X00A00
Public Debt

Operating Budget Data

($ in Thousands)

	FY 15 Actual	FY 16 Working	FY 17 Allowance	FY 16-17 Change	% Change Prior Year
General Fund	$140,000	$252,400	$283,000	$30,600	12.1%
Adjusted General Fund	**$140,000**	**$252,400**	**$283,000**	**$30,600**	**12.1%**
Special Fund	875,608	866,978	892,640	25,662	3.0%
Adjusted Special Fund	**$875,608**	**$866,978**	**$892,640**	**$25,662**	**3.0%**
Federal Fund	11,483	11,477	11,539	62	0.5%
Adjusted Federal Fund	**$11,483**	**$11,477**	**$11,539**	**$62**	**0.5%**
Adjusted Grand Total	**$1,027,091**	**$1,130,855**	**$1,187,179**	**$56,324**	**5.0%**

- General obligation (GO) bond debt service costs increase by $56 million in fiscal 2017. The increase is attributable to increased authorizations in recent years.

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

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Analysis in Brief

Major Trends

Debt Service Costs Increase at a Higher Rate Than the Revenues Supporting Them: GO bond debt service is supported by the Annuity Bond Fund (ABF). The primary source of revenues is State property taxes, which provide funds sufficient to support 65.3% of GO debt service costs. The remaining costs are supported by general funds, bond sale premiums, and other minor revenues. From fiscal 2016 to 2021, debt service costs are projected to increase by 3.8% while State property tax revenues are projected to increase by 1.9%.

Issues

The Budget Relies on Premiums Realized after the Legislature Adjourns: In the ABF forecast, the Administration estimates that the next bond sale, in May 2016, will generate $77.6 million in bond sale premiums. The forecast ends fiscal 2017 with a $2.0 million fund balance. This fund balance provides a small hedge if the full amount of premium is not realized. **The State Treasurer should be prepared to brief the committees on the use of bond sale premiums for GO bond debt service costs. The Administration should brief the committees on what action it will take if estimated bond premiums are insufficient to pay debt service for fiscal 2017.**

Reducing Taxable Debt Authorizations Reduces Interest Payments: The federal government limits the amount of private activity projects in tax-exempt bonds. The State has been increasing its authorizations of private activity projects in the GO program. From fiscal 2013 to 2016, the State issued $163 million in taxable bonds, and more issuances are anticipated. Data from the bond sale shows that taxable bonds are more expensive than tax-exempt bonds. **Insofar as taxable debt is more expensive than tax-exempt debt, the Department of Legislative Services recommends that authorizations for taxable loan authorizations be deleted and that general fund pay-as-you-go appropriations support these programs and projects instead.**

Beginning of a New Era: The Administration Proposes a Flat Capital Program: Since fiscal 1995, the State capital program has been increasing. Some periods, such as fiscal 1995 to 2000, saw modest increases. Fiscal 2001 to 2009 was a period of substantial growth. The new Administration is the first to propose a decade without growth. Based on the affordability criteria developed by the Capital Debt Affordability Committee, modest growth is affordable. The issue compares the Administration's program with recommendations made by the Spending Affordability Committee (SAC) in December 2015 and December 2014. **The State Treasurer should be prepared to brief the committees on the effects of the Administration's and the SAC recommended level of debt authorizations.**

Recommended Actions

1. Concur with Governor's allowance.

X00A00
Public Debt

Operating Budget Analysis

Program Description

The Public Debt program appropriates funds for general obligation (GO) bonds' debt service payments. This includes principal and interest payments. GO bonds support the State's general construction program, such as prisons, office buildings, higher education facilities, school construction, and mental health facilities. GO bonds do not pledge specific revenues but rather pledge the State's full faith and credit. 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 were 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 Annuity Bond Fund (ABF). The 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 (BABs, QZABs, QSCBs, and QECBs), as needed (taxable), or as they are in demand (retail bonds). The goal is to minimize the bonds' debt service costs.

Fiscal 2016 Actions

Exhibit 1 shows that debt service costs are $9.9 million less than budgeted. Savings realized from the March and July 2015 bond sales were slightly offset by issuing QZABs. In this analysis, the revised debt service amount will be used.

Exhibit 1
Fiscal 2016 Debt Service Adjustments to Legislative Appropriation
($ in Thousands)

	Amount
Appropriation	
Legislative Appropriation	$1,109,255
Budget Amendment 009-16	21,600
Working Appropriation	**$1,130,855**
Adjustments	
Savings from March 2015 New Debt Issuance	-$3,521
Savings from March 2015 Refunding	-3,616
Savings from July 2015 New Debt Issuance	-3,032
Qualified Zone Academy Bond Issuance	308
Total Adjustments	**-$9,861**
Revised Debt Service	**$1,120,994**

Source: Public Financial Management, Inc.; State Treasurer's Office; Department of Budget and Management; Department of Legislative Services

Proposed Budget

The fiscal 2017 allowance totals $1.2 billion. This continues the steady increase in GO bond debt service costs experienced in recent years. These increases are attributable to higher GO bond authorizations and issuances. For example, the amount of new GO bonds issued increased from just over $400 million annually in fiscal 2001 and 2002, to approximately $700 million from fiscal 2005 to 2008, and $1 billion from fiscal 2010 to 2014.

Debt Service Costs Increase at a Higher Rate Than the Revenues Supporting Them

Most of the revenues supporting GO bond debt service are derived from State property taxes. **Exhibit 2** shows that for fiscal 2017, State property taxes provide $775.6 million, which represents 65.3% of the appropriation. The Department of Legislative Services (DLS) projects that the May 2016, summer 2016, and winter 2017 bonds will sell at a premium. DLS projects that the May 2016 premium will be less than the budget assumes but that additional premiums in fiscal 2017 will be sufficient to support debt service fiscal 2017 costs. Issue 1 discusses the implications of budgeting bond sale premiums. Even with bond premiums, the current State property tax rate (at $0.112 per $100 of assessable base) and the ABF balance is insufficient to fully fund debt service costs. To support debt service without raising State property taxes, the allowance includes $283.0 million in general fund appropriations.

Exhibit 2
Annuity Bond Fund Revenues and Debt Service Expenditures
Fiscal 2015-2017
($ in Thousands)

	2015 Expenditures	2016 Appropriation	2017 Allowance
Annuity Bond Fund Activity			
Beginning Balance	$127,729	$86,990	$72,641
Property Tax Receipts	730,694	750,154	775,555
Interest and Penalties on Property Taxes	2,425	2,425	2,425
Other Repayments and Receipts	907	668	681
Bond Premium	94,573	83,098	48,226
Transfer to Reserve	-86,990	-72,641	-13,402
ABF Special Fund Appropriations	**$869,338**	**$850,694**	**$886,126**
General Fund Appropriations	$140,000	$252,400	$283,000
Transfer Tax Special Fund Appropriations	6,270	6,422	6,575
Federal Fund Appropriations	11,483	11,477	11,477
Projected Total Debt Service Expenditures	**$1,027,091**	**$1,120,994**	**$1,187,179**
Fiscal 2016 Changes to the Legislative Appropriation			
Excess Appropriations Attributable to March and July 2015 Bond Sale Savings	$0	$9,861	$0
Budgeted Debt Service Appropriations	**$1,027,091**	**$1,130,855**	**$1,187,179**

Source: Public Financial Management, Inc.; State Treasurer's Office; Department of Budget and Management; Department of Legislative Services

Exhibit 3 provides a breakdown of debt service costs projected in the fiscal 2017 allowance. The allowance includes $1,148.9 million in debt service from bonds that have already been issued and $25.9 million in debt service from issuances projected in May 2016. Bonds sold in summer 2016 are estimated to require $12.5 million in debt service payments in fiscal 2017. Since bonds pay debt service approximately six months after they are issued, bonds sold in fiscal 2017 after January 1 do not have any effect on fiscal 2017 debt service costs.

Exhibit 3
Fiscal 2017 Debt Service Costs
($ in Millions)

Type of Debt	Principal	Interest	Sinking Fund	Total
GO Bonds Sold to Institutional Investors	$674.5	$314.2	$0.0	$988.7
Retail Bonds	51.2	10.2	0.0	61.4
Taxable Bonds	58.8	1.4	0.0	60.1
Build America Bonds	0.0	25.3	0.0	25.3
Qualified Zone Academy Bonds	1.4	1.4	1.9	4.8
Qualified School Construction Bonds	0.0	2.0	6.4	8.3
Qualified Energy Conservation Bonds	0.0	0.3	0.0	0.3
Subtotal	***$785.8***	***$354.8***	***$8.3***	***$1,148.9***
Debt Issued after Allowance Submitted				
May 2016 Bond Sale	$0.0	$25.9	$0.0	$25.9
Summer 2016 Bond Sale	0.0	12.5	0.0	12.5
Subtotal	***$0.0***	***$38.4***	***$0.0***	***$38.4***
Total	**$785.8**	**$393.2**	**$8.3**	**$1,187.2**

GO: general obligation

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

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

Prior to fiscal 2001, State debt service was comprised of traditional GO bonds (tax-exempt debt issued to institutional investors). The exhibit identifies debt service payments attributable to the new kinds of debt and methods of issuance that have been added since 2001.

Effect of Federal Sequestration

The Budget Control Act (BCA) of 2011 included automatic across-the-board spending reductions if Congress and the President failed to enact a Joint Select Committee bill by January 15, 2012. The bill was required to reduce the federal budget deficit by at least $1.2 trillion over 10 years. Congress was unable to enact the bill, and the BCA required that automatic spending reductions, referred to as sequestration, take effect. A number of federal programs, such as Social Security and Medicaid, were exempt from these reductions. The Murray-Ryan Bipartisan Budget Act raised sequestration budget caps in federal fiscal 2014 and 2015 but also extended sequestration for two more years from federal fiscal 2022 to 2023. Similarly, the Bipartisan Budget Act of 2015 raised caps in federal fiscal 2016 and 2017. The Act also extended sequestration to federal fiscal 2025.

Federal subsidies on State and local bonds are not deemed to be exempt from sequestration. Reductions to federal grants are also influenced by the timing of the transfer of the subsidy. **Exhibit 4** shows that sequestration reduces federal funds by approximately $900,000 annually.

Exhibit 4
Issuances Receiving Federal Fund Appropriations and Reductions Attributable to Federal Sequestration
Fiscal 2015-2017
($ in Thousands)

	2015	2016	2017	Total
July 2009 Build America Bonds	$796	$796	$796	$2,389
October 2009 Build America Bonds	942	942	942	2,825
February 2010 Build America Bonds	6,036	6,036	6,036	18,108
July 2010 Build America Bonds	1,094	1,094	1,094	3,281
July 2010 Qualified School Construction Bonds	1,965	1,965	1,965	5,895
December 2010 Qualified Zone Academy Bonds	228	228	228	684
August 2011 Qualified Zone Academy Bonds	660	660	660	1,980
August 2011 Qualified Energy Conservation Bonds	234	234	234	703
August 2012 Qualified Zone Academy Bonds	426	426	426	1,279
Less Sequestration	-904	-904	-904	-2,711
Total	**$11,477**	**$11,477**	**$11,477**	**$34,432**

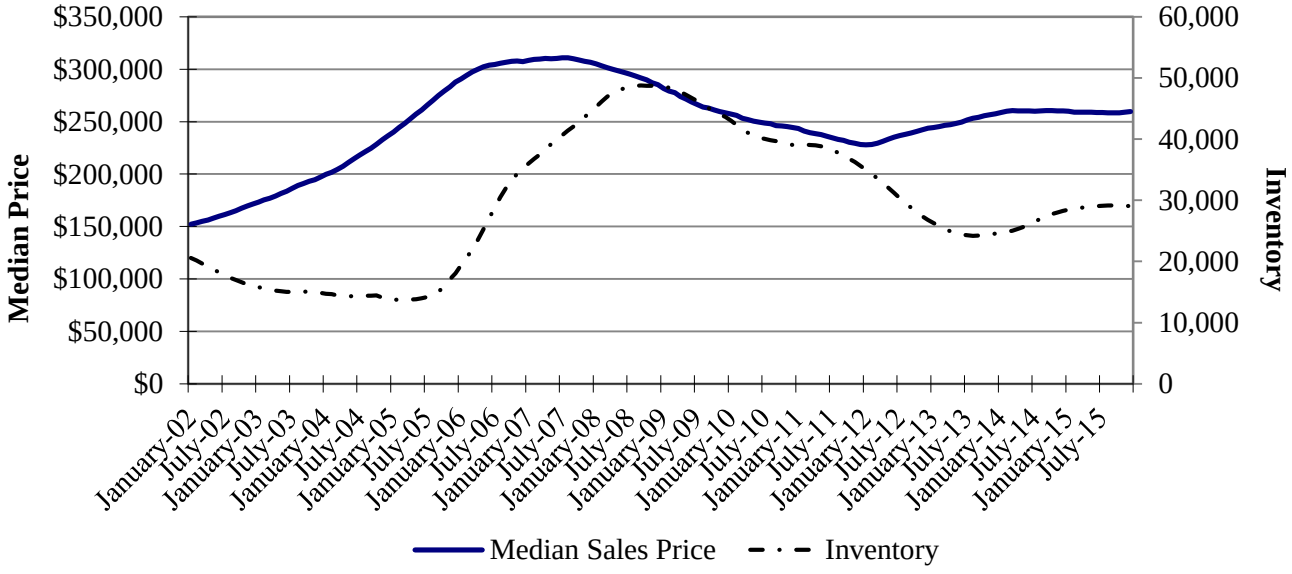
Source: Comptroller's Office; State Treasurer's Office; Department of Budget and Management, Department of Legislative Services

Annuity Bond Fund Six-year Forecast

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** shows that there was a substantial increase in real estate values, which peaked in summer 2007, followed by a decline in values. The year-over-year decline began in July 2007 and continued until February 2012. That is 55 straight months of year-over-year declines in median home values. From February 2012 to March 2014, year-over-year prices increased. Since April 2014, results have been mixed with some months seeing increases in values and others realizing decreases. Inventories went through a similar increase and decline. However, they lagged behind the pattern seen in home prices.

Exhibit 5
Maryland Housing – Median Prices and Inventory
12-month Moving Average
January 2002 to December 2015

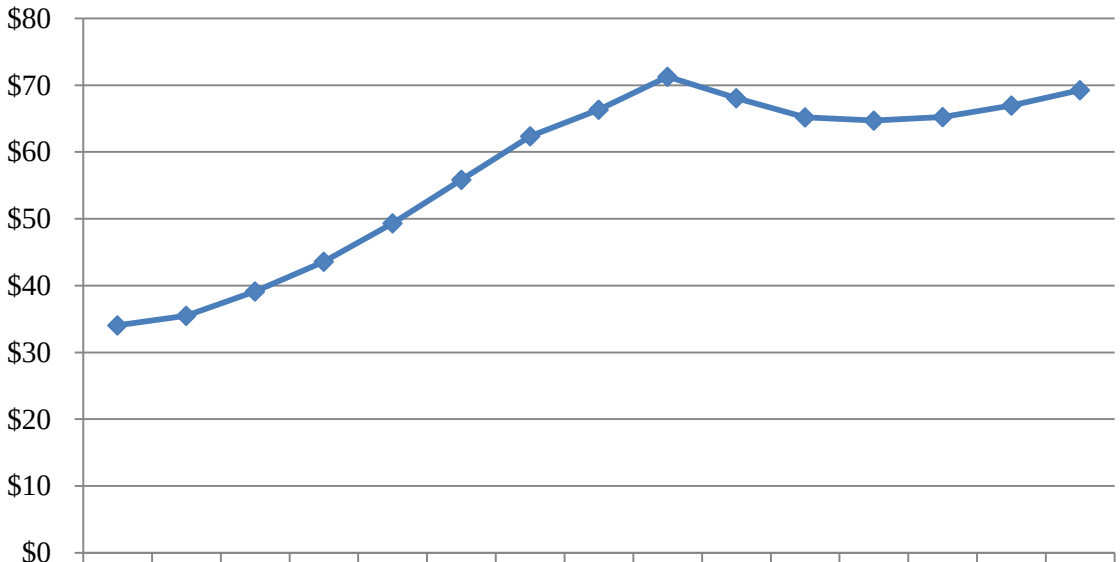


Note: Inventory represents housing units for sale according to Metropolitan Regional Information Systems, Inc. and Coastal Association of Realtors

Source: Maryland Association of Realtors; Department of Legislative Services

As expected, the rising property values from fiscal 2002 to 2007 increased State property tax receipts. **Exhibit 6** shows how much revenue one cent on the State property tax has generated since fiscal 2003. In fiscal 2003, there was a modest increase, and from fiscal 2004 to 2011, the increases were quite steep. Revenues declined from fiscal 2011 to 2014 and increased in fiscal 2015. Recent estimates expected revenues to increase about 1% in the out-years. The State Department of Assessments and Taxation revised its estimates in November 2015. Revenues are now expected to increase at a rate of 2% annually between fiscal 2016 and 2021.

Exhibit 6
Revenues Generated by One Cent of State Property Taxes
Fiscal 2003-2017
($ in Millions)



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Revenues	$34	$35	$39	$44	$49	$56	$62	$66	$71	$68	$65	$65	$65	$67	$69

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

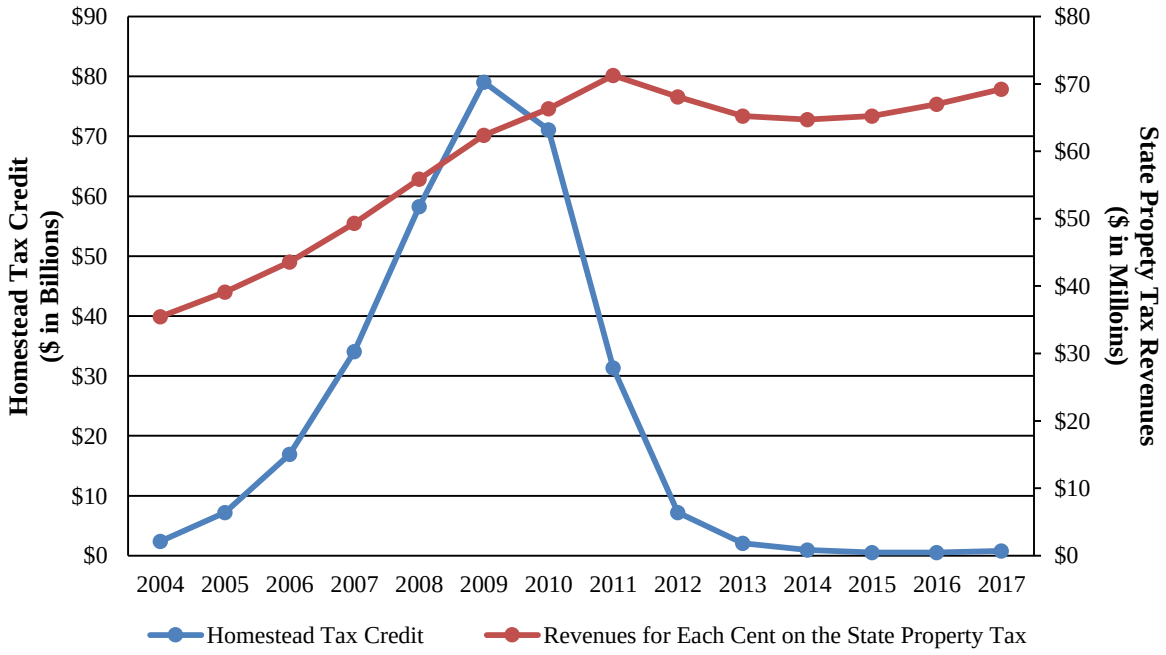
Assessment policies and the Homestead Tax Credit account for the lag between changes in the real estate market and tax receipts. Property values are assessed every three years, and increases are phased in over three years. For example, if a value increases by 9%, the increase would be 3% in the first year, 6% in the second year, and 9% in the third year.

The Homestead Tax Credit limits the annual increase in State property assessments subject to the property tax to 10%. If reassessing a resident's assessed property value results in an increase that

exceeds 10%, the homeowner receives a credit for any amount above 10%. This limits revenue growth when property values rise quickly. Taken together, the three-year assessment process and Homestead Tax Credit slowed the revenue increases and delayed the peak until after the decline in property values.

The homestead credit also provides the State with a hedge against declining property values. As home values declined, the homestead credit declined, and revenues continued to slowly increase. The result was to smooth State revenues; State property tax revenue growth was slower as home values increased, and there was no decline in revenues when home values decreased. **Exhibit 7** shows that State credits increased to $79 billion in fiscal 2009 in response to increases in assessments. Since fiscal 2014, the aggregate homestead credits are projected to be under $1 billion each year.

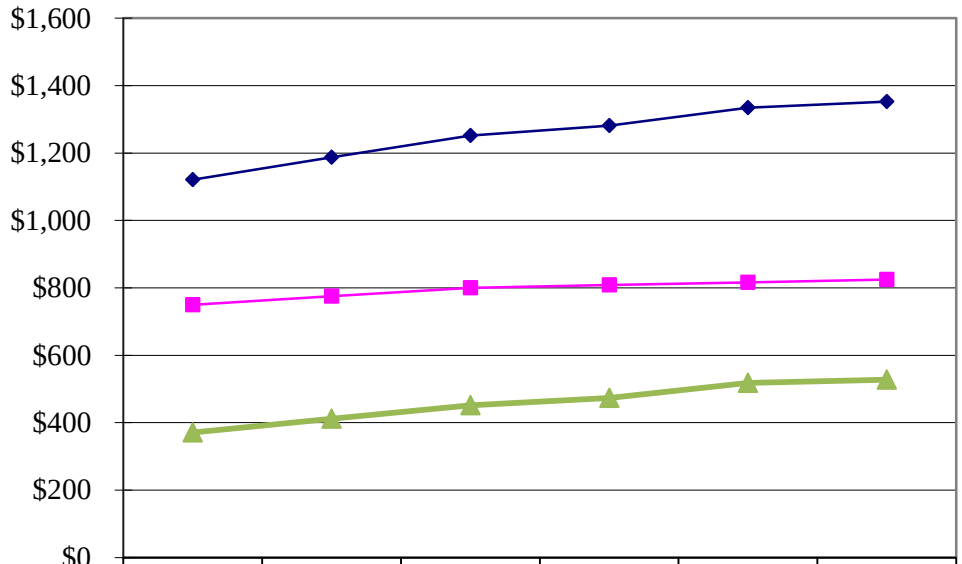
Exhibit 7
State Property Tax Homestead Tax Credits
Fiscal 2004-2017



Source: State Department of Assessments and Taxation

Over the next few years, State property tax revenues are estimated to remain fairly flat, increasing at a rate of 1.9% annually from fiscal 2016 to 2021. This contrasts with debt service costs, which are expected to increase at a rate of 3.8% annually over the same period. **Exhibit 8** shows how State property tax revenues, which are $371 million less than debt service costs in fiscal 2016, are expected to be $528 million less than debt service costs in fiscal 2021.

Exhibit 8
GO Bond Debt Service Costs and State Property Tax Revenue Collections
Fiscal 2016-2021
($ in Millions)



	2016	2017	2018	2019	2020	2021
State Property Tax Receipts	$750	$776	$800	$808	$816	$825
GO Bond Debt Service Costs	$1,121	$1,187	$1,252	$1,282	$1,334	$1,352
Difference	$371	$412	$452	$473	$518	$528

GO: general obligation

Source: Department of Legislative Services, January 2016

Before fiscal 2014, the shortfall in State property tax receipts was not a problem because the ABF had a large fund balance. This fund balance was largely attributable to the low interest rates offered for AAA-rated State and municipal bonds. These low interest rates have reduced GO bonds' true interest cost, resulting in higher bond sale premiums. These premiums have been deposited into the ABF to support debt service costs.

Exhibit 9 shows that general fund appropriations are required for fiscal 2017 despite the availability of $73 million in fund balance at the end of fiscal 2016 and an estimated $48 million in bond sale premiums in fiscal 2017. General fund appropriations increase from $252 million in fiscal 2016 to $506 million in fiscal 2021. **Appendix 2** shows the level of general fund support for GO bonds since fiscal 1979.

Exhibit 9
Revenues Supporting Debt Service
Fiscal 2016-2021
($ in Millions)

	2016	2017	2018	2019	2020	2021
Special Fund Revenues						
State Property Tax Receipts	$750	$776	$800	$808	$816	$825
Bond Sale Premiums	83	48	18	1	1	1
Other Revenues	3	3	3	3	3	3
Prior Year Balance	87	73	13	10	2	2
Subtotal Special Fund Revenues	***$923***	***$900***	***$835***	***$822***	***$823***	***$831***
General Funds	252	283	409	443	496	506
Transfer Tax Special Funds[1]	6	7	7	7	7	7
Federal Funds[2]	11	11	11	11	11	10
Total Revenues	**$1,194**	**$1,201**	**$1,262**	**$1,284**	**$1,336**	**$1,354**
Debt Service Expenditures	**$1,121**	**$1,187**	**$1,252**	**$1,282**	**$1,334**	**$1,352**
ABF End-of-year Fund Balance	**$73**	**$13**	**$10**	**$2**	**$2**	**$2**

ABF: Annuity Bond Fund

[1] This supports $70 million of general obligation bonds issued in 2010 for Program Open Space.
[2]This includes federal interest subsidies for Build America Bonds, Qualified Zone Academy Bonds, Qualified School Construction Bonds, and Qualified Energy Conservation Bonds.

Source: Department of Legislative Services, January 2016

Issues

1. The Budget Relies on Premiums Realized after the Legislature Adjourns

This is the first budget proposed by an Administration that relies on bond sale premiums realized after the legislative session to fund the debt service payment in the allowance.[1] In fall 2015, the State planned to issue $518 million in GO bonds in winter 2016. This sale has now been delayed to May 2016.

The budget assumes that the bond sale will generate $77.6 million in premiums to support debt service payments. The Department of Budget and Management (DBM) advises that this estimate was prepared by the State's financial advisor. DBM projects that the ABF will end fiscal 2017 with a $2.0 million fund balance. This is a small hedge for a revenue source as volatile as bond sale premiums.

This issue examines why bonds generate premiums, why the State must be careful, and what the State can do with premiums. The issue also examines if it is likely that the funds appropriated will not be sufficient to support debt service payments.

Bond Sale Premiums: Why the State Gets Them, Why the State Must Be Careful, and What the State Can Do with Them

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 Treasurer's Office determines how many bonds are sold (par value of the bonds) and when the bonds mature.[2] 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.[3] If the coupon rate is greater than the market rate, the bonds sell at a premium and the State's bonds proceeds exceed par value of the bonds.

For example, at the most recent bond sale in July 2015, the State issued $450 million in tax-exempt GO bonds (par value). The average coupon 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 a 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.

[1] In the fiscal 2007 and 2016 budgets enacted by the General Assembly, premiums were assumed to support capital projects.

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

[3] Appendix 4 includes a discussion of factors that influence the true interest cost of Maryland's GO bonds.

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 decline if interest rates rise.

How investors value bonds is 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.

In the current environment, interest rates are more likely to increase than decrease. Current interest rates are historically low. According to data from the Federal Reserve Board, the yield on 10-year treasury notes on Friday, July 31, 2015 (the time of the most recent bond sale), was among the lowest since 1962. In fact, only 135 out of 2,796 weeks had lower interest costs; 96% of the time, interest rates were higher than at the time of the last bond sale. In this environment, it certainly makes sense for investors to protect themselves against rising interest rates, and this is done by purchasing bonds at a premium.

Exhibit 10 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 you buy 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.

In conclusion, why do bonds sell at a premium? Because buying bonds at a premium is a hedge against increasing interest rates, and it looks like interest rates are going to increase.

Exhibit 10
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

Why Should the State Budget Premiums Carefully?

In recent years, bond premiums have been substantial. From fiscal 2012 to 2015, bond sale premiums have generated over $100 million annually. Although premiums are expected to diminish, DLS anticipates that bond sales will continue to generate premiums in fiscal 2017.

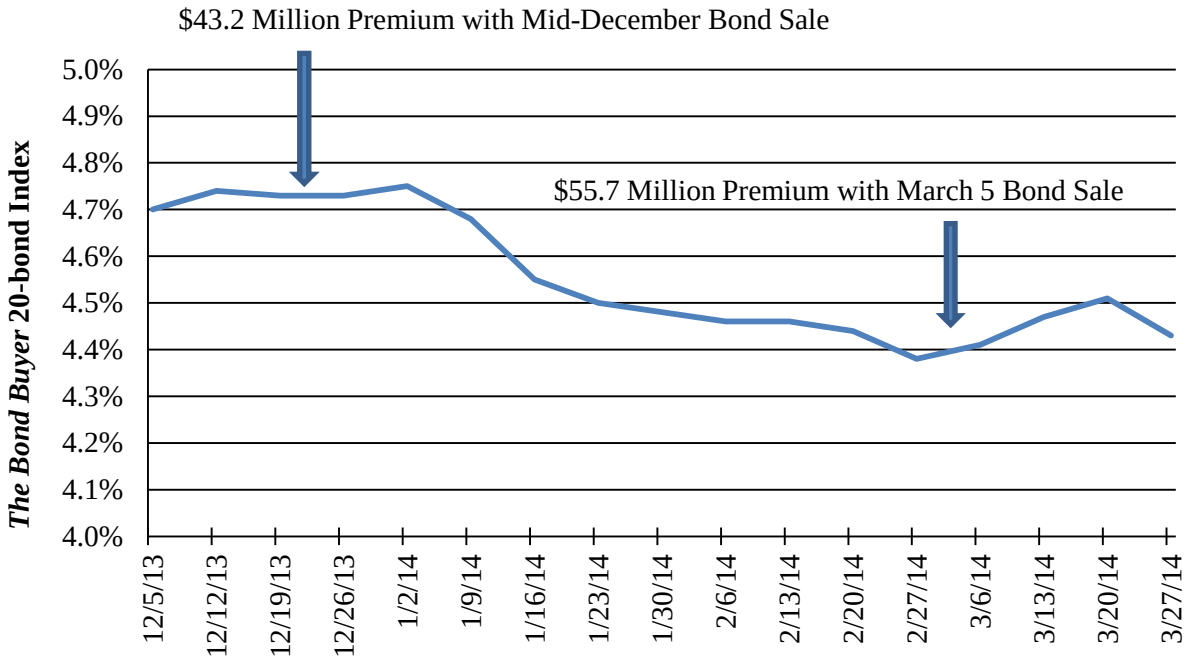
A concern with budgeting premiums in advance is that small changes in interest rates can generate substantial changes in the amount of premiums realized. Interest rates have been highly volatile, and rates have climbed or plummeted in a matter of weeks. For example, from April 9 to May 7, 2015, *The Bond Buyer* 20-bond Index increased by 25 percentage points, from 3.49% to 3.74%. Such an increase substantially decreases a bond sale premium.

Most of this volatility cannot be foreseen. This means that the key variables used to estimate premiums is impossible to predict with any precision. An example of this is the March 6, 2014 bond sale. The State projected a $40.8 million premium. This forecast was prepared in December 2013 and used in the Governor's fiscal 2015 budget. Using interest rates from December 2013, DLS forecasted

a $43.2 million premium. DLS concluded that the premium in the budget was entirely reasonable, based on the data that was available when the budget was prepared.

However, the actual bond sale premium for the March sale was $55.7 million. This is $14.9 million more than DBM projected. The reason for this difference is a sudden decline in interest rates. **Exhibit 11** shows that *The Bond Buyer* 20-bond Index declined from over 4.70% in December 2013 to approximately 4.40% in early March 2014. The State benefited from the change by receiving a larger premium.

Exhibit 11
Timing of Bond Sale Influences Interest Rates and Premiums
December 2013-March 2014



Note: The mid-December bond sale premium is estimated based on the interest rate generated using the statistical equation in Appendix 4. The amount of bonds sold and the coupon rate are assumed to be the same as the March sale.

Source: Department of Legislative Services, November 2014

This volatility goes both ways. For example, the State issued bonds on July 24, 2013. There was a sharp increase in interest rates during July 2013. From July 3 to July 25, 2015, the index interest rates increased from 4.39% to 4.77%. This increase of 38 basis points could have substantially decreased a forecasted premium. At the time, premiums were not forecast beyond the spring sale, so

it cannot be determined to what extent the higher rates resulted in a smaller premium or higher debt service costs. But the lesson is that large changes in interest rates can happen suddenly.

In answer, why should the State budget premiums carefully? Because interest rates in this environment are volatile and even estimates prepared weeks before a bond sale are routinely off by millions of dollars.

What Can the State Do with Bond Sale Premiums?

Bonds are sold at a premium because investors want to buy them at a premium. If the State were to dictate the coupon rate (instead of the underwriters), the State could eliminate the premium by offering low coupon rates. However, if the State were to set the coupon rate instead of the underwriter, the TIC would be expected to increase. Underwriters are purchasing bonds at a premium because of current market conditions. Eliminating the premium would make Maryland bonds less attractive, which increases borrowing costs and State spending. To keep costs down, the State has accepted that it will receive premiums. With respect to premiums, here are three options:

- ***Deposit Premiums in the ABF to Pay Debt Service Costs:*** This approach has been taken with most of the premiums realized. The State is paying higher interest costs for these premiums. Depositing the premium into the ABF reduces the short-term general fund requirements.

- ***Support Capital Programs:*** Premiums are bond sale proceeds. Bonds are sold so that the proceeds support capital projects. The State has authorized premiums for capital projects in the past. For example, premiums supported capital projects in fiscal 2007 and 2016. Sections 8-125 and 8-132 of the State Finance and Procurement Article require that premiums are deposited into the ABF, so any authorization for capital projects would require capital budget bill authorization.

- ***Resize the Bond Sale:*** If the objective is to generate a specific level of bond proceeds, the amount of bonds sold can be reduced and bond sale premiums can be used to support capital projects. This is referred to as resizing the bond sale. This has been done by the Maryland Department of Transportation as recently as its December 2015 bond sale. For example, if the State determines that $500 million in bond proceeds are needed and a $45 million premium is anticipated, the State could reduce the par value of the bonds by $40 million and use any premiums to support projects. This would need to be authorized in the State's capital budget. Bond documents, such as the Preliminary Official Statement, would need to clarify that bonds could be resized prior to opening the bids.

Premiums Support Fiscal 2017 Debt Service Payments

The budget assumes that premiums totaling $77.6 million will be realized at the May 2016 bond sale. **Exhibit 12** shows that the largest bond sale premium totaled $77.9 million and was realized in

March 2013. The May bond sale is the largest sold to date, which tends to increase the total premium received. However, interest rates may not be as favorable. While it is quite possible that the State will realize the premium projected, the estimate does appear optimistic and probably is high.

Exhibit 12
Bond Sale Premiums Since 2011
($ in Millions)

Date of Sale	Fiscal Year	Issuance	Par Value of Tax-exempt Bonds to Institutional Investors	Premium	Yield or True Interest Cost
March 9, 2011	2011	2011 1st	$354.2	$26.1	3.49%
July 27, 2011	2012	2011 2nd	418.3	52.4	3.08%
March 7,2012	2012	2012 1st	543.9	65.6	2.42%
August 1, 2012	2013	2012 2nd	478.7	70.1	2.16%
March 6, 2013	2013	2013 1st	500.0	77.9	2.36%
July 24, 2013	2014	2013 2nd	435.0	49.0	3.15%
March 3, 2014	2014	2014 1st	450.0	55.7	2.84%
July 23, 2014	2015	2014 2nd	449.6	64.0	2.67%
March 4, 2015	2015	2015 1st	518.0	72.6	2.65%
July 17, 2015	2016	2015 2nd	450.0	43.7	2.83%
May 2016	*2016*	*2016 1st*	*518.0*	*77.6*	*n/a*

Note: May 2016 sale is estimated. All other sales' data is actual data. Boxes are placed around the largest sale, largest premium, and interest rate.

Source: Public Financial Management, Inc.; Department of Legislative Services

In addition to the May bond sale, the State is expected to issue two more series of bonds before the end of fiscal 2017. The first sale is in summer 2016 and another is in winter 2017. This means that the State has two more opportunities to realize bond sale premiums if the May 2016 premium is insufficient to fully fund debt service. Should these premiums be insufficient to support debt service costs, a State deficiency appropriation would be required at the 2017 legislative session.[4]

Moody's Analytics and IHS Global Insights have provided DLS with 10-year federal treasury notes' interest estimates through the end of fiscal 2021 (the ABF forecast period). The estimates diverge sharply from the first quarter of calendar 2017 to the second quarter of calendar 2018. For example, during the third quarter of calendar 2017, the Moody's rate (4.58%) is 107 basis points greater than the IHS rate (3.51%).

With these estimates, DLS has prepared three series of bond sale premium estimates; a high, average, and low series. Moody's provides the high rate, an average of the two provides the average rate, and IHS provides the low rate. Also, for the low rate, DLS assumes that coupon rates also remain low; for the other two estimates, they are the average rate of recent bond sales. When the projected interest rate reaches the coupon rate, the State no longer receives a large premium. DLS includes a small incidental premium since bonds sales usually do not sell exactly at par. **Exhibit 13** shows that if Moody's rates are correct, the State should expect $65 million in premiums. The average rate generates $88 million in premiums, and the low rate generates $141 million in premiums. In the ABF forecast, DLS uses the average premium estimate.

The concern is that if interest rates begin to increase this spring, as Moody's expects, there may not be sufficient premiums to support fiscal 2017 debt service costs. The analysis shows that this is possible. **Exhibit 14** shows that if Moody's interest rate forecast is correct, the ABF could be $9.5 million underfunded in fiscal 2017. Interest rate projections tend to be unreliable. (The fact that the two services that DLS uses are so far apart suggests that there is little consensus.) This means that it is impossible to make a premium estimate with any certainty. But it is clear that realizing the premium estimated in the fiscal 2017 budget is far from certain. The State should be prepared to appropriate additional funds in the ABF if actual premiums are below estimates.

The State Treasurer should be prepared to brief the committees on the use of bond sale premiums for GO bond debt service costs. The Administration should brief the committees on what action it will take if estimated bond premiums are insufficient to pay debt service for fiscal 2017.

[4] Since the deficiency appropriation is not available until the budget is enacted, this could result in the ABF temporarily not having sufficient funds to support debt service. Maryland issues its winter bonds in February and March. Consequently, there are substantial debt service payments, including principal payments, in February, March, and early April. All these payments are due before the budget is enacted.

Exhibit 13
High and Low Premium Estimates
May 2016 to Winter 2021 Bond Sales
($ in Millions)

	Low Interest Rate Estimate	Average Interest Rate Estimate	High Interest Rate Estimate
Fiscal 2017 Budget Premiums			
May 2016	$51.2	$39.3	$38.5
Summer 2016	46.0	29.2	22.7
Winter 2017	43.8	19.0	3.6
Subtotal	***$141.0***	***$87.6***	***$64.7***
Out-year Premiums			
Summer 2017	$41.9	$11.8	$0.5
Winter 2018	30.9	6.6	0.5
Summer 2018	11.7	0.5	0.5
Winter 2019	0.5	0.5	0.5
Summer 2020	0.5	0.5	0.5
Winter 2021	0.5	0.5	0.5
Subtotal	***$86.0***	***$20.4***	***$3.0***
Total Premiums	**$226.9**	**$108.0**	**$67.7**

Source: Moody's Analytics, IHS Global Insights; Department of Legislative Services

Exhibit 14
Effect of Different Interest Rate Assumptions on the Fiscal 2017 Annuity Bond Fund Balance
($ in Millions)

	DBM Forecast	DLS Low Estimate	DLS Average Estimate	DLS High Estimate
Fund Balance without Premiums	-$75.6	-$74.2	-$74.2	-$74.2
Premiums	77.6	141.0	87.6	64.7
End-of-year Fund Balance	**$2.0**	**$66.8**	**$13.4**	**-$9.5**

DBM: Department of Budget and Management
DLS: Department of Legislative Services

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

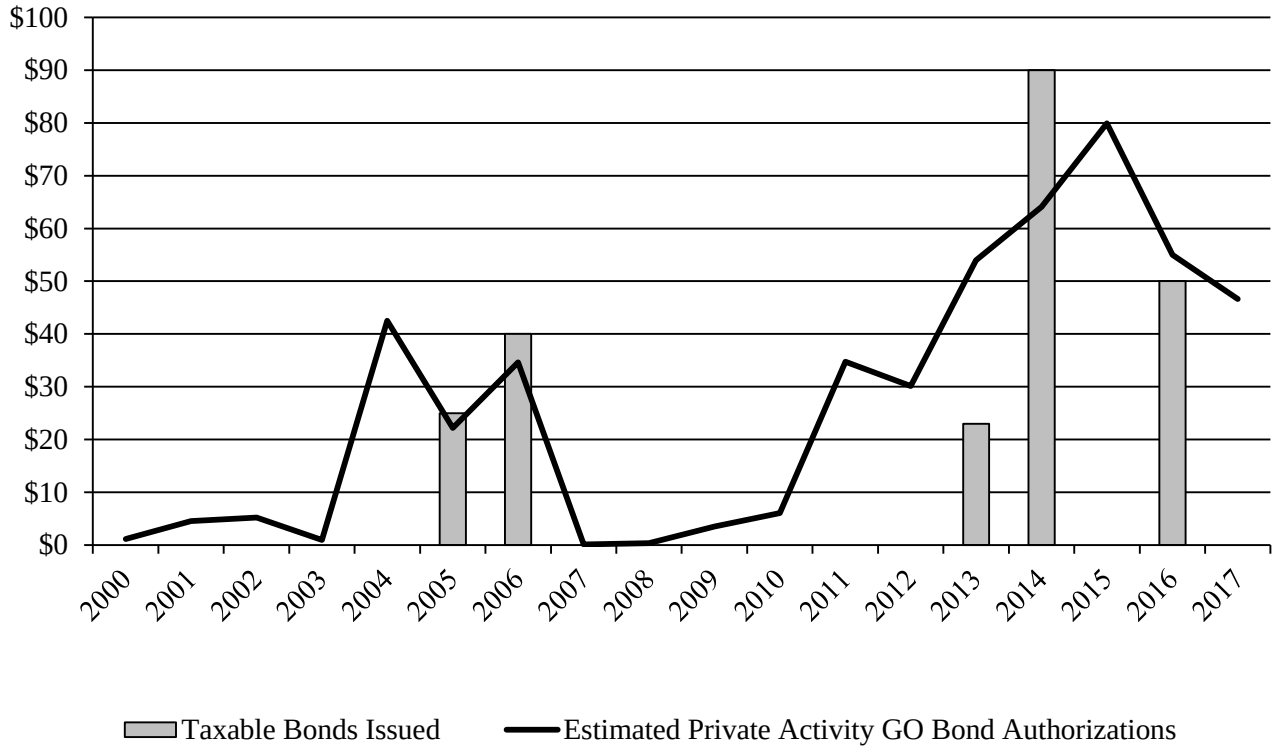
2. Reducing Taxable Debt Authorizations Reduces Interest Payments

The State's capital program supports a number of different public policy areas, such as health, environment, public safety, education, housing, and economic development. Federal government regulations allow the State to issue debt that does not require the buyer to pay federal taxes on interest earnings. In cases where investors do not pay federal income taxes, they are willing to settle for lower returns. Investors in taxable debt require higher returns to offset their tax liabilities. Consequently, the State can offer lower interest rates on tax-exempt bonds.

Federal laws and regulations limit the kinds of activities that the proceeds from tax-exempt bonds can support. One such requirement limits private activities or private purposes of the bond proceeds to 5% of the bond sales proceeds. Another requirement limits the bonds to $15 million for business use projects and $5 million for business loans. Examples of programs that support private activities or uses include the Partnership Rental Housing and Neighborhood Business Development programs of the Department of Housing and Community Development (DHCD); the Hazardous Substance Cleanup Program of the Maryland Department of the Environment (MDE); and Brendan Iribe Center for Computer Science and Innovation at the University of Maryland, College Park.

To avoid exceeding the private activity limits imposed in the federal regulations, the State has previously appropriated funds in the operating budget instead of issuing debt for private purpose programs and projects. Recent years' fiscal constraints have limited the amount of operating funds available for capital projects. To continue these programs, the State authorized GO bonds. In fiscal 2011, the State began migrating private purpose programs from the operating budget into the capital budget. **Exhibit 15** shows that the State has authorized over $300 million in private activity bonds since fiscal 2011. To support these projects, the State issued $23 million in taxable debt in fiscal 2013, $90 million in fiscal 2014, and $50 million in fiscal 2016. Insofar as the State has recently authorized private activity, projects exceed taxable debt issuance by over $150 million, and additional taxable bond sales are expected.

Exhibit 15
Private Activity Authorizations and Taxable Bond Issuances
Fiscal 2000-2017
($ in Millions)



GO: general obligation

Source: Department of Budget and Management's *Capital Improvement Program*; Financial Advisor's *Report on Bond Sales*

Taxable Bonds Cost More and Taxable Bonds' Costs Are Expected to Increase

In August 2012, the State sold $23 million in taxable GO bonds to institutional investors with three- and four-year maturities. The issuance's TIC was 0.45%, and the State did not realize a premium. At the same bond sale, the State also issued $4 million in tax-exempt bonds to institutional investors. The tax-exempt bond sale had a TIC of 0.33%. In other words, the difference between the two bonds, which were both issued on the same day, was 0.12% (12 basis points). DLS estimates that if the taxable issuance had sold at a TIC of 0.33%, instead of 0.45%, the bonds would have generated a premium totaling approximately $500,000.

In the out-years, the additional costs for issuing taxable debt are likely to increase. The current low interest rate environment is probably suppressing the additional costs paid by issuers of taxable debt. For example, the State issued taxable debt in fiscal 2005 and 2006. At the time, interest rates were higher, and DLS estimates that taxable bonds added $2.8 million in debt service costs for the $65.0 million issued. This is roughly twice the cost differential of the August 2012 bond sale.

Another factor that could add to the cost of taxable debt is increasing tax rates for higher income earners and corporations. The value of tax-exempt bonds is greatest when tax rates are highest. Recently enacted federal tax rate increases may well have an effect on the spread between taxable and tax-exempt bonds.

The bottom line is that there is a measurable difference between the cost of taxable and tax-exempt debt. The additional price paid by issuers of taxable debt is more likely to increase than decrease when compared to tax-exempt debt.

Reliance on GO Bonds for Private Use and Activities Continues after Budget Improves

It is not unusual for the State to move pay-as-you-go (PAYGO) capital projects and programs into the GO bond program when State finances deteriorate. Usually, the projects and programs are moved back out of the GO bond program after finances have improved. For example, after the rise in private use authorizations from fiscal 2004 to 2006, in fiscal 2007, there was a decline in private activity authorizations.

This is not the case in the current *Capital Improvement Program*. **Exhibit 16** shows that the fiscal 2017 capital budget includes $47 million in private activity authorizations. This includes $4 million for private business use and $43 million for private loans. The university projects are private business use. They are large projects with some incidental private activity included in these projects. The exemption was made for these kinds of projects. It is the $43 million in private loans that was traditionally funded with PAYGO appropriations. Out-year private loan authorizations range from $41 million in fiscal 2018 to $39 million in fiscal 2021. Though there is a decline in authorizations, there is still a substantial reliance on GO bond funds to support projects and programs that are traditionally supported in the PAYGO capital funding. It also appears as though there is no attempt to reduce the reliance of GO bonds and appropriate general funds instead for MDE or DHCD programs.

Exhibit 16
General Obligation Bond Private Activity Authorizations by Department
Fiscal 2017-2021
($ in Thousands)

	2017	2018	2019	2020	2021	Total
Private Business Use						
State Agency						
Morgan State University	$714	$56	$0	$0	$0	$770
University System of Maryland	2,866	3,994	2,244	2,316	0	11,420
Subtotal	***$3,580***	***$4,049***	***$2,244***	***$2,316***	***$0***	***$12,190***
Private Loans						
State Agency						
Department of Housing and Community Development	$33,100	$33,800	$32,900	$33,100	$31,600	$164,500
Maryland Department of the Environment	9,795	7,510	7,510	7,510	7,510	39,835
Department of Planning	150	150	150	150	150	750
Subtotal	***$43,045***	***$41,460***	***$40,560***	***$40,760***	***$39,260***	***$205,085***
Total	**$46,625**	**$45,509**	**$42,804**	**$43,076**	**$39,260**	**$217,275**

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

Source: Department of Budget and Management, *Capital Improvement Program*, January 2016

The fiscal 2017 capital budget includes $43 million authorizations for private loan projects that do not qualify for tax-exempt financing. **Insofar as taxable debt is more expensive than tax-exempt debt, DLS recommends that authorizations for taxable loan authorizations be deleted and that general fund PAYGO appropriations support these programs and projects instead.**

3. Beginning of a New Era: The Administration Proposes a Flat Capital Program

In September 2015, the Administration proposed to the Capital Debt Affordability Committee (CDAC) that fiscal 2017 GO bond authorizations be limited to $995 million and that there be no growth in authorizations for the next decade. CDAC adopted this recommendation. This is a major shift in

policy. No recent Administration has proposed going a decade without increasing the GO bond program. Prior to this shift, there were four trends since fiscal 1995.

Historical GO Bond Authorization Trends Since Fiscal 1995

The four trends since fiscal 1995 are:

- from fiscal 1995 to 2000, the State increased authorizations at a moderate level and did not deviate from its rule to provide for moderate growth each year;

- from fiscal 2001 to 2009, the State regularly increased authorizations in excess of what was previously planned;

- since fiscal 2009, the State has attempted to maximize authorizations and keep debt service under 8% of revenues; and

- in December 2013 and December 2014, the legislature's Spending Affordability Committee (SAC) recommended debt limits that differed from the limits recommended by CDAC.

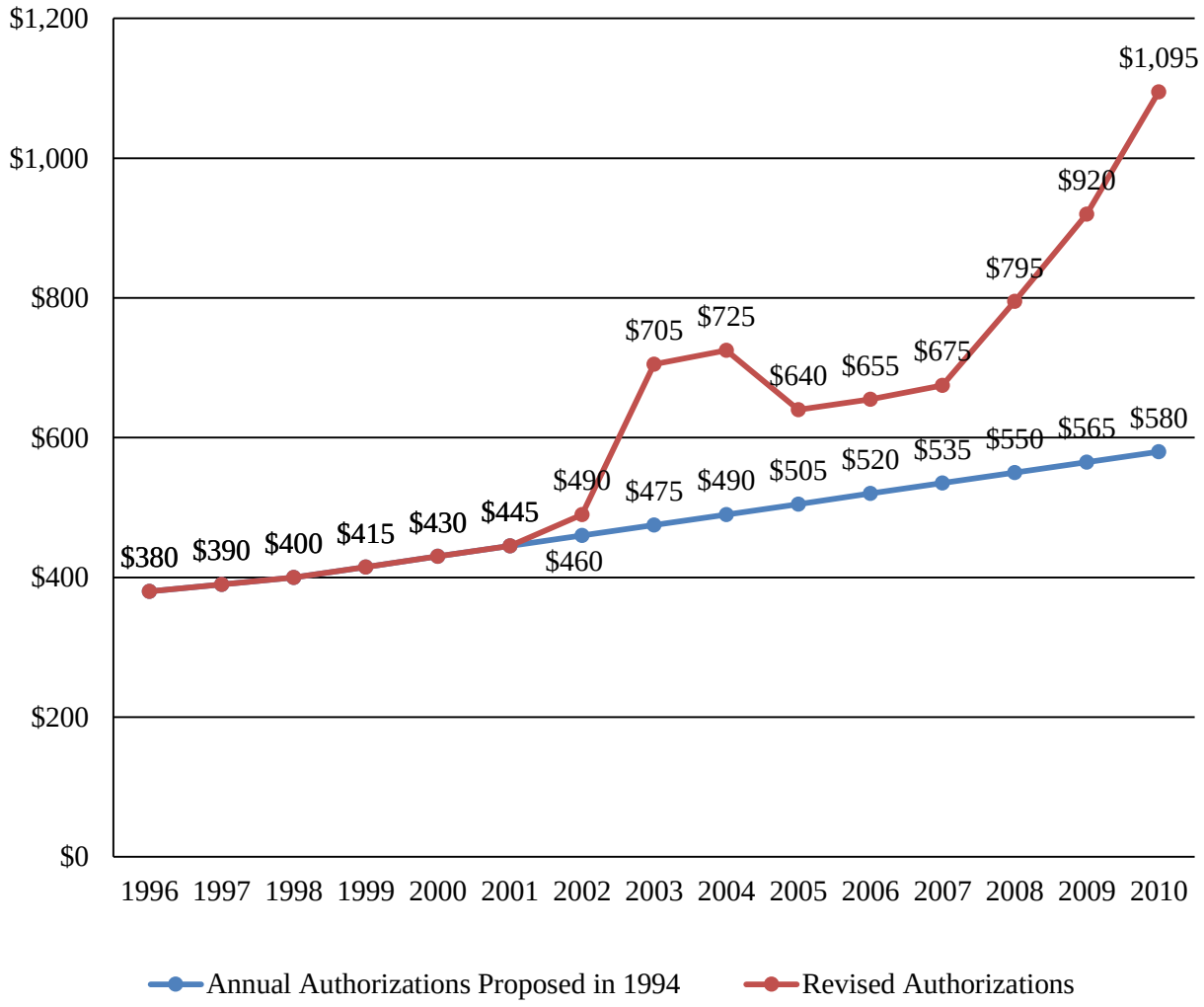
Moderate and Steady Increases in Authorizations: Fiscal 1995 to 2000

In the 1990s, the annual debt limit increased $10 million to $15 million each year. The fiscal 1996 debt limit was $380 million. This increased to $430 million in fiscal 2000. The affordability ratios were also well below their limits. In fiscal 1996, debt service was 6.35% of revenues. Fiscal 2000 debt service was 6.25% of revenues.

Increasing Authorizations: Fiscal 2001 to 2010

The State began deviating from slow and steady increases in GO bond authorizations in the 2001 legislative session. **Exhibit 17** shows that after fiscal 2001 all authorizations exceeded the 1990s trend.

Exhibit 17
General Obligation Bond Authorizations
Fiscal 1996-2010
($ in Millions)



Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*

Examples of specific increases in authorizations from fiscal 2001 to 2009 include:

- increasing the State capital program by $30 million annually beginning in fiscal 2002;
- adding a one-time $200 million increase to fiscal 2003 and again in fiscal 2004 to support PAYGO projects that had lost general fund support;

- increasing authorizations by $100 million a year for five years beginning in fiscal 2005, which became permanent in fiscal 2007;

- increasing the annual escalation from a fixed $15 million per year to 3% per year by CDAC in their 2005 report;

- adding $100 million to each year beginning in fiscal 2008; and

- adding $100 million to each year beginning in fiscal 2009.

The cumulative effect of increasing authorizations before 2009 was to increase the debt service to revenue ratio from 5.43% in fiscal 2001 to the 8% limit by September 2009.

Managing Authorizations: Fiscal 2011 to 2015

The third trend begins with the Great Recession. The State was about to exceed debt limits, so CDAC reduced out-year authorizations. Since December 2009, CDAC has been managing debt authorizations to maximize them without exceeding the limit.

The Great Recession's impact on Maryland's bonds was considerable. General fund revenues declined in fiscal 2009 and 2010 and did not reach fiscal 2008 levels until fiscal 2012. In response to the Great Recession, the Board of Revenues Estimates (BRE) reduced general fund revenue projections in December 2009. Consequently, the level of bond authorizations recommended by CDAC two months earlier would have pushed out-year debt service costs in excess of 8% of revenues. To avoid breeching this criterion, CDAC removed $960 million in GO bond authorizations from fiscal 2012 to 2017. No changes were proposed to authorizations beginning in fiscal 2018. Consequently, CDAC plans included a substantial increase in fiscal 2018.

By fiscal 2012, general fund revenues were improving, and additional debt capacity was available. CDAC responded by increasing authorizations. For example, the capital program was increased by $150 million annually from fiscal 2014 to 2018 by CDAC in September 2012.

In September 2013, CDAC again recommended increasing GO bond authorizations. The recommendation was to increase the program by $75 million annually from fiscal 2015 to 2019. SAC did not concur with this recommendation. Though SAC did support the additional $75 million in fiscal 2015, the committee recommended that no additional authorizations be provided from fiscal 2016 to 2019.

Differing SAC and CDAC Recommendations in Fiscal 2013 and 2014

The fourth trend is that SAC and CDAC have had differing recommendations. As mentioned in the previous section, SAC did not concur with the CDAC recommendation to increase fiscal 2016 to 2019 GO bond authorizations by $75 million annually.

CDAC proposed increasing annual authorizations again in October 2014. It proposed to incorporate the additional $75 million in annual increases. In December 2014, SAC rejected this increase and instead recommended the same level of debt it had recommended in December 2013.

SAC was concerned that the level of debt was not affordable. In December 2014, BRE reduced general fund revenue projections. At that time, the State Treasurer advised SAC that the size of the capital program that was proposed was no longer affordable. SAC was concerned about exceeding the debt limits and recommended that the fiscal 2016 GO bond program be limited to $1,095 million instead of $1,170 million recommended by CDAC.

New Administration Implements Policy Shift to Keep the Capital Program Spending Flat

On September 30, 2015, CDAC recommended that fiscal 2017 GO debt authorizations be limited to $995 million and that this level of authorizations be maintained through fiscal 2025. The fiscal 2017 authorization is $110 million less than the maximum amount that was affordable in December 2014. Over the five-year planning period (fiscal 2017 to 2021), this reduces capital spending by $1,170 million.

The reduction was proposed by the Secretary of Budget and Management and reflects the new Administration's policy to reduce State debt authorizations. The Secretary noted that debt service is too high; therefore, the State needs to reduce planned GO bond authorizations. The Secretary also expressed concerns that the debt service to revenue ratio is too close to the limit and that the State could breech this limit if revenues were to underattain and out-year revenues were to be revised downward.

Past Policies Recognized Inflation and Population Growth

Past capital budgets have recognized that capital project costs are subject to mild inflationary pressures and that the population of Maryland tends to increase over time. The inflationary pressures can erode capital spending, while additional population tends to increase the demand for projects. When CDAC increased the capital program's annual escalation to 3% in its 2006 report, it did so to recognize a 2% increase to offset inflation and a 1% increase to provide for increased demand attributable to population growth. DLS estimates that 2% inflation erodes the value of $995 million in fiscal 2021, the last year of the ABF forecast period, to $919 million, a loss of $76 million.

Comparing Recent SAC Recommendations to the CDAC Recommendation

In December 2014, SAC recommended that fiscal 2016 GO debt be limited to $1,095 million in fiscal 2016. Since this recommendation was made, the legislature authorized $1,045 million for fiscal 2016. Using this as a basis, SAC recommended 1% out-year growth and a debt limit totaling $1,055 million in fiscal 2017. This section compares the effect of the 2014 SAC recommendation with the 2015 SAC recommendation (1% growth) to the September 2015 CDAC authorizations. **Exhibit 18** shows GO bond authorizations under these three options.

Exhibit 18
Comparison of General Obligation Bond Authorizations
Fiscal 2017-2021
($ in Millions)

Year	Administration	1% Growth	2014 SAC
2017	$995	$1,055	$1,105
2018	995	1,065	1,200
2019	995	1,075	1,240
2020	995	1,085	1,280
2021	995	1,095	1,320

SAC: Spending Affordability Committee

Source: Spending Affordability Committee; Department of Legislative Services

The CDAC debt service affordability limit requires that debt service costs not exceed 8% of the State revenues supporting them. **Exhibit 19** shows that all options are affordable. CDAC also has a criterion that debt outstanding not exceed 4% of personal income. The State is well below this criterion.

Exhibit 19
Debt Service to Revenue Ratios for Options
Fiscal 2017-2021

Year	Administration	1% Growth	2014 SAC
2017	7.51%	7.51%	7.51%
2018	7.79%	7.79%	7.80%
2019	7.57%	7.59%	7.61%
2020	7.53%	7.56%	7.60%
2021	7.51%	7.57%	7.65%

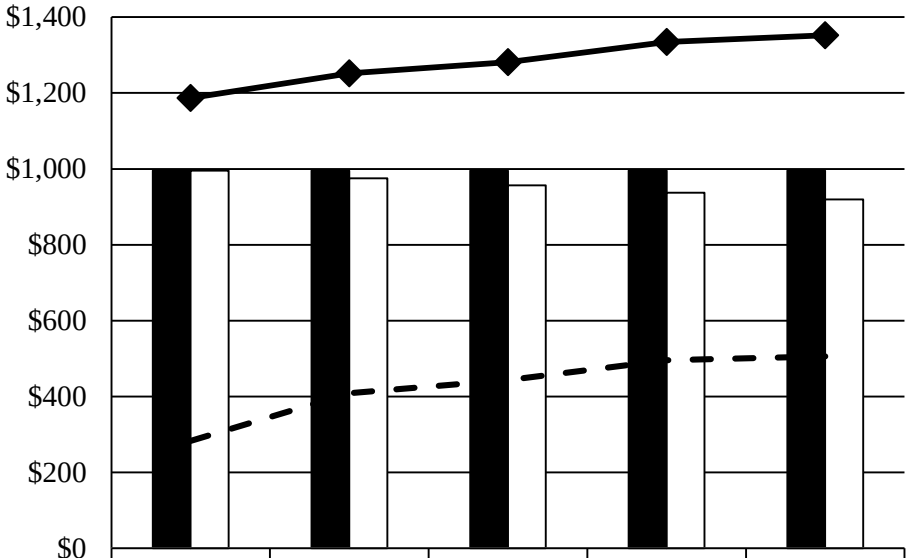
SAC: Spending Affordability Committee

Source: Spending Affordability Committee; Capital Debt Affordability Committee; Department of Legislative Services

Analysis of Administration's Flat Capital Program

The level of authorizations proposed by the Administration and recommended by CDAC in September 2015 is $995 per year. **Exhibit 20** shows that this reduces the purchasing power of the program to $919 million in fiscal 2021. Debt service appropriations increase by $165 million, and general fund appropriations increase by $223 million.

Exhibit 20
Bond Authorizations and Debt Service Costs for the Administration's Capital Program
Fiscal 2017-2021
($ in Millions)



	2017	2018	2019	2020	2021
Program Size	$995	$995	$995	$995	$995
In 2017 Dollars	995	975	956	938	919
Debt Service	1,187	1,252	1,282	1,334	1,352
General Funds	283	409	443	496	506

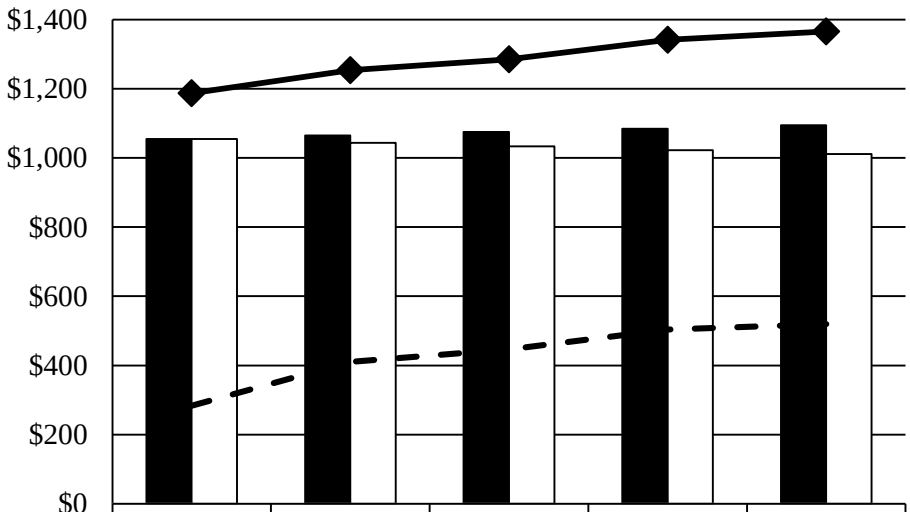
Source: Department of Legislative Services, January 2016

Analysis of 2015 SAC Recommendation: 1% Annual Growth Added to the Fiscal 2016 Authorization

Another approach is to allow for growth but limit it to growth in the primary revenue source supporting spending. State property taxes are dedicated for GO bond debt service. Annual growth is expected to be 1% over the forecast period.

Exhibit 21 shows that this provides $1,055 million in fiscal 2017, which increases to $1,095 million by fiscal 2021. The program does not keep up with inflation but does lose ground slower than a no-growth option. The fiscal 2021 program is $1,012 million in fiscal 2017. Debt service and general fund appropriations increase at a faster rate than the Administration's plan. While there is no noticeable increase in fiscal 2017, fiscal 2021 costs are $519 million, which is $13 million greater than the Administration's plan.

Exhibit 21
Bond Authorizations and Debt Service Costs for 2015 Spending Affordability Committees' 1% Annual Growth Program
Fiscal 2017-2021
($ in Millions)



	2017	2018	2019	2020	2021
Program Size	$1,055	$1,065	$1,075	$1,085	$1,095
In 2017 Dollars	1,055	1,044	1,033	1,022	1,012
Debt Service	1,187	1,254	1,285	1,342	1,366
General Funds	283	410	447	504	519

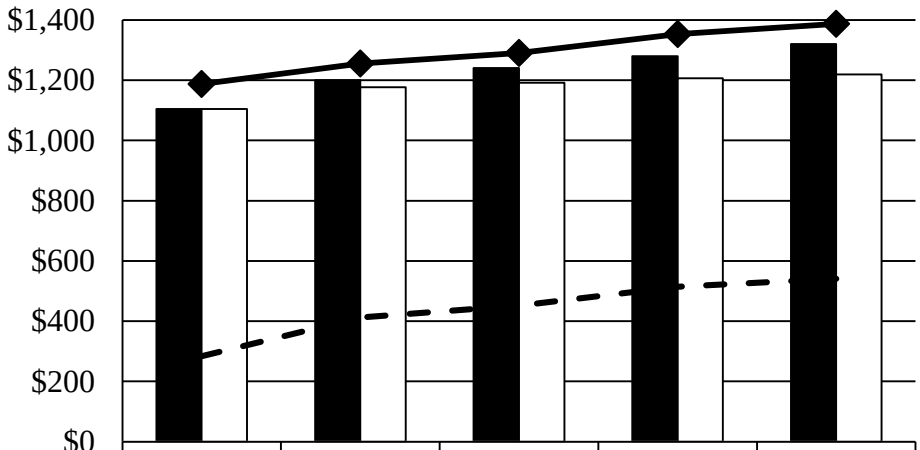
Source: Department of Legislative Services, January 2016

Analysis of December 2014 SAC Recommendations

The level of authorizations proposed by SAC in December 2014 is $1,105 million in fiscal 2017. In fiscal 2018, authorizations increase by almost 9%. This moves the capital program back to the level of authorizations recommended by CDAC for fiscal 2018 in September 2009. In December 2009, recommended fiscal 2012 to 2017 authorizations were reduced by $960 million. The fiscal years beginning in 2018 were unaffected by these reductions.

Exhibit 22 shows that this option provides $1,105 million in fiscal 2017, which increases to $1,320 million by fiscal 2021. The program keeps up with inflation and recognizes some increase in demand. The fiscal 2021 program is $1,219 million in fiscal 2017. Debt service and general fund appropriations increase at a faster rate than the Administration's plan. While there is no noticeable increase in fiscal 2017, fiscal 2021 costs are $540 million, which is $34 million greater than the Administration's plan.

Exhibit 22
Bond Authorizations and Debt Service Costs for 2014 Spending Affordability Committee's Recommended Program
Fiscal 2017-2021
($ in Millions)



	2017	2018	2019	2020	2021
Program Size	$1,105	$1,200	$1,240	$1,280	$1,320
In 2017 Dollars	1,105	1,176	1,192	1,206	1,219
Debt Service	1,187	1,255	1,290	1,353	1,387
General Funds	284	412	451	514	540

Source: Department of Legislative Services, January 2016

Requests Exceed Debt Capacity

In Maryland, State agencies prepare capital project requests and submit them to DBM. DBM reviews the agencies' requests and prepares the capital budget. Each year, the amount requested exceeds debt capacity. **Exhibit 23** shows that fiscal 2017 requests exceed the Administration's limit by $817 million, which is 82% more than the limit. The demand for projects far exceeds the State's ability to pay for projects.

Exhibit 23
General Obligation Bond Request
Fiscal 2017-2021
($ in Millions)

	2017	2018	2019	2020	2021	Total	Category Totals
State Facilities							**$636.8**
Board of Public Works	$64.1	$72.2	$104.5	$113.5	$141.8	$496.0	
Veterans Affairs	0.0	0.0	0.0	1.5	9.9	11.4	
Military	6.1	20.8	2.0	11.3	5.9	46.0	
Disabilities	1.6	1.6	1.6	1.6	1.6	8.0	
Maryland Public Broadcasting	0.2	1.0	6.5	4.6	0.0	12.2	
Information Technology	28.5	20.2	14.5	0.0	0.0	63.2	
Health and Social Services							**$395.7**
Health and Mental Hygiene	$9.6	$23.2	$37.0	$24.3	$10.0	$104.1	
University of Maryland Medical System	15.3	15.6	2.0	0.0	0.0	32.9	
Senior Citizen Activity Center	1.6	1.6	1.6	1.6	1.6	8.0	
Juvenile Services	33.0	32.0	0.5	9.7	13.3	88.5	
Private Hospital Grant Program	4.2	5.0	6.0	6.0	6.0	27.2	
Prince George's County Hospital	45.0	90.0	0.0	0.0	0.0	135.0	
Environment							**$391.4**
Natural Resources	$23.5	$24.0	$24.5	$19.9	$15.1	$107.0	
Agriculture	8.5	19.5	6.0	6.0	6.0	46.0	
Environment	47.8	41.5	20.5	20.5	20.5	150.8	
Maryland Environmental Service	22.6	24.6	12.4	14.6	13.4	87.6	
Education							**$3,329.4**
Education	$28.2	$30.3	$20.9	$7.0	$6.7	$93.0	
Maryland School for the Deaf	3.5	0.0	0.1	3.4	0.0	7.1	
Public School Construction	652.7	632.7	664.3	665.7	614.0	3,229.3	

	2017	2018	2019	2020	2021	Total	Category Totals
Higher Education							**$3,135.7**
University System of Maryland*	$338.0	$366.4	$465.5	$368.9	$356.6	$1,895.3	
Baltimore City Community College	0.3	3.9	18.4	17.6	0.0	40.2	
St. Mary's College	2.7	8.7	9.6	34.5	35.0	90.5	
Morgan State University	45.4	63.7	68.1	74.6	141.0	392.8	
Community Colleges	123.6	106.7	139.5	171.5	117.6	658.8	
Private Facilities Grant Program	10.0	12.0	12.0	12.0	12.0	58.0	
Public Safety							**$420.9**
Public Safety	$15.4	$46.8	$129.4	$115.9	$57.5	$365.1	
State Police	5.8	16.0	14.7	0.5	0.0	36.9	
Local Jails	2.9	6.0	5.0	5.0	0.0	18.9	
Housing and Economic Development							**$523.9**
Housing and Community Development	$97.1	$97.2	$97.3	$97.0	$96.8	$485.4	
Historic St. Mary's City	0.0	0.5	14.3	6.0	0.0	20.8	
Planning	7.5	4.6	1.8	2.2	1.8	17.8	
Transportation							**$285.0**
Transportation	$85.0	$100.0	$100.0	$0.0	$0.0	$285.0	
							$247.0
Legislative Initiatives**	$35.0	$35.0	$35.0	$35.0	$35.0	$175.0	
Miscellaneous	46.9	8.9	5.6	5.3	5.3	72.0	
Subtotal Request	***$1,811.6***	***$1,932.2***	***$2,040.8***	***$1,857.0***	***$1,724.2***	***$9,365.9***	***$9,365.9***
Debt Affordability Limits 2015 CDAC	**$995.0**	**$995.0**	**$995.0**	**$995.0**	**$995.0**	**$4,975.0**	
Variance 2015 CDAC	**$816.6**	**$937.2**	**$1,045.8**	**$862.0**	**$729.2**	**$4,390.9**	

CDAC: Capital Spending Affordability Committee
SAC: Spending Affordability Committee

*In addition to the general obligation bond request, the University System of Maryland has requested academic revenue bond funding of $22 million in fiscal 2017 and 2018 and $32 million in fiscal 2019-2021.
**Figures represent an estimated average of the total funding requests received through legislative local bond bills.

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

Source: Department of Budget and Management

Each Capital Budget Is a One-year Decision

For planning purposes, the State provides six-year forecasts of revenues and capital spending. This allows the State to assess how financially sound its actions are. But as a practical matter, the General Assembly passes an annual budget. This year, the Administration proposes $995 million in GO bond authorizations. SAC proposed $1,055 million in December 2015. Keeping with the December 2014 SAC recommendation would have resulted in $1,105 million in authorizations. **Exhibit 24** compares the total costs of these three options.

Exhibit 24
Cost of the Fiscal 2017 General Obligation Bond Authorization Comparing the Administration Plan with Recent Spending Affordability Committee Recommendations
($ in Millions)

	Administration Plan	December 2015 SAC (1% Increase)	December 2014 SAC
Total Principal Payments	$995	$1,055	$1,105
Total Interest Payments	482	511	535
Total Debt Service Payments	**$1,477**	**$1,566**	**$1,640**
Percent Increase		**6%**	**11%**
Additional Principal		$60	$110
Additional Interest		29	53
Total Additional		**$89**	**$163**

SAC: Spending Affordability Committee

Source: Department of Legislative Services

The State Treasurer should be prepared to brief the committees on the effects of the Administration's and the SAC recommended level of debt authorizations.

Recommended Actions

1. Concur with Governor's allowance.

Appendix 1

Current and Prior Year Budgets

Current and Prior Year Budgets
Public Debt
($ in Thousands)

	General Fund	Special Fund	Federal Fund	Reimb. Fund	Total
Fiscal 2015					
Legislative Appropriation	$140,000	$887,932	$11,490	$0	$1,039,422
Deficiency Appropriation	0	0	0	0	0
Cost Containment	0	0	0	0	0
Budget Amendments	0	0	0	0	0
Reversions and Cancellations	0	-12,325	-7	0	-12,331
Actual Expenditures	**$140,000**	**$875,608**	**$11,483**	**$0**	**$1,027,091**
Fiscal 2016					
Legislative Appropriation	$252,400	$845,378	$11,477	$0	$1,109,255
Budget Amendments	0	21,600	0	0	21,600
Working Appropriation	**$252,400**	**$866,978**	**$11,477**	**$0**	**$1,130,855**

Note: The fiscal 2016 working appropriation does not include deficiencies or reversions. Numbers may not sum to total due to rounding.

Fiscal 2015

Fiscal 2015 actual Public Debt spending was $12.3 million less than the appropriations. This was almost entirely attributable to special fund spending. Major changes include:

- interest costs from the July 2013 bond sale of new bonds were $1.1 million less than budgeted;
- the July 2014 refunding bond sale reduced fiscal 2014 debt service costs by $8.7 million; and
- costs associated with the March 2013 bond sale were $2.5 million less than budgeted.

Fiscal 2016

The March 2014 bond sale interest costs were less than budgeted, and the bond sale premium realized from that sale also exceeded projections. In response, the General Assembly reduced general fund appropriations by $21.6 million, and authorized a budget amendment to appropriate additional special funds. Budget amendment 009-16 appropriates these funds.

Fiscal Summary
Public Debt

Program/Unit	FY 15 Actual	FY 16 Wrk Approp	FY 17 Allowance	Change	FY 16 - FY 17 % Change
01 Redemption and Interest on State Bonds	$ 1,027,090,614	$ 1,130,855,189	$ 1,187,178,826	$ 56,323,637	5.0%
Total Expenditures	**$ 1,027,090,614**	**$ 1,130,855,189**	**$ 1,187,178,826**	**$ 56,323,637**	**5.0%**
General Fund	$ 140,000,000	$ 252,400,000	$ 283,000,000	$ 30,600,000	12.1%
Special Fund	875,607,745	866,977,926	892,639,657	25,661,731	3.0%
Federal Fund	11,482,869	11,477,263	11,539,169	61,906	0.5%
Total Appropriations	**$ 1,027,090,614**	**$ 1,130,855,189**	**$ 1,187,178,826**	**$ 56,323,637**	**5.0%**

Note: The fiscal 2016 appropriation does not include deficiencies. The fiscal 2017 allowance does not include contingent reductions.

Appendix 3

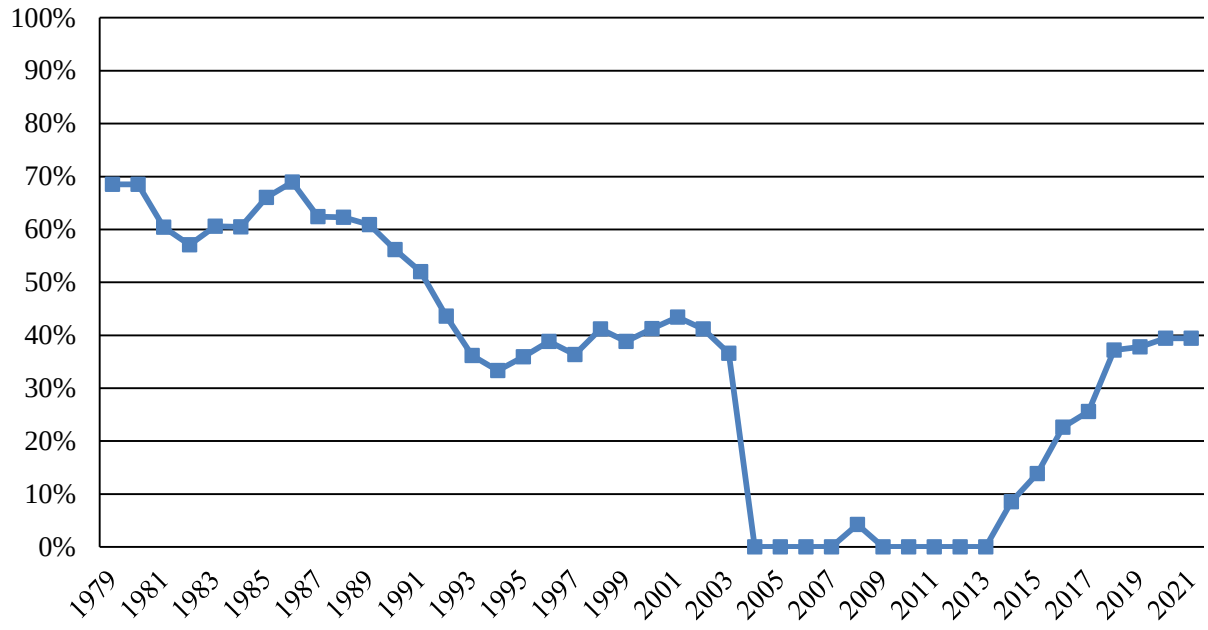
General Fund Appropriations for Debt Service and State Property Tax Rates

General obligation (GO) bond debt service costs are supported by the Annuity Bond Fund. Currently, the fund's primary revenue source is State property tax revenues. When these revenues are insufficient, the State appropriates general funds. Prior to fiscal 2004, reimbursable funds were also appropriated into the fund. The source of these funds was general funds appropriated into the Maryland State Department of Education budget to support local school construction debt service.

The chart shows that the Department of Legislative Services projects that general fund appropriations for debt service will approach 40% of debt service appropriations by fiscal 2020. 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. From fiscal 1979 to 1989, general fund support exceeded 60% in all but one year. From fiscal 1992 until the State property tax rate was increased in fiscal 2004, the general fund share hovered around 40%. Insofar as there is little support to increase property tax rates, the State appears to be heading into a period in which general fund support could again be 40% of GO bond debt service appropriations.

State property taxes were $0.084 per $100 of assessable base from fiscal 1979 to 2003, $0.132 from fiscal 2003 to 2006, and $0.112 since fiscal 2004.

General Funds as a Percent of Debt Service Appropriations And State Property Tax Rates
Fiscal 1979-2021



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

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

Appendix 4

Analysis of General Obligation Bonds' True Interest Costs

The interest rate that Maryland pays for the bonds 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.

Financial theory suggests factors that could influence Maryland's general obligation (GO) bond's TIC. Research has confirmed a number of significant influences in other states and in national studies that included Maryland. To build the least squares regression equation, data was collected and analyzed for the 63 bond issuances since March 1991 (refunding sales are excluded): 51 competitively bid, tax-exempt bond issuances; 8 negotiated, retail bond issuances; and 4 Build America Bond (BAB) issuances.

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 (TIC). The regression equation examines the variables previously listed and identifies five statistically significant variables at the 95% confidence level that affect the TIC and they are:

- ***Bond Buyer 20-bond Index:*** The key variable is the 20-bond index. This is an estimate of the market rate for 20-year, AA-rated State and municipal bonds. The Department of Legislative Services (DLS) has collected the estimated yields since 1991.

- ***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 interest rate investors will expect. One factor of risk is the fiscal health of the entity selling the debt. In the DLS regression equation, State personal income is used as a proxy for fiscal health. The equation uses a ratio that compares State personal income to U.S. personal income. If the ratio increases, Maryland is doing relatively better than the rest of the United States, and a GO bond issuance's TIC tends to decline.

- ***Years to Maturity:*** Under normal economic conditions, bonds with shorter maturities have lower interest costs than bonds with longer maturities. This is referred to as a positive yield curve. The analysis estimates that every year adds 0.26% (26 basis points) to the TIC.

- ***Post-financial Crisis:*** This is a variable that indicates if a bond was sold before or after Lehman Brothers collapsed in September 2008. The equation estimates that Maryland bond yields are 0.62% (62 basis points) less since September 2008. This is consistent with the "flight to quality" that some believe has resulted since the financial crisis of 2008. The average bond in the index is a lower quality bond than Maryland bonds. The negative coefficient projects that the yield on higher rated bonds has been reduced when compared to AA-rated bonds. This variable was not necessary in previous years. The analysis used an index of AAA-rated bonds which would not identify an increasing spread between higher and lower rated bonds. Now that an AA-rated index

is used, a variable measuring the increasing spread between AAA and AA bonds results in an improved equation.

- ***BABs:*** In February 2009, the American Recovery and Reinvestment Act authorized the issuance of BABs. The bonds are taxable bonds that support the same types of projects that traditional tax-exempt bonds support. The difference is that the buyers do not receive any federal tax credits or deductions so that the interest earnings are subject to federal taxes. Instead, Maryland receives a subsidy equal to 35% of the interest costs from the federal government. In concept, the bonds expand the number of buyers of State and municipal debt since the bonds are also attractive to individuals and institutions that do not pay federal taxes. Because the tax-exempt bonds' benefit is greater for shorter maturities, the State issued tax-exempt bonds with shorter maturities and BABs with longer maturities.

The following table shows the data for the statistically significant variables.

TIC Regression Equation – Evaluating the Independent Variables

Ind. Variable	Coefficient	Std. Error	Beta	t-test	Sig.	Tol.	Comment
The Bond Buyer 20-bond Index	0.871	0.044	0.62	19.620	0.000	0.58	Highest t-test suggests with confidence that the index is significant.
MD PI/US PI	-1.859	0.771	-0.08	-2.413	0.019	0.52	Negative coefficient suggests that as the Maryland economy strengthens, compared to the United States, the TIC declines.
Years to Maturity	0.259	0.027	0.34	9.697	0.000	0.46	Positive coefficient means that longer maturities tend to have higher TICs.
Post-financial Crisis	-0.639	0.099	-0.27	-6.435	0.000	0.34	Maryland bonds' yields are reduced since the crisis.
BAB	-1.111	0.180	-0.23	-6.168	0.000	0.42	Negative coefficient suggests BABs are less expensive.
Constant	1.528						

BAB: Build America Bonds
Ind.: independent
MD PI/US PI: Maryland Total Personal Income to U.S. Personal Income
Sig.: significance or confidence interval
Std.: standard
TIC: true interest cost
Tol. tolerance, a test of multicollinearity

Source: Department of Legislative Services, October 2015

In addition to estimating and evaluating the specific variables, a proper statistical analysis must also incorporate an analysis of the equation as a whole, such as:

- how confident are we in the equation (confidence interval);
- what is the equation's margin of error;
- how close are the equation's estimates to the actual data; and
- is there a dependence between successive dependent variables (serial or autocorrelation)?

The regression equation has a high level of explanatory power and suggests that the determinants of Maryland's TIC are well understood and account for almost all of the variations that are seen in the TIC. The following table shows the equation's statistics.

TIC Regression Equation – Evaluating the Entire Equation

What Is Measured	Statistic Used to Measure	Value of Statistic	Explanation
Confidence in the equation	F Statistic	331.5	We are over 99.9% confident that the independent variables influence the dependent variable.
Margin of error	Standard error of the estimate	0.227	We expect the actual TIC to be within 0.23% (23 basis points) of the estimate.
Estimate in relation to actual data	Adjusted R Square	0.964	The model's estimates explain 96.4% of the actual data.
Serial or autocorrelation	Durbin-Watson	1.537	The ideal value is 2.0. If the number deviates too far from 2.0, it suggests that there are patterns in the errors, and a key independent variable is missing.

TIC: true interest cost

Source: Department of Legislative Services, October 2015