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



Department of Legislative Services 2022

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Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland

December 2022

Contributing Staff

Writers
Patrick S. Frank
Elizabeth J. Allison
Andrew D. Gray
Emily R. Haskel
Matthew D. Klein
Steven D. McCulloch
Kelly K. Norton

Reviewers
Patrick S. Frank
David C. Romans

For further information concerning this document contact:

Library and Information Services
Office of Policy Analysis
Department of Legislative Services
90 State Circle
Annapolis, Maryland 21401

Baltimore Area: 410-946-5400 ● Washington Area: 301-970-5400
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TTY: 410-946-5401 ● 301-970-5401
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Home Page: http://mgaleg.maryland.gov

DEPARTMENT OF LEGISLATIVE SERVICES
OFFICE OF POLICY ANALYSIS
MARYLAND GENERAL ASSEMBLY

Victoria L. Gruber
Executive Director

Ryan Bishop
Director

December 2022

The Honorable Jim Rosapepe
Senate Chair, Spending Affordability Committee

The Honorable Marc Korman
House Chair, Spending Affordability Committee

Dear Chair Rosapepe and Chair Korman:

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 follows the format of previous reports and 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 (SAC).

CDAC complements the efforts of SAC 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 statistical analysis and data used in developing the recommendations were prepared by Patrick Frank with assistance from Elizabeth Allison, Andrew Gray, Emily Haskel, Matthew Klein, Steven McCulloch, and Kelly Norton. The manuscript was prepared by Brett Ogden.

Respectfully submitted,

Victoria L. Gruber
Executive Director

Ryan Bishop
Director

VLG:RB/bao

Legislative Services Building •90 State Circle • Annapolis, Maryland 21401-1991
410-946-5500 • FAX 410-946-5508 • TDD 410-946-5501
301-970-5500 • FAX 301-970-5508 • TDD 301-970-5401
Other areas in Maryland 1-800-492-7122

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New General Obligation Bond Authorization

The Capital Debt Affordability Committee (CDAC) recommended a limit of $600 million for new authorizations of general obligation (GO) bonds for fiscal 2024, which is below the $1.205 billion recommended by the Spending Affordability Committee (SAC) in December 2021 and the $1.125 billion programmed in the 2022 *Capital Improvement Program* (CIP). CDAC further recommended to maintain the $600 million authorization level for fiscal 2025. Beginning in fiscal 2026, the committee's recommendation returns the out-year authorization levels to its previously planned amounts ($1.145 billion in fiscal 2026) with 1% annual increases through the remainder of the five-year planning period.

In 2021, SAC recommended a debt limit of $1.205 billion for fiscal 2024. The level is affordable as it falls well within the affordability criteria, as discussed in Chapter 4. **Consistent with the SAC recommendation, the Department of Legislative Services (DLS) recommends that GO bond debt authorizations not exceed $1.205 billion in fiscal 2024.**

In Chapter 8, DLS examines the State's bond ratings and observes that the State maintains the highest bond rating in spite of having unusually high debt levels and unfunded pension liabilities. This is attributable to Maryland's strong and well-embedded financial practices, like having CDAC and SAC thoroughly review State debt at public hearings. **To maintain a AAA bond rating from all three rating agencies and keep interest rates low, DLS recommends that the State maintain its sound fiscal management and prudent debt policies including the policy that changes in GO bond authorizations are reviewed by CDAC and SAC before they are enacted in the capital budget bill.**

Bond Sale Premiums

Interest rates began increasing sharply in 2022. The 10-year U.S. Treasury Note rate increased from 1.98% on March 10 to 4.10% on November 11. Since there is an inverse relationship between interest rates and the value of bonds, premiums have been reduced substantially from the extraordinarily high amounts realized in 2020 and 2021. At this point, it is unclear what interest rates will be, what coupon rates underwriters will use to structure bond sales, and what the bond market's appetite for premiums will be. Prior to this recent period of high bond sale premiums, it was common to have bonds sell at modest premiums, usually for only a few million dollars. Current trends show interest rates for 10-year bonds approaching coupon rates that were commonly offered for prepandemic GO bond issuances. **DLS therefore recommends that the State take a cautious approach to estimating bond sale premiums prior to bond sales.**

Coupon Rate Paid for Bond Issuances

During the COVID-19 pandemic, the State changed its policy about the coupon rate that GO bonds paid to require a 5.00% coupon rate. This increases bond premiums in the short term while increasing debt service costs in the out-years. DLS' analysis of the factors that influence GO bonds' interest rates in Chapter 6 suggests that this policy increases the bonds' true interest cost (TIC). The State's fiscal condition is different now than when the policy to require a 5.00% coupon rate was introduced in July 2020. Maximizing premiums is not necessary at this time given the large general fund surplus. Instead, minimizing long-term debt service costs is a more appropriate policy. **Since requiring a higher coupon rate is an uncommon practice for which there is evidence of increased borrowing costs, DLS recommends that the State discontinue requiring a 5.00% coupon rate for GO bond issuances and adopt the policies in effect prior to the COVID-19 pandemic.**

Interest Rate Changes

The impact of increasing interest rates in 2022 has been to reduce bond sale premiums, but this has not affected debt service costs. The State Treasurer's Office and DLS' interest rate estimates assume a 5.00% coupon rate. Should bond sales' true interest cost be expected to exceed 5.00%, the assumed rate used for forecasting debt service should also be increased. **DLS recommends that interest rates are closely monitored and that interest rate assumptions increase if an anticipated TIC is more than 5.00%.**

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. The objective of the project was to examine whether operating leases can meet the definitions of assets or liabilities that could result in new standards for capital leases. Capital leases are discussed in Chapter 3.

After much deliberation, GASB approved Statement 87, which redefines lease rules. 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 GASB guidelines are effective with fiscal years beginning after June 30, 2022. **DLS recommends that CDAC examine the effect of the new GASB guidelines and adopt appropriate policies in response.**

Issuance of Transportation Debt

The Maryland Department of Transportation 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. Transportation bonds are discussed in Chapter 3. **It is recommended that the General Assembly continue to set an annual limit on the level of State transportation debt to keep debt outstanding within the 4% of personal income debt affordability criterion and debt service within the 8% of revenues affordability criteria.**

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 (WWTP). DLS projects that a program consistent with current laws and policies can be supported without issuing an additional $100 million in fiscal 2025. Fees supporting the BRF are scheduled to drop by 50% in fiscal 2031, which will limit the ability to support long-term debt service costs. BRF bonds are discussed in more detail in Chapter 3.

It is recommended that the General Assembly continue to limit BRF revenue bond issuances to a level that maintains debt outstanding within the 4% of personal income debt affordability criterion and debt service within the 8% of revenues affordability criteria. In addition, it is recommended that the Maryland Department of the Environment update the General Assembly during the 2023 session on the BRF revenue outlook. DLS also recommends against issuing any new bonds since the original goal of upgrading the 67 major WWTP plants is approaching completion and there is a short time horizon between any new issuances and the reduction in the fees supporting the BRF on June 30, 2030.

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 2023 session. This amount is the same amount authorized in the 2022 session and is consistent with the amount programmed for the 2023 session in the 2022 CIP. Academic bond issuances are discussed in Chapter 7. **DLS concurs with the committee's recommendation 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 fall 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; 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 GO bond authorization level of $600 million in fiscal 2024, which is below the $1.205 billion recommended by the Spending Affordability Committee in December 2021 and the $1.125 billion programmed in the 2022 *Capital Improvement Program* (CIP). CDAC further recommended to maintain the $600 million authorization level for fiscal 2025. Beginning in fiscal 2026, the committee's recommendation returns the out-year authorization levels to its previously planned amounts ($1.145 billion in fiscal 2026) with 1% annual increases through the remainder of the five-year planning period. The lower authorization level recommended by the committee reflects caution regarding the economic outlook and is based on the availability of general funds to support the capital program. This is made possible due to recent improvements in the State's General Fund, which closed out fiscal 2022 nearly $900 million above budgeted estimates.

Higher Education Academic Debt

CDAC recommends a new debt authorization of academic revenue bonds in the amount of $30 million for the 2023 session. This amount is the same amount authorized in the 2022 session and is consistent with the amount programmed for the 2023 session in the 2022 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, with 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 design, 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. The Spending Affordability Committee (SAC) recommended a GO bond authorization level of $1.205 billion in fiscal 2024, with recommended funding increasing by 4% annually for the remainder of the five-year planning period. As shown in **Exhibit 3.1**, the SAC recommendation would provide $6.5 billion of new GO bond authorizations in fiscal 2024 through 2028. Combined capital GO bond and general fund requests for this same period total $12.3 billion, or $3.9 billion more than the recommended authorization level.

Exhibit 3.1
Capital Funding Requests
Fiscal 2024-2028
($ in Millions)

	2024	2025	2026	2027	2028	Total
State-owned Projects	$1,195	$1,365	$1,445	$1,355	$1,035	$6,395
Capital Grant and Loan Programs	1,075	1,110	1,275	1215	1,235	5,910
Total Requests (GO Bonds and General Funds)	**$2,270**	**$2,475**	**$2,720**	**$2,570**	**$2,270**	**$12,305**
Planned General Funds	445	435	440	420	170	1,910
SAC Recommended GO Bond Authorization	1,205	1,250	1,300	1,355	1,410	6,520
Total Funding Planned/Authorized	**$1,650**	**$1,685**	**$1,740**	**$1,775**	**$1,580**	**$8,430**
Requests Over Planned Funding	**$620**	**$790**	**$980**	**$795**	**$690**	**$3,875**

GO: general obligation
SAC: Spending Affordability Committee

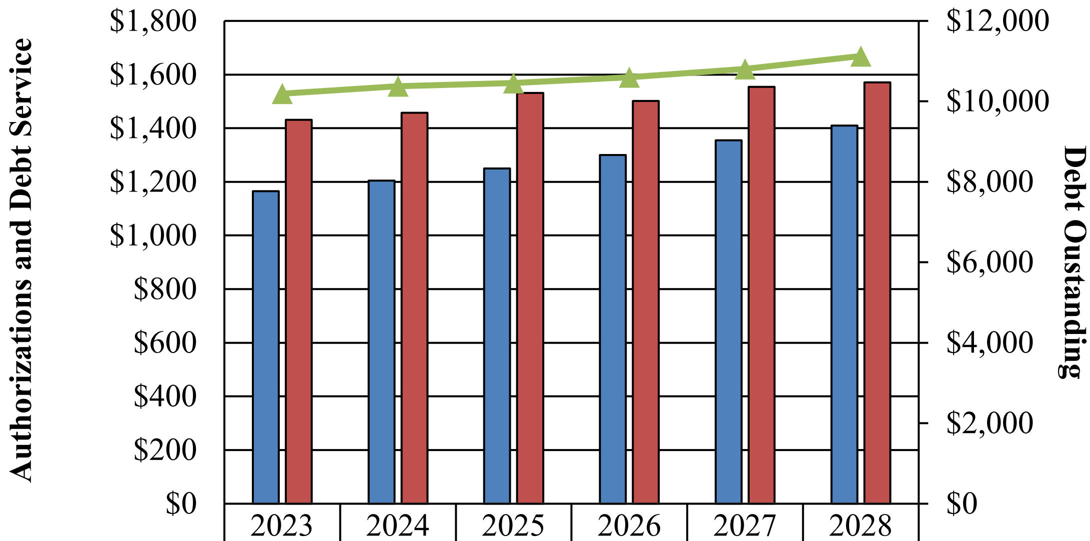
Note: Planned general funds includes $12 million for the Historic Revitalization Tax Credit in fiscal 2024. Total requests do not include miscellaneous project requests to the Governor or the legislature. Numbers may not sum to total due to rounding.

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

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, the Capital Debt Affordability Committee (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 shows the SAC recommended GO bond authorization level as well as debt service costs and debt outstanding over the five-year planning period from fiscal 2024 to 2028.

Exhibit 3.2
General Obligation Bond Authorizations, Debt Service Costs, and Debt Outstanding
Fiscal 2024-2028
($ in Millions)



	2023	2024	2025	2026	2027	2028
Authorizations	$1,165	$1,205	$1,250	$1,300	$1,355	$1,410
Debt Service	1,431	1,458	1,532	1,502	1,554	1,571
Debt Outstanding	10,191	10,374	10,457	10,601	10,808	11,128

Source: Department of Legislative Services

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. Bond refunding has reduced debt service costs by $402 million since fiscal 2010.

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 advanced refunding issuances, which had become common. From fiscal 2010 to 2018, there were 11 advanced refunding issuances; there were no refunding issuances between August 2017 and March 2020. Without advanced refunding, possible refunding strategies to take advantage of low rates are to:

- ***Issue Taxable Bonds If Interest Rates Are Low Enough to Realize Savings:*** While the law prohibits advanced refunding tax-exempt bonds, there is no prohibition on advanced refunding taxable bonds. Taxable bonds are more expensive than tax-exempt bonds. However, if interest rates decline so that taxable bond rates are low enough, issuing taxable bonds could lower debt service costs. The State can also issue forward delivery bonds if STO is concerned that interest rates are favorable and could increase; and

- ***If Taxable Bonds Do Not Provide Sufficient Savings, Delay the Refunding until 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. Then 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 savings early of 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.

Forward Delivery Bonds Issued in August 2021

At the August 2021 bond sale, STO projected that it was the appropriate time to issue these forward funding bonds. Interest rates were low, and STO was concerned about the rising possibility that inflation or other factors will lead to an increase in interest rates. So that the State could still get the benefit of currently low interest rates, forward funding bonds were issued that locked into a low rate. In this sale, the State issued $237 million in forward funding bonds, of which $114 million will be settled on or near March 1, 2022, and $123 million will be settled on or near May 3, 2022. As discussed in Chapter 8, interest increased in 2022, and the State was fortunate to have these arrangements because the savings would have evaporated. **Exhibit 3.3** provides key summary data from the sales.

Exhibit 3.3

Tax-exempt Forward Delivery Refunding Bonds

August 11, 2021

($ in Thousands)

Description	Delivery Date	True Interest Cost	Average Maturity (in years)	Amount Sold	Amount Called	Debt Service Savings	NPV of Savings
Series C	March 1, 2022	0.87%	5.73	$113,840	$134,655	$22,387	$21,274
Series D	May 3, 2022	1.04%	6.28	123,285	141,075	19,010	17,833
Total				**$237,125**	**$275,730**	**$41,397**	**$39,107**

NPV: net present value

Source: B of A Securities, August 2022

This bond sale is more complicated and unique than previous sales have been, so this sale is a negotiated sale instead of a competitive bid. STO advises that Bank of America Securities, Inc. (B of A Securities) was chosen to be the underwriter because its affiliated underwriter, Bank of America Merrill Lynch (BAML), has been offering competitive bids recently. For example, BAML offered the lowest bid for both tax-exempt issuances during the February 2021 sale. STO believes that selecting a competitive bidder for this negotiated sale could also encourage other underwriters to offer more competitive bids for traditional tax-exempt and taxable issuances.

With this sale, the State issued forward delivery bonds to retire GO bonds that are callable in calendar 2022. The sale's initial closing date was on August 25, 2021, with settlement dates in March 1, 2022, and May 3, 2022, depending on the call date of the refunded bonds. The State entered into a Forward Delivery Bonds Purchase Agreement with the underwriter, B of A Securities. The forward delivery bonds are sold to third-party purchasers. B of A Securities entered into delayed delivery contracts with the purchasers of the forward delivery bonds. The State was not party to the delayed delivery contracts. Except as specified, a purchaser of forward delivery bonds would not be able to withdraw their orders on the 2022 settlement dates because of market or credit changes, including changes in the financial condition, operations, performance, or prospects of the State occurring between the closing date in August 2021 and the settlement dates in 2022. As such, the purchasers of the forward delivery bonds assume the market risk.

In addition, the Forward Delivery Bonds Purchase Agreement requires that certain conditions be met by the State prior to the March 2022 and May 2022 settlement dates. Included in these conditions were that the bonds maintain an investment grade rating (ratings of BBB- by Standard and Poor's and Fitch and Baa3 by Moody's), that representations made by the State were accurate, and that the State performs all required obligations. One such obligation is that the State prepare an Updated Official Statement between three weeks and five days before the respective settlement dates. The forward delivery bonds closed as expected, and the State realized the savings.

High Interest Rates Reduce GO Bond Refunding Opportunities

Since the end of calendar 2021, interest rates have increased substantially. For example, The Bond Buyer's 20-bond index increased from 2.05% on December 30, 2021, to 4.02% on September 29, 2022. Higher interest rates reduce opportunities to reduce debt service costs by calling and refunding current issuances. Changes in interest rates and the effect of higher interest rates on long-term debt service costs is discussed in Chapter 5.

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 2010 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 the final debt service payment is in fiscal 2026. The debt service is deducted from transfer tax revenues allocated to DNR and MDA proportionately based on the share of the issuance each received.

Exhibit 3.5
Program Open Space GO Bonds Debt Service Payment Schedule
Fiscal 2023-2028
($ in Millions)

	2023	2024	2025	2026	2027	2028
Debt Outstanding	$15.0	$8.4	$1.6	$0.0	$0.0	$0.0
Debt Service	7.0	7.0	7.0	1.7	0.0	0.0

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	Total 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." The committee did not reach any agreement on reductions, and mandatory reductions took effect January 2013. Sequestration cuts were spread equally over nine years and divided equally between defense and nondefense spending, with some programs exempt from sequestration, such as Medicaid and Social Security. Legislation provided some relief to BCA caps in every fiscal year since federal fiscal 2013 (American Taxpayer Relief Act of 2012). The Bipartisan Budget Act of 2019 increased spending caps and extended mandatory sequester spending to federal fiscal 2029.

Direct pay bonds are affected by mandatory reductions required through sequestration. STO advises that this reduces federal fund reimbursements for these bonds. As federal reimbursements decline, this mandatory reduction also declines. The Internal Revenue Service advises that the federal sequestration rate is expected to be 5.7% from federal fiscal 2021 to 2030. **Exhibit 3.7** shows that federal grants are expected to decline. These grants are winding down with the final payment in fiscal 2028.

Exhibit 3.7

Effect of Sequestration on Federal Fund Revenues

Fiscal 2022-2024

($ in Thousands)

Issuance	2022	2023	2024	Total
February 2010 Build America Bonds	$3,713	$2,855	$1,952	$8,520
July 2010 Build America Bonds	1,094	968	708	2,769
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	*-456*	*-418*	*-352*	*-1,226*
Total	**$7,864**	**$6,919**	**$5,822**	**$20,605**

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.

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 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 2020, the State refunded the 2009 BABs. Federal funds were lost, but the interest savings exceeded the loss of federal funds. In January 2011, DLS estimated that BABs reduced State GO bond debt service costs by $39 million over the life of the bonds. Actual savings were less due sequestration and refunding the 2009 bonds. The 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, Special Transportation Project Revenue Bonds, 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 effects of the COVID-19 pandemic and the actions taken by the State to stop the spread of the virus had an adverse impact on MDOT's financial condition and operations. Revenue attainment for almost all TTF tax and fee revenues 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 also experienced declines due to decreased transit ridership and passenger air travel.

With the rollout of COVID-19 vaccines, travel has rebounded to varying degrees among the different modes. Although all modes of travel have experienced increased volumes compared to the early months of the pandemic, travel volumes for most modes were still lower at the end of May 2022 than at the same point in 2019. Statewide weekly traffic and MDTA customer traffic were down by 6.25% and 2.8%, respectively, comparted to prepandemic levels at the end of May 2022, but passenger traffic for all services of the Maryland Transit Administration (MTA) was down 46%, and passenger traffic at the Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall Airport) was down 15% compared to prepandemic levels.

Federal aid through COVID-19 stimulus legislation has helped support MDOT operations and replace revenue losses attributed to the pandemic. In support of its operating budget, MDOT used $358 million in COVID-19-related federal aid in fiscal 2021, $725 million in fiscal 2022, and expects to use $303 million in fiscal 2023, and $70 million in fiscal 2024. MDOT also received a capital allocation of $106.3 million for the Purple Line that was spent during fiscal 2022. Even with this federal assistance, the capital program was impacted by the pandemic. The 2021 *Consolidated Transportation Program* (CTP) was $1.2 billion smaller than the previous CTP. The outlook has improved considerably over the last two years. Most tax and fee revenue sources are projected at above prepandemic levels in the draft 2023 TTF forecast.

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.

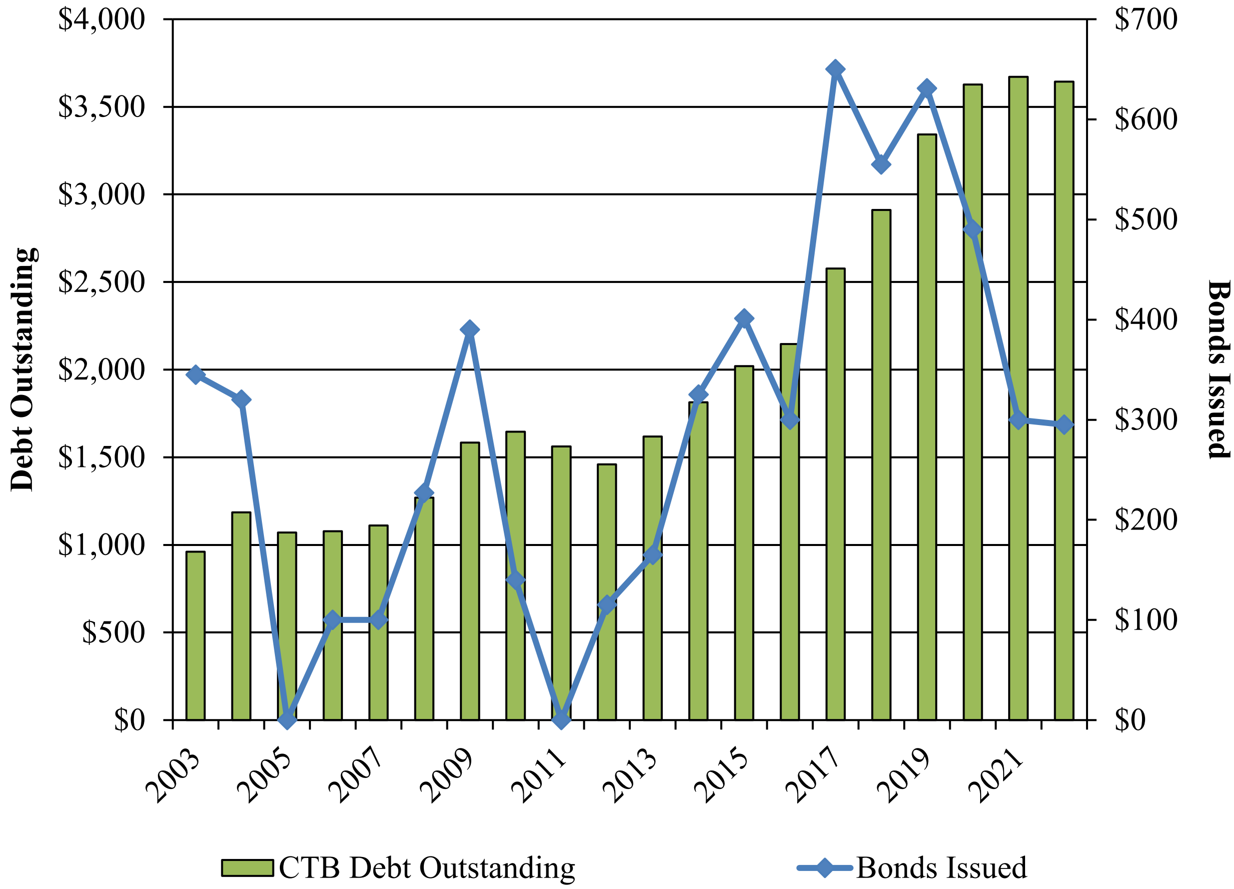
Section 3-202(c) of the Transportation Article further requires the General Assembly to establish each year in the State budget the maximum unpaid principal balance in bonds that may be outstanding at the end of the forthcoming year. The fiscal 2023 Budget Bill set the maximum ceiling for June 30, 2023, at $3,321 million. DLS estimates that as of June 30, 2023, debt outstanding will total $3,315 million.

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, 2023, MDOT will have net income coverage of 4.1 and pledged taxes coverage of 5.1.

MDOT has issued new (*e.g.*, nonrefunding) consolidated transportation bonds in 18 of the last 20 years, with the only exceptions being in 2005 and 2011.

Exhibit 3.8 illustrates annual bond sales and changes in debt outstanding from fiscal 2003 to 2022. In fiscal 2022, MDOT's net debt outstanding was $3.6 billion, well under the $4.5 billion debt outstanding debt limit.

Exhibit 3.8
Maryland Department of Transportation
Bonds Issued and Net Debt Outstanding
Fiscal 2003-2022
($ in Millions)



CTB: consolidated transportation bond

Source: Maryland Department of Transportation; Department of Legislative Services

Special Transportation Project Revenue Bonds

In 2014, the General Assembly passed legislation allowing MDOT to issue transportation project revenue bonds backed by the revenues attributable to the facilities being financed for the payment of debt service on the bonds. Bonds issued under this authority may not include a pledge of the tax revenues accruing to the TTF and are not supported by tax revenues, like the gas tax, so are not considered to be tax-supported debt. Special Transportation Project Revenue Bonds will be a component of the department's nontraditional debt.

In February 2021, MDOT issued the first bonds under this authority, refunding bonds totaling $220 million to refund debt previously issued for certain projects at BWI Marshall Airport. In July 2021, MDOT issued $190 million in new money bonds to fund construction of the Concourse A and B Connector and Baggage Handling System Replacement project at BWI Marshall Airport. The refunding bonds have a 10-year maturity, and the new money bonds have a 30-year maturity.

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 DLS forecast assumes the same level of debt issuances include in MDOT's 2023 draft forecast. Following is a discussion of the differences between the DLS and MDOT forecasts with respect to revenues and spending.

Total six-year revenues in the DLS forecast are a net $656 million higher than projected by MDOT. DLS projects higher gasoline consumption levels over the six-year forecast compared to levels assumed by MDOT resulting in an additional $669 million over the forecast period. The DLS assumes title tax revenues will grow at an average annual rate of 2.3% compared with MDOT's projection of 1.9% average annual growth resulting in an additional $111 million difference. These increases in the DLS forecast are slightly offset by lower corporate income tax projections over the six-year forecast totaling $124 million. The DLS forecast of corporate income tax revenue uses the September estimates released by the Board of Revenue Estimates (BRE), which were released after MDOT released its draft forecast. MDOT's final 2023 forecast will use the BRE December estimates as required in statute.

On the spending side of the equation, the DLS forecast assumes $445 million in higher operating expenses over the six-year forecast. The higher operating spending is based on the DLS baseline spending estimate for fiscal 2024 that is $33 million higher than fiscal 2024 spending assumed in the MDOT forecast and a higher rate of growth in the DLS forecast (3% excluding Purple Line availability payments) than in the MDOT forecast (2.1% excluding Purple Line availability payments). The 3% inflator used for fiscal 2025 and beyond in the DLS forecast is the average annual rate of increase in actual operating expenses for the five-year period ending with fiscal 2022. For the final forecast, MDOT is required by statute to use the five-year average annual rate of change in actual operating expenses except that the rate used cannot increase or decrease by more than 0.5% from the rate of increase used in the previous forecast. The January 2022 forecast used a rate of 1.9% which means MDOT's January 2023 forecast will use a 2.4% inflator for operating expenses.

The DLS and MDOT forecasts both 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. The higher DLS operating expenses estimate is more than offset by higher estimated revenues, which results in slight improvements in the debt service coverage ratios relative to the MDOT forecast for all but the final year of the forecast. **Exhibit 3.9** shows the planned level of debt issuances, debt outstanding, and debt service included in the MDOT and DLS six-year forecasts, and net income debt service coverage ratios in each forecast

Exhibit 3.9

Consolidated Transportation Bonds

Fiscal 2023-2028

($ in Millions)

				Net Income Debt Service Ratio	
Fiscal Year	**Issued**	**Outstanding**	**Debt Service**	**MDOT**	**DLS**
2023	$0	$3,315	$480	4.0	4.1
2024	60	3,080	430	4.1	4.2
2025	420	3,188	443	3.5	3.8
2026	440	3,318	441	3.2	3.3
2027	490	3,481	464	3.0	3.1
2028	550	3,674	498	2.9	2.8
Total	**$1,960**		**$2,655**		

DLS: Department of Legislative Services MDOT: Maryland Department of Transportation

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. Transportation debt 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 keep debt outstanding within the 4% of personal income debt affordability criterion and debt service within the 8% of revenues affordability criterion.**

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 was 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. 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 $160 million as of June 30, 2022. Debt service costs were $29 million in fiscal 2022. This excludes EPCs for the Ravens and Orioles stadiums that are included in the MSA totals. The last payment for the MDOT headquarters building was in fiscal 2022.

Exhibit 3.10

Tax-supported Capital Lease Debt Outstanding and Debt Service

($ in Millions)

State Agency/Facility	Debt Outstanding June 2022	Debt Service Fiscal 2022
State Treasurer's Office		
Capital Equipment Leases	$10.0	$4.1
Energy Performance Projects[1]	3.9	2.6
Maryland Department of Transportation		
Headquarters Office Building	0.0	2.8
Airport Shuttle Buses	19.1	2.1
Department of General Services		
Prince George's County Justice Center	10.2	1.5
Maryland Transportation Authority		
Annapolis State Office Parking Garage	13.5	1.5
Maryland Department of Health		
Public Health Laboratory	102.5	14.0
Total	**$160.0**	**$28.6**

[1] Energy performance leases include one University of Baltimore project, which is not State debt, and two Maryland Stadium Authority projects that are included in the stadium authority debt when analyzing affordability in Chapter 4.

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 five projects are excluded from CDAC calculations. Debt outstanding at the end of fiscal 2022 was $3.9 million, and fiscal 2022 debt service totaled $2.7 million.

Exhibit 3.11 shows that five EPC projects are included as capital leases. The university project is not State debt, the MSA projects are included in the MSA debt, and the two other projects are included in the leasing affordability calculation in Chapter 4.

Exhibit 3.11
Tax-supported Energy Leases Lacking Surety Guarantee
Fiscal 2022
($ in Thousands)

Agency	Status	Debt Outstanding as of June 30, 2022	Debt Service
University of Baltimore	Non-State Debt	$1,267	$649
Department of Veterans Affairs	State Debt	135	57
Maryland Stadium Authority for Ravens Stadium	State Debt	129	263
Maryland Stadium Authority for Orioles Stadium	State Debt	348	716
Maryland Port Administration	State Debt	1,999	964
Total		**$3,879**	**$2,650**

Source: State Treasurer's Office

Section 12-301 of the State Finance and Procurement Article limited the duration of EPCs to 15 years. Chapter 247 of 2022 increases EPC's duration to 30 years. DGS advises that there are projects with a useful life and payback of more than 15 years. This change is expected to increase the number of viable EPCs. Although there may not be many 30-year agreements, there appear to be sufficient agreements that require more than 15 years. The effective date of the legislation is July 1, 2022.

Changes to 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. For years, under GASB guidelines, leases that meet at least one of the following criteria are considered 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 multi-year 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 Rules Require Government to Recognize Leases Exceeding 12 Months

In 2013, GASB initiated a project to reexamine issues associated with lease accounting. The objective of the project was to examine whether operating leases can 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 requirements of the proposed statement would be effective for reporting periods beginning after December 15, 2019, with earlier application permitted. In response to the coronavirus pandemic, GASB 95 postponed the effective date by 18 months to June 15, 2021. Fiscal 2022 was the first State fiscal year after the effective date.

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 amortize the leased asset over the term of the lease and recognize interest expenses related to the lease liability. Exceptions are provided for short-term leases lasting 12 months or less, along with financed purchases.

The new rules 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*, 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. 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 is not supported by State revenues.

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 challenge is the State has entered into hundreds of small leases, which all require amortization tables to correctly estimate debt outstanding. Since the CDAC measures debt for a six-year period, this requires reporting amortization tables for a decade beyond the current year. To do this, the State would need to build a larger administrative infrastructure, which could divert resources from other functions. One approach to simplify the process could be to exclude leases with an estimated debt outstanding below a certain threshold.

DLS recommends that CDAC examine the effect of the new GASB guidelines in 2023 and develop a policy in response to the new GASB 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. BRF is funded 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

The most recent data provided by MDE shows that the BRF closing balance increased from $116.1 million in fiscal 2020 to $136.1 million in fiscal 2022. The increasing balance appears to reflect the length of time that it takes for local governments to seek reimbursement for project expenditures. The increasing fund balance has implications for the revenue bond schedule.

Revenue Bond Schedule

There is no need to issue $100 million of revenue bonds in fiscal 2025, as currently projected by MDE. The ENR upgrades to the 67 major WWTPs have largely been completed – 65 facilities are in operation, 1 facility is under construction, and 1 facility is in planning, and there is an influx of federal Infrastructure Investment and Jobs Act funding for water quality projects through the Water Quality Revolving Loan Fund. This funding totals $269.6 million between federal fiscal 2022 and 2026, of which 49% can be used to provide 100% principal forgiveness or grants, or a combination of these, which may help to address some demands on the BRF from the additional uses authorized by legislation in recent years. Of note, MDE still expects there to be limited funding available from the BRF: the 2022 *Capital Improvement Program* (CIP) schedule includes only $20 million in special funds from the BRF between 2024 and 2027 and programs GO bond authorizations of $45.0 million in fiscal 2026 and $55.0 million in fiscal 2027. MDE has indicated that the GO bonds will allow it to continue to offer BRF grants at a level consistent with historical funding levels.

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 is retaining the option to issue additional revenue bonds due to the availability of favorable issuance terms, the future demands for project funding, particularly from minor WWTPs but for other uses of the BRF as well, and additional funding being transferred from the BRF Wastewater Account to other purposes, such as the Clean Water Commerce Account.

Based on the current issuance stream, the debt outstanding peaked at $301.6 million in fiscal 2016 and then has decreased steadily over the time period shown in **Exhibit 3.12**. Debt service costs held steady at $31.8 million in fiscal 2022. Overall, issuances are limited by the

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[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.

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 scheduled to drop to $30 per year. This would limit the final issuance to a five-year maturity if bonds are issued in fiscal 2025. Therefore, based on current law and project schedules reported in the 2022 CIP, and past revenue uncertainties, it does not appear necessary or prudent to issue the $100 million in revenue bonds in fiscal 2025, and DLS does not forecast that these bonds will be issued under current laws and policies.

Exhibit 3.12
Bay Restoration Wastewater Treatment Fund
Fiscal 2022-2028
($ in Millions)

	2022	2023	2024	2025	2026	2027	2028
Debt Outstanding	$186.2	$161.6	$140.4	$118.1	$94.7	$70.4	$44.9
Debt Service	31.8	31.8	27.2	27.2	27.1	27.3	27.7

Source: Maryland Department of the Environment

Prioritization

As of fiscal 2023, the funding schedule, in order of priority, is as follows:

- ***Debt Service:*** payment of debt service on outstanding bonds;
- ***Operation and Maintenance Grants:*** operation and maintenance grants to certain owners of WWTPs that are operating at or above ENR levels to partially offset the cost of operation and maintenance using up to 10% of fees collected annually;
- ***Operating Expenses:*** reasonable operating expenses to administer the account (up to 1.5% of account funds);
- ***Major WWTP:*** 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;
- ***Minor WWTP:*** 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;
- ***Atlantic and Coastal Bays WWTP Upgrades:*** funding up to 100.0% for ENR upgrades at WWTPs that discharge into the Atlantic Coastal Bays or other waters of the State;

- ***Additional Improvements WWTP Upgrades:*** funding future upgrades of WWTPs to achieve additional nutrient removal or water quality improvement that is greater than ENR treatment levels;

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

- ***Septic Systems and Sewage Holding Tanks:*** costs associated with upgrading septic systems and sewage holding tanks;

- ***Stormwater:*** 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

- ***Stormwater Alternative Compliance Plans:*** funding up to 100% for stormwater alternative compliance plans.

In addition to the funding schedule noted above, there were changes made in the 2021 and 2022 sessions that impact how the BRF is used. Legislation passed during the 2021 session implemented two mandatory distributions from the BRF, which may only happen after funding any cost-effective minor WWTP upgrades, as follows:

- ***Clean Water Commerce Act:*** Chapters 694 and 695 of 2021 (Clean Water Commerce Act), beginning in fiscal 2022, transfer $20 million annually to the Clean Water Commerce Account to purchase environmental outcomes in support of the State's efforts to achieve the Chesapeake Bay Total Maximum Daily Load; and

- ***Tree Solutions Now Act:*** Chapter 645 of 2021 (Tree Solutions Now Act), in fiscal 2023 only, transfers to (1) the Chesapeake Bay Trust's Urban Trees Program ($10 million); (2) DNR's Chesapeake and Atlantic Coastal Bays 2010 Trust Fund ($2.5 million); and (3) MDA for tree plantings under the Conservation Reserve Enhancement Program and other tree-planting programs on agricultural land ($2.5 million).

Chapter 150 of 2021 (BRFA) included a provision limiting funding to upgrade privately owned WWTPs to ENR to 50% of the eligible costs of the planning, design, construction, and upgrade. This change impacted the "Major WWTP" and "Minor WWTP" funding prioritizations noted above. Subsequently, Chapters 341 and 342 of 2022 (BRF – Intended Use Plans and Privately Owned Wastewater Facilities) altered the definition of privately owned wastewater facility to mean a wastewater facility that is owned by a private entity and provides wastewater treatment or disposal services to multiple residential dwelling units. This change effectively made a facility that provides wastewater treatment or disposal services solely to commercial or industrial entities ineligible for funding from the BRF. In addition, Chapters 341 and 342 prohibited MDE from providing funding from the BRF to the owner of a privately owned facility if either MDE or the U.S. Environmental Protection Agency has determined that, in the two years immediately preceding the date on which the facility owner submitted a proposal for funding from the BRF, the facility did not comply with a discharge permit issued by MDE. However, MDE may still provide funding to a wastewater facility that would be ineligible because of this restriction if MDE determines, based on proof submitted by the facility owner when submitting a funding proposal, that the facility owner lacks the financial capacity to purchase or upgrade a wastewater treatment system that would bring the facility into compliance with the discharge permit.

Revenue Fluctuations from Fiscal 2019 to 2021

The BRF fee revenues have fluctuated over the last couple of years. The reasons for the fluctuations include a ransomware attack on Baltimore City that delayed payments in fiscal 2019 and most recently due to an entity not paying for three quarters of fiscal 2021.

A complicating factor in any analysis of revenues is the difference between how revenues are accounted for by the Comptroller and MDE. The Comptroller reports revenues on an accrual basis – beginning with June, the amounts collected each month with a final July accrual period added to the end of each fiscal year's revenue collection. In contrast, MDE accounts for revenues on a cash basis, so revenues in each fiscal year do not line up. While there have been fluctuations in the timing of revenue collections, there does not appear to be a substantial change in the amount of overall revenues collected.

Exhibit 3.13 shows the history of the bay restoration fee revenue in terms of how the Comptroller and MDE reflect revenues and also in terms of the changes between years. One of the major changes in the revenue is the doubling of the fee by Chapter 150 of 2012. Exhibit 3.13 reflects that, overall, \$1.5 billion has been collected and that the greatest change between recent years is the \$23.1 million decrease between fiscal 2020 and 2021, according to the Comptroller's accrual accounting. This big decrease is somewhat evened out by MDE's cash accounting basis, which reflects an increase of \$1.7 million between fiscal 2020 and 2021. The annual average revenues for both MDE and the Comptroller is approximately \$113 million between fiscal 2014, the first full year of revenues after the fee doubling, and fiscal 2022, the last full year of revenues. Therefore, while there have been revenue fluctuations, it appears that the BRF revenue is stable.

Exhibit 3.13
Bay Restoration Fund Revenues
Difference Between MDE and Comptroller Accounting Methods
Fiscal 2005-2023
($ in Millions)

Year	Revenues MDE	Revenues Comptroller	MDE and Comptroller Revenue Difference	MDE Annual Revenue Change	MDE Annual Revenue Percent Change	Comptroller Annual Revenue Change	Comptroller Annual Revenue Percent Change
2005	$7.0	$7.0	$0.0				
2006	57.7	57.7	0.0	$50.7	721%	$50.7	721%
2007	56.1	69.1	13.0	-1.6	-3%	11.5	20%
2008	56.4	54.7	-1.7	0.3	1%	-14.4	-21%
2009	53.4	53.3	0.0	-3.1	-5%	-1.4	-2%
2010	54.8	54.4	-0.4	1.5	3%	1.1	2%
2011	54.6	55.5	0.9	-0.2	0%	1.1	2%
2012	54.6	56.0	1.4	0.0	0%	0.5	1%
2013	92.8	102.1	9.4	38.2	70%	46.2	82%
2014	108.5	110.7	2.2	15.7	17%	8.5	8%
2015	111.8	109.8	-2.0	3.3	3%	-0.9	-1%
2016	123.7	124.3	0.6	11.9	11%	14.5	13%
2017	112.7	116.0	3.3	-11.0	-9%	-8.3	-7%
2018	113.5	115.3	1.8	0.9	1%	-0.7	-1%
2019	114.2	107.5	-6.7	0.7	1%	-7.8	-7%
2020	107.6	121.2	13.6	-6.6	-6%	13.6	13%
2021	109.3	98.1	-11.2	1.7	2%	-23.1	-19%
2022	115.4	119.4	4.0	6.1	6%	21.3	22%
2023	28.1	0.0	-28.1				
Total	**$1,532.1**	**$1,532.1**	**$0.0**				

MDE: Maryland Department of the Environment

Note: MDE’s records indicate slightly different revenue amount for fiscal 2007 ($57.5 million) and fiscal 2008 ($55.1 million).

Source: Comptroller of Maryland; Maryland Department of the Environment

Moody's Downgrades Debt

The rating agency Moody's has now downgraded Bay Restoration revenue bonds twice. The first downgrade was from Aa1 to Aa2 on December 10, 2010, which was primarily due to the transfer of funds from the BRF to Maryland's General Fund in fiscal 2010 to use the funds to reduce budget gaps. The downgrade on December 10, 2010, also reflected that consumption-sensitive revenues were vulnerable to economic cycles and long-term water consumption trends and that the additional bonds test of 1.1 times was weak.

Moody's downgraded the Bay Restoration revenue bonds again on January 31, 2022, from Aa2 to Aa3 due to the significant volatility and declines in BRF fee revenue caused both by the reduced usage and delayed remittances from local governments during the COVID-19 pandemic. Moody's noted that the BRF revenue "…structure depends on multiple utilities, each with its own enforcement and process, to collect and remit Bay Restoration Fund fees" and that "Greater remote work post-pandemic will shift some usage away from commercial property, which has a consumption-sensitive fee structure, and toward residential property, which does not."

MDE notes that discussions with Moody's indicate that a rating upgrade is unlikely, although Moody's rating action included possible reasons both for an upgrade and a further downgrade. The possible reasons for an upgrade include a stronger leverage constraint and a binding non-impairment provision that better protects BRF equity balances. The possible reasons for a further downgrade include a significant fall-off in revenue and a material increase in leverage. Of note, the recent revenue volatility noted by Moody's in its BRF revenue bond downgrade appears to have been resolved by the collection of delinquent payments from an entity that had not paid for three quarters of fiscal 2021.

It is recommended that the General Assembly continue to limit BRF revenue bond issuances at a level that maintains debt outstanding within the 4% of personal income debt affordability criterion and debt service within the 8% of revenues affordability criteria. In addition, it is recommended that MDE update the General Assembly during the 2023 session on the BRF revenue outlook. DLS also recommends against issuing any new bonds since the original goal of upgrading the 67 major WWTP plants is approaching completion and there is a short time horizon between any new issuance and the sunsetting of the fee increase on June 30, 2030.

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. More recently, MSA's role has been expanded to issue (1) up to $1.1 billion in debt for the purpose of constructing and improving public school facilities in Baltimore City; (2) up to $2.2 billion for public school facilities statewide; (3) up to $375 million for horse racing and community development. In the most recent legislative session, Chapters 60 and 61 of 2022, expand authorizations for Orioles and Ravens stadiums and authorize MSA to issue bonds for Statewide Sports and Entertainment Facilities and Blue Line Corridor (BLC) projects in Prince George's County. The Baltimore City school debt, statewide school debt, and racing debt is not considered a debt of the State. **Exhibit 3.14** 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 3.14
Maryland Stadium Authority
Revenue Debt Authorizations, Debt Outstanding, and Debt Service
($ in Thousands)

Project	Revenues Supporting Debt	Authorized	Outstanding on June 30, 2023	Debt Service Fiscal 2023
State Debt				
Hagerstown Multi-Use Sports and Events Facility	General Fund	$59,500	$57,215	$3,749
Baltimore City Convention Center	General Fund	55,000	0	0
Ocean City Convention Center	General Fund	24,500	20,160	1,654
Montgomery County Conference Center	General Fund	23,185	1,485	1,555
Baseball and Football Stadiums and Camden Station[1]	Lottery and MSA	n/a	18,790	7,701
Subtotal		***$162,185***	***$108,471***	***$14,660***

Project	Revenues Supporting Debt	Authorized	Outstanding on June 30, 2023	Debt Service Fiscal 2023
Non-State Debt				
Built to Learn	ETF	$2,200,000	$622,595	$33,525
Baseball and Football Stadiums and Camden Station[1]		1,200,000	47,480	6,936
Baltimore City Public Schools	Lottery, Baltimore City, State grants to Baltimore City	1,100,000	1,026,575	59,996
Blue Line Corridor Projects	Lottery	400,000	0	0
Horse Racing Facilities	Lottery	375,000	0	0
Sports Entertainment Facilities Financing Fund	Lottery	200,000	0	0
Supplemental Facilities Fund	MSA	25,000	0	0
Subtotal		***$5,500,000***	***$1,696,650***	***$100,457***
Total		**$5,662,185**	**$1,794,300**	**$115,116**

ETF: Education Trust Fund 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. Chapter 60 of 2022 increased the limit from $235 million to $1,200 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, Education Trust Fund (ETF) 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 supported by lottery revenues.

- The first one is for Camden Yards and the baseball and football stadiums. Chapter 60 of 2022 increases the cap on annual lottery revenues for debt service supporting the stadiums and Camden Yards from $20 million to $90 million. 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 back 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 lottery commitment is for Baltimore City Public Schools (BCPS) with a $20 million cap. The financing fund is the pledge to the bondholders. These are parity bonds.

- The third lottery commitment is for the Racing and Community Development 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

Prior to the enactment of Chapter 60, MSA's revenues have been used to support debt service for Camden Yards and the baseball and football stadiums when debt service exceeded $20 million. MSA revenues can also be used to support the Supplemental Facilities Fund.

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.

Education Trust Fund

A share of proceeds from video lottery terminals and table games at licensed gaming facilities is deposited into the ETF. The Built to Learn Act (Chapter 20 of 2020) required the Comptroller to make semiannual deposits from the ETF to the Supplemental Public School Construction Financing Fund beginning in fiscal 2022. Chapter 20 was contingent on the enactment of the Blueprint for Maryland's Future (House Bill 1300 of 2020), which the Governor vetoed. The veto was overridden, but not until after the budget bill was introduced, so the initial payment into the supplemental financing fund is in fiscal 2023. Annual deposits are $60 million in fiscal 2023, $125 million in fiscal 2024 and subsequent years, and $100 million beginning in fiscal 2026 if Prince George's County enters into a public-private partnership (P3) to construct schools.

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. Chapter 60 increased the statutory limit for bonds for the stadiums and Camden Yards complex from $235 million to $1.2 billion in outstanding debt. This provides $600 million for each team. The law prohibits the stadium authority from issuing debt with maturities that exceed the length of teams' leases.

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. The most recent issuance was $55 million in May 2019.

Hagerstown Multi-Use Sports and Events Facility

Chapter 353 of 2021 created the Hagerstown Multi-Use Sports and Events Facility Fund as a continuing, nonlapsing fund to support financing and construction of the facility. The fund can support payment of debt service on MSA bonds, reasonable charges and expenses related to MSA's borrowing, and the management of MSA obligations. Beginning in fiscal 2023, the Governor is required to include a $3.75 million appropriation to the fund in the State operating budget. The fund can support up to $59.5 million in bonds.

MSA issued $57.6 million in 30-year bonds for the facility in March 2022. The sale realized an $11.8 million net premium, after deducting cost of issuance and the underwriter's discount. The project also uses $10.5 million in additional appropriations from the State of Maryland. The project budget is $12.5 million of site acquisition, $3 million for design and engineering, and $66.6 million for construction. The Authority will own and the State will lease with the annual lease sufficient to pay debt service. Upon substantial completion of the project, MSA will convey title to the Hagerstown-Washington County Industrial Foundation, and State revenues will flow into the financing fund. This foundation will operate the facility.

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 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. The bonds will retire in fiscal 2023.

Baltimore City Convention Center

Chapter 695 of 2019 required that MSA enter into an agreement to begin planning and design of the expansion and renovation of the Baltimore City Convention Center. Prior issuances have been retired, so the full $55 million in capacity is available for the bonds. When the legislation was enacted, MSA expected to issue $50 million in bonds, of which two-thirds ($33.3 million) would be supported by the State and one-third ($16.7 million) would be supported by Baltimore City. The State annual share of debt service would be $2.6 million from fiscal 2022 through 2039. Complications at the site slowed design and delayed this project so that no bonds have been issued as of October 2022. MSA advises that it has sent some revised plans to the city, which is reviewing the plans. The timing of project construction or any bond issuances is unclear.

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 net 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 also receives $15 million from the Town of Ocean City and $500,000 from the Maryland capital budget. Debt service payments will be $1.7 million beginning in fiscal 2023, and the bonds will be retired in fiscal 2040.

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 is authorized to issue bonds supporting baseball and football stadiums, Baltimore City school construction, the statewide public school construction program, horse racing facilities, sports entertainment facilities, and BLC projects that are 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 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 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.

Chapter 60 increased MSA’s bonding limit for the Orioles and Ravens stadiums to $1.2 billion, in which each franchise gets $600 million. This was done to encourage the teams to remain in Baltimore when the leases expire. The Orioles’ lease extension expires in 2023 and the Ravens lease expires in February 2028.

Supplemental Facilities Fund

The Supplemental Facilities Fund was established in Chapter 221 of 2019. This continuing, nonlapsing fund can be used to support facilities that directly or indirectly benefit the sports facilities at Camden Yards. MSA can issue up to $25 million for supplemental facilities in Baltimore City. This could include developing, establishing, acquiring, owning, leasing, improving, operating as landlord, regulating, maintaining, selling, transferring, or otherwise disposing of property acquired under the bill. The legislation also authorizes MSA to enter into partnerships with Baltimore City, units of the State or local government, or private developers.

Revenues to the fund consist of funds appropriated for deposit, proceeds from the sale of bonds concerning supplemental facilities, revenues collected or received from any source under the bill related to supplemental facilities, and any additional money made available from any public or private source for the purposes established for the fund. To the extent considered appropriate by MSA, the receipts of a supplemental facility must be pledged to and charged with the following relating to the supplemental facility: the payment of debt service on MSA bonds; all reasonable charges and expenses related to MSA borrowing; and the management of MSA obligations.

The fund is to support the Camden Yards complex so it cannot support the Baltimore City Convention Center or the Hippodrome Performing Arts Center in Baltimore City. Debt issued is not a debt of the State, MSA, or other governmental unit. MSA has not issued any Supplemental Facilities Fund bonds or identified any specific facilities as of October 2022.

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 anticipates a third sale totaling $200 million. After all three issuances, debt service costs are expected to be $60 million, which is consistent with the amount of revenues supporting these projects.

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.

The final issuance was in July 2022. MSA issued capital appreciation bonds, which extended the Baltimore City School revitalization bonds debt service payments for five years. The final debt service payment will be fiscal 2055, instead of fiscal 2050. The bonds pay no debt service until fiscal 2051. At which point there are five annual debt service payments totaling $60 million from fiscal 2051 to 2055. The bonds' par value is $66.05 million and the TIC is 5.002%. This sale increases the net par value issued, after adjusting for refunding issuances, to $1,040 million with total proceeds, including bond sale premiums and capital appreciation bonds, totaling $1,269 million. MSA advises that this is the final issuance.

Built to Learn Act of 2020

The Built to Learn Act (Chapter 20) and Built to Learn Act – Revisions (Chapter 698 of 2021) establish a program to fund public school construction statewide. MSA is authorized to issue up to $2.2 billion in revenue bonds, backed by annual payments from the ETF beginning in fiscal 2022, for public school construction projects in the State, including to support a possible P3 agreement for Prince George's County. The legislation also expands school construction costs eligible for State funding and increases or establishes new mandated State funding for other public school construction programs. Projects are approved by the Interagency Commission on School Construction (IAC).

The legislation's fiscal note projected that the debt service cash flows support $2.0 billion in bond proceeds for capital projects, and IAC has assumed this as its baseline for estimating how much each jurisdiction will receive. MSA's first issuance was in October 2021. The par value was $257 million, and the sale generated a net premium of $36 million. The project fund received

$286 million, and $6 million was deposited into a capitalized interest fund to support the first debt service payment in June 2022. The second sale was in March 2022. The par value was $373.1 million, and the sale generated a net premium of $43.9 million. The project fund received $413.5 million, and $3.5 million was deposited into a capitalized interest fund to support the first debt service payment in June 2022. The first deposit into the Supplemental Public School Construction Financing Fund from the ETF is not until November 2022, so the capitalized interest fund was required to make the first debt service payment. MSA anticipates issuing another $1.5 billion in bonds with one issuance each year. The authority advises that the size of these issuances will be determined by the need as determined by projects approved by IAC prior to the bond sale.

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 roods and walkways. The Pimlico site will be conveyed to Baltimore City, the Baltimore Development Corporation, or a designated entity.

Chapter 590 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 financing plans 45 days prior to BPW approval.

The Racing and Community Development 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. As of October 2022, appropriations into the fund are $34 million, $17 million each in fiscal 2022 and 2023. No debt has been issued.

Racing Facilities Construction Has Been Delayed and Costs Are Increasing: A schedule provided to DLS in December 2019 projected Laurel Park construction would be done first, after which Pimlico would be renovated. The plan expected Laurel Park's construction to be completed in 2022 so that racing at Laurel Park could begin in February 2022. As of February 2022, construction had not yet begun and Laurel Park. Chapter 61 of 2022 requires MSA to report to the fiscal committees on the project schedule and costs. MSA submitted its report on September 30, 2022. Key findings include:

- for the Pimlico project, one of eight agreements and none of the property conveyances have been completed, while no agreements have been reached for the Laurel Park project. MSA advises that completing "these agreements should be prioritized, since the inability to satisfy these prerequisites will prevent the project from moving forward;"

- programmatic needs identified by the Maryland Jockey Club and Maryland Thoroughbred Horsemen's Association increased the Laurel Park project by over $150 million. Changes in the finalized program include:

  - a complete replacement and reconfiguration of the tracks;
  - adding a fourth synthetic training surface;
  - a backstretch expansion beyond Laurel Park's existing footprint to increase population and programming demand;
  - addition of a tunnel or bridge to connect Brock Bridge Road parcel to Laurel Park;
  - an inability to renovate, repurpose, or reuse any existing backstretch facilities based on existing conditions that are inconsistent with the prior concept;
  - increased square footage of the clubhouse facility; and
  - relocation of the clubhouse facility to the opposite side of the track.

- in response to a requirement to discuss programming changes and potential cost savings, MSA responded that it expects that costs to increase, due to the changes previously noted, when compared to prior estimates;

- interest rates have increased substantially, and the proceeds available for construction will decline. MSA advises that costs will continue to increase as a result of "prolonged agreement negotiations and the protracted confirmation process." **Exhibit 3.15** shows how increasing interest rates have eroded anticipated proceeds and reduced available funds.

Exhibit 3.15
Effect of Interest Rates on Par Value of Bonds
December 2019 to June 2022
($ in Thousands)

Date of Estimate	True Interest Cost	Annual Debt Service	Par Value of Bonds
December 13, 2019	2.24%	$17,000	$369,386
February 24, 2021	2.95%	17,000	328,405
February 11, 2022	2.90%	17,000	311,705
June 23, 2022	4.18%	17,000	284,340
Example of effect of increased rates	5.00%	17,000	261,300
Example of effect of increased rates	5.50%	17,000	247,035
Example of effect of increased rates	6.00%	17,000	233,960

Source: *Maryland Stadium Authority report on Pimlico and Laurel Park Racing Facilities Redevelopment as Required by HB 897/Ch. 61, Sec. 3 (a), 2022 MSAR #14166*, September 30, 2022

Sports Entertainment Facilities Financing Fund

Chapter 61 created the Sports Entertainment Facilities Financing Fund. A sports entertainment facility is a structure or other improvement at which minor league games are played or other non-major league sporting events are held. It includes parking lots, garages, and other property adjacent and directly related to the facility. It does not include a (1) facility located at Camden Yards; (2) sports facility; or (3) high school, collegiate, or recreational venue that does not generate positive incremental tax benefits to the State.

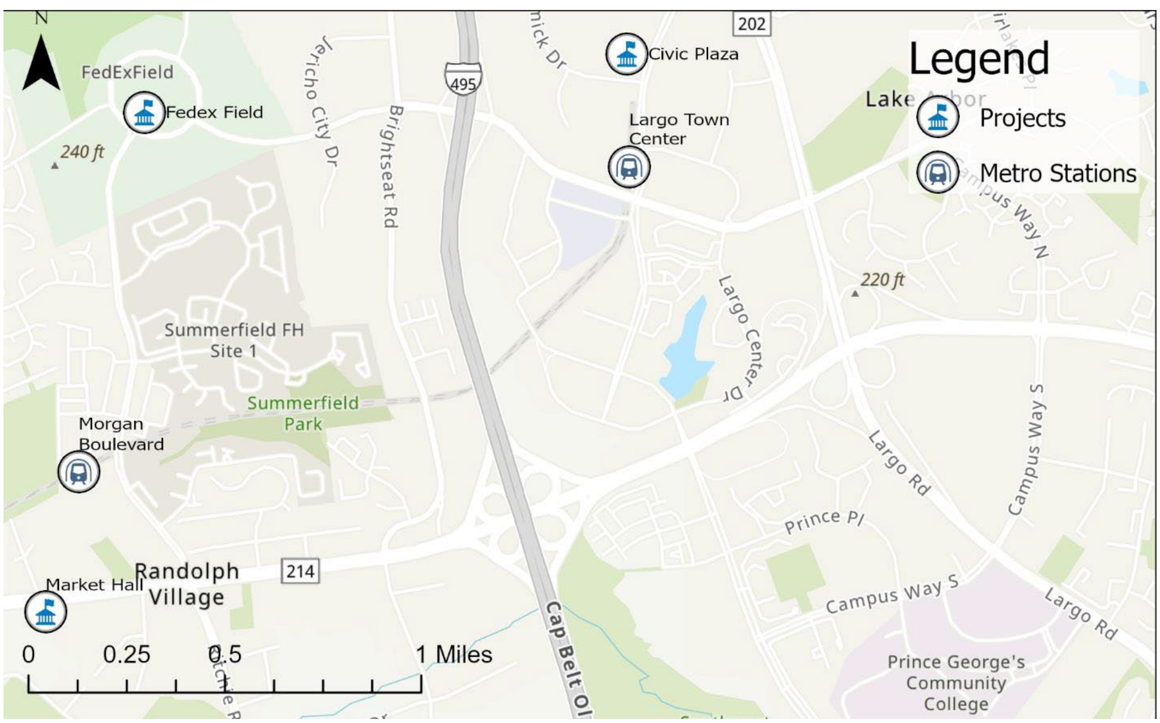
To fund a project, MSA must secure a written agreement with the State, county, or local government in which the sports entertainment facility is located, as approved by BPW, under which the source of funding and the order in which funds will be spent is described, and the State, county, or local government agrees to (1) own, market, promote, and operate or contract for the marketing, promotion, and operation of the sports entertainment facility in a manner that maximizes the facility's economic return; (2) maintain and repair or contract for the maintenance and repair of the facility; and (3) any other terms or conditions deemed necessary or appropriate by MSA. The county or local government in which a sports entertainment facility financed by the bill is located must annually report to the fiscal committees of the General Assembly on the sports entertainment facility's assessment of the maintenance and repair needed to keep the facility in operating order.

The fund is supported by two biennial deposits of lottery funds. Annual appropriations cannot exceed $25 million, and total debt outstanding cannot exceed $200 million. Total debt outstanding is low compared to other financing funds. MSA anticipates issuing bonds with shorter maturities that will amortized more quickly, so the fund will not need as high a level of debt outstanding. The shorter amortization allows MSA to fund more projects. MSA advises that it does not anticipate requiring any debt service appropriation in fiscal 2023 or 2024.

Prince George's County Blue Line Corridor Facilities' Projects

Chapter 61 created the Prince George's County Blue Line Corridor Facility Fund. A BLC facility is a structure located within BLC that is (1) a convention center; (2) an arts and entertainment amphitheater; or (3) any other functionally related structures, improvements, infrastructure, furnishings, or equipment of the facility, including parking garages. **Exhibit 3.16** shows potential projects identified by Prince George's County in April 2022.

Exhibit 3.16
Potential Blue Line Corridor Projects



Source: Prince George's County; Esri; US Geological Survey; SafeGraph; and GeoTechnologies, Inc., April 2022

To finance site acquisition, planning, design, and construction of a BLC facility, MSA must notify the fiscal committees of the General Assembly and provide them with a comprehensive financing plan, as specified, and obtain the approval of BPW of the proposed bond issue, the financing plan, and the required agreement with Prince George's County. MSA must also secure a written agreement with Prince George's County identifying the roles and responsibilities of each party with respect to the BLC facility.

The fund is supported by two biennial deposits of lottery funds. Annual appropriations cannot exceed $27 million, and total debt outstanding cannot exceed $400 million. Issuances are most commonly expected to be amortized over 30 years. MSA advises that it does not anticipate requiring any debt service appropriation in fiscal 2023 or 2024.

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 a multi-use soccer stadium in the Port Covington area of Baltimore City, architectural/engineering services associated with the I-68 Recreation Complex at Frostburg State University, and a cost estimate for construction of the Ocean City Outdoor Field Complex and Indoor Field House.

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.

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 allows 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.

Personal Income

Exhibit 4.1 shows the official Board of Revenue Estimates (BRE) September 2022 personal income estimates.

Exhibit 4.1
Maryland Personal Income
Calendar 2022-2028
($ in Billions)

Year	Personal Income Estimate	% Change
2022	$439	2.77%
2023	462	5.09%
2024	481	4.29%
2025	501	4.19%
2026	523	4.22%
2027	544	4.13%
2028	566	4.07%

Source: Board of Revenue Estimates

Revenue Projections

Exhibit 4.2 shows the out-year revenue projections through fiscal 2028. General fund, transfer tax, and Blueprint for Maryland's Future Fund estimates are consistent with BRE estimates. Bay restoration fund estimates were prepared by the Maryland Department of the Environment, and stadium revenue estimates were prepared by the Maryland Stadium Authority (MSA).

Exhibit 4.2
Revenue Projections
Fiscal 2023-2028
($ in Millions)

Fiscal Year	General Funds	Property Tax	Other ABF	Blueprint	Transfer Taxes	TTF	Stadium	BRF	Total
2023	$23,683	$936	$21	$623	$306	$4,256	$20	$117	$29,963
2024	25,257	957	10	766	318	4,266	19	118	31,711
2025	26,056	979	8	807	328	4,193	18	119	32,508
2026	26,499	1,004	5	860	329	4,259	17	120	33,093
2027	27,304	1,031	3	913	328	4,351	9	121	34,060
2028	28,549	1,062	3	937	327	4,382	9	122	35,390

ABF: Annuity Bond Fund
BRF: Bay Restoration Fund
TTF: Transportation Trust Fund

Note: 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; Maryland Stadium Authority; Maryland Department of the Environment; Capital Debt Affordability Committee; State Department of Assessments and Taxation; Department of Legislative Services

The Department of Legislative Services (DLS) has prepared separate estimates of Transportation Trust Fund (TTF) revenues, State property taxes, and other Annuity Bond Fund (ABF) revenues. As mentioned in Chapter 3, DLS' TTF revenue estimates are higher than the Maryland Department of Transportation estimates. DLS' State property tax estimates use the State Department of Assessments and Taxation's fiscal 2023 to 2025 property base estimates to derive its estimates. Other ABF revenues are primarily federal funds and anticipated bond premiums, which DLS estimates using interest rate estimates from Moody's Analytics and IHS Markit.

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 2024 general obligation (GO) bond authorization totaling $1.205 billion. This is consistent with the debt levels recommended by the Spending Affordability Committee in its 2021 report for fiscal 2024.

Exhibit 4.3 shows affordability calculation assumptions for GO bond authorizations, transportation bonds, and capital leases.

Exhibit 4.3
Projected New Debt Issuances
Fiscal 2023-2028
($ in Millions)

Fiscal Year	GO Bond Authorizations	GO Bond Issuances	Transportation Bonds	Capital Leases
2023	$1,165	$590	$0	$11
2024	1,205	1,189	60	17
2025	1,250	1,195	420	16
2026	1,300	1,204	440	6
2027	1,355	1,262	490	6
2028	1,410	1,374	550	6

GO: general obligation

Source: 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. The proposed levels of State debt are affordable. **Exhibit 4.4** shows that for the forecast period, debt outstanding as a percent of personal income peaks at 3.02% in fiscal 2023 as the ratio steadily declines.

Exhibit 4.4

State Tax-supported Debt Outstanding
Components and Relationship to Personal Income

Fiscal 2023-2028
($ in Millions)

Fiscal Year	GO Bonds	MDOT Bonds	Capital Leases	Stadium Authority Bonds	Bay Restoration Bonds	Total Tax-supported Debt
2023	$10,191	$3,315	$149	$142	$162	$13,960
2024	10,374	3,080	134	129	140	13,859
2025	10,457	3,188	118	118	118	13,999
2026	10,601	3,318	102	106	95	14,222
2027	10,808	3,481	86	102	70	14,548
2028	11,128	3,674	71	98	45	15,015

State Tax-supported Debt Outstanding as a Percent of Personal Income
(Affordability Criteria = 4.0%)

Fiscal Year	GO Bonds	MDOT Bonds	Capital Leases	Stadium Authority Bonds	Bay Restoration Bonds	Total Tax-supported Debt
2023	2.21%	0.72%	0.03%	0.03%	0.04%	3.02%
2024	2.16%	0.64%	0.03%	0.03%	0.03%	2.88%
2025	2.09%	0.64%	0.02%	0.02%	0.02%	2.79%
2026	2.03%	0.63%	0.02%	0.02%	0.02%	2.72%
2027	1.99%	0.64%	0.02%	0.02%	0.01%	2.67%
2028	1.96%	0.65%	0.01%	0.02%	0.01%	2.65%

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; Maryland Stadium Authority; Maryland Department of the Environment; 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. The proposed levels of State debt are affordable. **Exhibit 4.5** shows that the debt service as a percent of revenues peaks at 6.65% in fiscal 2023 and declines throughout the forecast period.

Exhibit 4.5
State Tax-supported Debt Service
Components and Relationship to Revenues
Fiscal 2023-2028
($ in Millions)

Fiscal Year	General Obligation	MDOT Bonds	Capital Leases	Stadium Authority	Bay Restoration Bonds	Total Tax-supported Debt Service
2023	$1,431	$481	$28	$20	$32	$1,991
2024	1,458	430	29	19	27	1,963
2025	1,532	443	28	18	27	2,048
2026	1,502	441	29	17	27	2,016
2027	1,554	464	27	9	27	2,081
2028	1,571	498	27	9	28	2,133

State Tax-supported Debt Service as a Percent of Revenues
(Affordability Criteria = 8.0%)

Fiscal Year	General Obligation	MDOT Bonds	Capital Leases	Stadium Authority	Bay Restoration Bonds	Total Tax-supported Debt Service
2023	4.78%	1.61%	0.09%	0.07%	0.11%	6.65%
2024	4.60%	1.36%	0.09%	0.06%	0.09%	6.19%
2025	4.71%	1.36%	0.09%	0.05%	0.08%	6.30%
2026	4.54%	1.33%	0.09%	0.05%	0.08%	6.10%
2027	4.57%	1.36%	0.08%	0.03%	0.08%	6.12%
2028	4.44%	1.41%	0.08%	0.02%	0.08%	6.03%

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; Maryland Stadium Authority; Maryland Department of the Environment; Department of Legislative Services

Chapter 5. Long-term Cost Forecasts

In the previous chapter, the affordability of bonds was analyzed consistent with 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 sufficient. 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

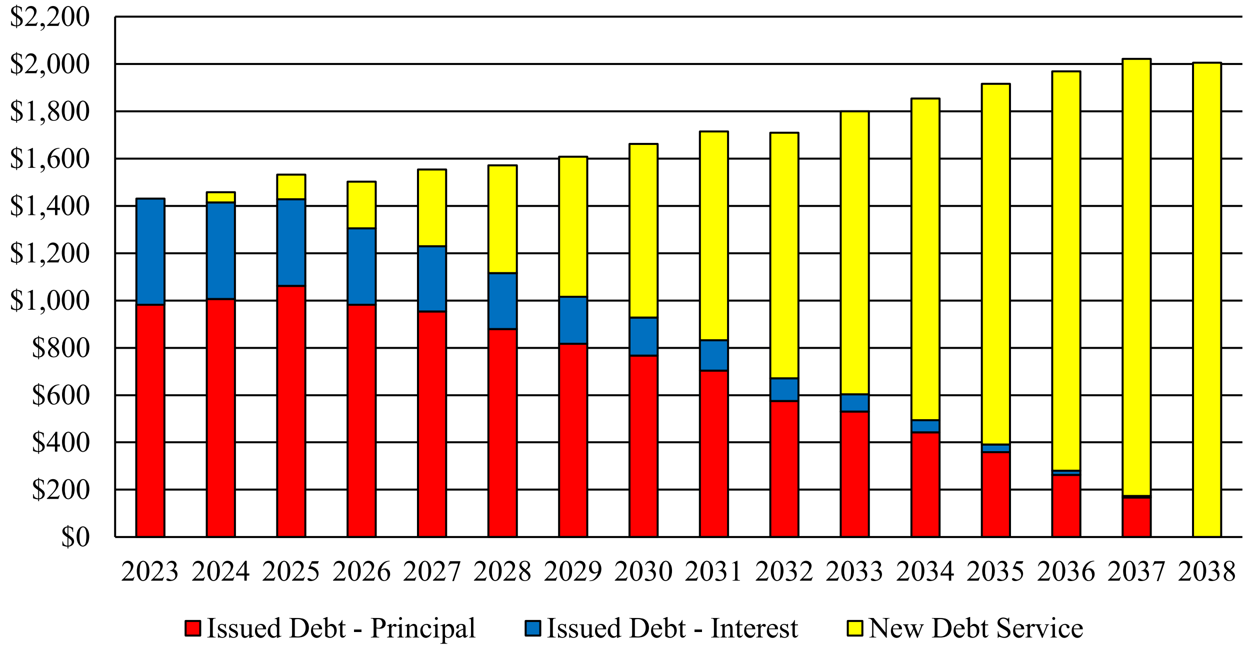
GO bond debt service is primarily supported by State property tax revenues and general funds. The State property tax rate is insufficient to support all debt service costs, so general funds are appropriated to subsidize the shortfall. This analysis assumes that the State authorizes $1.205 billion in GO bonds in fiscal 2024 and that authorizations increase 4% annually. This is consistent with the amount recommended by the Spending Affordability Committee (SAC).

This diverges from SAC policy since 2015, which was to increase authorizations annually by 1%. The 2015 policy was adopted because the State was close to the 8% State debt service to State revenues ratio. At the time, the largest revenue source supporting debt service, the State property tax, was increasing more than 1%, so these modest increases were expected to slow debt service cost increases and increase the debt capacity so that the State would not breach the debt limits in case of a recession, which was a concern when the policy was adopted. As Chapter 4 notes, the State is now well below the affordability ratios.

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 2023 will be retired before fiscal 2039. **Exhibit 5.1** shows the principal and interest costs for bonds sold prior to June 2022 as well as the debt service costs for anticipated bond sales. From fiscal 2023 to 2038, debt service costs increase from $1.43 billion to $2.00 billion, an annual increase of 2.28%.

Exhibit 5.1
General Obligation Bonds' Debt Service Costs
Fiscal 2023-2038
($ in Millions)



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

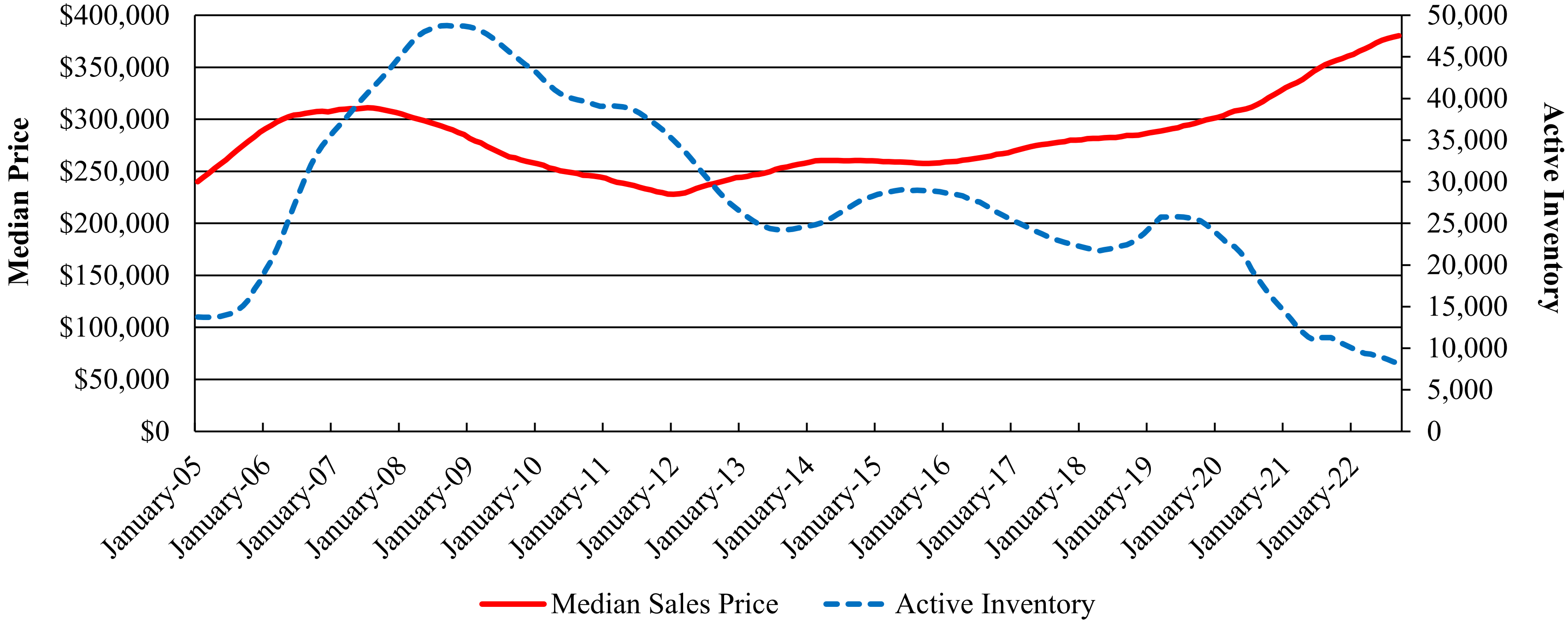
The short maturities mean that debt is retired quickly, and interest costs decline quickly. The average maturity for the State's 15-year GO bonds is just under 10 years, so most of each issuance is retired within 10 years. Fiscal 2023 interest costs total $448 million, which is 31% of the $1.431 billion in total debt service. The share of interest costs to debt service payments decreases steadily throughout the forecast period for previously issued bonds.

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, with prices increasing more sharply since 2020. Even more pronounced is the decline in the inventory of houses for sale. Inventories since September 2021 have been lower than the number of inventories since before the year 2000. Recent increases in home values appear to be at least in some part due to low inventories. Increasing interest rates and a slowing economy are likely to constrain home values through fiscal 2024. In the short term, this does not pose a threat to State property tax revenues. Factors leading to this conclusion are discussed in the next section.

Exhibit 5.2
Maryland Housing – Median Prices and Inventory
12-month Moving Average
January 2005 to September 2022



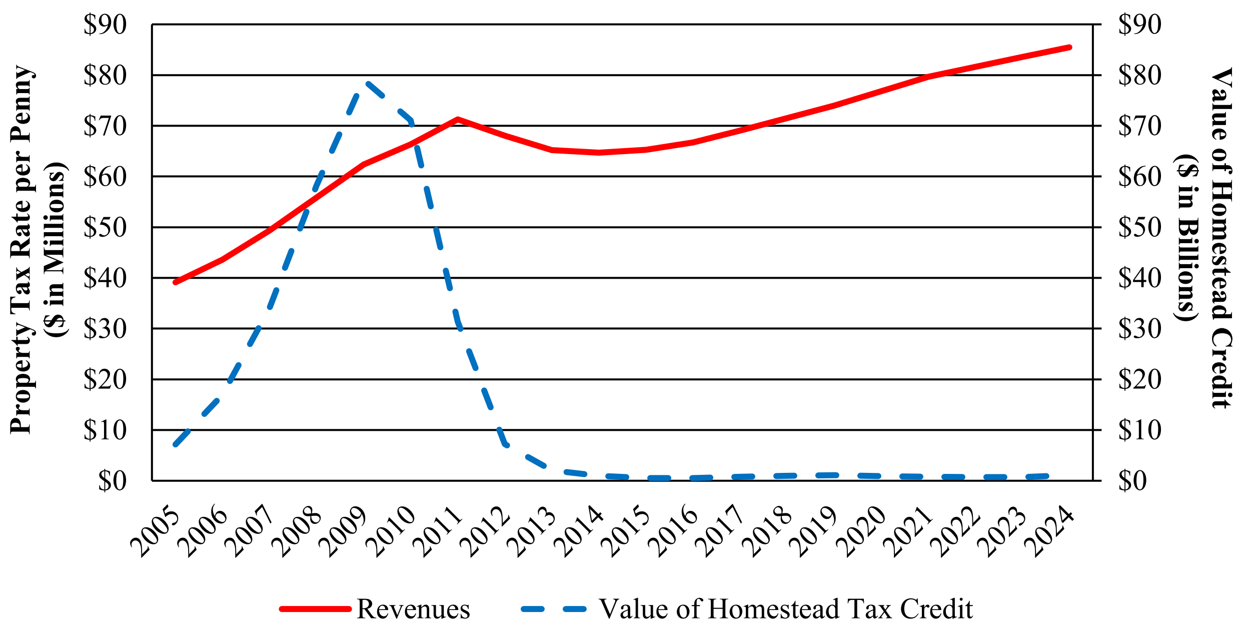
Note: There were sometime substantial revisions of prior calendar year inventory data as some months were revised by as much as 20%. The data is a 12-month moving average, which cancels any effects from seasonality and shows the underlying trend.

Source: Maryland Association of Realtors; Department of Legislative Services

Homestead Tax Credit and Three-year Assessment Process

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 generated 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.

Exhibit 5.3
State Property Tax Homestead Tax Credits and Revenues Per Each Cent of State Property Taxes
Fiscal 2005-2024



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

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. For example, if a value increases by 9%, the State increase would be 3% in the first year, 6% in the second year, and 9% in the third year. Having three years between assessments also moderates fluctuations in State property taxes. Properties assessed in calendar 2023 will have last been assessed in calendar 2020. Unless there is a substantial decline in 2023, home values are still likely to be higher than 2020 assessments. As such, assessments are still likely to increase in fiscal 2023, even if home values decline compared to 2022.

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 the Homestead Tax Credit slowed the revenue increases during the real estate boom and delayed the peak until after the decline in property values. While the current environment is different than the fallout from the Great Recession, State property tax receipts are still likely to be stable through fiscal 2024. However, since there is not a large buildup of Homestead Tax Credits, sustained declines in home values would affect State property tax collection much sooner in the current environment.

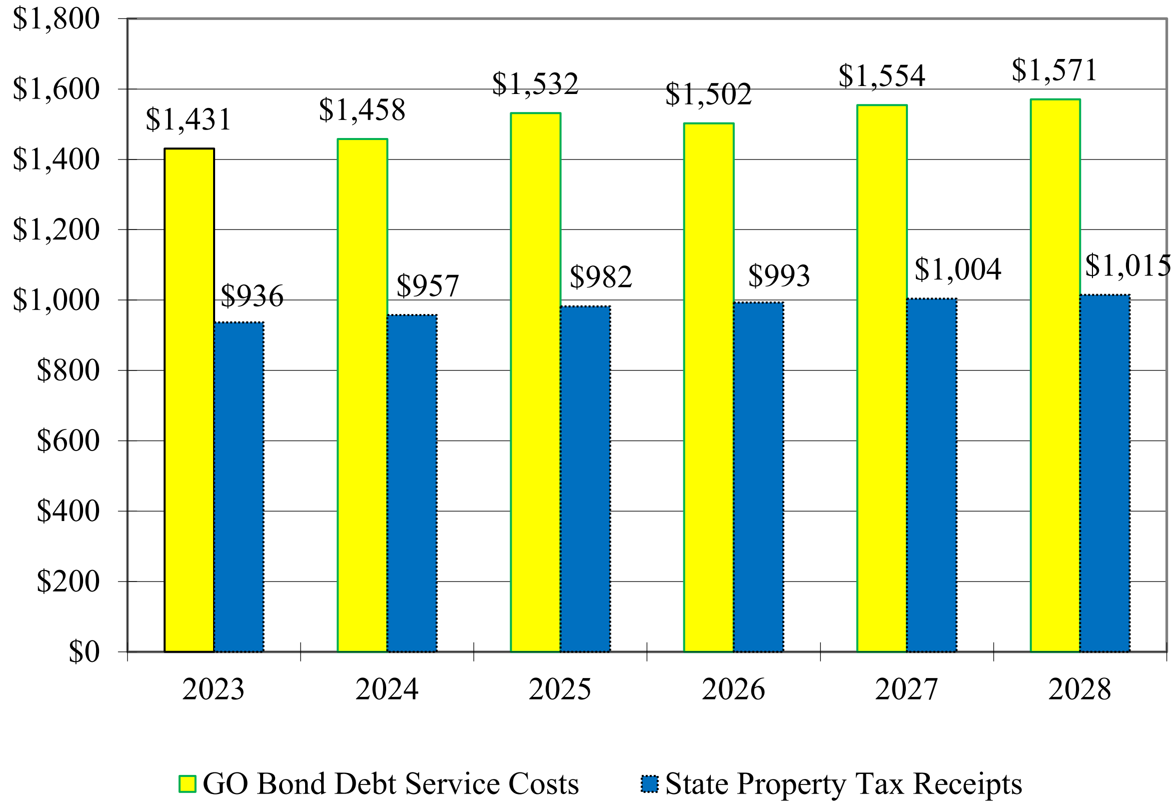
Higher Interest Rates Are Not Expected to Increase Out-year Debt Service Costs

Interest rates have been increasing throughout much of calendar 2022. Higher rates reduce anticipated bond sale premiums but are not expected to increase debt service costs in the Department of Legislative Services' (DLS) forecast. DLS and the State Treasurer's Office assume a 5.00% coupon rate on bonds. Since the true interest cost is expected to stay below the assumed rate, no increase in debt service is anticipated; instead, DLS is no longer anticipating bond sale premiums. This issue is discussed in more detail in Chapter 8.

General Funds Are Appropriated to Keep State Property Taxes Low

State property tax revenues are estimated to increase at a rate of 1.6% annually from fiscal 2023 to 2028. This estimate is consistent with the State Department of Assessments and Taxation estimates that assessable base increases 2% annually in fiscal 2024 and 2025. For fiscal 2026 to 2028, DLS expects the assessable base to increase 1% annually. Debt service costs are expected to increase at a rate of 1.9% over the same period. **Exhibit 5.4** shows how State property tax revenues, which are $494 million less than debt service costs in fiscal 2023, are expected to be $556 million less than debt service costs in fiscal 2028.

Exhibit 5.4
GO Bond Debt Service Costs and State Property Tax Revenue Collections
Fiscal 2023-2028
($ in Millions)



GO: general obligation

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

Exhibit 5.5 shows that estimates of general fund subsidies to the ABF increase from $430 million in fiscal 2023 to $563 million in fiscal 2027. The fiscal 2023 capital budget authorizes $260 million in capital projects supported by bond sale premiums. Increases in interest rates in excess of the rates anticipated in the budget have reduced anticipated premiums. This forecast assumes that general fund surplus at the end of fiscal 2022 will provide a $220 million general fund pay-as-you-go (PAYGO) capital appropriation for these projects.

Exhibit 5.5
Revenues Supporting Debt Service
Fiscal 2023-2028
($ in Millions)

	2023	2024	2025	2026	2027	2028	Annual % Change
Special Fund Revenues							
State Property Tax Receipts	$936	$957	$982	$993	$1,004	$1,015	1.6%
Bond Sale Premiums	10	0	0	0	0	0	-100.0%
Capital Authorizations	-40	0	0	0	0	0	-100.0%
Other Revenues	3	3	3	3	3	3	0.0%
ABF Fund Balance Transferred from Prior Year	79	3	1	1	1	1	
Subtotal	***$988***	***$963***	***$986***	***$997***	***$1,008***	***$1,019***	***0.6%***
General Funds	$430	$482	$535	$502	$547	$552	5.1%
Transfer Tax Special Funds	7	7	7	2	0	0	-100.0%
Federal Funds	8	7	5	2	1	0	-52.6%
Total Revenues	**$1,433**	**$1,459**	**$1,533**	**$1,503**	**$1,556**	**$1,571**	**1.9%**
Debt Service Expenditures	**$1,431**	**$1,458**	**$1,532**	**$1,502**	**$1,554**	**$1,571**	**1.9%**
End-of-year ABF Balance	**$3**	**$1**	**$1**	**$1**	**$1**	**$1**	

ABF: Annuity Bond Fund

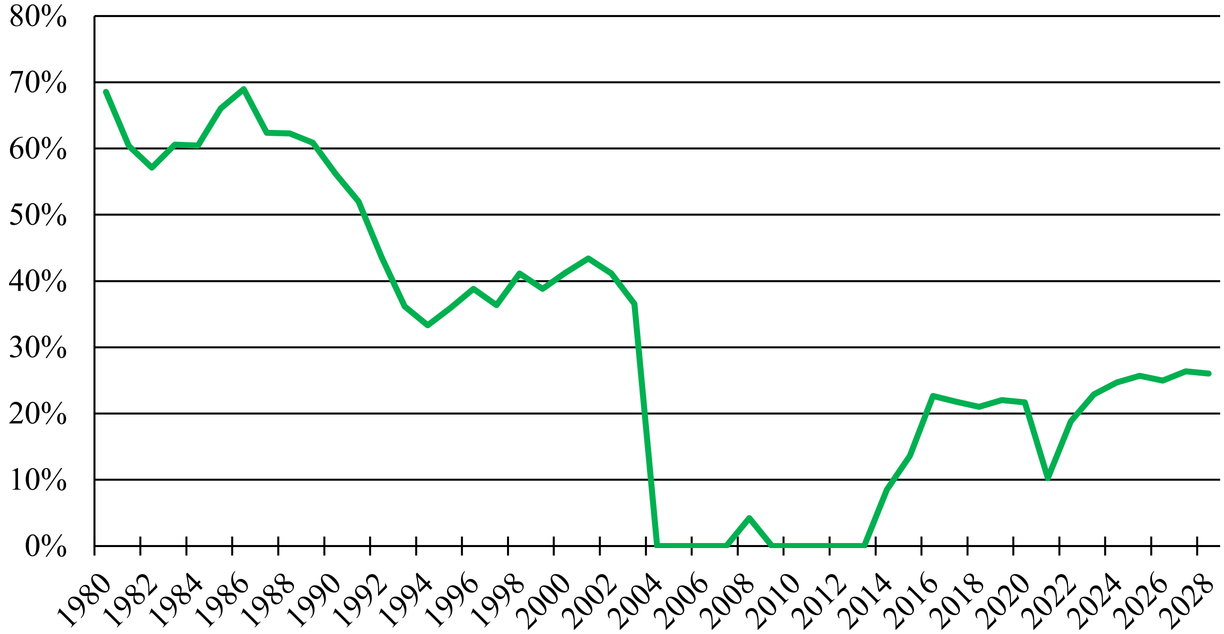
Source: Department of Legislative Services

General Fund Appropriations for Debt Service Since 1980

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 DLS projects that general fund appropriations for debt service will be 24% to 26% of debt service appropriations from fiscal 2024 to 2028. 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 1980-2028

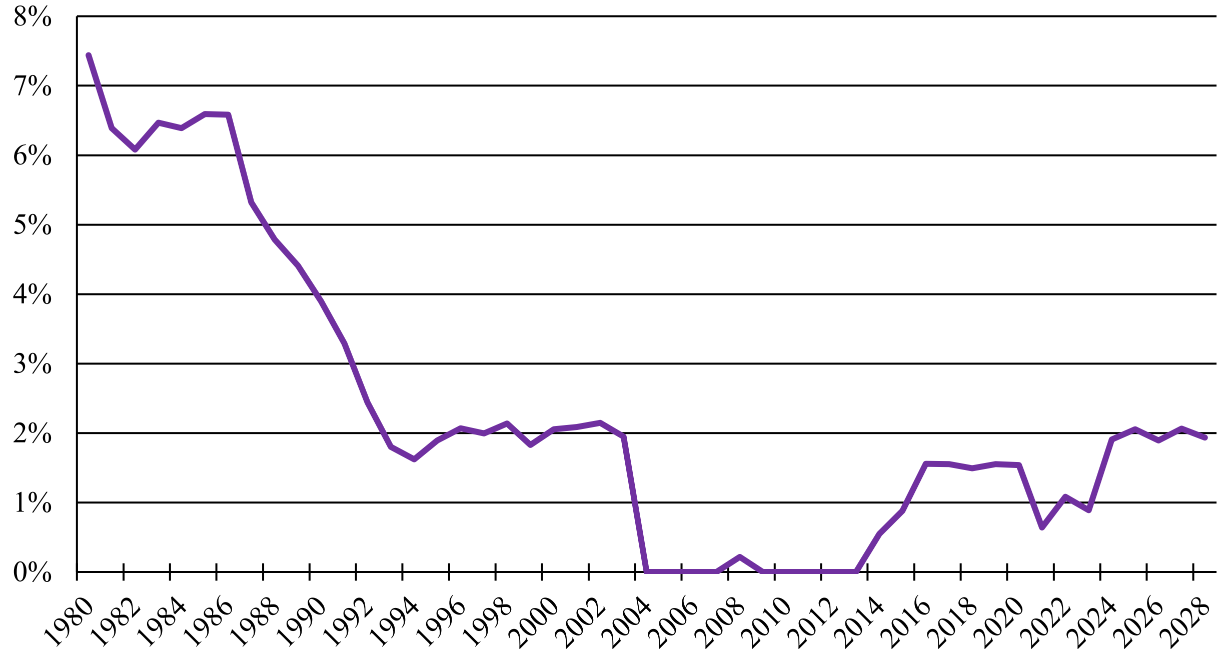


Note: Fiscal 1985 to 2003 includes general funds appropriated in the Maryland State Department of Education for capital school construction. Fiscal 2002 and 2003 are adjusted to remove proceeds from refunding bonds.

Source: Department of Budget and Management

Exhibit 5.7 shows that current estimates expect that the general fund costs for debt service will range from 1.9% to 2.1% of total general fund revenues from fiscal 2024 to 2028. 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, $0.112 per $100 of assessable base, in fiscal 2007.

Exhibit 5.7
General Fund Debt Service Appropriations as a Percent of General Fund Revenues
Fiscal 1980-2028



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 Benefits 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 0.20% (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 0.88% (or 88 basis points) less than *The Bond Buyer* 20-Bond Index 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 after bond issuances. 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 costs. 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 $2.3 billion in fiscal 2022. The primary reason for the increased costs is 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. Lower contributions required by the corridor funding method also led to a lower funded ratio. 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 the general practice for the Governor to propose and the General Assembly to appropriate the amount certified by the State Retirement and Pension System Board.

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% to 7% 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. Local governments pay the normal cost for their employees' pensions. The State pays the unfunded liability. Should this liability increase, the State pays the full cost of this increased liability. Under this structure. State payments are larger and tend to be more volatile than the local payments.

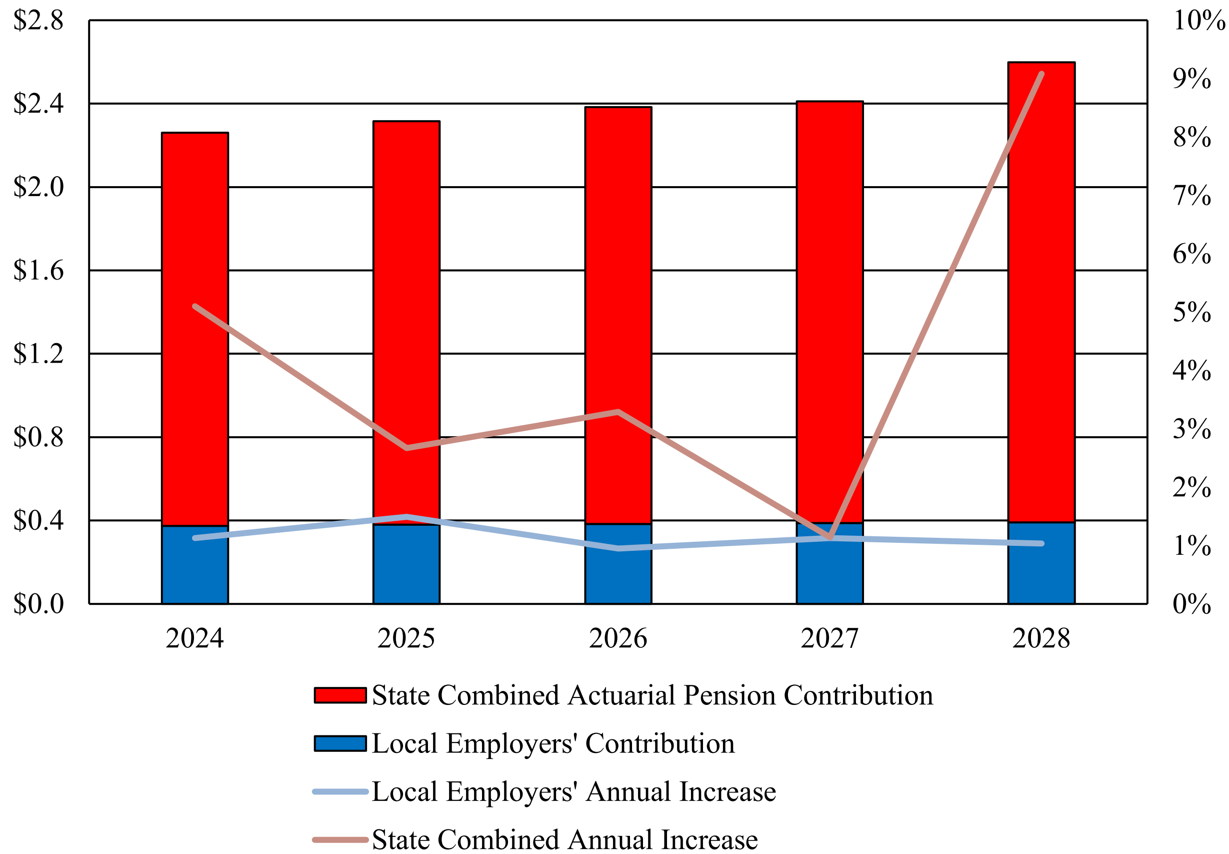
Current law requires supplemental pension contributions. The Administration is required to include $75 million in supplemental contributions and to provide appropriate unassigned general fund balances of up to $25 million. In fiscal 2022, unassigned general fund balance totaled $1.12 billion, of which $25 million is to be appropriated in fiscal 2024. Taken together, these reforms reduce the State's out-year unfunded liabilities.

Pension Cost Outlook

The market return for pension fund assets in fiscal 2022 was -2.90%. The fund's assumed annual return is 6.80%, so the returns were 9.70% less than projected. The market value of the fund's assets declined from $67.6 billion to $64.3 billion. Fiscal 2022 losses are smoothed over five years. The practical effect is an increase in the actuarial contribution. The valuation after fiscal 2021 anticipated declining pension contributions from fiscal 2023 to 2027. This is no longer the case as the losses from fiscal 2022 require increasing contributions.

Exhibit 5.8 shows that the State's annual actuarially required contribution is expected to increase from $1.89 billion in fiscal 2024 to $2.21 billion in fiscal 2028, which is an annual increase of 4.00%. Total pension costs, which include local contributions, increase from $2.26 billion in fiscal 2024 to $2.60 billion in fiscal 2028. The State's costs, which include amortizing fiscal 2022 losses, increase annually between 1.14% and 9.08%. Local costs, which are only the normal cost and are not affected by losses, increase between 0.95% and 1.49% annually.

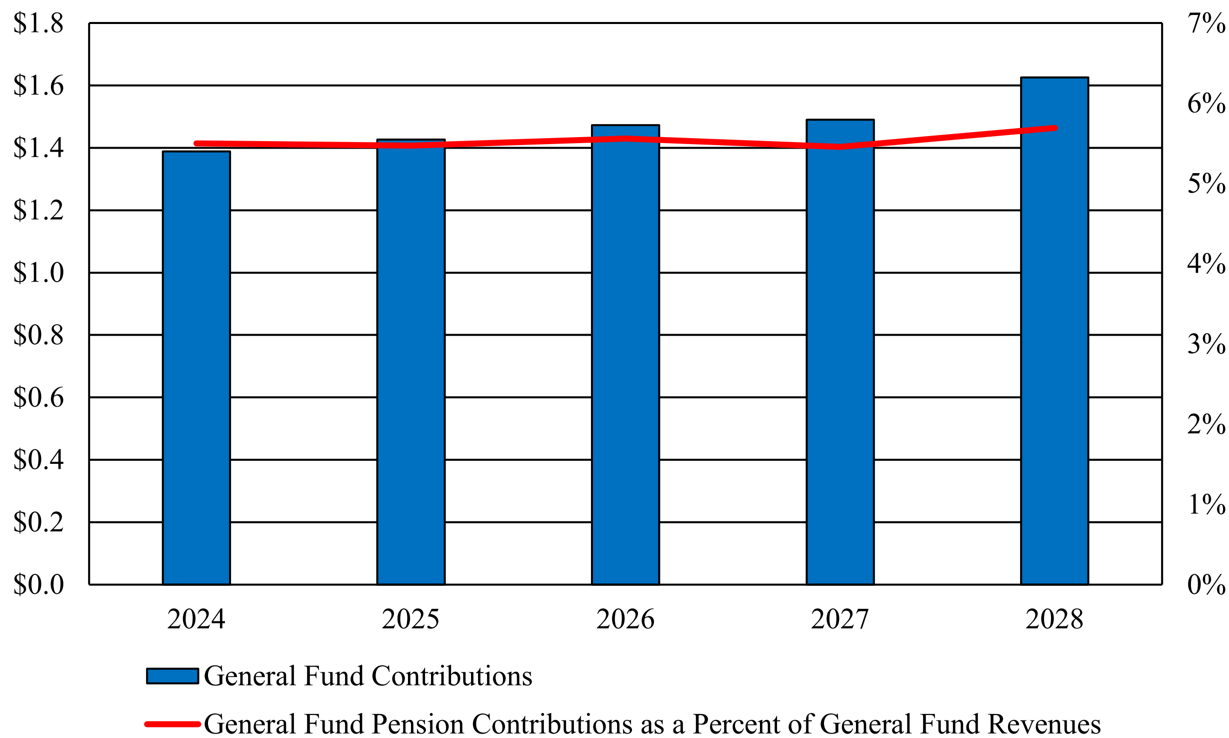
Exhibit 5.8
Total State Pension Costs
Fiscal 2024-2028
($ in Billions)



Source: Bolton; Department of Legislative Services

Exhibit 5.9 shows that general fund costs for pensions are expected to rise from 5.5% in fiscal 2024 to 5.7% in fiscal 2028. General fund pension costs are increasing at a higher rate than general fund revenues, so pension costs are expected to be a larger share of expenditures in the out-years.

Exhibit 5.9
General Fund Pension Costs as a Percent of General Fund Revenues
Fiscal 2024-2028
($ in Billions)



Source: Bolton; Department of Legislative Services

Each year, Moody's Investor Service publishes a report that compares state debt service and debt outstanding to wealth indicators like state revenues and personal income. In 2022, Moody's expanded the report to include other long-term liabilities, including unfunded pension liabilities, OPEB, and capital asset depreciation.

With respect to pensions, Moody's calculates the adjusted net pension liability (ANPL), which is each plan's unfunded liability. To compare pension plans, Moody's recalculates each state's pension liability using the same discount rate. Moody's uses the Financial Times Stock Exchange (FTSE) Pension Liability Index as of June 30 each year for this purpose. The index is published monthly and is maintained by the FTSE Group. The index includes three discount rates, a standard rate, an intermediate rate, and a short rate. Moody's uses the standard rate to determine the APNLs in its report. This rate is currently lower than the reported discount rates used by all pension plans shown in the Moody's report, so the APNLs are higher than the NPLs across the board. The larger the difference between the rates, the larger the adjustment Moody's will make. **Exhibit 5.10** shows Maryland's liability is the highest among AAA–rated states, when compared to personal income.

Exhibit 5.10

Adjusted Net Pension Liability to Personal Income of AAA-rated States

Fiscal 2021

State	Adjusted Net Pension Liability to Personal Income	State Rank
Maryland	15.8%	9
Delaware	14.1%	12
Texas	10.0%	20
Mean	9.6%	n/a
Indiana	5.4%	28
Missouri	4.9%	30
Minnesota	3.9%	33
Utah	3.1%	39
Iowa	2.8%	43
South Dakota	2.8%	43
Virginia	2.7%	45
North Carolina	2.6%	46
Florida	2.4%	47
Georgia	2.4%	47
Tennessee	2.4%	47

Source: *U.S. State Liabilities Report*, Moody's September 2022

Other Post Employment Benefits Outlook

The State also offers retirees subsidized health care. Retirees participate in the same 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 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. Aligning the transition with a provision in the 2010 Patient Protection and Affordable Care Act, which eliminated the Medicare Part D coverage gap by calendar 2020 (later accelerated to 2019) was recommended. The alignment 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.

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 prescription drug coverage from the State when they reach Medicare eligibility.

On December 30, 2021, the federal District Court judge ruled that State law creates a contractual right to prescription drug benefits for State retirees who retired before January 1, 2019. The ruling further provided that retirees who retired on or after that date, and current active employees, do not have a contractual right to prescription drug benefits under State law. The State has informed the court that it intends to appeal the ruling with respect to individuals who retired before January 1, 2019; however, it is not seeking to lift the current injunction or to stay the court's proceedings while the appeal is pending. Therefore, State prescription drug coverage under the State plan for all eligible retirees remains in effect.

State Does Not Provide Full Actuarial Funding

At the end of fiscal 2022, the State's net OPEB liability was $12.4 billion, representing a funded ratio of 3% ($385 million in assets). The State has not met the commission's recommendation regarding payments to prefund the OPEB liability. The State has not provided OPEB liability payments since fiscal 2010.

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. The fiscal 2022 unassigned general fund balance was $1.12 billion, requiring another $25 million appropriation in fiscal 2024.

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.

As with the pension liability, Moody's now includes the OPEB liability in its annual review of State's long–term liabilities. **Exhibit 5.11** shows that Maryland has the second highest OPEB liability to personal income ratio among AAA-rated states, behind Delaware. Over the next few years, Maryland's ranking may fluctuate depending on how OPEB litigation unfolds.

Exhibit 5.11
Adjusted Net OPEB Liability to Personal Income of AAA-rated States
Fiscal 2021

State	Adjusted Net OPEB Liability to Personal Income	State Rank
Delaware	15.5%	2
Maryland	3.3%	11
Mean	2.6%	n/a
Texas	2.5%	14
Missouri	1.1%	22
North Carolina	0.8%	25
Florida	0.5%	29
Georgia	0.4%	30
Tennessee	0.4%	30
Virginia	0.3%	33
Minnesota	0.2%	34
Iowa	0.1%	40
Indiana	0.0%	44
Utah	0.0%	44
South Dakota	0.0%	44

OPEB: Other Post Employment Benefits

Source: *U.S. State Liabilities Report*, Moody's September 2022

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 80 bond issuances since March 1991 (refunding sales are excluded): 72 competitively bid, tax-exempt bond issuances; and 8 negotiated, retail bond issuances. The data collected includes:

- the TIC;
- *The Bond Buyer* 20-bond index;
- 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;
- effect of requiring 5.00% coupon rates, which was done for bond sales from August 2020 to June 2022;
- 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;

- 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.[1] **Exhibit 6.1** shows the data for the statistically significant variables. **Appendix 2** provides a summary of the data.

- ***Bond Buyer 20-bond Index:*** The key variable is the 20-bond index. *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.

- ***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.

- ***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

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[1] The statistical analysis of the equation suggests that the equation explains GO bond sales' TICs very well. The adjusted R-square, which measures how much of the TIC is explained by the equation, is 0.973. The F Statistic, which measures if this group of variables is jointly significant, is 567, which is more than 99.9% significant. DLS ran the Durbin-Watson statistic, which measures autocorrelation between variables, and it is 1.464, which is a reasonable, but does suggest some positive autocorrelation.

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 0.756% (76 basis points) less than *The Bond Buyer* 20-bond index since the financial crisis.

- ***Years to Maturity:*** Under normal economic conditions, bonds with shorter maturities have lower interest costs than bonds with longer maturities. The analysis estimates that every year adds 0.133% (13 basis points) to the TIC.

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	0.883	0.038	23.423	0.000	0.331	Highest t-test suggests that this is a most significant independent variable and that Maryland bonds are priced at 88% of the index.
Maryland Personal Income to U.S. Personal Income	-2.425	.342	-5.105	0.000	0.639	Stronger Maryland personal income tends to reduce the TIC.
Post-financial Crisis	-0.756	0.081	-9.379	0.000	0.416	Maryland bonds' yields are reduced since the crisis.
Years to Maturity	0.133	0.022	6.199	0.000	0.481	Positive coefficient means that longer maturities tend to have higher TICs.
Callable Bonds	0.366	0.091	4.044	0.000	0.487	Callable bonds' average TIC is 30 basis points (0.30%) higher than noncallable bonds.
Constant	2.112					

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

Source: Department of Legislative Services

- ***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 that 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 0.366% (37 basis points) to the cost of a bond. In the June 2022 sale, Maryland bonds will be callable on June 1, 2033. Bonds maturing after that date can be called and refunded.

Regression Analysis Suggests That Requiring a 5% Coupon Rate Increases Interest Costs

Since the July 2020 bond sale, the Preliminary Official Statement, which is used by underwriters to structure their bids, has required that coupon rates are neither above nor below 5%, so that the sale was required to be structured with a 5% coupon rate.[2] This policy change was enacted early in the COVID-19 pandemic at a time when there were concerns that the pandemic could slow economic activity so that revenues would decline substantially. The advantage of this approach is that it ensures higher premiums, thus providing the State with more cash in the short term. In sales prior to July 2020, most coupon rates were near 4%. The sales with the 5% coupon rates were on July 22, 2020; February 24, 2021; August 11, 2021; and June 8, 2022. This affected nine bid groups with par issuances ranging from $207 million to $335 million.

To estimate if these restricting coupon rates had a measurable effect on the TIC, DLS included a variable that identified which sales required 5% coupon rates. When this variable was substituted for the ratio of Maryland gross State product to U.S. gross domestic product, the 5% coupon variable was statistically significant, and the equation was also statistically significant. The variable had a positive coefficient, which means that equation estimated that requiring a 5% coupon rate increased interest costs. This equation is not as strong as the equation used in Exhibit 6.1. Also, the Durbin-Watson statistic is below 2 and is less than in the equation with the 5% coupon variable, which suggests stronger positive autocorrelation. As such, the equation in Exhibit 6.1 explains the TIC better and is therefore the best equation. While the analysis measuring the effect of requiring a 5% coupon rate does not produce an ideal or best equation, it does imply that there are additional costs associated with a policy that requires a 5% coupon rate.

[2] 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, the State Treasurer's Office determines how many bonds are sold (par value of the bonds) and when the bonds mature. For bond sales prior to July 2020, the underwriter determined 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 true interest cost. 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. These premiums have been used to support debt service and capital projects.

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:

- ***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 2012 and 2022:

- ***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 2012 and 2022
($ in Millions)

	2012	2022	Total Change	Annual % Change
Agency Debt Subject to State Regulatory Cap	$3,365	$2,457	-$908	-3.1%
Agency Debt Not Subject to State Regulatory Cap	5,120	5,011	-109	-0.2%
Tax-supported Debt	10,210	14,732	4,522	3.7%
Authorities and Corporations without Caps	11,436	11,630	193	0.2%
Total	**$30,132**	**$33,829**	**$3,698**	**1.2%**

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 3**.

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 2022 allocation totaled $678.2 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 statute.

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 the U.S. 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 Maryland 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 nonhousing allocations have been reallocated to CDA at year end for carry-forward purposes.

Allocation of Private Activity Bonds

Exhibit 7.2 provides the calendar 2018 through 2022 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 2018-2022 YTD
($ in Millions)

	2018	2019	2020	2021	YTD 2022
Fund Sources					
Annual Cap	$635.5	$634.5	$634.8	$665.0	$678.2
Carry Forward from Prior Years	1,586.1	1,668.7	1,271.4	1,286.5	1,397.1
Total Capacity Available	**$2,221.6**	**$2,303.2**	**$1,906.2**	**$1,951.5**	**$2,075.3**
Issuances					
Single-family Housing	$204.6	$691.3	$240.0	$187.5	$73.6
Mortgage Credit Certificates[1]	72.0	0.0	0.0	0.0	0.0
Multifamily Housing	265.6	340.5	379.7	366.8	275.8
Total Issuances	**$542.2**	**$1,031.7**	**$619.7**	**$554.4**	**$349.4**
Prior Year Carry Forward Abandoned	$10.8	$0.0	$0.0	$0.0	$0.0
Carry Forward	$1,668.7	$1,271.4	$1,286.5	$1,397.1	$1,401.9

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

CDA's issuance of single-family housing private activity debt varies year to year based on housing market conditions and interest rates, and CDA may also issue single-family debt that does not make use of the volume cap. Overall, single-family issuances using volume cap from calendar 2018 to 2021 (totaling $1.3 billion) far exceeded issuances during the prior four-year period ($177 million). This increase is due to both decreased interest rates as well as increased marketing of DHCD's mortgage programs.

Maryland Economic Development Corporation Bonds

MEDCO classifies its projects as "Performing," "Watch," or "Non-performing" based on the project's ability to meet its financial obligations. As of September 2022, the Chesapeake Bay

Conference Center (CBCC) project was non-performing, and three of MEDCO's student housing projects were in watch status.

CBCC was already a nonperforming project prior to the COVID-19 pandemic, and revenues were further reduced by the closure of the facility in March 2020 and the limited capacity following the reopening of the hotel in June 2020. Fiscal 2022 revenues increased significantly along with increased travel demand, which had been suppressed during the pandemic. MEDCO reports that occupancy levels at CBCC are at the highest level since 2008, and residential construction along the golf course that began in April 2022 is expected to have a positive impact on the project. MEDCO advises that the project is able to cover all operating expenses but, despite increases, revenues are still not sufficient to make full debt service payments. The project was able to make additional interest payments of $3.8 million that have not been paid in prior years. Investors have repeatedly extended six-month forbearance agreements over the past several years, and MEDCO anticipates investors will once again extend the agreement through the end of fiscal 2023.

Student Housing Bonds

Revenues at student housing facilities, which make up the majority of MEDCO-operated projects, were negatively impacted by the transition during the COVID-19 pandemic from in-person to remote and hybrid learning environments. Occupancy in several housing projects remained low for an extended period, and as a result, several projects entered watch status. While most watch projects recovered by the end of fiscal 2022, University of Maryland, Baltimore Campus (UMB), Towson University (TU), and Frostburg State University (FSU) were still in watch status as of September 2022. All three projects failed to meet the required debt coverage ratio of 1.20 as of the last day of the fiscal year, and as a result, MEDCO is required to retain a management consultant for these projects.

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 2022 for each housing project. MEDCO anticipates that all student housing projects will be able to fund operating expenses and meet their upcoming debt service payments.

Exhibit 7.3
Status of MEDCO-operated Student Housing Projects
Fiscal 2020-2022
($ in Millions)

Project	Debt Coverage Ratio[1] 2020	2021	2022	Maximum Annual Debt Service	Outstanding Balance June 2022
Bowie State University	1.33	***1.13***	2.62	$1.4	$11.9
Bowie Mixed Use Project	n/a	n/a	1.36	2.6	44.9
Capitol Technology University	1.66	1.24	1.51	0.9	12.3
Frostburg State University	1.38	1.26	***1.18***	1.2	10.6
Morgan State University	1.68	1.33	1.89	2.4	21.1
Morgan Mixed Use Project	n/a	n/a	n/a	6.0	80.8
Salisbury University	1.49	1.93	1.97	2.2	16.2
Towson University	***1.06***	***0.47***	***1.16***	3.5	36.0
University of Maryland, Baltimore Campus	***1.16***	***1.15***	***1.15***	1.9	22.4
University of Maryland, Baltimore County	***1.05***	***0.60***	1.91	1.2	15.0
University of Maryland, College Park Campus	***1.14***	1.41	1.28	10.1	109.2
University Village at Sheppard Pratt	2.27	1.56	1.66	1.6	15.4

MEDCO: Maryland Economic Development Corporation

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

Note: Bold and italics indicate projects that did not meet the required coverage ratio.

Source: Maryland Economic Development Corporation

UMB's recovery from the pandemic has been slower than many of the other schools, and the management consultant hired to evaluate the project made several recommendations for improvement, such as updating furniture and equipment in the units, improved coordination of marketing efforts across UMB schools, targeted marketing to international undergraduate students in the area, and working with UMB to increase security services. Although the FSU project exceeded the required debt coverage ratio in each of fiscal 2020 and 2021, occupancy declined in the spring 2022 term, and the project is experiencing more bad debt than expected, leading the project to enter "watch" status in January 2022 and subsequently fail to meet the required coverage ratio at the close of fiscal 2022. The TU project only had occupancy of 86% in fiscal 2022, although MEDCO advises that the project is leased at 100% for fiscal 2023.

University System of Maryland

The 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 Board of Regents policy establishes prudent limits and process for the use of debt financing and 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 (terms no longer used in the preparation of audited financial statements with the adoption of Governmental Accounting Standards Board (GASB) Statement 87) to be less than 4.0% of operating revenues plus State appropriations, including grants and contracts. USM is waiting for feedback on how leases will be handled as they relate to debt capacity following the implementation of GASB 87. The current 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 (S&P). The most recent credit reviews by the rating agencies were in January (Moody's and S&P) and February (Fitch) 2022. The next full rating meetings are expected to take place in January 2023.

Exhibit 7.4 shows that USM will be under the 4.0% debt service goal for fiscal 2022 to 2028. Including debt issued in fiscal 2022, total debt service will be approximately $138 million, or 2.6%, of fiscal 2022 operating revenues plus State appropriations, including grants and contracts. The forecast indicates that the ratio will stay at or below 3.1% through the fiscal 2028 projection.

Exhibit 7.4
University System of Maryland Debt Service as Related to Operating Revenues Plus State Appropriations
Fiscal 2011-2028 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	1,357	136	4,960	2.7%
2022 Estimated	1,214	138	5,388	2.6%
2023 Estimated	1,234	145	5,496	2.6%
2024 Estimated	1,251	146	5,606	2.6%
2025 Estimated	1,271	141	5,718	2.5%
2026 Estimated	1,289	145	5,832	2.5%
2027 Estimated	1,299	151	5,949	2.5%
2028 Estimated	1,307	152	6,068	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 policy limit for the ratio of expendable resources (defined as unrestricted net position, or fund balance of USM and the affiliated foundation with adjustments for certain long-term liabilities) to debt outstanding. With advice from its financial advisor, USM's Board of Regents policy limits debt authorizations such that the ratio of expendable resources is 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 2028. USM also adjusts 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 year-end 2022 ratio was 234%. 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 2023 session, the system will seek authorization for a total of $30 million in academic revenue bonds to provide facility renewal and capital project funding for USM institutions for fiscal 2024.

Exhibit 7.5

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

Fiscal 2011-2028 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	2,798	1,357	206.2%
2022 Estimated	2,842	1,214	234.1%
2023 Estimated	2,892	1,234	234.3%
2024 Estimated	2,950	1,251	235.8%
2025 Estimated	2,979	1,271	234.4%
2026 Estimated	3,009	1,289	233.4%
2027 Estimated	3,039	1,299	233.9%
2028 Estimated	3,069	1,309	234.5%

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

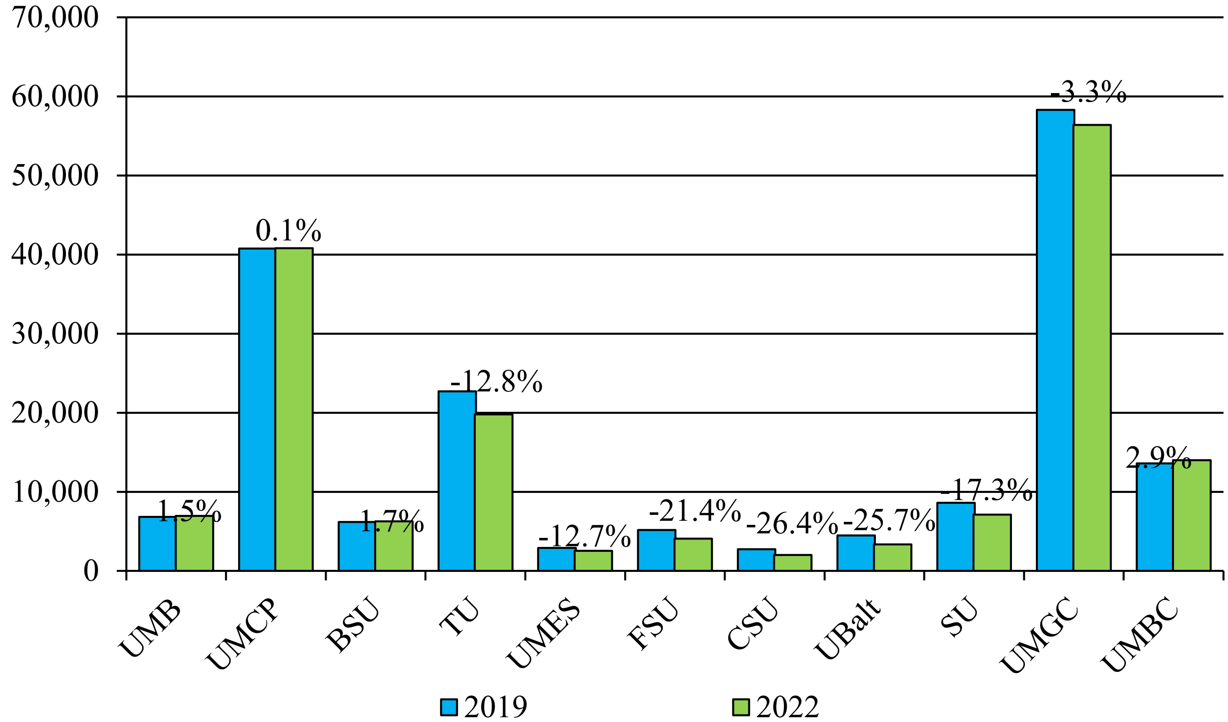
Source: University System of Maryland

Will Enrollment Bounce Back to Prepandemic Levels?

Fall 2020 was the first fall semester impacted by the pandemic during which USM institutions de-densified campuses with most classes being taught remotely and reduced resident hall occupancy for the academic year. Fall 2021 saw the resumption of in-person classes and full occupancy of resident halls. To understand the impact these actions had on enrollment and if institutions have fully recovered from the impacts of the pandemic, fall 2019 (prepandemic) enrollment is used as a baseline for comparison.

Overall, as shown in **Exhibit 7.6**, total fall headcount enrollment at USM institutions declined 5.2% between fall 2019 and 2022. Nationally, according to the National Student Clearinghouse, since 2020, enrollment has declined 4.2% at public four-year institutions. However, as also shown in the exhibit, the impact of the pandemic varied depending upon the type of institution; with some experiencing declines exceeding 20%, while others saw increases in enrollment. In general, more selective institutions and Historically Black Colleges and Universities (HBCU), such as University of Maryland, College Park Campus; University of Maryland Baltimore County; and Bowie State University, saw their enrollment bounce back to prepandemic levels, while regional institutions (*e.g.*, FSU, Salisbury University, TU, and University of Maryland Eastern Shore) continue to struggle. This partly reflects the impact of the continuing decline in enrollment at community colleges affecting the number of transfer students enrolling at these institutions.

Exhibit 7.6
Total Fall Headcount Enrollment and Percentage Change
Fall 2019-2022



BSU: Bowie State University
CSU: Coppin State University
FSU: Frostburg State University
TU: Towson University
SU: Salisbury University
UBalt: University of Baltimore
UMB: University of Maryland, Baltimore Campus
UMBC: University of Maryland Baltimore County
UMCP: University of Maryland, College Park Campus
UMES: University of Maryland Eastern Shore
UMGC: University of Maryland Global Campus

Note: Percent change is by institution from fall 2019 to fall 2022.

Source: University System of Maryland, November 2022

Also noteworthy is that the rate of enrollment decline has slowed to prepandemic levels. Nationally, for fall 2022, total enrollment across all higher education institutions declined 1.1%, while USM institutions experienced 1.0% decrease in enrollment, the smallest decline in the last four years. Another positive indicator is enrollment of first-time students increased for a second year at USM institutions.

St. Mary's College of Maryland

St. Mary's College of Maryland's (SMCM) outstanding debt consists of auxiliary and capital lease debt. SMCM has no outstanding academic debt. The total debt in fiscal 2022 is $39.9 million, declining to $27.1 million by fiscal 2028. As shown in **Exhibit 7.7**, the college's ratio of debt service to unrestricted expenditures is also expected to decrease from 5.3% in fiscal 2022 to 3.6% in fiscal 2028.

Exhibit 7.7
St. Mary's College of Maryland Debt Service Related to Unrestricted Funds
Fiscal 2011-2028 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	42,135	3,034	65,895	4.6%
2022	39,865	3,816	69,164	5.5%
2023 Estimated	37,535	3,791	72,019	5.3%
2024 Estimated	35,115	3,786	74,133	5.1%
2025 Estimated	32,965	3,429	75,615	4.5%
2026 Estimated	31,015	3,153	77,128	4.0%
2027 Estimated	29,115	3,033	78,670	3.7%
2028 Estimated	27,135	3,041	83,589	3.6%

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 2021, SMCM's bond rating was affirmed by Moody's at A2 with a stable outlook, upgraded from the previous rating of A2 negative.

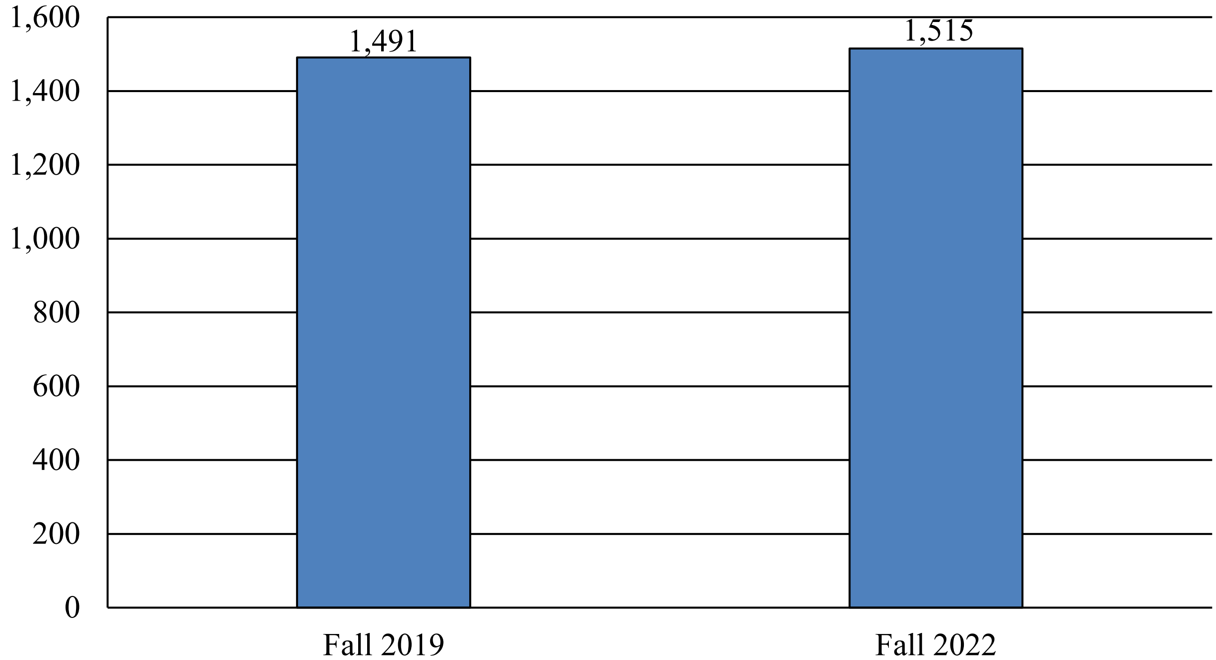
Impact of COVID-19 Pandemic

The pandemic had a marginal impact on the college's long-term operational budget. Receiving $4.6 million in Higher Education Emergency Relief Fund; Coronavirus Aid, Relief, and Economic Security (CARES); and American Rescue Plan Act (ARPA) operational funding from the federal and State level, along with a Payroll Protection Plan loan that was ultimately forgiven, allowed the college to cover lost tuition and lost auxiliary revenue and maintain financial viability throughout the pandemic. For fall 2022, campus residency (dorm occupancy and dining services) has fully recovered from the pandemic impact. Throughout the pandemic period, no contingency or unrestricted fund balance accounts were used to cover any deficits.

Throughout the early part of the pandemic, the college invested a considerable amount of funds to ensure that adequate remote teaching capabilities were available. These efforts included expansion of Wi-Fi coverage in academic and residential buildings and the acquisition and installation of adequate technology, including cameras and microphones, in all classrooms to ensure remote learning capability. These enhanced capabilities will remain in place should the college have the need to pivot quickly to fully remote status in the future and, importantly, as the college works to redefine the residential college experience post-COVID-19.

Enrollment projections continue to be rebound for the college. As shown in **Exhibit 7.8**, the SMCM full-time undergraduate enrollment for fall 2022 is 1,515 total students, compared to 1,491 for fall 2019, a slight increase of 1.6%. For fall 2022, SMCM once again exceeded the record for the number of applications received at 3,099. In fall 2019, the college only had 1,621 total applications. Thus, the college has experienced an application increase of 90% in just three years.

Exhibit 7.8
St. Mary's College Enrollment Headcount
Fall 2019 and Fall 2022



Source: St. Mary's College of Maryland, November 2022

Morgan State University

As shown in **Exhibit 7.9**, Morgan State University (MSU) had $27.9 million of debt in fiscal 2022 relating to $7.1 million in capital lease debt and $20.8 million in HBCU loan disbursements. There was no academic and auxiliary revenue debt outstanding as of June 30, 2021, as MSU retired the 1993 bonds in July 2020 and the defeased 2012 revenue bonds in October 2020, leaving capital leases as the only debt outstanding. MSU is planning to initiate an additional HBCU loan (2022 HBCU loan) for $65 million to fund student housing renovations and critical deferred maintenance projects. No further issuance of debt is under consideration over the next five years.

Exhibit 7.9
Morgan State University Debt Service as Related to Unrestricted Funds
Fiscal 2011-2028 Estimated
($ in Thousands)

Year	Total Debt Outstanding[1]	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	9,038	7,588	169,184	4.5%
2022	27,960	2,159	253,539	0.9%
2023 Estimated	49,130	2,705	303,808	0.9%
2024 Estimated	111,013	4,498	312,922	1.4%
2025 Estimated	107,148	6,457	322,310	2.0%
2026 Estimated	103,568	7,337	331,979	2.2%
2027 Estimated	100,968	6,257	341,939	1.8%
2028 Estimated	98,272	6,257	352,197	1.8%

[1] Morgan State University advises that fiscal 2021 debt outstanding was low because the university retired $22.6 million in 1993 and 2012 bonds in fiscal 2020. Another $7.5 million in Historically Black College and University loans were forgiven, leaving $9 million in capital leases outstanding.

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

Source: Morgan State University

MSU has taken advantage of the HBCU Capital Financing Program through the U.S. Department of Education (USDE). This program provides low-cost capital to finance improvements to the infrastructure of the nation's HBCUs. HBCU Capital Financing Program debt is not considered revenue bonds outstanding but rather a general obligation of the university. MSU indicated that, for financial statement purposes, this debt should not be considered outstanding until it is disbursed. In other words, this is similar to a line of credit.

In November 2018 and October 2020, MSU initiated future advance project funding bonds from USDE as part of the HBCU Capital Financing Loan Program totaling $25.0 million and

$69.8 million, respectively. Total amounts disbursed under these loans as of December 27, 2020, totaling $33.7 million were forgiven by USDE pursuant to the Consolidated Appropriations Act of 2021. As a result, MSU had no bond debt outstanding as of June 30, 2021. The remaining $61.1 million undisbursed from the 2020 HBCU loan is expected to be mostly disbursed in fiscal 2022 for a public safety building and a dining facility with any remaining balance disbursed in fiscal 2023. As noted, in December 2022, MSU intends to initiate future advance project funding bonds from USDE as part of the HBCU Capital Financing Loan Program totaling $65.0 million.

MSU received an affirmed A+ Rating from S&P in December 2021 with the outlook upgraded to stable, and Moody's' last review was in May 2021 with an A1 rating and stable outlook.

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. MSU has indicated that, as a result of GASB 87 implementation, there is an estimated additional $19.5 million in capital leases arising from those leases previously accounted for as operating leases. MSU plans to procure an accounting/consulting firm to perform an analysis to determine the actual impact of GASB 87 on its financial statements.

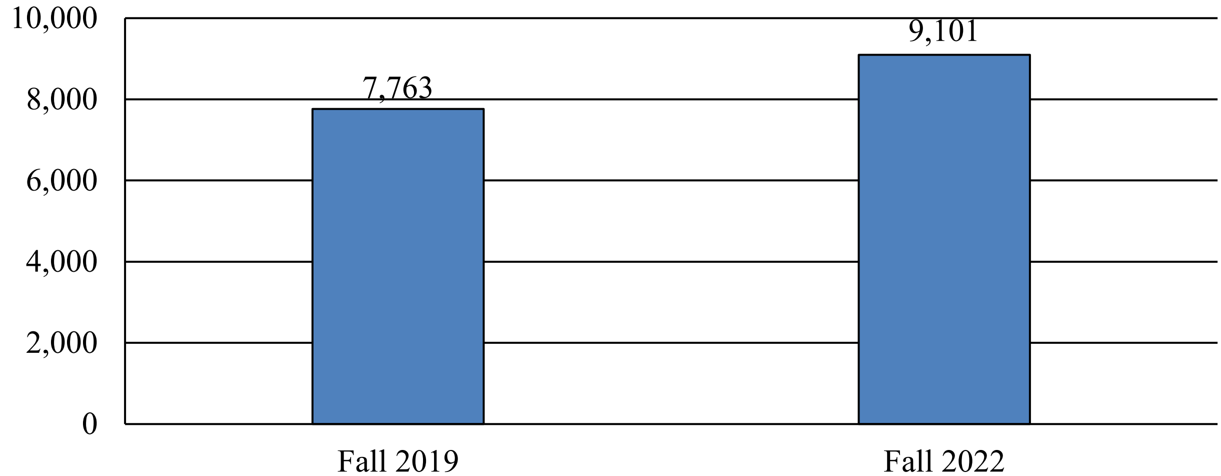
Impact of COVID-19 Pandemic

Throughout the pandemic, MSU has been upgrading facilities and technology, resulting in increased costs to support a remote learning environment and a safe work environment for essential employees. Approximately $57 million of federal stimulus funds were used in fiscal 2021 for student grants, technology, student housing, remote instruction, campus safety and personal protective equipment, and financial aid to cover lost revenues. Approximately $27 million of remaining federal stimulus funds were used in fiscal 2022 for pandemic-related expenditures with approximately $28 million remaining for fiscal 2023.

The federal stimulus provided needed funding to weather the financial impact of the pandemic, for students as well as the institution. These federal funds have enabled the university to improve academic and telework technological infrastructures needed to teach and work remotely. The ongoing costs of maintaining these technological infrastructures and the related staff and equipment costs necessary to provide a continued adequate and appropriate level of functionality are a challenge. Additionally, MSU has expressed concerns about inflation, which could make managing long-term financial stability more challenging.

MSU, like many HBCUs, has seen a steady increase in enrollment. This increase goes against the trend of a decline in enrollment overall for universities. While many colleges have been dealing with a steady decrease in enrollment that has been exacerbated by the pandemic, MSU has avoided this outcome. As shown in **Exhibit 7.10**, in fall 2019, MSU's total headcount was 7,763; while in fall 2022, it rose to 9,101. MSU's enrollment increased by 17.2% between fall 2019 and fall 2022.

Exhibit 7.10
Morgan State University Enrollment Headcount
Fall 2019 and Fall 2022



Source: Morgan State University, November 2022

Baltimore City Community College

To date, Baltimore City Community College (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 is tasked with reviewing the institution’s capital planning needs.

Chapter 8. Issues

Key issues examined in this chapter are:

- discontinuing the current policy of requiring a 5.00% coupon rate for general obligation (GO) bond sales;
- the effect of increasing interest rates on GO bonds' premiums and debt service costs;
- Maryland's high levels of debt, unfunded pension, and unfunded Other Post Employment Benefits (OPEB) liabilities compared to AAA-rated states; and
- how sound debt policies keep the cost of GO bonds low.

Discontinuing the Policy of Requiring 5.00% Coupon Rates Is Recommended

During the COVID-19 pandemic, the State changed its policy about the coupon rate that GO bonds paid. Requiring a higher coupon rate had the short-term advantage of increasing bond sale premiums with a long-term cost of increased debt service payments. The coupon rate is the interest rate paid on the par value of the bonds. Underwriters are now required to sell bonds at a 5.00% coupon rate. This is an uncommon policy. Prior to July 2020, the State had not required a specific coupon rate in in at least 30 years. Letting underwriters set the coupon rate is commonly done because underwriters have more data about bond markets than issuers do, so the underwriters are better positioned to determine what coupon rate is most marketable. If bonds are bid competitively, as is the practice for GO bonds, this tends to reduce debt service costs.

In Chapter 6, the Department of Legislative Services (DLS) analyzed the factors that influence the true interest cost (TIC) of Maryland's GO bond issuances since 1991. After the June 2022 bond sale, DLS updated the equation. As part of this process, DLS included a variable that identified in which sales the State required the 5.00% coupon rate. There was a strong and statistically significant correlation between higher interest rates and requiring the 5.00% coupon. This suggests that the State is paying more debt service costs when forcing the underwriter to increase the coupon rate to 5.00%.

The policy to require a 5.00% coupon rate was adopted early in the pandemic, presumably to increase bond premiums. The State's fiscal condition is different now than when the policy to require a 5.00% coupon rate was introduced in July 2020. Maximizing premiums is not necessary now. Instead, minimizing long-term costs is a more appropriate policy. **Since requiring higher coupon rates is an uncommon practice for which there is evidence of increased borrowing costs, DLS recommends that the State discontinue requiring 5.00% coupon rates for GO bond issuances and adopt the policies in effect prior to the COVID-19 pandemic.**

Effect of Recent Interest Rate Increases

From 2020 to through early 2022, interest rates were extraordinarily low. The Federal Reserve kept interest rates low during the pandemic to stimulate the economy. **Exhibit 8.1** shows that the 10-year U.S. Treasury Note stayed below 2% over much of that period. While it occasionally dipped below 2% in prior years, this was the only extended period below 2%. DLS uses the 10-year rate as a basis for comparison since GO bond issuances average maturities are 10 years.

Exhibit 8.1
10-year U.S. Treasury Note Interest Rates
January 1962 to November 2022

Source: Board of Governors of the Federal Reserve System

Since March 2022, interest rates have trended upward, albeit unevenly. The 10-year rate was last below 2% on March 11, 2022, at 1.98%. By November 11, 2022, the rate increased to 4.10%. Inflation has been persistent throughout 2022. In response, the Federal Reserve Board has increased the federal funds rate six times, including four rate increases of 0.75%. The board has not indicated if it will continue to increase rates but has indicated that rates will increase as long as inflation persists.

DLS has observed that a GO bonds' TIC is rarely below the 10-year Treasury Note rate. The one time in recent years that the TIC was below the Treasury Note rate, it was 0.15% (15 basis points) below the Treasury Note rate. This suggests that the Treasury Note rate is essentially a floor for GO bond rates.

Small or Even Negligible Bond Sale Premiums Are Anticipated

There is an inverse relationship between interest rates and the value of bonds. As interest rates decline, bond sale premiums increase; as interest rates increase, bond sale premiums decline. Buying bonds at a premium reduces the losses realized by investors if interest rates rise. This creates demand for premiums when interest rates are low and are expected to increase. Offering high coupon rates increased how much premium the State realized in recent GO bond sales. **Appendix 3** provides a discussion of the economics of bond sale premiums with an example of how premiums affect the value of bonds when interest rates increase.

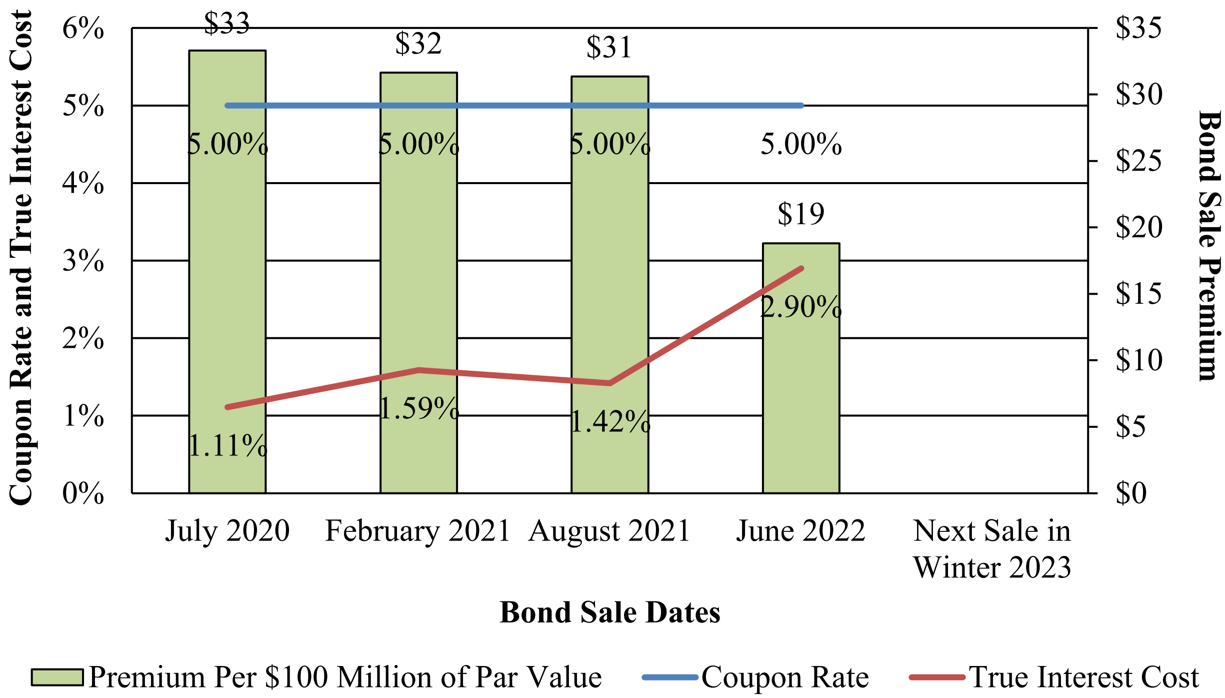
Exhibit 8.2 shows that bond sale premiums per $100 million of par value were over $30 million during the period of extraordinarily low interest rates in the first two years of the COVID-19 pandemic. As interest rates increased in 2022, premiums per $100 million in par value declined. DLS anticipates that the amount of bond sale premium realized will be smaller and that they could even be negligible. Reasons for this are that:

- ***The Period of All-time Low Interest Rates Is Over:*** Higher inflation and Federal Reserve Board actions have increased interest rates. This is more likely to continue than to reverse. The question is not if interest rates will be higher than the extraordinarily low rates offered during the pandemic, but how much higher the rates will be.

- ***Allowing Coupon Rates to Fall Below 5.00% Reduces Premiums:*** The policy to force high coupon rates is uncommon and, as discussed in Chapter 6, likely increases debt service costs. Reverting back to prepandemic policies allowing underwriters to determine the coupon rate would decrease bond sale premiums. Prior to the pandemic, coupon rates fluctuated from sale to sale, but often ranged between from 4.00 to 4.25%.

- ***Higher Interest Rates Should Reduce the Demand for High Bond Sale Premiums:*** Even without requiring coupon rates that are more than the TIC, coupon rates have been higher than the TIC in recent years, as investors prefer buying bonds that are hedged against higher interest rates.

Exhibit 8.2
GO Bond Sale True Interest Costs and Coupon Rates
July 2020 to Winter 2023
($ in Millions)



GO: general obligation

Source: Public Resources Advisory Group; Department of Legislative Services

Taken together, these factors reduce the amount of bond sale premiums anticipated in upcoming bond sales. At this point, it is unclear what interest rates will be, what coupon rates underwriters will use to structure the bond sale, and what the bond market's appetite for premiums will be. Prior to this recent period of high bond sale premiums, it was common to have bonds sell at modest premiums, usually for only a few million dollars. Current trends show interest rates for 10-year bonds approaching coupon rates that were commonly offered for prepandemic GO bonds issuances. This could happen again. **DLS recommends that the State take a cautious approach to estimating premiums prior to bond sales.**

Forecasted Debt Service Costs Not Expected to Increase but Could If Interest Rates Continue to Increase Sharply

In 2022, the impact of higher interest rates has been to reduce bond sale premiums. Projected debt service costs have not increased. The State Treasurer's Office and DLS' interest rate estimates assume a 5.00% coupon rate. This high rate was assumed even before the State adopted the policy of requiring 5.00% coupon rates. Interest rates on 10-year Treasury Notes are still about 1.00% less than the 5.00% rate assumed in forecasts. Until the TIC is higher than 5.00%, higher interest rates will not increase debt service costs. However, should interest rates exceed 5.00%, the assumed rate would need to be increased. **DLS recommends that interest rates are closely monitored and that interest rate assumptions increase if an anticipated TIC is more than 5.00%.**

Maryland Is a High-debt State That May See Increased Demand for Capital Spending during the Six-year Forecast Period

Maryland is a high-debt State that uses debt to support non-State capital assets. As discussed later in this chapter and in Chapter 3, large new bond issuances have been authorized in recent years. Maryland also has aging infrastructure that may increase the demand to authorize debt.

Large Capital Program Also Supports Local Jurisdictions and Nonprofit Organizations

Maryland 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 just 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. Maryland has the highest ratios among the AAA-rated states for these measures.

Exhibit 8.3 shows that Moody's ranked Maryland the thirteenth highest state with respect to debt outstanding, which is 4.1% of personal income. This is the second highest level among AAA-rated states. Most AAA-rated states are below the ratio, suggesting that it is more difficult to keep a high bond rating as levels of debt increase. The state with the highest ratio is Hawaii, with a ratio of 11.4%.

Exhibit 8.3
Ranking AAA-rated States
Net Tax Supported Debt Outstanding as a Percent of Personal Income
Fiscal 2021

State	Debt Outstanding to Personal Income	State Rank
Delaware	7.0%	5
Maryland	4.1%	13
Virginia	2.8%	19
Mean	*2.8%*	*n/a*
Minnesota	2.2%	25
Georgia	2.0%	26
Utah	1.6%	29
Florida	1.2%	32
North Carolina	1.2%	21
Texas	1.1%	36
South Dakota	0.9%	28
Missouri	0.7%	42
Iowa	0.7%	42
Tennessee	0.5%	45
Indiana	0.4%	46

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 higher than Maryland's estimates.

Source: *U.S. State Liability Report*, Moody's Investors Services, September 2022

Exhibit 8.4 shows that Maryland's debt service to revenues is the highest among AAA-rated states, which Moody's calculates to be 3.9%. To make the comparison comparable, Moody's estimates an implied debt service. This is done by amortizing all debt over 20 years. Since Maryland's GO bonds are amortized over 15 years, Maryland GO bonds' implied debt service costs are less than actual debt service costs, which lowers Maryland's ratio. However, Moody's also considers lottery bonds to be State debt, and since these bonds are often amortized over 30 years, debt service costs for those bonds are increased with this methodology. The implied rate further increases the ratio since it increases most of the Maryland Stadium Authority's (MSA) debt service costs. Overall, Moody's ratio is less than the State ratio, so the net effect of this process is to reduce Maryland's ratio. Even with net favorable debt service adjustments, Maryland still has the highest ratio among AAA-rated states.

Exhibit 8.4

Ranking AAA-rated States
Net Debt Service as a Percent of Revenues

Fiscal 2021

State	Implied Debt Service to State Revenues	State Rank
Maryland	3.9%	9
Delaware	3.5%	15
Virginia	2.7%	20
Mean	*2.5%*	*n/a*
Georgia	2.5%	22
Florida	2.1%	25
Minnesota	1.8%	28
Utah	1.8%	28
Texas	1.6%	32
North Carolina	1.3%	33
Missouri	1.3%	33
South Dakota	1.2%	36
Iowa	0.9%	39
Tennessee	0.6%	45
Indiana	0.5%	46

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 higher than Maryland's estimates. Moody's also estimates implied debt service, which increases Maryland's bonds' amortization period to 20 years. This reduces the ratio, since most Maryland bonds are amortized over 15 years.

Source: *U.S. State Liability Report*, Moody's Investors Services, September 2022

This year, Moody's expanded its debt service report to include other long-term liabilities, such as unfunded pension liabilities, unfunded OPEB liabilities, and other liabilities like judgments, compensated absences, and environmental remediation. This provides a more expansive measure of long-term liabilities. Moody's compares the estimated annual cost of these liabilities to annual State revenues. **Exhibit 8.5** shows that Maryland has the highest ratio among AAA-rated states. As in Exhibit 8.4, debt service costs are implied, and as discussed in Chapter 5, Moody's recalculates pension cost by using the FTSE Pension Liability Index as the common discount rate.

Exhibit 8.5
Total Liabilities to State Revenues
Fiscal 2021

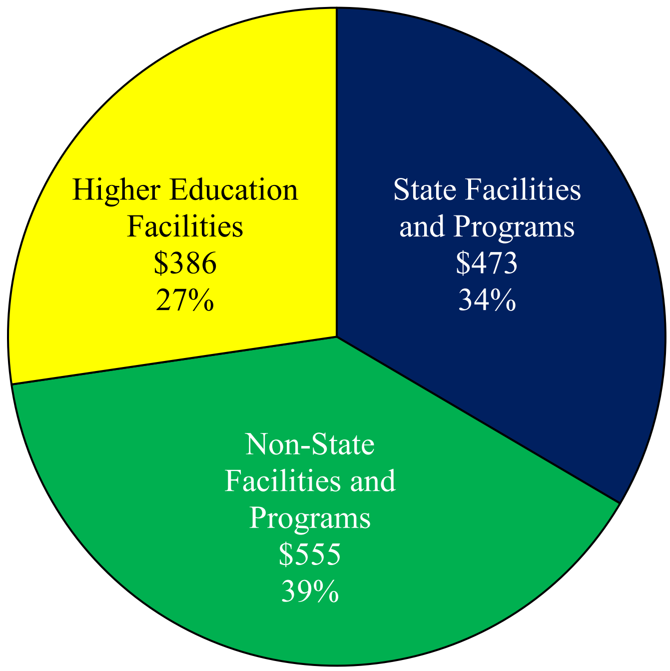
State	Total Liabilities' Fixed Annual Costs to State Revenues	State Rank
Maryland	12.6%	7
Delaware	10.0%	13
Texas	9.6%	14
Missouri	7.2%	21
Mean	*6.3%*	*n/a*
Florida	4.5%	33
Virginia	4.5%	33
Georgia	4.4%	35
Indiana	4.3%	36
North Carolina	3.6%	39
Utah	3.2%	41
Minnesota	3.0%	42
Iowa	2.4%	43
South Dakota	2.2%	45
Tennessee	2.2%	45

Source: *U.S. State Liability Report*, Moody's Investors Services, September 2022

Uses of Maryland's GO Bonds

Maryland's bond program supports various State and non-State projects and programs. **Exhibit 8.6** shows 39% of proposed fiscal 2022 GO bond authorizations support non-State projects and programs. The largest area of support, public school construction, receives \$222 million, which is 16% of total authorizations.

Exhibit 8.6
Uses of General Obligation Bond Proceeds
Fiscal 2023 as Introduced
($ in Millions)



Note: The capital budget bill authorizes funding for $1.414 billion in projects, which includes $1.165 billion in par value bonds, $210 million in bond sale premiums, and deauthorizes $39 million.

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

Since 2019, the State Has Authorized a Substantial Amount of Revenue Bonds to Supplement Capital Needs Not Funded with General Obligation Bonds

In addition to the GO bond program, the State authorizes revenue bonds to support various non-State assets. Since 2019, the General Assembly has authorized over $4.5 billion in MSA debt to support the following projects:

- $2.2 billion for Built to Learn school construction projects in Chapter 20 of 2020 and Chapter 698 of 2021;

- $1.2 billion for stadium improvements to the Baltimore Orioles and Ravens' stadiums in Chapter 60 of 2022;

- $400 million for constructing and renovating blue line corridor projects in Prince George's County;

- $375 million for improvements to horse racing at Pimlico and Laurel Park;

- $200 million for minor league sports stadiums and entertainment facilities;

- $59.5 million for constructing the Hagerstown Multi-Use Sports and Events Facility;

- $55 million for renovating and expanding the Baltimore City Convention Center;

- $25 million for a Supplemental Facilities Fund; and

- $24.5 million for renovating and expanding the Ocean City Convention Center.

Prior to 2010, MSA bonds supported by lottery revenues were classified as State debt. Bond counsel advised that this debt can be structured so that it is not State debt if the Comptroller's Office deposits the lottery funds with a trustee for the bondholders. Subsequent bond sales were structured as non-State sales. Of MSA's $5.7 billion in total authorized debt, $5.5 billion is counted by the State as non-State debt. As noted earlier, Moody's considers bonds supported by lottery revenues to be State debt.

Sound Debt Policies Give Maryland Access to Inexpensive Debt

Despite Maryland's high levels of debt, GO bond interest rates are low. Maryland's credit strengths include a strong economy and a willingness to make difficult decisions. Adhering to Maryland's affordability process is also a key credit strength.

Maryland Bonds Sell at a Low Interest Rate

The State currently pays one of the lowest interest rates of all issuers of state and municipal debt. Paying low interest rates persisted through the pandemic and has continued since interest rates have risen throughout 2022. Each year, DLS measures the factors that influence GO bonds' interest rates. An analysis of the interest cost of GO bonds in Chapter 6 shows that the State's cost of capital is low. DLS' analysis suggests that:

- State bonds sell at 88% 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 0.76% (76 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.

Why Maryland Has a AAA Bond Rating

High levels of debt notwithstanding, Maryland has a AAA bond rating from all three major credit rating agencies. Rating agencies have identified strong economy and financial practices as credit strengths. The State also adheres to its affordability process and policies.

Rating Agencies Identify Maryland's Credit Strengths

Prior to the most recent bond sale in June 2022, rating agencies reaffirmed Maryland's AAA bond rating. That agencies commented on the following credit strengths:

- high wealth and income levels;
- broad and diverse economy;
- strong and well-embedded financial practices; and
- adequate reserves and liquidity.

Maryland Has a History of Making Difficult Decisions to Reduce or Slow the Growth of the Capital Program to Keep Debt Affordable

An example of Maryland's strong and well-embedded financial practices is the State's willingness to make difficult decisions. The State has exhibited discipline 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 million.

The State has also restrained increases in bond authorizations. From 2015 through 2021, the Spending Affordability Committee (SAC) recommended that increases in authorizations be limited to 1%. This policy was adopted when the debt service to revenues ratio was close to the affordability limit. The major revenue source supporting debt service is the State property tax, which was projected to increase between 1% to 2% annually. To keep the growth below revenues, increases in authorizations were limited to 1%.

Observations about Maryland's AAA Rating

Based on conversations with rating agencies and the comments in their ratings, DLS observes that:

- ***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 3 of 14 states with AAA ratings from the three major rating agencies have debt outstanding ratios above the median, and, similarly, 3 of 14 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 might 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 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.

To maintain a AAA bond rating from all three rating agencies and keep interest rates low, DLS recommends that the State should continue its sound fiscal management and prudent debt policies including the policy that changes in GO bond authorizations are reviewed by the Capital Debt Affordability Committee and SAC before they are enacted in the capital budget bill.

Appendix 1

Estimated General Obligation Bond Issuances

Fiscal 2023 to Post-2031

($ in Millions)

Fiscal Year	Proposed Auth.	Estimated Issuances during Fiscal Year (a) ═══> 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Post-2032	Total Issued
2024	$1,205	$0	$374	$301	$241	$181	$108						**$1,205**
2025	1,250		0	388	313	250	188	$111					**1,250**
2026	1,300			0	403	325	260	195	$117				**1,300**
2027	1,355				0	420	339	271	203	$122			**1,355**
2028	1,410					0	437	353	282	212	$126		**1,410**
2029	1,465						0	454	366	293	220	$132	**1,465**
2030	1,525							0	473	381	305	366	**1,525**
2031	1,585								0	491	396	698	**1,585**
2032	1,650									0	512	1,138	**1,650**
Total New Authorization		**$0**	**$374**	**$689**	**$957**	**$1,176**	**$1,332**	**$1,384**	**$1,441**	**$1,499**	**$1,559**	**$2,334**	
Previously Authorized GO Bonds	$2,332	$590	$815	$506	$247	$86	$42	$38	$8,418	$0	$0	$0	**$2,332**
Total Issuances		**$590**	**$1,189**	**$1,195**	**$1,204**	**$1,262**	**$1,374**	**$1,422**	**$1,449**	**$1,499**	**$1,559**	**$2,334**	**$15,077**

GO: general obligation

Source: Department of Legislative Services

Appendix 2

Maryland General Obligation Bond Debt True Interest Cost Analysis

Statistically Significant Variables

Bond Sale Date	TIC	20-bond Index	MD/U.S. PI	Post-crisis	YTM	Call
03/13/91	6.31%	7.32%	2.261	No	9.84	Yes
07/10/91	6.37%	7.21%	2.240	No	9.85	Yes
10/09/91	5.80%	6.66%	2.230	No	9.80	Yes
05/13/92	5.80%	6.54%	2.220	No	9.80	Yes
01/13/93	5.38%	6.19%	2.221	No	9.73	Yes
05/19/93	5.10%	5.77%	2.212	No	9.73	Yes
10/06/93	4.45%	5.30%	2.206	No	9.73	Yes
02/16/94	4.48%	5.42%	2.208	No	9.74	Yes
05/18/94	5.36%	6.14%	2.199	No	9.74	Yes
10/05/94	5.69%	6.50%	2.191	No	9.72	Yes
03/08/95	5.51%	6.18%	2.184	No	9.78	Yes
10/11/95	4.95%	5.82%	2.163	No	9.65	Yes
02/14/96	4.51%	5.33%	2.159	No	9.65	Yes
06/05/96	5.30%	5.94%	2.144	No	9.69	Yes
10/09/96	4.97%	5.73%	2.144	No	9.70	Yes
02/26/97	4.90%	5.65%	2.136	No	9.68	Yes
07/30/97	4.64%	5.23%	2.135	No	9.68	Yes
02/18/98	4.43%	5.07%	2.119	No	9.68	Yes
07/08/98	4.57%	5.12%	2.128	No	9.68	Yes
02/24/99	4.26%	5.08%	2.134	No	9.60	Yes
07/14/99	4.83%	5.36%	2.146	No	9.60	Yes
07/19/00	5.05%	5.60%	2.157	No	9.72	Yes
02/21/01	4.37%	5.21%	2.178	No	9.71	No
07/11/01	4.41%	5.22%	2.201	No	9.68	No
03/06/02	4.23%	5.19%	2.233	No	9.61	No
07/31/02	3.86%	5.00%	2.241	No	9.66	No
02/19/03	3.69%	4.79%	2.235	No	9.60	No
07/16/03	3.71%	4.71%	2.250	No	9.67	Yes
07/21/04	3.89%	4.84%	2.254	No	9.70	Yes
03/02/05	3.81%	4.50%	2.259	No	9.70	Yes
07/20/05	3.79%	4.36%	2.268	No	9.69	Yes
03/01/06	3.87%	4.39%	2.242	No	9.68	Yes
07/26/06	4.18%	4.55%	2.238	No	9.64	Yes
02/28/07	3.86%	4.10%	2.228	No	9.64	Yes
08/01/07	4.15%	4.51%	2.218	No	9.65	Yes
02/27/08	4.14%	5.11%	2.208	No	9.64	Yes
07/16/08	3.86%	4.65%	2.213	Yes	9.60	Yes
03/04/09	3.39%	4.96%	2.287	Yes	9.01	Yes
03/02/09	3.63%	4.87%	2.287	Yes	10.04	Yes
08/05/09	2.93%	4.65%	2.303	Yes	8.96	Yes
08/03/09	3.20%	4.69%	2.303	Yes	9.01	Yes
10/21/09	2.93%	4.31%	2.242	Yes	7.91	Yes

Bond Sale Date	TIC	20-bond Index	MD/U.S. PI	Post-crisis	YTM	Call
07/28/10	1.64%	4.21%	2.259	Yes	5.34	No
07/28/10	1.91%	4.21%	2.259	Yes	6.20	Yes
03/07/11	2.69%	4.90%	2.286	Yes	6.86	No
03/09/11	3.49%	4.91%	2.286	Yes	10.51	Yes
07/25/11	1.99%	4.46%	2.299	Yes	5.65	No
07/27/11	3.08%	4.47%	2.299	Yes	10.05	Yes
03/02/12	2.18%	3.72%	2.306	Yes	8.33	Yes
03/07/12	2.42%	3.84%	2.306	Yes	9.71	Yes
07/27/12	2.52%	3.61%	2.277	Yes	9.10	Yes
08/01/12	2.17%	3.66%	2.277	Yes	9.71	Yes
03/06/13	2.35%	3.86%	2.288	Yes	9.61	Yes
07/24/13	3.15%	4.77%	2.284	Yes	10.20	Yes
03/05/14	2.84%	4.41%	2.265	Yes	10.14	Yes
07/18/14	1.27%	4.36%	2.240	Yes	4.69	No
07/23/14	2.65%	4.29%	2.240	Yes	10.16	Yes
03/05/15	2.65%	3.68%	2.232	Yes	9.63	Yes
07/16/15	2.83%	3.82%	2.238	Yes	10.33	Yes
06/08/16	2.17%	3.03%	2.207	Yes	9.62	Yes
03/08/17	2.84%	4.02%	2.205	Yes	10.59	Yes
08/16/17	2.29%	3.57%	2.200	Yes	9.59	Yes
03/07/18	2.83%	3.88%	2.129	Yes	10.29	Yes
08/01/18	2.33%	3.95%	2.124	Yes	6.72	No
08/01/18	3.12%	3.95%	2.124	Yes	13.05	Yes
03/26/19	1.78%	3.79%	2.138	Yes	6.69	No
03/26/16	2.71%	3.79%	2.138	Yes	13.02	Yes
08/14/19	1.13%	3.10%	2.128	Yes	7.35	No
08/14/19	1.98%	3.10%	2.128	Yes	13.00	Yes
03/04/20	0.89%	2.31%	2.107	Yes	7.41	No
03/04/20	1.85%	2.31%	2.107	Yes	13.01	Yes
07/22/20	0.55%	2.10%	2.090	Yes	6.75	No
07/22/20	1.74%	2.10%	2.090	Yes	13.09	Yes
02/24/21	0.63%	2.44%	2.009	Yes	7.48	No
02/24/21	1.73%	2.44%	2.009	Yes	13.07	Yes
08/11/21	0.76%	2.14%	2.009	Yes	7.58	No
08/11/21	1.78%	2.14%	2.009	Yes	13.02	Yes
06/08/22	2.32%	3.16%	1.885	Yes	7.19	No
06/08/22	2.83%	3.16%	1.885	Yes	10.97	Yes
06/08/22	3.29%	3.16%	1.885	Yes	13.97	Yes

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

Source for 20-bond Index: *The Bond Buyer*
Source for personal income: Moody's Analytics; IHS Markit
Remaining sources: Bond Sale Official Statements

Appendix 3
Agency Debt Outstanding
Fiscal 2012-2022
($ in Millions)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Change 2012-2022	Average Annual % Change 2012-2022
Agency Debt Subject to Ceiling and Allocation Caps													
Maryland Environmental Service	$27.5	$25.2	$27.9	$26.4	$24.8	$23.1	$21.4	$27.8	$26.8	$24.7	$22.3	-$5.2	-2.1%
Maryland Transportation Authority	3,279.7	3,303.2	3,179.3	3,176.4	3,062.0	2,928.4	2,149.9	2,097.5	2,393.5	2,479.5	2,424.9	-854.8	-3.0%
Maryland Water Quality Financing Administration[1]	57.7	47.2	36.7	33.2	29.2	24.7	20.3	17.8	15.2	12.4	9.5	-48.2	-16.5%
Revenue Cap Total	**$3,364.9**	**$3,375.6**	**$3,243.9**	**$3,235.9**	**$3,116.0**	**$2,976.2**	**$2,191.6**	**$2,143.1**	**$2,435.5**	**$2,516.6**	**$2,456.6**	**-$908.3**	**-3.1%**
% Change/Prior Year	**-2.1%**	**0.3%**	**-3.9%**	**-0.2%**	**-3.7%**	**-4.5%**	**-26.4%**	**-2.2%**	**13.6%**	**3.3%**	**-2.4%**		
Agency Debt Not Subject to Ceiling and Allocation Caps													
Baltimore City Community College	$1.0	$0.9	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	-$1.0	-100.0%
Department of Housing and Community Development[2]	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	2,922.9	3,193.1	86.6	0.3%
Local Government Infrastructure (CDA)	122.8	129.6	137.1	164.1	156.1	167.8	184.0	191.9	195.9	181.5	165.9	43.1	3.1%
Maryland Industrial Development Financing Authority	492.6	347.7	335.1	312.6	288.3	286.4	265.8	237.0	223.6	213.0	185.8	-306.8	-9.3%
MDOT – County Revenue Bonds	82.9	101.7	94.9	87.9	120.2	108.8	97.0	128.0	113.4	100.6	87.2	4.3	0.5%
MDOT – Nontax-supported Issuances	51.1	47.7	44.7	41.5	38.2	33.4	29.8	26.1	22.1	17.9	13.5	-37.6	-12.5%
Morgan State University	55.2	47.8	44.3	43.5	58.3	51.8	46.5	45.0	40.9	9.0	27.9	-27.3	-6.6%
St. Mary's College of Maryland	38.3	36.1	34.3	34.6	32.5	32.0	29.6	25.8	24.3	42.1	39.9	1.6	0.4%
University System of Maryland	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	1,207.9	1,297.8	127.8	1.0%
Noncap Total	**$5,120.4**	**$4,885.5**	**$4,742.7**	**$4,369.7**	**$4,408.2**	**$4,327.5**	**$4,135.5**	**$4,451.6**	**$4,861.0**	**$4,694.9**	**$5,011.0**	**-$109.4**	**-0.2%**
% Change/Prior Year	**-2.0%**	**-4.6%**	**-2.9%**	**-7.9%**	**0.9%**	**-1.8%**	**-4.4%**	**7.6%**	**9.2%**	**-3.4%**	**6.7%**		

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Change 2012-2022	Average Annual % Change 2012-2022
Tax-supported Debt													
Transportation Debt	$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	$3,672.3	$3,643.5	$2,080.9	8.8%
Grant Anticipation Revenue Vehicles	539.4	479.0	415.8	349.4	279.8	206.6	129.7	48.9	0.0	0.0	0.0	-539.4	-100.0%
Capital Leases	310.3	286.2	260.3	242.2	236.0	216.7	223.6	199.2	198.1	175.4	160.0	-150.3	-6.4%
Maryland Stadium Authority	218.3	193.0	175.4	151.0	130.5	110.4	88.6	122.8	120.1	108.5	153.8	-64.5	-3.4%
Bay Restoration Bonds	38.8	36.0	133.1	130.0	301.6	292.9	273.6	253.4	232.1	209.7	186.2	147.4	17.0%
General Obligation Debt	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	9,912.9	10,588.6	3,047.5	3.5%
Tax-supported Debt Total	**$10,210.5**	**$10,618.0**	**$11,160.0**	**$11,570.1**	**$12,559.2**	**$12,739.1**	**$13,106.6**	**$13,574.2**	**$13,949.7**	**$14,078.8**	**$14,732.2**	**$4,521.7**	**3.7%**
% Change/Prior Year	**6.6%**	**4.0%**	**5.1%**	**3.7%**	**8.5%**	**1.4%**	**2.9%**	**3.6%**	**2.8%**	**0.9%**	**4.6%**		
Authorities and Corporations Not Subject to Ceiling and Allocation Caps													
Health/Higher Education Facilities Authority	$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	$8,475.2	$8,600.2	-$312.8	-0.4%
Maryland Economic Development Corporation	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	2,758.2	3,029.4	506.3	1.8%
Authorities and Corporations Total	**$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**	**$11,233.5**	**$11,629.6**	**$193.5**	**0.2%**
% Change/Prior Year	**2.8%**	**-1.8%**	**-1.2%**	**-1.1%**	**1.1%**	**2.4%**	**0.1%**	**-0.8%**	**-4.3%**	**4.1%**	**3.5%**		

CDA: Community Development Administration
MDOT: Maryland Department of Transportation

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

Appendix 4
Economics of 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, the State Treasurer's Office determines how many bonds are sold (par value of the bonds) and when the bonds mature. The underwriter determines the coupon rate (interest rate the issuer pays) and the sale price of the bonds, which is awarded to the underwriter with the lowest interest cost. If the coupon rate is greater than the market rate, the bonds sell at a premium, and the State's bond proceeds exceed the par value of the bonds.

For example, at the bond sale in July 2015, the State issued $450 million in tax-exempt general obligation bonds (par value). The average coupon rate was 3.92%, and the true interest cost (TIC) (market interest rate) was 2.83%. Since the coupon rate exceeded the market interest rate, the bonds sold at premium, and total bond proceeds totaled $494 million (after deducting the underwriters discount and cost of issuance expenses). This additional $44 million is the bond premium.

Why Do Bonds Sell at a Premium?

Economic theory tells us 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, we do live in an uncertain world. 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 declines if interest rates rise.

How investors value bonds are relative and depends on what interest rates the market offers. If low-risk rates 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 a good deal if everyone else is offering 3% or more.

The table below examines a tranche of $36,125,000 in bonds sold with an eight-year maturity in the July 2015 bond sale. The top half of the exhibit compares the return if an investor buys bonds at par and at a premium. It shows that paying $6,080 and getting a 5.0% interest rate yields the same return as paying $5,000 and getting a 2.06% interest rate, since the TIC for both is 2.06%. The bottom half shows what happens if market interest rates increase. In both examples, the bonds are worth less. The difference is that bonds sold at a premium lost 17.8% of their value, while bonds selling at par lost 19.2% of their value. For investors that are intent on preserving wealth or cash, this matters.

Effect of Higher Interest Rates on the Value of Bonds

Data from Bond Sale from July 2015 Bond Sale

	Premium Bonds	Sold at Par	Explanation
Par Value of Bonds	$5,000	$5,000	This is the principal you get back
Coupon Rate	5.00%	2.06%	This is the interest rate on the bond's par value
Premium	$1,080	$0	This is what you pay extra for the higher rate
Value at Sale	$6,080	$5,000	This is what you pay
Yield or TIC	2.06%	2.06%	This is what matters, rate of return
If the Market Interest Rate Increases to 5%			
Value at Sale	$6,080	$5,000	This is what you paid for the bonds
Value After Interest Rates Increase	5,000	4,038	This is what your bonds are now worth
Total Loss	-1,080	-962	This is how much you lose due to rate change
Percent Loss	-17.8%	-19.2%	This is what matters, value lost

TIC: true interest cost

Source: Public Financial Management, July 2015; Department of Legislative Services, November 2015

In conclusion, why do bonds sell at a premium? Because buying bonds at a premium is a hedge against increasing interest rates.