – County Revenue Bonds	95.1	89.1	82.9	101.7	94.9	87.9	120.2	108.8	97.0	128.0	113.4	18.3	1.8%
MDOT – Nontax-supported Issuances	57.3	54.2	51.1	47.7	44.7	41.5	38.2	33.4	29.8	26.1	22.1	-35.2	-9.1%
Morgan State University	64.4	59.6	55.2	47.8	44.3	43.5	58.3	51.8	46.5	45.0	41.0	-23.4	-4.4%
St. Mary's College of Maryland	45.3	41.8	38.3	36.1	34.3	34.6	32.5	32.0	29.6	25.8	24.3	-21.0	-6.0%
University System of Maryland	1,082.9	1,129.2	1,170.0	1,195.0	1,269.0	1,128.5	1,178.7	1,202.0	1,186.8	1,196.7	1,202.0	119.1	1.0%
Noncap Total	**$5,177.0**	**$5,225.8**	**$5,120.4**	**$4,885.5**	**$4,742.7**	**$4,369.7**	**$4,408.2**	**$4,327.5**	**$4,135.5**	**$4,451.6**	**$4,861.1**	**-$315.9**	**-0.6%**
% Change/Prior Year	**4.7%**	**0.9%**	**-2.0%**	**-4.6%**	**-2.9%**	**-7.9%**	**0.9%**	**-1.8%**	**-4.4%**	**1.0%**	**12.3%**		

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Change 2010-20	Average Annual % Change 2010-20
Tax-supported Debt													
Transportation Debt	$1,645.0	$1,561.8	$1,562.6	$1,618.0	$1,813.0	$2,020.3	$2,146.1	$2,578.4	$2,911.7	$3,342.9	$3,627.0	$1,982.0	8.2%
Grant Anticipation Revenue Vehicles	651.8	596.9	539.4	479.0	415.8	349.4	279.8	206.6	129.7	48.9	0.0	-651.8	-100.0%
Capital Leases	242.5	166.4	310.3	286.2	260.3	242.2	236.0	216.7	223.6	199.2	198.1	-44.4	-2.0%
Maryland Stadium Authority	243.6	225.7	218.3	193.0	175.4	151.0	130.5	110.4	88.6	122.8	67.1	-176.5	-12.1%
Bay Restoration Bonds	44.2	41.6	38.8	36.0	133.1	130.0	301.6	292.9	273.6	253.4	232.1	187.9	18.0%
General Obligation Debt	6,523.2	6,982.8	7,541.1	8,005.8	8,362.3	8,677.2	9,465.3	9,334.2	9,479.4	9,606.9	9,772.5	3,249.3	4.1%
Tax-supported Debt Total	**$9,350.3**	**$9,575.2**	**$10,210.5**	**$10,618.0**	**$11,160.0**	**$11,570.1**	**$12,559.2**	**$12,739.1**	**$13,106.6**	**$13,574.2**	**$13,896.7**	**$4,546.4**	**4.0%**
% Change/Prior Year	**7.1%**	**2.4%**	**6.6%**	**4.0%**	**5.1%**	**3.7%**	**8.5%**	**1.4%**	**2.9%**	**8.1%**	**9.1%**		
Authorities and Corporations Not Subject to Ceiling and Allocation Caps													
Health/Higher Education Facilities Authority	$8,660.7	$8,656.4	$8,913.1	$8,835.3	$8,837.2	$8,779.5	$8,664.0	$9,042.8	$9,063.4	$8,903.8	$8,339.6	-$321.2	-0.4%
Maryland Economic Development Corporation	2,329.9	2,471.2	2,523.1	2,391.0	2,253.8	2,192.7	2,426.6	2,311.0	2,301.9	2,373.0	2,453.7	123.8	0.5%
Authorities and Corporations Total	**$10,990.6**	**$11,127.6**	**$11,436.2**	**$11,226.3**	**$11,091.0**	**$10,972.2**	**$11,090.6**	**$11,353.8**	**$11,365.3**	**$11,276.8**	**$10,793.3**	**-$197.3**	**-0.2%**
% Change/Prior Year	**3.9%**	**1.2%**	**2.8%**	**-1.8%**	**-1.2%**	**-1.1%**	**1.1%**	**2.4%**	**0.1%**	**1.7%**	**-4.9%**		

CDA: Community Development Administration
MDOT: Maryland Department of Transportation

[1] Excludes bay restoration bonds.
[2] Excludes local government infrastructure.