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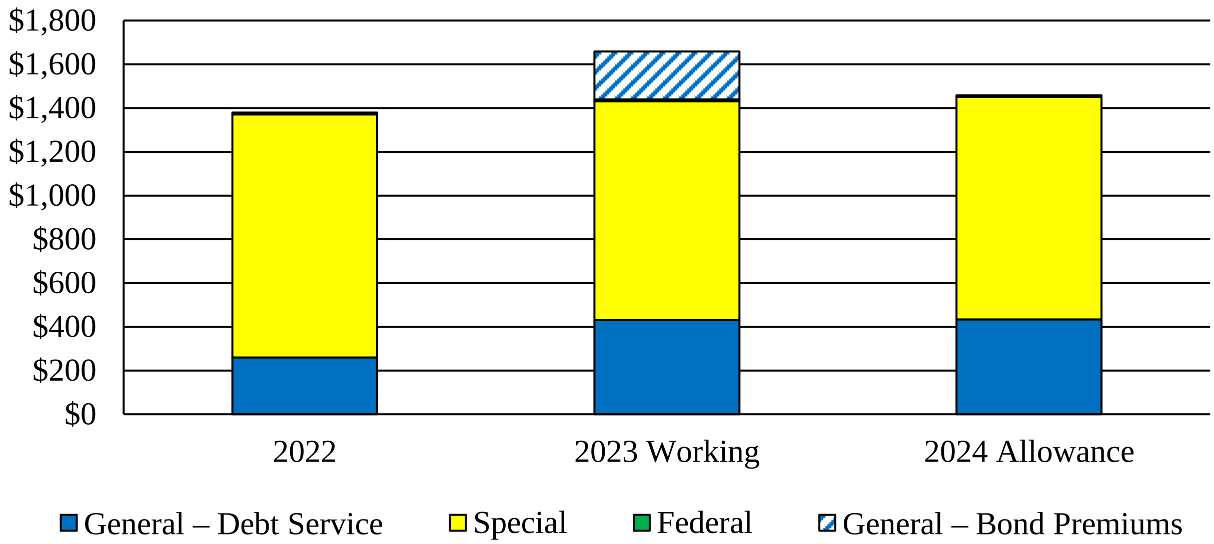
Public Debt

Executive Summary

The Public Debt program appropriates funds for general obligation (GO) bonds' debt service principal and interest payments. GO bonds support the State's general construction program. GO bonds do not pledge specific revenues but rather pledge the State's full faith and credit. Debt service payments are supported by the Annuity Bond Fund (ABF), whose largest revenue source is the State property tax. At the current State property tax rate of $0.112 per $100 of assessable base, property tax revenues are insufficient to fully fund debt service, so general funds are also appropriated.

Operating Budget Summary

Fiscal 2024 Budget Decreases $200 Million, or 12.1%, to $1,458 Million
($ in Millions)



Note: The fiscal 2023 working appropriation includes deficiency appropriations.

- Debt service costs increase 1.3% to $1,458 million in fiscal 2024.

- A $219 million one-time general fund deficiency appropriation is in the budget bill to cover shortfalls in bond sale premiums that had been allocated to support fiscal 2023 capital budget authorizations. June 2022 bond sale premiums were lower than anticipated due to higher interest rates, and March 2023 bond sale premiums are also expected be less than projected in January 2022.

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Key Observations

- ***State Should Reevaluate Policy to Require 5.00% Coupon Rates for GO Bonds:*** At recent bond sales, State policy has been to require that all coupon rates are 5.00%. There is evidence suggesting that this could increase borrowing costs. **The Department of Legislative Services (DLS) recommends that this policy be reevaluated.**

- ***State Debt Authorizations Proposed by the Administration Are Affordable:*** The improved revenue outlook means that affordability ratios are well below limits. Higher authorizations proposed by the Spending Affordability Committee (SAC) are also affordable.

- ***Maryland Is a High-debt State That Keeps Costs Down by Effectively Managing Debt:*** Maryland's net debt service as a percent of revenues and net debt outstanding as a percent of personal income are among the highest of AAA-rated states. This additional debt is used to support capital projects for grants to local jurisdictions and nonprofit organizations, which accounts for 39% of the fiscal 2023 capital budget. Investors and rating agencies know this. Nonetheless, Maryland's GO bonds sell at low interest rates compared to other issuers. To keep costs down, Maryland should maintain its debt management policies.

- ***Debt Affordability Policy Recommendations:*** Maryland structures debt so that initial debt service payments are quite low. This understates the cost of increasing debt authorizations and makes it difficult to reduce debt service if revenues underperform. The analysis offers recommendations to address these concerns.

Operating Budget Recommended Actions

1. Concur with Governor's allowance.

Operating Budget Analysis

Program Description

The Public Debt program appropriates funds for GO bonds' debt service payments. This includes principal and interest payments. The Capital Debt Affordability Committee (CDAC) develops State debt policies and recommends limits on State debt. SAC advises the legislature on debt policies. GO bonds support the State's general construction program, which includes grants to local public school construction, other grants to local jurisdictions and nonprofit organizations, higher education facilities, and State facilities. GO bonds do not pledge specific revenues but rather pledge the State's full faith and credit. Past issuances include:

- tax-exempt bonds sold to institutional investors;
- tax-exempt bonds sold to retail investors;
- taxable bonds sold to institutional investors;
- Build America Bonds (BAB) that are taxable bonds for which the State receives a direct subsidy from the federal government;
- Qualified Zone Academy Bonds (QZAB) that support specific education projects. Depending on the date of issuance, these bonds have received federal tax credits or direct federal subsidies;
- Qualified School Construction Bonds (QSCB) that supported specific education projects. Depending on the date of issuance, these bonds have received federal tax credits or direct federal subsidies; and
- Qualified Energy Conservation Bonds (QECB) that are direct federal subsidy bonds that support energy efficiency capital expenditures in public buildings, renewable energy production, and other related projects.

GO bond debt service payments are supported by the ABF. ABF revenues include State property tax revenues; federal subsidies; bond sale premiums; and repayments from certain State agencies, subdivisions, and private organizations. General funds may subsidize debt service if these funds are insufficient.

The State usually issues tax-exempt GO bonds to institutional investors twice a year. Other bonds are issued as they become authorized as needed (taxable) or as they are in demand (retail bonds). Each issuance's goal is to minimize the bonds' debt service costs.

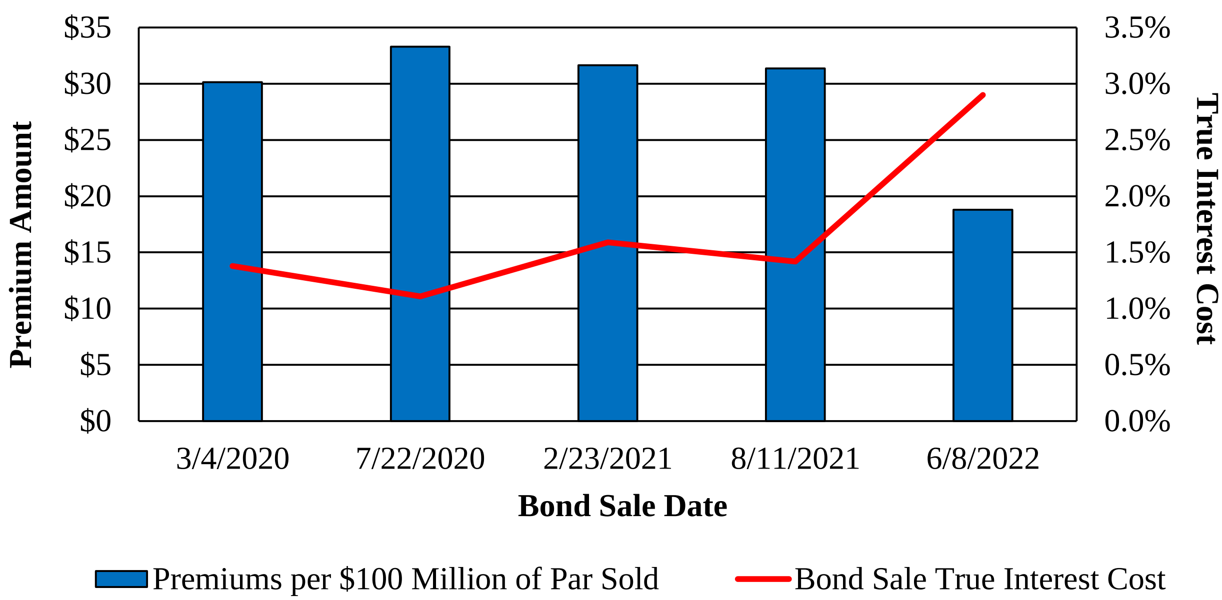
Fiscal 2023

Proposed Deficiency

The budget bill includes $219 million in general funds to support fiscal 2023 capital projects for which bond sale premiums have been appropriated. The funds are needed because interest rates increased sharply, ending a period of historically low interest rates. For example, *The Bond Buyer* 20-bond index of state and municipal bonds increased from below 3% in early April 2022 to over 4% in September 2022. Interest rates have moderated since September but are still well above what rates were at the beginning of calendar 2022. **Appendix 1** shows the interest rate on the 10-year U.S. Treasury Note since 1962.

Exhibit 1 shows how higher interest rates reduced bond sale premiums per $100 million of par value. Other factors that could reduce anticipated premiums include (1) smaller bond sales if supply chain issues continue to slow capital construction and (2) lower coupon rates, which are discussed in more detail in Issue 1. The June 2022 bond sale's premiums were substantially lower than projected. Higher rates also reduce anticipated premiums for the March 2023 bond sale. The deficiency appropriation ensures that funding is available for authorized capital projects.

Exhibit 1
Bond Sale Premiums Per $100 Million of Par Value and True Interest Costs
Calendar 2020-2022
($ in Millions)

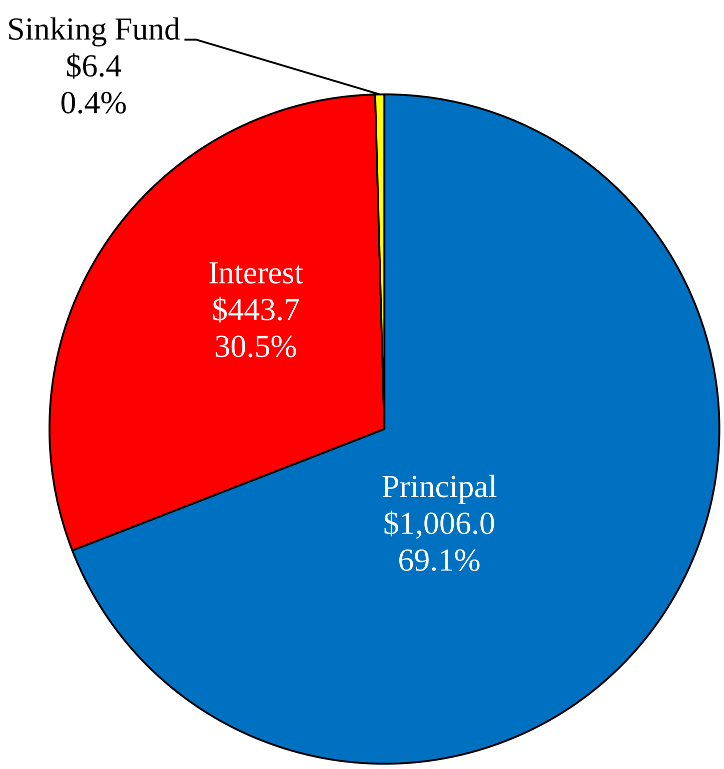


Source: Public Resources Advisory Group; Department of Legislative Services

Fiscal 2024 Overview of Public Debt Spending

Exhibit 2 shows that over 69% of debt service costs are principal payments. This is an uncommonly high level of principal payments and is attributable to Maryland GO bonds' relatively short maturities. The State constitution does not allow for any State debts to mature in more than 15 years. To level out debt service payments, each issuance sells tranches of bonds that mature between 3 and 15 years with an average maturity of 10 years. This means that Maryland tends to have higher debt service payments for the level of debt that is outstanding and also retires debt more quickly.

Exhibit 2
Overview of Public Debt Spending
Fiscal 2024 Allowance
($ in Millions)



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

Exhibit 3 shows that 97% of the fiscal 2024 debt service cost is for debt that has already been issued and that most of the State's debt is fixed-rate, tax-exempt bonds sold to institutional investors. The State has also issued taxable bonds and has $310.8 million taxable debt outstanding at the beginning of fiscal 2024, of which $64.2 million will be retired during the year.[1] BABs, QZABs, QSCBs, and QECBs issuances are structured to take advantage of federal tax credits or subsidies. Debt service payments for these issuances are less than traditional GO bonds. At the beginning of fiscal 2024, $330.5 million of the State's GO debt outstanding is attributable to these bonds.

Exhibit 3
Debt Service Costs
Fiscal 2024
($ in Millions)

Type of Debt	Principal	Interest	Sinking Fund	Total	Share of Total
Previously Issued Debt					
GO Bonds Sold to Institutional Investors	$860.7	$384.5	$0.0	$1,245.2	85.5%
Taxable Bonds	64.5	5.6	0.0	70.1	4.8%
Build America Bonds	78.8	7.6	0.0	86.4	5.9%
Qualified Zone Academy Bonds	1.9	1.3	0.0	3.2	0.2%
Qualified School Construction Bonds	0.0	2.0	6.4	8.3	0.6%
Qualified Energy Conservation Bonds	0.0	0.3	0.0	0.3	0.0%
Subtotal	***$1,006.0***	***$401.2***	***$6.4***	***$1,413.6***	***97.1%***
Debt Issued					
Winter 2023 Bond Sale[1]	$0.0	$27.5	$0.0	$27.5	1.9%
Summer 2023 Bond Sale[1]	0.0	15.0	0.0	15.0	1.0%
Subtotal	***$0.0***	***$42.5***	***$0.0***	***$42.5***	***2.9%***
Total	**$1,006.0**	**$443.7**	**$6.4**	**$1,456.1**	**100.0%**

GO: general obligation

[1] Estimated bond issuances are $550 million in March 2023 and $600 million in summer 2023. These are a function of anticipated cash flow needs and subject to change. Debt service costs do not match the Governor's budget books.

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

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

[1] Taxable debt is more expensive than tax-exempt debt, so taxable bonds are issued with shorter maturities. This minimizes the extra costs paid for taxable bonds. At the bond sale in August 2019, the State sold $50 million in taxable GO bonds to institutional investors with three- and four-year maturities. The issuance's yield was 1.61% for the four-year bonds. Thirty minutes later, the State also issued $14.89 million in tax-exempt bonds to institutional investors. The tax-exempt bond sale had a true interest cost of 0.94%. The difference between the four-year bonds was 0.67% (67 basis points). DLS estimates that the additional 67 basis points paid for taxable three- and four-year bonds increased interest payments by $1.13 million from fiscal 2020 to 2023.

Operating Budget Annuity Bond Fund Projection

Exhibit 4 shows that most of the revenues supporting GO bond debt service are derived from State property taxes.

Exhibit 4
Annuity Bond Fund Forecast
Fiscal 2022-2024
($ in Millions)

	2022 Expenditures	2023 Appropriation	2024 Allowance
Annuity Bond Fund (ABF) Activity			
Beginning Balance	$184.4	$83.3	$33.0
Property Tax Receipts[1]	919.2	938.5	977.9
Interest and Penalties on Property Taxes	2.1	2.6	2.6
Other Repayments and Receipts	-34.0	0.1	0.1
Bond Premiums	338.6	35.0	0.0
Bond Premiums Supporting Capital Projects	-222.9	-259.8	0.0
Transfer to Reserve	-83.3	-33.0	-5.1
ABF Special Fund Appropriations	**$1,104.3**	**$766.7**	**$1,008.5**
General Fund Appropriations – Debt Service	$260.0	$430.0	$433.8
General Fund Appropriations – Capital Program	0.0	219.0	0.0
Transfer Tax Special Fund Appropriations	6.9	7.0	7.0
Federal Fund Appropriations[2]	7.9	8.4	7.0
Projected Total Debt Service Expenditures	**$1,379.1**	**$1,431.1**	**$1,456.4**
Adjustments to Appropriations			
Excess Budgeted Appropriations[3]		$7.9	$1.6
Budgeted Appropriation	**$1,379.1**	**$1,439.0**	**$1,458.0**

[1] The State property tax estimates in the Governor's budget books are $940 million in fiscal 2023 and $981.9 million in fiscal 2024.
[2] The federal fund appropriations in the Governor's budget books are $9 million in fiscal 2023 and $7.5 million in fiscal 2024.
[3] The fiscal 2024 debt service appropriation in the Governor's budget books is $1,458 million.

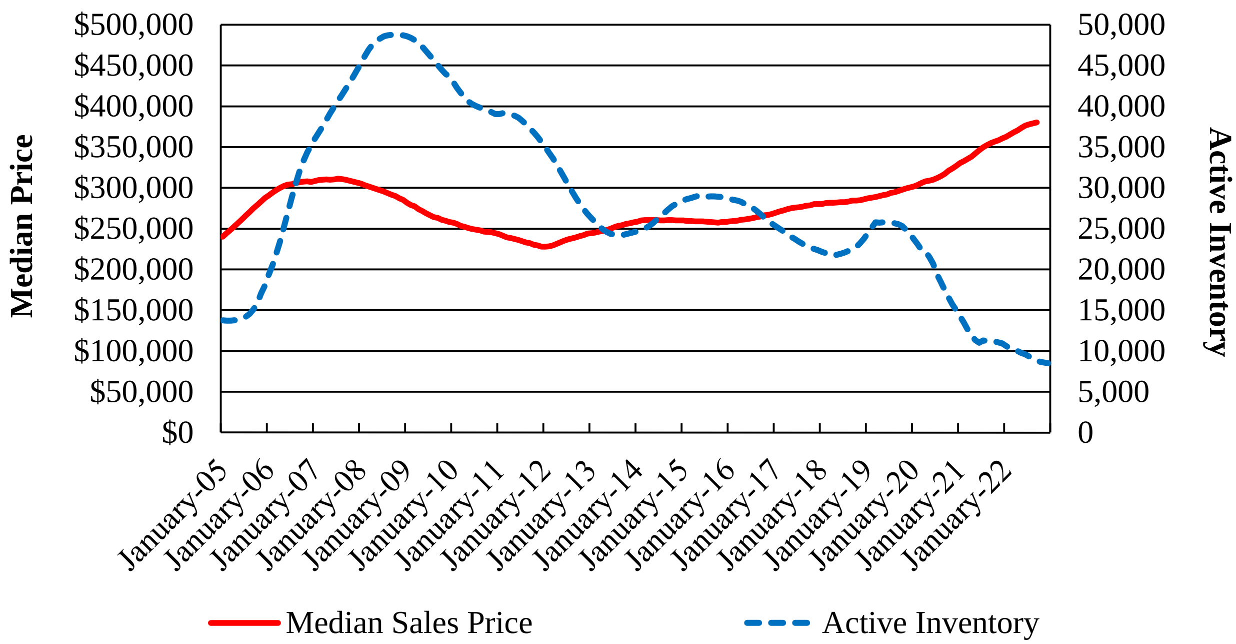
Note: This excludes the $219 million fiscal 2023 deficiency appropriation for capital projects.

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

Annuity Bond Fund Six-year Forecast

When developing estimates of State property tax collections, DLS examines trends in home values and inventories. **Exhibit 5** shows the effect of the property bubble from the late 2000s and how prices and inventories have rebounded. Because these data are cyclical, as home values and inventories tend to peak in the summer, the data are smoothed by using a 12-month moving average. With this approach, every data point includes a full year's cycle, and the high and lows of the cycle are smoothed. However, this makes the data a lagging indicator. For instance, median prices declined modestly since summer 2022. Since these monthly median home values are more than the year-on-year prices, no reduction has shown in the exhibit. For example, the December 2022 median home value is less than the November value, but it is still more than the December 2021 value, which is the year-on-year comparison. If prices continue to decline so that each month's median price is less than the comparable price from a year earlier, the data will show the cyclical decline. It is unclear at this point to what extent declining monthly data at the end of calendar 2022 are cyclical or a harbinger of lower year-on-year home prices. At the least, the data show that the real estate market is cooling, and growth is slowing. In response to the slowing growth, DLS has reduced its out-year State property tax estimates.

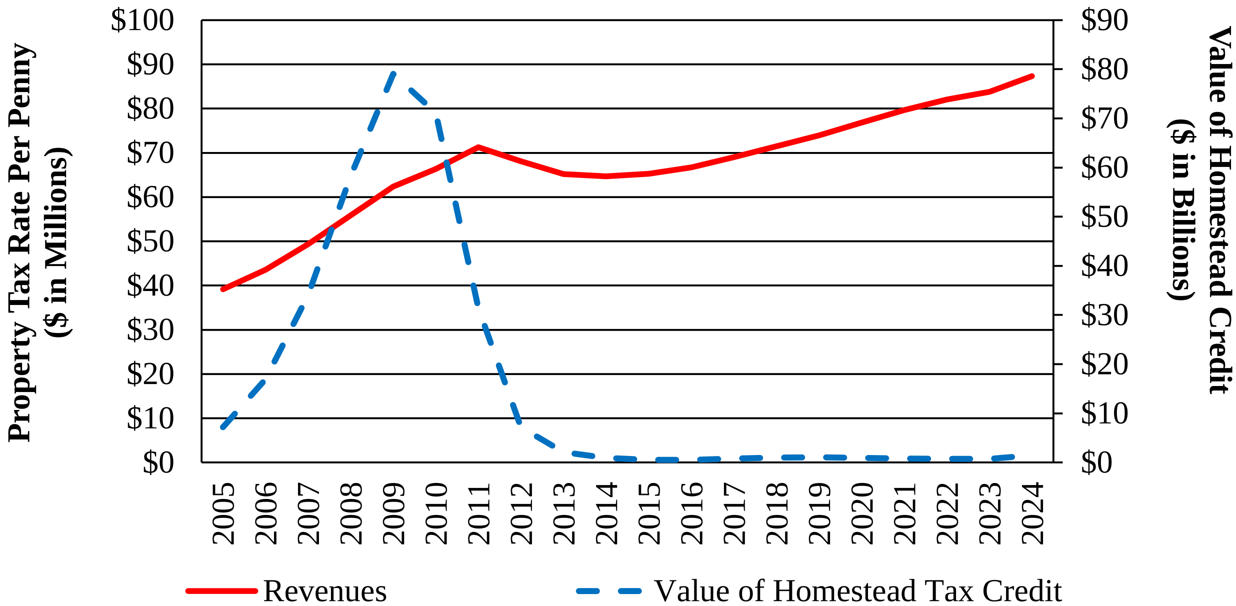
Exhibit 5
Maryland Housing – Median Prices and Inventory
12-month Moving Average
January 2005 to January 2022



Source: Maryland Association of Realtors; Department of Legislative Services

Exhibit 6 shows how much revenue $0.01 on the State property tax has generated since fiscal 2005. State property tax receipts generated by $0.01 of revenues continued to increase from fiscal 2005 to 2011, even as home values peaked in fiscal 2007. Revenues declined from fiscal 2011 to 2014 and have generally increased since fiscal 2015. The State has a Homestead Tax Credit that limits annual increases to 10%. As the exhibit shows, this tax credit is large when prices are appreciating rapidly. Since recent increases in home values have been modest, the tax credit has been well below the high levels realized during the housing bubble. While the recent increases in median home prices have not been as steep and those in the 2000s, the situation now is somewhat analogous to that period in that the Homestead Tax Credit will absorb some of the lost home values should home values decline.

Exhibit 6
State Property Tax Homestead Tax Credits and Property Tax Receipts
Fiscal 2005-2024



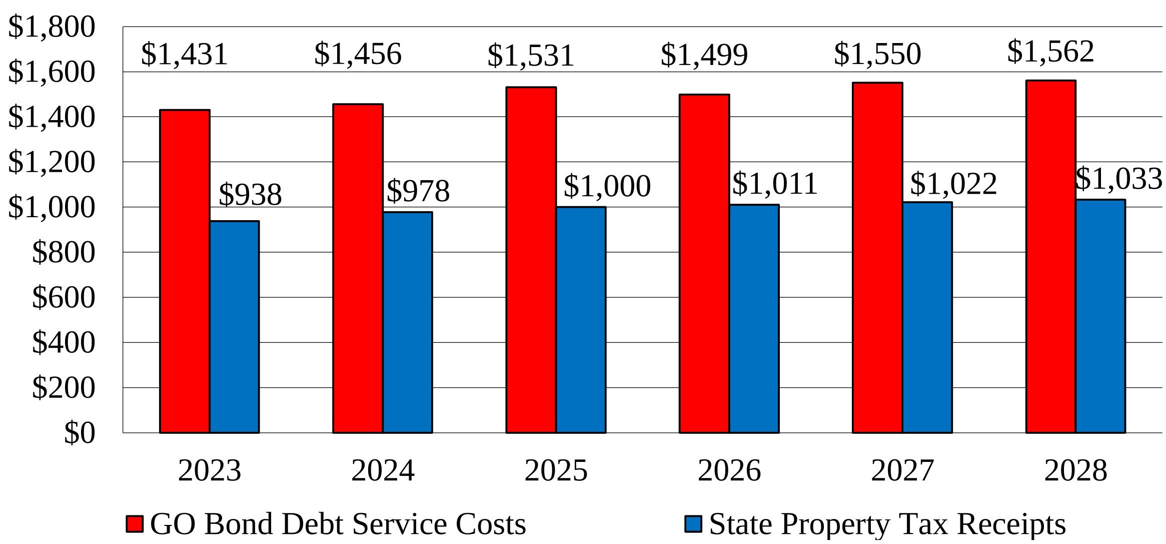
Source: State Department of Assessments and Taxation; Department of Budget and Management; Department of Legislative Services

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. 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%. The State only applies one-third of increases in property values each year during a three-year assessment cycle. Consequently, homeowners do not realize the full tax increase until the third year. This limits revenue growth when property values rise quickly. Taken together, the three-year assessment process and Homestead Tax Credit slowed the revenue increases during the real estate boom and delayed the peak until after the decline in property values. The process provides the State a hedge against declining property values. If values begin to decline, this process will again slow the decline in State property tax revenues. DLS has reduced its out-year estimate of State property tax revenues to reflect the softening real estate market.

General Fund Appropriation Is Necessary to Avoid State Property Tax Increases

State property tax revenues are estimated to increase slowly to a moderate 1% annual increase after fiscal 2025. State property tax rates have been $0.112 per $100 of assessable base since fiscal 2007. This policy keeps taxes low but requires general fund appropriations to fund GO bond debt service. When estimating debt service costs, DLS uses authorizations proposed in the 2023 *Capital Improvement Program* (CIP), which keeps authorizations a constant $1,205 million through fiscal 2028. This is below the level recommended by SAC. The implications for using the SAC authorizations are discussed in Issue 2. **Exhibit 7** shows that steady increases in State property tax revenues and debt service costs are projected. A forecast of the ABF is shown in **Exhibit 8**.

Exhibit 7
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 8
Revenues Supporting Debt Service
Fiscal 2023-2028
($ in Millions)

	2023	2024	2025	2026	2027	2028	Annual % Change
Special Fund Revenues							
State Property Tax Receipts	$938	$978	$1,000	$1,011	$1,022	$1,033	1.9%
Bond Sale Premiums	35	0	0	0	0	0	n/a
Capital Authorizations	-260	0	0	0	0	0	n/a
Other Revenues	3	3	3	3	3	3	0.0%
Prior Year ABF Fund Balance Transferred	83	33	5	1	1	1	n/a
Subtotal Special Fund Revenues	***$800***	***$1,014***	***$1,008***	***$1,015***	***$1,026***	***$1,037***	***5.3%***
General Funds – Debt Service	$430	$434	$513	$481	$525	$525	4.1%
General Funds – Capital Projects	219	0	0	0	0	0	n/a
Transfer Tax Special Funds	7	7	7	2	0	0	n/a
Federal Funds	8	7	5	2	1	0	n/a
Total Revenues	**$1,464**	**$1,461**	**$1,533**	**$1,500**	**$1,552**	**$1,563**	1.3%
Debt Service Expenditures	**$1,431**	**$1,456**	**$1,531**	**$1,499**	**$1,550**	**$1,562**	1.8%
End-of-year ABF Balance	**$33**	**$5**	**$1**	**$1**	**$1**	**$1**	

ABF: Annuity Bond Fund

Note: Out-year authorizations are consistent with the Administration's *Capital Improvement Program.*

Source: Department of Legislative Services

Issues

1. Reevaluate 5.00% GO Bond Coupon Policy

With the July 2020 GO bond sale, the State changed its policy about the coupon rate[2] that bonds pay so that underwriters are now required to pay a 5.00% coupon rate. Prior to July 2020, while there were limits on the coupon rate that underwriters could offer, the State had not required a specific coupon rate. Higher coupon rates increase bond sale premiums, which increase short-term cash reserves but increase long-term costs.

Each year, DLS analyzes the factors that influence the true interest cost (TIC) of Maryland's GO bond issuances since 1991.[3] After the June 2022 bond sale, DLS updated the equation. As part of this process, DLS analyzed a variable for the sales where the State required the 5.00% coupon rate. This analysis showed 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%. Allowing underwriters more flexibility could reduce long-term debt service costs.

Another consideration is that the State issues bonds that are callable after 10 years. If interest rates are below the coupon rate, the bond can be called, and new bonds can be sold at a lower interest rate. Exercising a call is valuable to the State since it reduces debt service costs. Calls are options, whose value can be estimated. The factors that influence the value of a call include (1) length of the call period; (2) the variability of the asset, which is influenced by the variability of interest rates for GO bonds; and (3) coupon rates. The value of a call increases as the coupon rate increases, since higher coupon rates increase savings if bonds are called. This suggests that there is some value to higher coupon rates. It is noteworthy that interest rates have been quite volatile in recent years, implying that there is a fair amount of volatility in estimated call values.

At times, there are countervailing forces that affect what the ideal coupon rate is for GO bonds. While requiring higher coupon rates can increase the value of callable bonds, coupon rates can be increased to the point that this value is offset by increasing the TIC that is paid. DLS' review of TICs for bond sales since July 2020 suggests that it may be time to review policies regarding the minimum and maximum coupon rates that underwriters can offer at bond sales. Given the variability of interest rates, a range of coupon rates, instead of requiring a specific coupon rate, may reduce the total costs of bonds. **DLS recommends that the State Treasurer's Office review its policies regarding GO bond sales' coupon rates.**

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[2] Key definitions: **par value** is the nominal value of the bond and the principal paid when bonds mature; **coupon rate** is the interest rate paid to the investor based on the par value of the bonds; **TIC** is the market rate of return on the bonds at the time of the sale; and if bonds sell at a TIC that is below the coupon rate, the **bonds sell at a premium**, and bond proceeds exceed par value.

[3] *Effect of Long-term Debt on the Financial Condition of the State*, most recently published in December 2022, can be found on the DLS website.

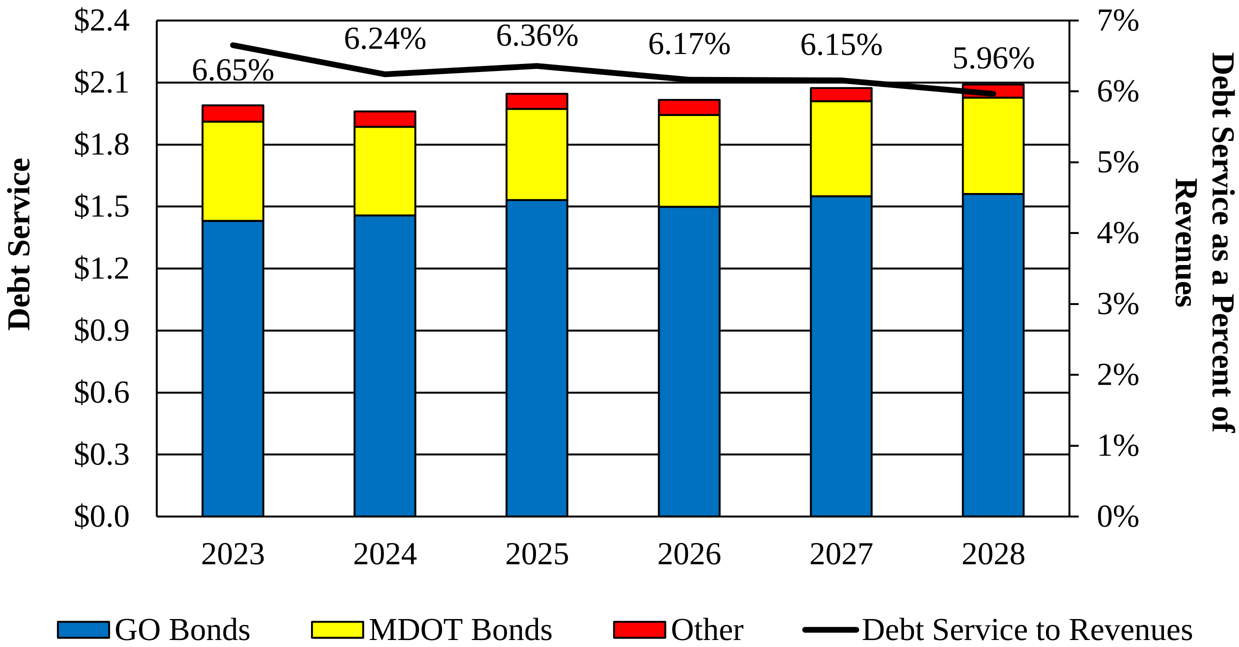
2. State Debt Is Well Below Affordability Ratios

State debt includes GO bonds, the Maryland Department of Transportation's (MDOT) transportation bonds, Grant Anticipation Revenue Vehicles capital leases supported by State revenues, Maryland Stadium Authority (MSA) bonds supported by State revenues, and bay restoration bonds. To manage this State debt, CDAC was created in 1978. The committee sets limits on GO bond issuances. The committee also evaluates the affordability of all State debt. CDAC has two affordability criteria: State debt outstanding cannot exceed 4% of State personal income; and State debt service cannot exceed 8% of State revenues.

Authorizations Proposed in the CIP Are Affordable

The ratio that the State is closest to breaching in recent years is debt service to revenues. Maryland nearly exceeded this ratio after the Great Recession. To avoid exceeding the ratio, the State reduced the fiscal 2012 GO bond authorization to $925 million, which was $215 million less than the fiscal 2011 GO bond authorization. The State has also limited debt in recent years as SAC has recommended limiting annual increases in GO bond authorizations to 1% since 2015. This level was chosen because it is less than the anticipated increases in revenues, which reduces the debt service to revenues ratio. The improved economic outlook has substantially reduced this ratio. **Exhibit 9** shows that State debt service to revenues is expected to peak in fiscal 2025 and decline thereafter.

Exhibit 9
Total State Debt Service and Debt Service as a Percent of Revenues
***Capital Improvement Program* GO Bond Authorizations**
Fiscal 2023-2028
($ in Billions)



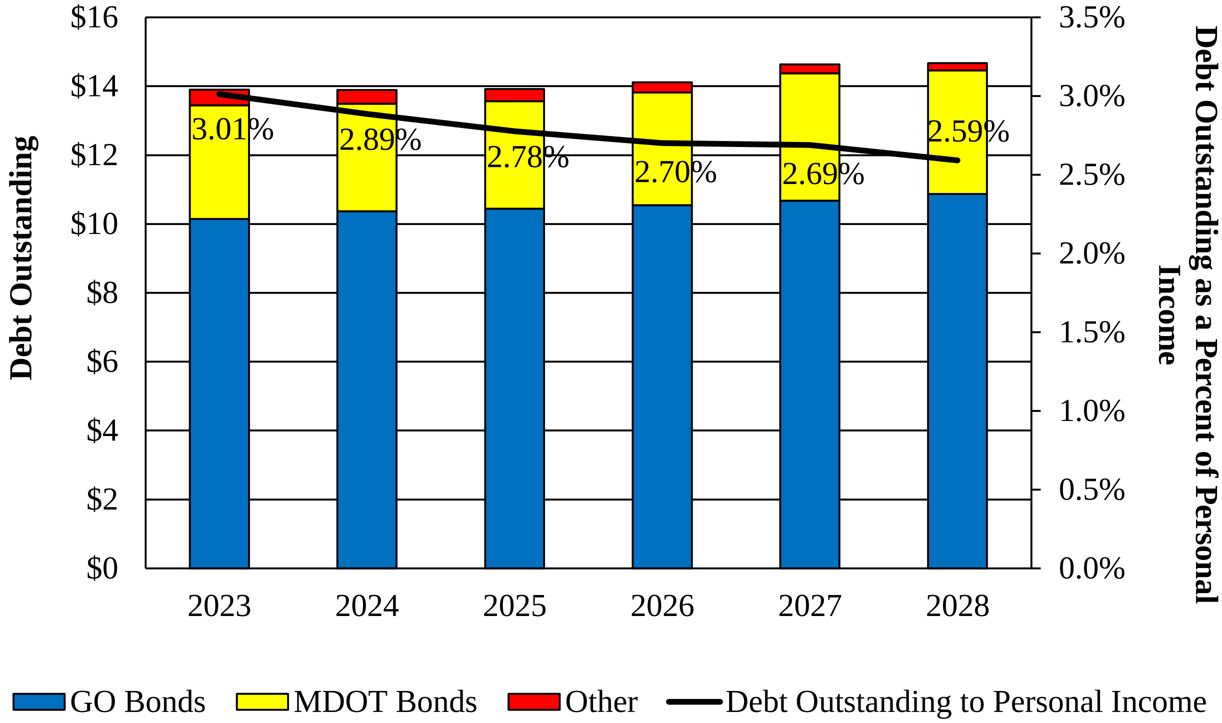
GO: general obligation
MDOT: Maryland Department of Transportation

Note: Other debt is capital leases, Bay Restoration Bonds, and certain Maryland Stadium Authority issuances.

Source: State Treasurer's Office; Department of Budget and Management; Bureau of Revenue Estimates; Maryland Department of Transportation; Maryland Stadium Authority; Maryland Department of the Environment; Department of Legislative Services

Maryland's other affordability criterion, that debt outstanding not exceed 4% of personal income, is expected to decline steadily through fiscal 2028. **Exhibit 10** shows that State debt outstanding increases modestly over the six-year forecast period, and the ratio is well below the limit.

Exhibit 10
State Debt Outstanding as a Percent of Personal Income
***Capital Improvement Program* GO Bond Authorizations**
Fiscal 2023-2028
($ in Billions)



GO: general obligation
MDOT: Maryland Department of Transportation

Note: Other debt is capital leases, bay restoration bonds, and certain Maryland Stadium Authority issuances.

Source: State Treasurer's Office; Department of Budget and Management; Bureau of Revenue Estimates; Maryland Department of Transportation; Maryland Stadium Authority; Maryland Department of the Environment; Department of Legislative Services

GO Bond Authorizations Recommended by SAC Are Also Affordable

The Administration's CIP authorizes $1,205 million in funding annually from fiscal 2024 to 2028. In its 2022 report, SAC proposed to authorize $1,205 million in fiscal 2024 and increase authorizations by 4% annually. **Exhibit 11** compares the two plans. Affordability ratios are well below the limits under each approach.

Exhibit 11
CIP and SAC Authorizations
Fiscal 2025-2028
($ in Millions)

Fiscal Year	CIP Authorization	SAC Authorization	Difference
2025	$1,205	$1,255	$50
2026	1,205	1,300	95
2027	1,205	1,355	150
2028	1,205	1,410	205

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

Source: *Capital Improvement Program*; *Spending Affordability Committee 2022 Interim Report*

3. Maryland Is a High Debt State That Manages to Keep Costs Lower by Managing Debt Effectively

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 does not compare favorably to the other AAA states on either measure.

Exhibit 12 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 12
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 Service, September 2022

Exhibit 13 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 MSA's 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 13
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 Service, September 2022

This year, Moody's expanded its debt service report to include other long-term liabilities, such as unfunded pension liabilities, unfunded Other Post Employment Benefits 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 14** shows that Maryland has the highest ratio among AAA-rated states. As in Exhibit 13, debt service costs are implied. In addition, Moody's recalculates pension costs by using the Financial Times Stock Exchange Pension Liability Index as the common discount rate.[4]

Exhibit 14
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 Service, September 2022

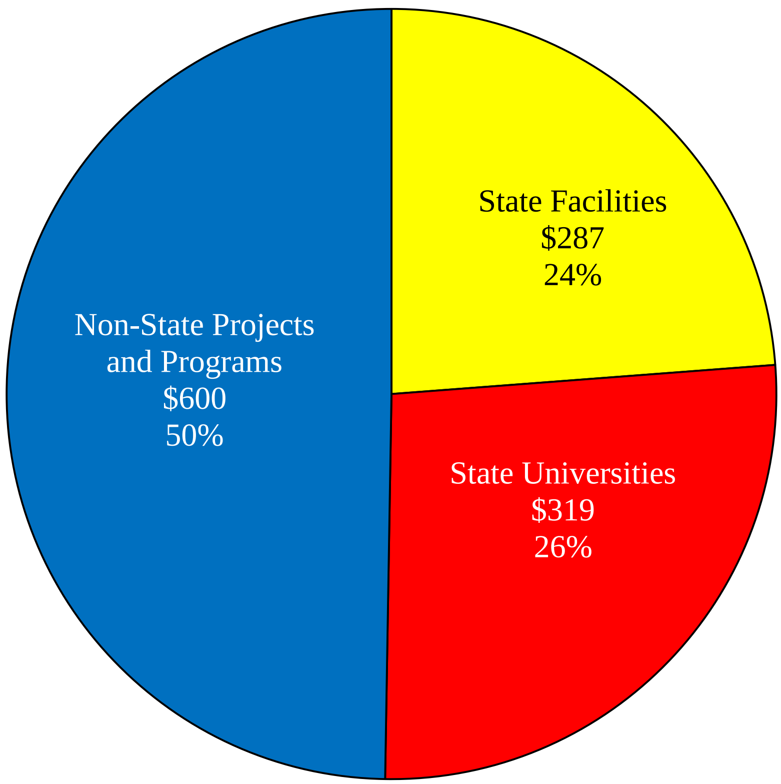
Uses of Maryland's GO Bonds

Maryland's bond program supports various State and non-State projects and programs. **Exhibit 15** shows 50% of proposed fiscal 2022 GO bond authorizations support non-State projects

[4] 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 net pension liabilities across the board. The larger the difference between the rates, the larger the adjustment Moody's will make. Maryland has reduced the discount rate so that the rate is near the average of other state plans.

and programs. The largest area of support, public school construction, receives $191 million, which is 16% of total authorizations.

Exhibit 15
Uses of General Obligation Bond Proceeds
Fiscal 2024 as Introduced
($ in Millions)



Note: The capital budget bill authorizes funding for $1.207 billion in projects and deauthorizes $2 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 GO 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;
- $1.2 billion for stadium improvements to the Baltimore Orioles and Ravens' stadiums;
- $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. **Appendix 2** provides a list of all MSA authorizations, revenue source, and fiscal 2023 debt outstanding and debt service.

GO Bonds' Interest Rates Are Low and the State Has Key Credit Strengths

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 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.

Rating Agencies Identify Key Credit Strengths

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. Prior to the most recent bond sale in June 2022, rating agencies reaffirmed Maryland's AAA bond rating. Those 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.

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. During the Great Recession, revenues declined so substantially that the State debt service to revenues was expected to exceed 8% of revenues in the out-years. In response, GO bond authorizations were reduced from $1.14 billion in fiscal 2011 to $925 million in fiscal 2012. The prior plan had been to increase the fiscal 2012 authorizations to $1.17 billion. The State also adapts policies that reflect the macroeconomic environment. When the State was near the limit after the Great Recession, growth in authorizations were reduced to 1% so that authorizations increase at a rate that is less than the revenues supporting the debt. Now that the ratios are well below limits and inflation is a concern, a policy to increase authorizations by 4% is recommended by SAC.

- ***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.

4. Recommendations to Strengthen the Debt Affordability Process

CDAC Process Underestimates the Cost of Increasing Debt

CDAC has two affordability criteria: State debt outstanding cannot exceed 4% of State personal income; and State debt service cannot exceed 8% of State revenues. With respect to the debt service ratio, the State's methodology does not recognize the full impact of increased authorizations until the eighth year. As such, the State understates the effect of increased authorizations on debt service costs. Two factors are responsible for the lag between bond authorizations and debt service payments:

- ***Bonds Do Not Pay Principal Until the Third Year:*** The State issues 15-year bonds that pay interest only for the first 2 years and pay interest and principal for the final 13 years. For example, selling $100 million in bonds with a 5% interest rate would result in $5 million annually in interest in the first 2 years and $11 million in total debt service annually in the following 13 years, so that the initial payments are less than half debt service payments paid for most of the life of a bond.

- ***Capital Projects and Programs Do Not Need the Complete Authorization in the First Year:*** State bonds support various programs and projects, many of which have payments that stretch over a number of years. To manage the cash flow efficiently, bonds are sold when payments are due. On average only 31% of authorized bonds are issued in the first year. The remaining 69% is spread over four years.

A typical authorization's first payment is an interest-only payment for less than one-third of the bonds authorized. For example, if the State were to increase authorizations in fiscal 2024 by $100 million more than proposed by SAC, the effect on fiscal 2024 would be negligible, and fiscal 2025 debt service costs would increase by just under $2 million. Annual costs would gradually increase to $10.5 million in about eight years.

Recognizing the full cost of increased authorizations provides a short-term hedge against declining, or even slowing, revenues. When CDAC calculates the debt service to revenue ratio, it assumes that revenues increase as projected by the Board of Revenue Estimates. **DLS recommends that CDAC consider developing a more cautious approach when evaluating increased GO bond authorizations. CDAC should consider the full cost debt service costs instead of the phased-in debt service costs that initially understates debt service costs.**

Have a Target Debt Service to Revenues Ratio That Is Below 8% of Revenues as a Hedge Against Underperforming Revenues

Another implication of the debt service costs' slow phase-in is that reducing authorizations only slowly reduces debt service costs. If increasing an authorization has a negligible effect on that year's debt service costs, decreasing authorizations also has a negligible effect on debt service costs. If revenues underperform, the State may not be able to slow increases in debt service costs and may not be able to avoid breaching the debt service to revenues ratio. To provide a hedge against breaching the ratio, CDAC can set a target below the 8% ratio. Florida has such a policy, and MDOT does this with its coverage ratios.

Another concern is that unless the State is in recession, revenue projections assume increasing revenues. This means that if the State is close to the limit, it could breach the debt service to revenues criterion if revenues increase but just not as much as is anticipated.

DLS performed a sensitivity analysis to see the effect of no or declining revenues on CDAC ratios. Recessions often see lower revenues over two fiscal years, so DLS examined this effect over two years from fiscal 2023. **Exhibit 16** shows that if revenue growth slows to 2% annually from fiscal 2023 to 2025, the debt service to revenues ratio is 0.21% higher than what is currently estimated. If there is no growth, or if revenues decline over the two-year period, the debt service to revenue ratio would increase even more.

Exhibit 16

Effect of Revised Revenue Estimates on the Fiscal 2025 Affordability Ratio

($ in Billions)

	Fiscal 2023 Revenues	Fiscal 2025 Revenues	Effect of Change in Revenues on Ratio
No Revenue Change – 3.7% Annual Increase	$29.9	$32.2	0.00%
2% Annual Increase in Revenues	29.9	31.1	0.21%
No Revenue Growth	29.9	29.9	0.48%
2% Total Decrease in Revenues	29.9	29.3	0.62%
4% Total Decrease in Revenues	29.9	28.7	0.76%

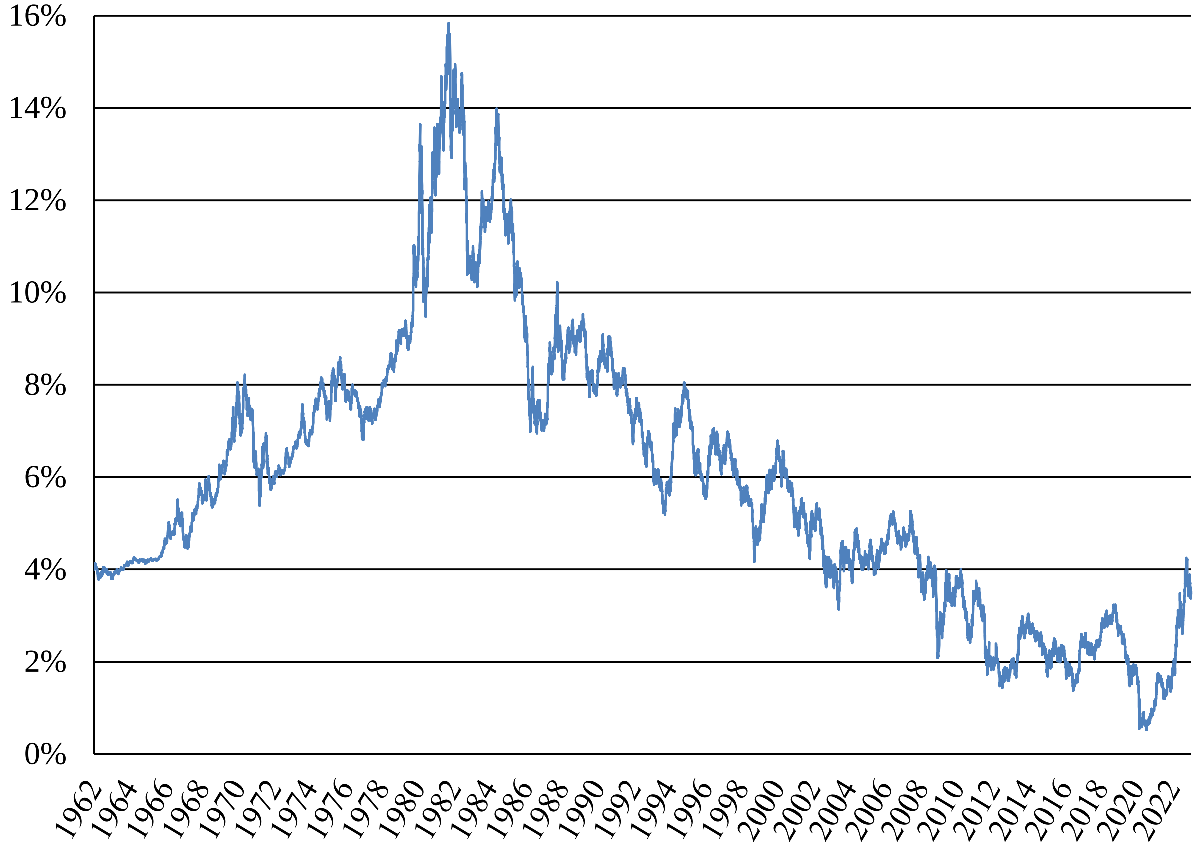
Source: Bureau of Revenue Estimates; Department of Legislative Services

When the State is close to the debt limit, the State is beholden to revenue estimates to keep from breaching its debt service to revenue ratio. Having a target below the criterion offers a hedge in case revenue growth slows or declines. **DLS recommends that CDAC consider having a debt service to revenues target that is below the 8% criterion. Should the target be breached, the State could examine options to get below the target that are less disruptive to capital plans.**

Operating Budget Recommended Actions

1. Concur with Governor's allowance.

Appendix 1
Interest Rates for 10-year U.S. Treasury Notes
January 1962 to January 2023



Source: Board of Governors of the Federal Reserve System

Appendix 2
Maryland Stadium Authority Authorizations

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 Stadiun and Camden Station[1]	Lottery and MSA	n/a	18,790	7,701
Subtotal		***$162,185***	***$108,471***	***$14,660***
Non-State Debt				
Built to Learn	Education Trust Fund	$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
Non-State Debt				
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**

[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.

Appendix 3
Object/Fund Difference Report
Public Debt

Object/Fund	FY 22 Actual	FY 23 Working Appropriation	FY 24 Allowance	FY 23 - FY 24 Amount Change	Percent Change
Objects					
13 Fixed Charges	$ 1,379,062,579	$ 1,439,000,000	$ 1,458,000,000	$ 19,000,000	1.3%
Total Objects	**$ 1,379,062,579**	**$ 1,439,000,000**	**$ 1,458,000,000**	**$ 19,000,000**	**1.3%**
Funds					
01 General Fund	$ 260,000,000	$ 430,000,000	$ 433,800,000	$ 3,800,000	0.9%
03 Special Fund	1,111,198,147	1,000,000,000	1,016,700,000	16,700,000	1.7%
05 Federal Fund	7,864,432	9,000,000	7,500,000	-1,500,000	-16.7%
Total Funds	**$ 1,379,062,579**	**$ 1,439,000,000**	**$ 1,458,000,000**	**$ 19,000,000**	**1.3%**

Note: The fiscal 2023 appropriation does not include deficiencies. The fiscal 2024 allowance does not include contingent reductions or cost-of-living adjustments.

Appendix 4
Fiscal Summary
Public Debt

Program/Unit	FY 22 Actual	FY 23 Wrk Approp	FY 24 Allowance	Change	FY 23 - FY 24 % Change
01 Redemption and Interest on State Bonds	$ 1,379,062,579	$ 1,439,000,000	$ 1,458,000,000	$ 19,000,000	1.3%
Total Expenditures	**$ 1,379,062,579**	**$ 1,439,000,000**	**$ 1,458,000,000**	**$ 19,000,000**	**1.3%**
General Fund	$ 260,000,000	$ 430,000,000	$ 433,800,000	$ 3,800,000	0.9%
Special Fund	1,111,198,147	1,000,000,000	1,016,700,000	16,700,000	1.7%
Federal Fund	7,864,432	9,000,000	7,500,000	-1,500,000	-16.7%
Total Appropriations	**$ 1,379,062,579**	**$ 1,439,000,000**	**$ 1,458,000,000**	**$ 19,000,000**	**1.3%**

Note: The fiscal 2023 appropriation does not include deficiencies, targeted revenues, or across-the-board reductions. The fiscal 2024 allowance does not include contingent reductions or cost-of-living adjustments.