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

DEPARTMENT OF LEGISLATIVE SERVICES 2016

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

Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland

November 2016

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DEPARTMENT OF LEGISLATIVE SERVICES
OFFICE OF POLICY ANALYSIS
MARYLAND GENERAL ASSEMBLY

Warren G. Deschenaux
Executive Director

November 2016

The Honorable Roger P. Manno
Senate Chairman, Spending Affordability Committee

The Honorable Ben Barnes
House Chairman, Spending Affordability Committee

Dear Chairman Manno and Chairman Barnes:

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

The Capital Debt Affordability Committee complements the efforts of the Spending Affordability Committee in management of the State's bonded indebtedness. The Capital Debt Affordability Committee, created by an Act of the 1978 General Assembly, is required to submit a recommended level of debt authorization to the Governor and the General Assembly by October 1 of each year. The existence of the committee within the Executive Branch means that consideration of debt affordability will occur at the time of formulation of the State's capital program, as well as the time of approval of the program by the legislature.

The statistical analysis and data used in developing the recommendations were prepared by Patrick Frank with assistance from Andrew Gray, Garret Halbach, Matthew Klein, Jason Kramer, Steven McCulloch, Robert Rehrmann, and Jody Sprinkle. The manuscript was prepared by Maureen Merzlak.

Respectfully submitted,

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WGD/mrm

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Chapter 1. Recommendations of the Department of Legislative Services

New General Obligation Bond Authorization

The Capital Debt Affordability Committee (CDAC) recommended a limit of $995 million for new authorizations of general obligation (GO) bonds during the 2017 session. This recommendation is the same level as was recommended for the fiscal 2016 session. Limiting GO bond authorizations to $995 million through fiscal 2025 does not provide for inflationary increases.

The Administration's objectives are to limit increases in debt service costs and reduce the debt service to revenue ratio. As discussed in Chapter 8, recent increases in debt service costs are primarily attributable to increasing authorizations beyond previously planned levels. The Administration's objectives can be realized by moderately increasing authorizations. Current estimates have general fund revenues increasing 4% annually. To restrain debt service costs and provide capacity, annual increases in authorizations should not exceed projected increases in revenues. Based on Department of Legislative Services' **(**DLS) estimates, the State can achieve these goals by moderately increasing authorizations by 1% annually off of the fiscal 2017 authorization. **DLS concurs with CDAC that limiting GO bond authorizations to $995 million is affordable. DLS notes that moderate increases, such as limiting annual increases to 1%, are also affordable and do not substantially increase debt service costs.**

Consider Policies to Limit Increases to General Obligation Bond Authorizations

CDAC has two criterion to judge affordability: debt outstanding should not exceed 4% of personal income and debt service should not exceed 8% of revenues. These criteria have been effective in restraining debt. Debt to revenues declined from 11% in fiscal 1919 to 8% in fiscal 1987. After revenues were written down in response to the Great Recession, CDAC reduced the five-year capital program by $400 million. Most recently, CDAC reduced the fiscal 2017 capital program by $55 million.

The CDAC process also allows for large increases to GO bond authorizations. The most substantial increases in recent years include:

- increasing annual authorizations by $100 million a year from fiscal 2005 to 2009 in the 2004 legislative session;

- modifying the annual increase from a fixed $15 million to 3% in the 2006 legislative session. Another $100 million was permanently added annually to the program beginning

in fiscal 2010 to avert a reduction in the program created by the proposed level of authorizations made in calendar 2004;

- permanently increasing authorizations by $100 million annually in the 2008 legislative session; and

- increasing authorizations by $150 million annually from fiscal 2014 to 2018 in the 2013 legislative session.

DLS has raised concerns that the CDAC process makes it too easy to increase GO bond authorizations. One concern is that the full debt service cost of an increased authorization is not realized for at least eight years. **DLS recommends that the full annual interest cost is considered when proposing to increase authorizations.** Another concern is that there is no criterion linking authorizations to revenues. **DLS recommends that increases in GO bond authorizations be limited to increases in State property taxes, which support debt service costs.**

Taken together, these changes align the CDAC process more closely with the State's fiscal condition. Since increasing authorizations has almost no impact on short-term expenditures, the cost of increasing authorizations is understated. Accounting for the maximum amount of debt service would immediately recognize the fiscal impact of increasing authorizations. Also, the current process provides for annual increases that relate to maintaining program purchasing power instead of relating to the revenues available to support the program. Reducing the annual increase aligns growth with revenues instead of demand, thus making future GO bond authorizations more affordable. **As discussed in Chapter 8, DLS recommends that CDAC consider debt policies that realize the cost of debt more quickly and that limit growth in authorizations to the revenues supporting the debt.**

Review of Issuance Assumptions Recommended

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

In recent years, however, the State has increasingly aligned GO bond authorizations to estimated project cash flow needs based on the timing and schedule of project contracts. This policy, now fully adopted in the State's annual five-year annual *Capital Improvement Program* planning process, produces a more efficient use of limited State GO bonds that more closely aligns

authorizations to project expenditures. This also influences the timing of when the funds are needed and, therefore, a faster bond issuance schedule than has been used to date. Accordingly, for the purposes of analyzing and comparing future issuances and debt service requirements, in this analysis, DLS uses a five-year issuance stream as such: 35% in the first year, 27% in the second year, 18% in the third year, 13% in the fourth year, and 7% in the fifth year. **Based on an evaluation of recent capital budgets, DLS recommends a more accelerated issuance stream be used for planning purposes and in evaluating the impact of recommended authorization levels on the State's debt affordability criteria. DLS, the Department of Budget and Management (DBM), the Department of General Services, the State Comptroller's Office, and the State Treasurer's Office should prepare the evaluation and make a recommendation to CDAC.**

Issuance of Taxable Debt

The State's capital program supports a number of different public policy objectives, such as health, environmental, public safety, education, housing, and economic development objectives. 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. 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.

At the August 2013 bond sale, the State issued $40 million in taxable GO bonds and $435 million of tax-exempt bonds. The true interest cost of the taxable bonds was noticeably higher than the tax-exempt bonds – 1.48% for four-year, taxable debt compared to 1.04% for four-year, tax-exempt debt. Using market data, DLS estimated the cost of issuing tax-exempt debt. The net effect on spending over four years is that the tax-exempt bonds cost approximately $478,000 less than taxable bonds. This issue is discussed in more detail in Chapter 8. **To reduce debt service cost, DLS recommends that DBM reduce private activity authorizations for fiscal 2018.**

Authorization of Transportation Debt

The Maryland Department of Transportation issues bonds supported by Transportation Trust Fund revenues. As State tax-supported bonds, these bonds compete with other State capital projects within debt affordability limits. Transportation debt capacity is limited by the constraints on debt outstanding, debt service coverage, the cash flow needs for projects in the capital program, and overall, State debt affordability limits. Transportation debt is discussed in Chapter 3. **It is**

recommended that the General Assembly continue to set an annual limit on the level of State transportation debt to keep debt outstanding within the 4% of personal income debt affordability criterion and debt service within the 8% of revenues affordability criterion.

Authorization of Bay Restoration Bond Debt

The Bay Restoration Fund was created in 2004 primarily to provide grants for enhanced nutrient removal pollution reduction upgrades at the State's 67 major wastewater treatment plants. In 2012, the General Assembly adopted legislation to increase funding for these projects. Current plans provide sufficient funding for this initiative. Bay bonds are discussed in more detail in Chapter 3. **It is recommended that the General Assembly continue to limit Bay Restoration Fund revenue bond issuances at a level that maintains debt outstanding within the 4% of personal income debt affordability criterion and debt service within the 8% of revenues affordability criteria.**

Higher Education Academic Debt

CDAC recommends limiting new debt authorization of the University System of Maryland (USM) academic revenue bonds (ARB) to $32 million for the 2016 legislative session. Academic bond issuances are discussed in Chapter 7. **DLS concurs with the committee's assessment that issuing $32 million in new USM ARBs is affordable.**

Chapter 2. Recommendations of the Capital Debt Affordability Committee

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

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

New General Obligation Debt Authorization

GO bonds are backed by the full faith and credit of the State, and they support the State's capital program. CDAC recommends a $995 million limit on new GO debt authorization for the 2017 session, which is the same amount proposed by CDAC for the 2016 session in its October 2015 report and the same level included in the Governor's 2016 session *Capital Improvement Program* (CIP) for the 2017 session. CDAC's long-range plan recommends keeping new GO debt authorizations at $995 million annually through the 2025 session, which is the same recommendation made by the committee in its 2015 report and the same level programmed for planning purposes in the 2016 CIP.

The recommendation to keep the amount of new GO bond authorizations at $995 million annually through the planning period was made by the Secretary of Budget and Management and reflects the Administration's policy to reduce the reliance on general funds for debt service. To support keeping GO bond authorizations level at $995 million annual, the budget Secretary noted that debt service requires increased levels of general fund appropriation, and continued efforts to keep authorizations levels below $1 billion annually is, therefore, required in order to lower out-year debt service expenditures.

Exhibit 2.1 shows that CDAC's planned annual authorizations remain at $995 million throughout the forecast period.

Exhibit 2.1
Effect of Proposed Capital Debt Affordability Committee
General Obligation Bond Authorizations
2017-2025 Legislative Sessions
($ in Millions)

Session	Proposed GO Authorizations 2015 CDAC	Proposed GO Authorizations 2016 CDAC	Change from 2015 CDAC
2017	$995	$995	$0
2018	995	995	0
2019	995	995	0
2020	995	995	0
2021	995	995	0
2022	995	995	0
2023	995	995	0
2024	995	995	0
2025	995	995	0
Total	**$8,955**	**$8,955**	**$0**

CDAC: Capital Debt Affordability Committee
GO: general obligation

Source: *Affordability Analysis: September Baseline*, Capital Debt Affordability Committee, October 2016

Higher Education Academic Debt

CDAC recommends new debt authorization of academic revenue bonds in the amount of $32.0 million for the 2017 session. This amount reflects an $8.5 million increase from the $24.5 million authorized in the 2016 legislative session but is consistent with the amount programmed for the 2017 session in the 2016 CIP.

Chapter 3. State Debt

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

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

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

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

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

- Grant Anticipation Revenue Vehicles (GARVEE) pledging projected future federal transportation grants to support debt service payments. GARVEEs can be issued by MDOT and the Maryland Transportation Authority (MDTA);

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

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

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

General Obligation Bonds

GO bonds are authorized and issued to pay for the construction, renovation, or equipping of facilities for State, local government, and private-sector entities. Grants and loans are made to local governments and private-sector entities when the State's needs or interests have been identified. Projects funded with GO bonds include, but are not limited to, public and private colleges and universities, public schools and community colleges, prisons and detention centers, and hospitals. **Appendix 1** shows agency GO bond requests for fiscal 2018 through 2022.

New General Obligation Bond Authorizations: Reduced Levels of Authorizations Recommended

The Capital Debt Affordability Committee (CDAC) recommended a limit of $995 million for new authorizations of GO bonds for the 2017 session. The committee's recommendation is the same amount proposed by CDAC for the 2016 session in its October 2015 report and the same level included in the Governor's 2016 session *Capital Improvement Program* (CIP) for the 2017 session. The CDAC long-range plan recommends keeping annual new GO debt authorizations at $995 million annually through the 2025 session. The proposed 2017 session level is below the $1,065.0 million level recommended by the Spending Affordability Committee (SAC) in its 2015 reports for the 2017 session. The CDAC long-range plan also reflects GO debt levels below amounts proposed by SAC in its 2015 report for each year in the planning period. It is also noteworthy that the CDAC out-year planning assumption continues to exclude annual incremental increases to account for inflation in the construction market. The committee's policy previously included annual inflationary increases, but beginning with the 2015 recommendation, this policy has not been applied in favor of keeping authorizations flat through the planning period to address the impact that increasing annual debt service requirements has on the General Fund.

Exhibit 3.1 shows that the CDAC long-term forecast recommends a total of $4,975 million in new GO bond authorizations for the 2017 through 2021 sessions. The exhibit also illustrates the differences between the CDAC 2016 recommended authorization levels as compared to what SAC recommended in its 2015 reports. The SAC recommendation would provide $450 million more than what CDAC recommends for the period covering the 2017 through 2021 sessions. The 2015 SAC recommendation limits annual increases to 1% on a year-over-year basis. This moderate growth rate limits increases in GO bond authorizations to below projected State property tax revenue increases, which reduces the ratio of debt service to revenues in the out-years. Both the CDAC and SAC recommended out-year authorization levels are within the debt affordability benchmarks, which limit State tax-supported debt outstanding to no more than 4% of State personal income and debt service to no more than 8% of revenues. The comparison of the two recommendations and their estimated impact on State-tax supported debt limits is analyzed in more detail in Chapter 4 of this report.

Exhibit 3.1
CDAC and SAC Recommended Authorization Levels
2017-2021 Legislative Sessions
($ in Millions)

Session	Proposed GO Authorizations 2015 and 2016 CDAC	Proposed GO Authorizations 2015 SAC	Difference from 2015 SAC
2017	$995	$1,065	-$70
2018	995	1,075	-80
2019	995	1,085	-90
2020	995	1,095	-100
2021	995	1,105	-110
Total	**$4,975**	**$5,425**	**-$450**

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

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*, 2015 and 2016; *Spending Affordability Committee 2015 Interim Report*, December 2015, and Governor's 2016 *Capital Improvement Program*

General Obligation Bond Issuance Stream

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

In recent years, however, the State has increasingly aligned GO bond authorizations to estimated project cash flow needs based on the timing and schedule of project contracts. This policy, now fully adopted in the State's annual five-year annual CIP planning process, produces a more efficient use of limited State GO bonds that more closely aligns authorizations to project expenditures. This also influences the timing of when the funds are needed and, therefore, a faster bond issuance schedule than has been used to date. Accordingly, for the purposes of analyzing and comparing future issuances and debt service requirements, in this analysis, the Department of Legislative Services (DLS) uses a five-year issuance stream as such: 35% in the first year, 27% in the second year, 18% in the third year, 13% in the fourth year, and 7% in the fifth year. **Based on an evaluation of recent capital budgets, DLS recommends a more accelerated issuance**

stream be used for planning purposes and in evaluating the impact of recommended authorization levels on the State's debt affordability criteria. DLS, the Department of Budget and Management, the Department of General Services (DGS), the State Comptroller's Office, and the State Treasurer's Office should prepare the evaluation and make a recommendation to CDAC.

Exhibit 3.2 compares the issuance stream projected by the State Treasurer's Office based on the CDAC flat $995 million annual authorization level and current five-year issuance stream projections to the issuance stream projected by DLS. Based on the different assumptions issuance projections, the DLS recommendation would result in the State issuing $50 million less through fiscal 2025.

Exhibit 3.2
Proposed Issuance Stream
Fiscal 2018-2025
($ in Millions)

Year	2016 CDAC Estimate	DLS Estimate	Difference
2018	$1,075	$1,045	-$30
2019	1,050	1,030	-20
2020	1,025	1,025	0
2021	1,005	1,005	0
2022	995	995	0
2023	995	995	0
2024	995	995	0
2025	995	995	0
Total	**$8,135**	**$8,085**	**-$50**

CDAD: Capital Debt Affordability Committee
DLS: Department of Legislative Services

Source: *Effect of Long-term Debt on the Financial Condition of the State*, November 2015; Department of Legislative Services, October 2016

Appendix 2 shows how the proposed authorizations for fiscal 2018 through 2026 would be issued by the State Treasurer's Office based on the CDAC flat $995 million annual authorization level and current five-year issuance stream projections. The appendix reflects DLS' estimate of authorizations that reflects a modified GO bond issuance schedule. There are two differences between the approaches of DLS and CDAC. DLS has a more aggressive issuance

schedule for bonds issued after fiscal 2017 while CDAC projects higher issuances of previously issued debt.

General Obligation Bond Debt Service Costs

Exhibit 3.3 shows that from fiscal 2018 through 2022, DLS estimates increase from $1,250 million to $1,397 million.

Exhibit 3.3
Projected Debt Service Costs
Fiscal 2018-2022
($ in Millions)

Year	Debt Service Estimate
2018	$1,250
2019	1,310
2020	1,339
2021	1,359
2022	1,397

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

Source: Department of Legislative Services, September 2016

General Obligation Bond Refunding

GO bonds issued by Maryland are callable after 10 years. In recent years, low interest rates provided the State with the opportunity to refund bonds. The bonds were financed by issuing new debt at lower interest rates. The new debt was placed in an escrow account from which debt service payments for the previously issued debt are made. This increases gross GO bond debt outstanding, but net debt remains constant. **Exhibit 3.4** shows that refunding reduced debt service costs by over $200 million since December 2009.

Exhibit 3.4
Debt Service Cost Savings Attributable to Bond Refunding
($ in Millions)

Date of Sale	Amount Issued	Amount Retired	Savings	Net Present Value of Savings
December 2009	$602.8	$606.3	$25.8	$24.9
February 2010	195.3	200.4	9.3	8.6
September 2011	254.9	264.6	12.6	11.1
March 2012	138.4	140.7	12.6	10.2
August 2012	183.8	194.5	18.7	16.1
March 2013	165.1	168.7	10.0	8.1
March 2014	236.9	245.9	14.2	12.6
July 2014	649.7	695.2	69.2	58.3
March 2015	365.4	369.7	29.0	21.8
Total	**$2,792.2**	**$2,885.8**	**$201.5**	**$171.7**

Source: Public Financial Management, Inc.

The State Treasurer's Office, with advice from its financial advisor, is continually monitoring financial markets to determine if refinancing GO debt is advantageous. Should it be determined that market interest rates are sufficient to warrant a refunding, such action would be presented to the Board of Public Works (BPW) for its approval. The U.S. Federal Reserve Board's Federal Open Market Committee has stated that it expects to increase interest rates before the end of 2016. Increasing short-term rates could result in higher rates for longer term debt. This would reduce future refunding opportunities.

Program Open Space Debt Service Payments

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

The full $70 million in GO bonds was issued as part of two State issuances, February and July 2010, as shown in **Exhibit 3.5.** By statute, the bond issuance had to occur before the first

expenditures of general fund advances for property purchases. The first purchases were in August 2010. The Department of Natural Resources (DNR) received $65 million, and the Maryland Department of Agriculture (MDA) received $5 million of the $70 million issuance. Some of the debt was issued as BABs. The bonds include federal direct payment subsidies that were reduced by sequestration. The reduction is less than $100,000.

Exhibit 3.5
Program Open Space GO Bond Issuances
($ in Thousands)

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

GO: general obligation

Source: Department of Budget and Management, January 2011

Exhibit 3.6 shows that debt service costs are $6.7 million in 2018. The debt service is deducted from transfer tax revenues allocated to DNR and MDA proportionately based on the share of the issuance each received.

Exhibit 3.6
Program Open Space GO Bonds Debt Service Payment Schedule
Fiscal 2017-2022
($ in Millions)

	2017	2018	2019	2020	2021	2022
Debt Outstanding	$50.5	$45.1	$42.3	$36.6	$30.7	$26.1
Debt Service	6.4	6.7	7.1	6.9	6.9	6.9

GO: general obligation

Source: Department of Budget and Management, January 2011

Federal Tax Credit and Direct Payment Bonds

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

To date, the State has issued $199 million in QZABs, QSCBs, and QECBs, most of which support education construction projects. **Exhibit 3.7** shows that DLS estimates that the lower costs associated with these bonds reduced total debt service payments by $63 million. However, some of these bonds are affected by federal sequestration reductions, which reduces the savings by $3 million.

Exhibit 3.7
Summary of Special Purpose Issuances

Type	Date Issued	Amount Issued	Payments	Similar GO Payments	Savings	Sequestration Reduction	Net Savings
QZAB	Nov-01	$18,098	$12,432[1]	$27,182	$14,750	$0	$14,750
QZAB	Nov-04	9,043	7,356[1]	12,393	5,038	0	5,038
QZAB	Dec-06	4,378	3,609[1]	6,132	2,523	0	2,523
QZAB	Dec-07	4,986	4,089[1]	6,967	2,877	0	2,877
QZAB	Dec-08	5,563	6,142	7,606	1,464	0	1,464
QZAB	Dec-09	5,563	6,275	7,052	778	0	778
QSCB	Dec-09	50,320	49,570[1]	63,791	14,221	0	14,221
QSCB	Aug-10	45,175	44,497[1]	52,731	8,234	-1,665	6,568
QZAB	Dec-10	4,543	4,474[1]	5,302	828	-193	635
QZAB	Aug-11	15,900	15,900	20,267	4,367	-559	3,808
QECB	Aug-11	6,500	7,080	8,285	1,206	-199	1,007
QZAB	Aug-12	15,230	15,230	18,303	3,073	-360	2,713
QZAB	Dec-13	4,549	4,549	5,875	1,326	0	1,326
QZAB	Dec-14	4,625	4,625	5,971	1,346	0	1,346
QZAB	Dec-15	4,625	4,625	5,971	1,346	0	1,346
Total		**$199,098**	**$1,324,703**	**$253,829**	**$63,378**	**-$2,977**	**$60,401**

[1]Sinking Fund payment

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

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

Source: Comptroller of Maryland; State Treasurer's Office; Department of Legislative Services, October 2016

Effect of Sequestration on Direct Payment Bonds

The federal Budget Control Act of 2011 imposes caps on federal discretionary spending from federal fiscal 2013 to 2021. The Act also created a Joint Select Committee to further reduce the federal deficit by at least $1.2 billion over 10 years. The committee could substitute reductions for the mandatory spending reductions required through sequestration. The committee did not reach any agreement on reductions, and mandatory reductions are now in place. In 2013, sequestration reductions to federal fiscal 2014 and 2015 were reduced, and the period was extended to federal fiscal 2023. In 2015, sequestration reductions to federal fiscal 2016 and 2017 were reduced, and the period was extended to federal fiscal 2025.

Direct pay bonds are affected by mandatory reductions required through sequestration. The State Treasurer's Office advises that this reduces federal fund reimbursements for these bonds. Initially, in fiscal 2013, reimbursements were reduced by approximately $51,000. **Exhibit 3.8** shows that by fiscal 2018, federal funds could be reduced by $0.9 million, resulting in an $11.5 million federal subsidy. Because exact reductions are influenced by the mismatch between federal and State fiscal years, the date bond payments are due, and the timing of the request for federal reimbursements, the amount that federal funds are reduced can vary from initial estimates.

Exhibit 3.8
Effect of Sequestration on Federal Fund Revenues
Fiscal 2017-2022
($ in Thousands)

	2017	2018	2019	2020	2021	2022
July 2009 BAB	$796	$796	$796	$796	$796	$796
October 2009 BAB	942	942	942	942	942	942
February 2010 BAB	6,036	6,036	6,036	5,302	4,528	3,713
July 2010 BAB	1,094	1,094	1,094	1,094	1,094	1,094
July 2010 QSCB	1,965	1,965	1,965	1,965	1,965	1,965
December 2010 QZAB	228	228	228	228	228	228
August 2011 QZAB	660	660	660	660	660	660
August 2011 QECB	234	234	234	234	234	234
August 2012 QZAB	426	426	426	426	426	426
Less Sequestration	*-904*	*-904*	*-904*	*-850*	*-794*	*-734*
Total	**$11,477**	**$11,477**	**$11,477**	**$10,797**	**$10,079**	**$9,324**

BAB: Build America Bonds
QECB: Qualified Energy Conservation Bond
QSCB: Qualified School Construction Bond
QZAB: Qualified Zone Academy Bond

Source: State Treasurer's Office

Qualified Zone Academy Bonds

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

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

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

Since 2011, the federal government authorized QZABs with a direct payment to the State. Because interest rates are quite low, the federal payment is sufficient to fully subsidize the interest costs. For example, the State issued $15.2 million in August 2012. The winning bid was submitted by Morgan Stanley & Co., LLC with a true interest cost that is essentially 0.0% because State debt service costs are reimbursed by the federal government. The net interest cost for the winning bidder was 2.83%. Since the federal government fully reimburses the State, there effectively is no interest payment for these bonds.

The State has received additional QZAB allotments. The State can issue $4.7 million by December 2016 and $4.7 million by December 2017. The DLS debt service calculations assume that this debt will be issued as direct pay debt and that federal payments will be sufficient to support interest costs. As such, the payments represent State principal payments from fiscal 2018 to 2033.

Qualified School Construction Bonds

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

QSCBs are tax credit bonds entitling the holder of the bond to a tax credit for federal income tax purposes in lieu of receiving current interest on the bonds, similar to QZABs. The tax credit rate on QSCBs is set by the U.S. Treasury to allow for issuance of QSCBs at par and with no interest costs to the issuer. Unlike QZABs, tax credits may be stripped from bonds and sold separately, which could increase the marketability of the bonds.

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

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

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

Qualified Energy Conservation Bonds

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

The State issued the full $6.5 million allocated to the State in July 2011. The proceeds will support the construction of energy conservation projects at a school in St. Mary's County. The winning bid's interest cost was 0.62%. This low rate is attributable to the federal reimbursement. The winning bidders' net interest cost is 4.22%. Insofar as the federal tax credit rate at the day of the sale was 5.15%, and the State will be reimbursed 70.0% of that rate, the effective federal reimbursement is 86.0%. Annual interest payments are approximately $273,000. The federal subsidy is $234,000, requiring a net interest payment that is just over $39,000 from the State. Sequestration reduces the annual federal subsidy by approximately $17,000, resulting in a $56,000 payment by the State.

Build America Bonds

The ARRA authorized the State to sell BABs. The bonds support the types of projects that traditional tax-exempt bonds support and are issued in place of tax-exempt bonds. The buyers of the bonds do not receive any federal tax credit and are subject to federal taxes. Instead, Maryland receives a 35% subsidy from the federal government. Unlike QZABs, QSCBs, and QECBs, these bonds can support any project that is eligible to be funded with tax-exempt bonds.

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

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

Transportation Debt

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

In addition to issuing consolidated transportation bonds, MDOT also has debt referred to as nontraditional debt. Nontraditional debt currently includes Certificates of Participation and debt sold on MDOT's behalf by the Maryland Economic Development Corporation and MDTA. A portion of the financing for the Purple Line transit project will be provided through a federal Transportation Infrastructure Finance and Innovation Act loan, which will be considered MDOT nontraditional debt. Of the 12 outstanding issuances of nontraditional debt, 2 are tax-supported and are included in the State debt affordability analysis in the Capital Lease section. The General Assembly annually adopts budget language that imposes a ceiling on MDOT's nontraditional debt.

Consolidated Transportation Bonds

The issuance of transportation bonds is limited by two criteria: an outstanding debt limit and a coverage test. Section 3-202(b) of the Transportation Article establishes the maximum aggregate and unpaid principal balance of consolidated transportation bonds that may be outstanding at any

one time. During the 2013 session, the maximum outstanding debt limit was increased to $4.5 billion (from $2.6 billion) in recognition of the enactment of an increase in motor fuel tax revenue.

Section 3-202(c) of the Transportation Article further requires the General Assembly to establish each year in the State budget the maximum unpaid principal balance in bonds that may be outstanding at the end of the forthcoming year. The fiscal 2017 budget bill set the maximum ceiling for June 30, 2017, at $2,773,900,000. DLS estimates that as of June 30, 2017, debt outstanding will total $2,718,385,000.

The bond revenue coverage test, which is established in MDOT's bond resolutions, establishes that the department will maintain net revenues and pledged taxes equal to at least twice (2.0) the maximum future debt service, or MDOT will not issue bonds until the 2.0 ratio is met. MDOT has adopted an administrative policy establishing a minimum coverage of 2.5. Based on projected bond sales, DLS estimates that as of June 30, 2017, MDOT will have net income coverage of 3.6 and pledged taxes coverage of 5.8.

As shown in **Exhibit 3.9**, MDOT has issued new (*e.g.*, nonrefunding) consolidated transportation bonds in 19 of the past 25 years.

Exhibit 3.10 illustrates annual bond sales and changes in debt outstanding from fiscal 1992 to 2016. In fiscal 2016, MDOT's net debt outstanding was $2.1 billion, well under the $4.5 billion debt outstanding debt limit.

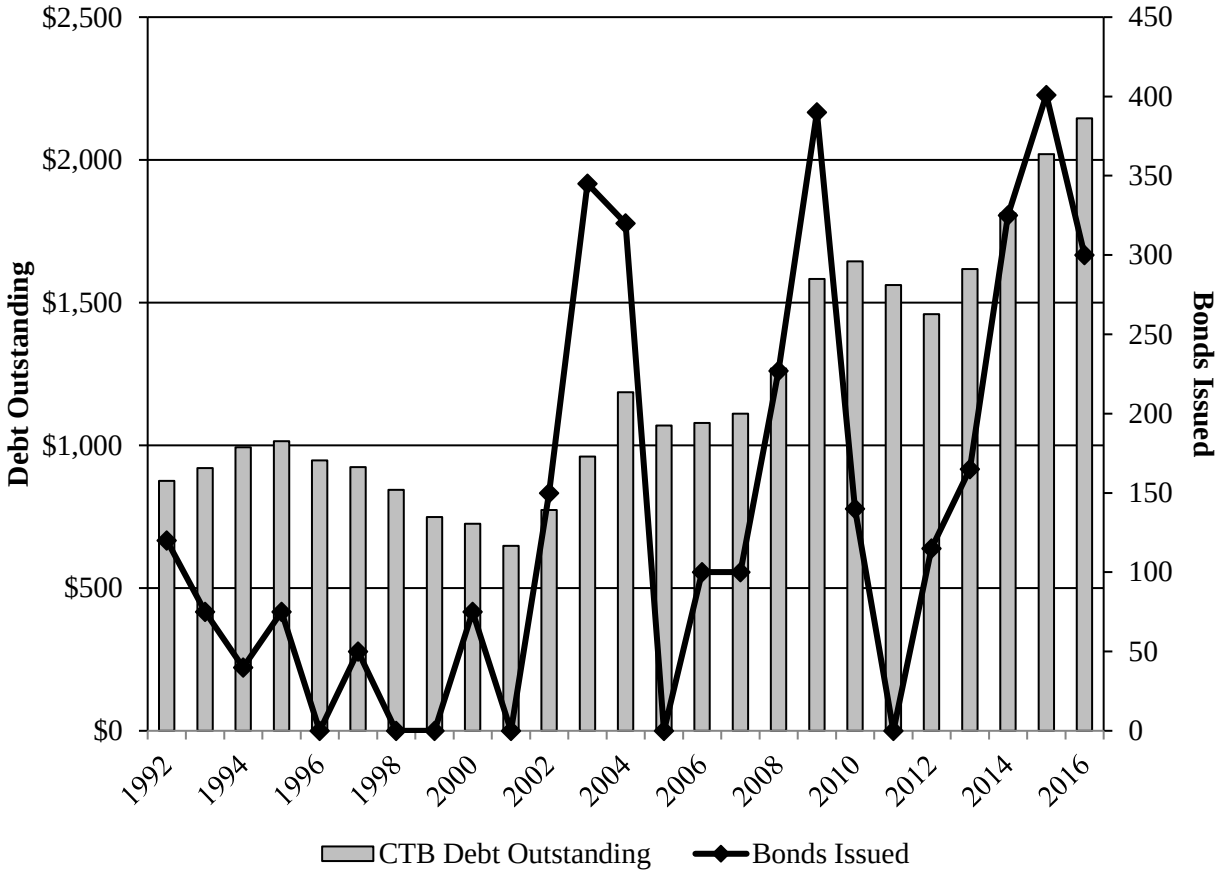
Exhibit 3.9
Consolidated Transportation Bond Issuance*
Fiscal 1992-2016
($ in Millions)

Year	Bonds Issued
1992	$120
1993	75
1994	40
1995	75
1996	0
1997	50
1998	0
1999	0
2000	75
2001	0
2002	150
2003	345
2004	320
2005	0
2006	100
2007	100
2008	227
2009	390
2010	140
2011	0
2012	115
2013	165
2014	325
2015	401
2016	300
Total	**$3,513**

*Exclusive of refunding. Seven refunding issuances were made from fiscal 1990 through 2016, including most recently in fiscal 2016, when refunding bonds totaling $242.5 million were issued and used in conjunction with bond premiums to refund $253.0 million in previously issued debt.

Source: Maryland Department of Transportation, September 2016

Exhibit 3.10
Maryland Department of Transportation
Bonds Issued and Net Debt Outstanding
Fiscal 1992-2016
($ in Millions)



CTB: consolidated transportation bond

Source: Maryland Department of Transportation

Future Debt Issuance

Every fall, DLS prepares a TTF forecast. The forecast projects revenues and expenditures and adjusts debt issuances accordingly. DLS estimates that revenues will grow 0.5% and 1.2% in fiscal 2017 and 2018, respectively. The DLS forecast assumes an average annual rate of growth in revenues of just 2.2% from fiscal 2017 to 2022 due to weak growth in the major revenue sources and low inflation.

The TTF forecast assumes that capital funds are available after operating needs have been met. The DLS TTF forecast assumes greater operating expenditures than shown in the MDOT forecast, which reduces the amount available for capital. The DLS baseline budget estimate for MDOT operations in fiscal 2018 is $2.0 billion or 4.2% more than the current year working appropriation. The DLS forecast projects operating expenses to grow at an average annual rate of 5.1% from fiscal 2019 to 2022, which is the five-year average annual rate experienced by MDOT through fiscal 2016, the most recent year for which actual expenditures are available. This adds $588 million in operating spending over the amount assumed in the MDOT draft forecast and results in an average annual increase of 4.9% for the entire 2017 to 2022 forecast period.

Finally, the DLS forecast assumes that the MDOT administrative policy of maintaining a minimum debt service coverage ratio of 2.5 is followed throughout the forecast period with the assumed level of bond issuance adjusted as necessary to achieve this goal. The lower revenue attainment estimates and higher operational spending assumptions in the DLS forecast result in the need to reduce bond issuances for fiscal 2018 to 2022 by a total of $987 million. Absent this reduction in bond issuances, the net income debt service coverage ratio would fall below the 2.5 minimum level in fiscal 2020 through 2022 based on the DLS revenue and operational spending assumptions. **Exhibit 3.11** compares the levels of bond issuances contained in the MDOT draft 2017 to 2022 forecast with the DLS forecast estimate.

Exhibit 3.11
Department of Legislative Services' Estimate
Consolidated Transportation Bonds – MDOT vs. DLS Projected Issuances
Fiscal 2017-2022
($ in Millions)

Year	MDOT	DLS	Difference
2017	$845	$845	$0
2018	900	585	-315
2019	695	452	-243
2020	455	296	-159
2021	370	240	-130
2022	400	260	-140
Total	**$3,665**	**$2,678**	**-$987**

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

Source: Department of Legislative Services

Debt Outstanding

Exhibit 3.12 shows the amount of estimated debt outstanding in the DLS forecast from fiscal 2017 to 2022. Over this period, debt outstanding is estimated to increase by $633 million. This increase is tied to the cash flow needs of projects and is affordable under the department's coverage ratios and statutory debt outstanding limit.

Exhibit 3.12
Consolidated Transportation Bonds – MDOT Projected Debt Outstanding
Fiscal 2017-2022
($ in Millions)

Year	Amount
2017	$2,718
2018	3,082
2019	3,334
2020	3,415
2021	3,389
2022	3,351

MDOT: Maryland Department of Transportation

Source: Department of Legislative Services

Debt Service

Exhibit 3.13 shows that debt service costs are projected to increase steadily from $304 million in fiscal 2017 to $434 million in fiscal 2022. The growth is attributable to increased principal payments from prior issuances and the costs associated with issuing the debt from fiscal 2017 to 2022.

Exhibit 3.13
Projected Transportation Debt Service
Fiscal 2017-2022
($ in Millions)

Year	Projected Debt Service
2017	$307
2018	340
2019	332
2020	353
2021	405
2022	434
Total	**$2,171**

Source: Department of Legislative Services

Conclusions and Recommendations on Transportation Debt

MDOT competes with other State capital projects within debt affordability limits. Transportation debt capacity is limited by the constraints on debt outstanding, debt service coverage, the cash flow needs for projects in the capital program, and overall State debt affordability limits. The MDOT capital program relies heavily on debt which results in debt service coverage ratios approaching their minimums by the end of the forecast period. **It is recommended that the General Assembly continue to set an annual limit on the level of State transportation debt to keep debt outstanding within the 4% of personal income debt affordability criterion and debt service within the 8% of revenues affordability criteria.**

Grant Anticipation Revenue Vehicles

GARVEEs are transportation bonds that are issued by states and public authorities that are backed by future federal aid highway and transit appropriations. While the source of funds used to repay GARVEE issuances originates with the federal government, the federal government's agreement to the use of its funds in this manner does not constitute any obligation on the part of the federal government to make these funds available. If for any reason federal appropriations are not made as anticipated, the obligation to repay GARVEEs falls entirely to the state agency or authority that issued them. To increase the GARVEE bond rating and reduce borrowing costs, the State pledges TTF revenues should federal appropriations be insufficient to pay GARVEE debt service. Since paying the debt is an obligation of the State, and TTF revenues have been pledged, GARVEE bonds are considered State debt.

Chapter 472 of 2005 authorizes the use of GARVEE bonds for the InterCounty Connector (ICC) project. The law stipulates that the State may issue no more than $750.0 million in GARVEE bonds and that bond maturity may not exceed 12 years after date of issue. MDTA issued $325.0 million in GARVEE bonds on May 22, 2007, with a net premium of $16.9 million to support construction of the ICC. A second GARVEE debt issuance of $425.0 million was issued on December 11, 2008, with a net premium of $17.7 million. GARVEE debt service payments are $87.5 million from fiscal 2010 to 2019 and $51.4 million in fiscal 2020, the last year of debt service payments.

Capital Leases Supported by State Revenues

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

Beginning in 1987, the State's capital program began utilizing lease/leaseback financing for capital projects. These leases are used to acquire both real property and equipment. Beginning in fiscal 1994, the State instituted a program involving equipment leases for energy conservation projects at State facilities to improve energy performance.

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

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

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

For energy performance projects, agencies make lease payments using the savings that result from implementation of the conservation projects. Using the savings realized in utility cost reductions to pay off energy performance project leases allows projects to proceed that otherwise might not be of high enough priority to be funded given all of the other competing capital needs statewide. Under the program, utility costs will decrease; as the leases are paid off, the savings from these projects will accrue to the State.

Exhibit 3.14 shows that projected tax-supported capital lease debt outstanding totals $211.9 million as of June 30, 2016. Debt outstanding is projected to decrease to $199.3 million on June 30, 2016.

Exhibit 3.14
Tax-supported Capital Lease Debt Outstanding
As of June 30, 2016 and Projected June 30, 2017
($ in Millions)

State Agency/Facility	Amount Outstanding June 2016	Projected Amount Outstanding June 2017	Difference
State Treasurer's Office			
Capital Equipment Leases	$8.5	$4.9	-$3.6
Energy Performance Projects	1.8	1.0	-0.9
Maryland Department of Transportation			
Headquarters Office Building	14.6	12.4	-2.2
Maryland Aviation Administration Shuttle Buses	1.2	0	-1.2
Department of General Services			
Hilton Street Facility	0.5	0.2	-0.2
Prince George's County Justice Center	16.0	15.1	-0.9

State Agency/Facility	Amount Outstanding June 2016	Projected Amount Outstanding June 2017	Difference
Maryland Transportation Authority			
Annapolis State Office Parking Garage[1]	18.0	17.8	-0.2
Department of Health and Mental Hygiene			
Public Health Laboratory	151.4	144.2	-7.2
Subtotal – Current Leases	***$211.9***	***$195.5***	***-$16.4***
Proposed Leases			
New Capital Equipment Leases	$0.0	$3.8	$3.8
Total	**$211.9**	**$199.3**	**-$12.6**

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

Source: State Treasurer's Office, September 2016

Energy Performance Contracts

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

The legislation that was enacted allows CDAC to exclude capital leases if the savings they generate equal or exceed the lease payments. It also requires that EPCs are monitored in accordance with the reporting requirements adopted by CDAC. DGS reviews these EPCs to determine if they do in fact generate savings. The State Treasurer's Office advises that 19 EPCs can be excluded from the CDAC debt affordability calculation. Four projects, whose fiscal 2017 debt service costs total $1 million, cannot be excluded and are included in the affordability calculation.

Changes to Lease Accounting Rules Are Being Examined

Under current guidelines, leases that meet at least one of the following criteria are considered to be capital leases:

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

Many leases that the State enters into are not considered to be capital leases. Even if the leases represent long-term commitments to make payments, no liabilities are reported. Similarly, no assets are reported on many leases even if the State has long-term rights to receive operating lease payments.

The Governmental Accounting Standards Board (GASB) is an independent, nonpolitical organization dedicated to establishing rules that require state and local governments to report clear, consistent, and transparent financial information. In 2013, GASB initiated a project to reexamine issues associated with lease accounting. The objective of the project is to examine whether operating leases can meet the definitions of assets or liabilities, which could result in new standards for capital leases. A concern is that the current approach to operating leases undervalues liabilities. For example, there are a number of operating leases that include long-term commitments to make payments, but no liabilities are reported.

An exposure draft was issued in January 2016. This was followed by a comment period that ended in May 2016. A public hearing was held in June 2016. After the comment period, redeliberations began in August 2016. The current plan is to discuss lessee models in October 2016, lessor models in December 2016, and multiple leases in January 2017. The final statement is scheduled to be approved in May 2017. The requirements of the proposed statement would be effective for reporting periods beginning after December 15, 2018, with earlier application permitted. This affects fiscal 2020.

If GASB proposes changes to leasing standards, the new standards could substantially increase the amount of leases included in the debt affordability calculation. The proposed rule would require government lessees to recognize a lease liability and an intangible asset representing their right to use the leased asset, with limited exception. Lessees would amortize the leased asset over the term of the lease and recognize interest expense related to the lease liability. The exposure draft provides exceptions for short-term leases lasting 12 months or less, along with financed purchases.

The new rules would increase the amount of capital leases, but it is unclear to what extent. The *Comprehensive Annual Financial Report* (CAFR) for fiscal 2015 (this is the most recent one available since they usually are completed in January, six months after the end of the fiscal year), reports $260 million in general fund commitments and $28 million in special funds. The CAFR

also reports that rent expenditures totaled $68 million in fiscal 2015. By contrast, capital lease expenditures reported by CDAC totaled $38 million in fiscal 2015. Insofar as the leases identified in the CAFR have not been reviewed, some of the leases reported may be exempted, so the increase is likely to be less than the CAFR reports.

DLS will continue to monitor this issue and report if there are any changes to leasing standards.

Bay Restoration Bonds

The BRF was created in 2004 primarily to provide grants for enhanced nutrient removal (ENR) pollution reduction upgrades at the State's 67 major wastewater treatment plants (WWTP), which are defined as WWTPs with a design capacity of 0.5 million gallons per day or greater. The fund is administered by MDE's Water Quality Financing Administration. The fund is financed by a bay restoration fee on users of wastewater facilities (WWTP Fund) and septic systems and sewage holding tanks (Septic Fund). The fees on WWTP users (and users receiving public drinking water) took effect January 1, 2005, and are being collected through water and sewer bills. The fees on septic system and sewage holding tank owners took effect October 1, 2005, and are being collected by the counties. Fees were increased in 2012. The fund has several revenue sources and expends funds for both operating and capital purposes. As of fiscal 2018, the funding prioritization schedule, in order of priority, is as follows:

- funding an upgrade of a wastewater facility with a design capacity of 0.5 million gallons or more per day to ENR;

- funding for the most cost-effective ENR upgrades at WWTP with a design capacity of less than 0.5 million gallons per day; and

- costs associated with upgrading septic systems and sewage holding tanks, grants for local government stormwater control measures for jurisdictions that have implemented a specified system of charges under current authority, and funding up to 87.5% of the cost for combined sewer overflows abatement, rehabilitation of existing sewers, and upgrading conveyance systems, including pumping stations.

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

Use Modified

Chapter 93 of 2016 (On-Site Sewage Disposal Systems – Operations and Maintenance Costs – Low-Income Homeowners) expands the authorized uses of the BRF Septics Account to include providing financial assistance to low-income homeowners for up to 50% of the cost of an operation and maintenance contract of up to five years for an on-site sewage disposal system that utilizes nitrogen removal technology. Either MDE or a local government must determine an applicant's eligibility and the level of assistance to be provided is based on the average cost of such a contract provided by vendors in the applicant's area.

Possible Future Expansion

The BRF has been proposed by the Administration as a means to start nutrient trading by expanding the authorized uses to include the purchase of cost-effective nitrogen and phosphorus credits for Chesapeake Bay restoration (HB 325 of 2016; failed). The rationale is that the State cannot compel nonpermitted sectors (septic and nonpermitted stormwater) to make reductions and so instead the BRF could be used to pay for relatively inexpensive nitrogen and phosphorus reductions in the agricultural sector that would defray the need for more expensive reductions in the septic and nonpermitted stormwater sector. Overall, MDE estimates that approximately $60 million per year will be available in fiscal 2018 for nondebt service purposes and that the BRF could use up to $10 million of this amount annually for purchasing nutrients credits. This use of funding could thus reduce the funding available to the other purposes noted above but does not impact debt service.

Revenue Bond Schedule

Based on the current priority list and estimated capital cost of ENR upgrades, **Exhibit 3.15** shows that the program anticipates issuing $100.0 million[1] of revenue bonds in fiscal 2017 (March/April 2017) to complete the debt anticipated to be issued for ENR upgrades. Of note, the overall projected need has decreased from $530.0 million to $430.0 million. The debt outstanding will peak at $392.9 million in fiscal 2017. Debt service costs increase to $42.8 million in fiscal 2020. These issuances are limited by the revenues generated by the WWTP share of the funds, overall State debt considerations, and the spending on additional uses allowed beginning in fiscal 2018.

[1] Under current market conditions, it is possible that the bond could sell at a premium, which could generate additional proceeds for capital projects. If this is the case, the department could reduce the issuance to account for additional proceeds. This would reduce debt service costs and debt outstanding. However, if MDE determines that additional proceeds can be spent without incurring any arbitrage penalties, the department may use these additional proceeds to support capital projects.

Exhibit 3.15
Bay Restoration Wastewater Treatment Fund
Fiscal 2016-2022
($ in Millions)

	2016	2017	2018	2019	2020	2021	2022
Revenue Bonds Issued	$180.0	$100.0	$0.0	$0.0	$0.0	$0.0	$0.0
Debt Outstanding	301.6	392.9	373.6	346.9	318.9	289.4	259.6
Debt Service	14.3	23.4	36.3	42.7	42.8	42.8	42.8

Source: Maryland Department of the Environment; Department of Legislative Services; September 2016

The debt issuances for the WWTP Fund appear to be more certain as there has been no change in the schedule relative to what was identified in last year's report. The Septic Fund is operated on a pay-as-you-go basis and does not involve revenue bond proceeds.

It is recommended that the General Assembly continue to limit BRF revenue bond issuances at a level that maintains debt outstanding within the 4% of personal income debt affordability criterion and debt service within the 8% of revenues affordability criteria.

Maryland Stadium Authority

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

In subsequent years, MSA's role was expanded to include managing and issuing revenue bonds to renovate and expand convention centers in Baltimore and Ocean City, construct a conference center in Montgomery County, renovate the Hippodrome Performing Arts Center, and renovate Camden Station. Most recently, MSA's role has been expanded to issue up to $1.1 billion in debt for the purpose of constructing and improving public school facilities in Baltimore City (discussed below). **Exhibit 3.16** lists MSA's current tax-supported authorized debt, debt outstanding, and annual debt service.

Exhibit 3.16
Maryland Stadium Authority
Revenue Debt Authorizations, Debt Outstanding, and Debt Service
($ in Millions)

Project	Authorized	Outstanding as of July 2016	Debt Service Fiscal 2017
Baseball and Football Stadiums	$235.0	$119.7	$23.3
Montgomery County Conference Center	23.2	10.1	1.6
Hippodrome Performing Arts Center	20.3	8.8	1.6
Camden Station	8.7	5.6	0.7
Equipment Leases	n/a	2.8	0.9
Total	**$359.5**	**$147.0**	**$28.1**

Note: Numbers may not sum to total due to rounding. Excludes debt issued for the Baltimore City School Revitalization program.

Source: Maryland Stadium Authority

Camden Yards Sports Complex

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

Between 2010 and 2012, MSA issued over $30 million in Sports Facilities Taxable Lease Revenue Bonds in order to fund capital improvement projects at the Camden Yards Sports Complex. The bonds will be secured by lottery revenues and, in the opinion of bond counsel, will not constitute tax-supported debt. An agreement with the Comptroller ensures that lottery proceeds are deposited with a trustee for the benefit of the holders of the bonds. The bonds were sold as a private placement at a 2.9% interest rate and a 3.5-year term. Funds were used primarily for the three phases of capital improvements to Oriole Park, including concrete restoration, seat renovation, waterproofing, roof replacement, electrical repairs, and some structural steel painting. A refunding and reissue of a portion of this debt occurred in fiscal 2014 to avoid a significant final payment and to extend payments beyond fiscal 2015. The remaining debt was similarly refunded and reissued in fiscal 2015. The original offering was done in conjunction with $4 million financed through the State Treasurer's Master Equipment Lease Program to replace video boards at the football stadium and $10 million financed through the State Treasurer's Energy Performance Contract Master Lease Program for various energy projects at the facilities.

In 2012, MSA issued approximately $105 million in fixed-rate lease revenue bonds that were used to refund the 1998 and 1999 variable-rate bonds. This transaction eliminated exposure risks and some annual fees associated with the current variable-rate debt.

Montgomery County Conference Center

In July 2003, MSA issued $23.2 million in tax-supported bonds to support construction of the Montgomery County Conference Center. Of this amount, $20.3 million represents the State's contribution to construction costs, which totaled $66.0 million. The remaining bond proceeds funded a capitalized interest account established as part of the financing plan to fund interest-only debt service payments beginning on June 15, 2003, and continuing through June 15, 2004. Debt service payments thereafter and continuing through June 15, 2024, are paid from funds subject to appropriation by the State. Montgomery County contributed $13.7 million for construction and another $2.5 million for project-related enhancements. The project opened in 2004. In 2012, MSA submitted an Amended Comprehensive Plan of Financing for the center to refund the existing issuance at a lower rate. The fiscal 2017 debt service for these revenue bonds is $1.6 million.

Hippodrome Performing Arts Center

On July 10, 2002, the authority issued $20.25 million in taxable revenue bonds for the renovation of the Hippodrome Performing Arts Center in Baltimore City. The total cost of the Hippodrome project was $63.0 million, excluding capitalized interest expense. Funding for the project was provided by the State, MSA revenue bonds, Baltimore City, Baltimore County, private contributions, the performing arts center's operator, historic tax credits, and interest earnings. The project was completed in February 2004.

The Hippodrome is leased to the State and, subsequently, leased back to MSA. The rent paid under the lease by the State is equivalent to the debt service on the revenue bonds and is derived from the State's General Fund. Debt service payments are subject to appropriation and were averaging $1.8 million annually for the 20-year term of the bond. The debt service is partially offset by a $2 per ticket surcharge for events at the Hippodrome, which is required by legislation authorizing the project. The surcharge was originally expected to cover approximately half of the debt service; however, lower than expected sales have led to greater contributions by the State.

Camden Station

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

In February 2004, MSA issued $8.7 million in 20-year taxable revenue bonds to renovate Camden Station. Of that amount, $8.0 million is to pay for capital construction associated with the development of the project. The remaining bond proceeds were used to pay capitalized interest, costs of issuance, and bond insurance. The capital interest period covered biannual debt service payments through June 15, 2006. The fiscal 2017 debt service costs for the authority's revenue bonds are about $740,000 subject to State appropriation.

Phase I of the project, involving the basement and first floor, was completed in March 2005. Phase II, involving the second and third floors, was completed in August 2006. The Geppi's Entertainment Museum rents approximately 16,055 square feet on the second and third floor. The first floor and basement are currently vacant; MSA is in the process of attracting new tenants.

Local Project Assistance and Feasibility Studies

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

Several studies are currently in various stages of completion by the authority. The most recently released study is a market and economic study that examined the concept of a Maryland Horse Park System that incorporates various assets of the horse industry across the State. Other studies to be conducted include an examination of an additional expansion for the Ocean City Convention Center and a market and economic study of Pimlico Race Course.

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

Baltimore City School Revitalization Program

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

- all revenues generated by the Baltimore City beverage container tax;

- all of the city's proceeds from table games at the video lottery facility located in Baltimore City are dedicated to school construction and 10% of the participation rent paid by the video lottery facility operator to Baltimore City;

- $20 million in State education aid due to the Baltimore City Board of School Commissioners;

- $20 million in annual proceeds from the State lottery;

- proceeds from the sale of State bonds to finance improvements to Baltimore City public school facilities; and

- any other funds or revenues received from or dedicated by any public source to support the initiative.

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

In April 2016, MSA issued the first round of debt dedicated to the school construction program. The 30-year, tax-exempt revenue bonds totaled $320.0 million and garnered a premium of $66.1 million to be used for construction costs. The annual debt service is expected to be approximately $20.8 million. The first payment is expected in fiscal 2018. MSA anticipates issuing another $400 million in the fall of 2017.

Chapter 4. Economic Factors and Affordability Analysis

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

- State debt outstanding should be limited to 4% of Maryland personal income.

- State debt service should be limited to 8% of revenues supporting the debt service.

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

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

This section examines the economic factors that measure debt affordability and evaluates CDAC's recommendation to determine affordability.

Personal Income

Exhibit 4.l shows that the Department of Legislative Services' (DLS) estimates of personal income are less than those of CDAC. CDAC is using the Board of Revenue Estimates' (BRE) September 2016 personal income estimates. Since BRE updated its estimates, the federal Bureau of Economic Analysis (BEA) has revised its second quarter State personal income data and revised historical data. DLS' estimates are less than CDAC because they are based on BEA's lower estimates.

Exhibit 4.1
Maryland Personal Income
Comparison of Department of Legislative Services and Capital Debt Affordability Committee Projections
Calendar 2017-2022
($ in Millions)

Year	DLS Personal Income Estimate	% Change	CDAC Personal Income Estimate	% Change	Difference
2017	$363,833	4.35%	$364,581	5.80%	-748
2018	380,687	4.63%	381,471	4.63%	-784
2019	396,725	4.21%	397,541	4.21%	-816
2020	413,495	4.23%	414,346	4.23%	-851
2021	429,314	3.83%	430,197	3.83%	-883
2022	444,962	3.64%	444,962	3.43%	0

CDAC: Capital Debt Affordability Committee
DLS: Department of Legislative Services

Source: Capital Debt Affordability Committee, September 2016; Department of Legislative Services, October 2016

Revenue Projections

Exhibit 4.2 shows that DLS' out-year revenue projections are greater than CDAC's through fiscal 2021. The differences primarily relate to the DLS estimate of out-year transportation revenues.

Exhibit 4.2
Comparison of DLS and CDAC Revenue Projections
Fiscal 2017-2022
($ in Millions)

Year	General Funds	Property Tax	Other ABF	ETF Slots	Transfer Taxes	TTF	GARVEE	Stadium	BRF[1]	DLS Total	CDAC Estimate	Diff.
2017	$16,635	$781	$15	$463	$203	$3,161	$549	$22	$114	$21,942	$21,920	$22
2018	17,205	800	15	546	215	3,200	549	22	115	22,667	22,620	47
2019	17,823	820	15	554	225	3,297	549	21	116	23,420	23,365	55
2020	18,482	841	14	562	234	3,351	549	21	117	24,172	24,066	106
2021	19,177	862	13	570	243	3,478	0	7	119	24,469	24,312	157
2022	19,911	883	12	602	251	3,555	0	7	120	25,343	25,131	212

ABF: Annuity Bond Fund
BRF: Bay Restoration Fund
CDAC: Capital Debt Affordability Committee
Diff: Difference
DLS: Department of Legislative Services
ETF: Education Trust Fund (supported by video lottery terminals)
GARVEE: Grant Anticipation Revenue Vehicle
TTF: Transportation Trust Fund

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

Source: General Fund, Other Annuity Bond Fund, and Maryland Department of Transportation: Department of Legislative Services, November 2016; State Property Tax, Federal Funds, Education Trust Fund Slots, Transfer Taxes, Stadium Authority, Grant Anticipation Revenue Vehicle, Bay Restoration Fund, and Capital Debt Affordability Committee Revenues: Capital Debt Affordability Committee, September 2016

Affordability Analysis

DLS has prepared a revised estimate of State debt outstanding to personal income and State debt service to revenues. **Exhibit 4.3** shows DLS' debt issuance assumptions. The general obligation bond, Grant Anticipation Revenue Vehicle, Stadium Authority, and bay restoration bond issuances are consistent with CDAC estimates. There are differences with respect to Qualified Zone Academy Bonds (QZABs) and Maryland Department of Transportation (MDOT) bonds. With respect to QZABs, DLS is assuming that the State will issue the federal authorizations provided through December 2017. DLS projects that less transportation bonds will be issued. This is due to lower estimated revenue attainment combined with higher estimated operating spending in the DLS forecast, which reduces the net revenues available for debt service. It is MDOT policy that its net revenue and pledged taxes are at least 2.5 times the maximum debt service. To stay within these ratios, DLS projects lower issuances.

Exhibit 4.3
Projected New Debt Issuances
Fiscal 2017-2022
($ in Millions)

Year	GO Bond Auth.	GO Bond Issuances	QZABs	MDOT Bonds	GARVEE	Capital Leases	Stadium Authority Bonds	Bay Restoration Bonds
2017	$995	$568	$5	$845	$0	$4	$0	$100
2018	995	1,045	5	585	0	8	0	0
2019	995	1,030	0	452	0	8	0	0
2020	995	1,025	0	296	0	8	0	0
2021	995	1,005	0	240	0	8	0	0
2022	995	995	0	260	0	8	0	0

GARVEE: Grant Anticipation Revenue Vehicle
GO: general obligation
MDOT: Maryland Department of Transportation
QZAB: Qualified Zone Academy Bond

Source: General Obligation, Maryland Department of Transportation Bonds, Qualified Zone Academy Bond, and Capital Leases: Department of Legislative Services, November 2016; Stadium Authority, Grant Anticipation Revenue Vehicle, and Bay Restoration Bonds: Capital Debt Affordability Committee, September 2016

Exhibit 4.4 shows that, for the forecast period, debt outstanding as a percent of personal income peaks at 3.54% in fiscal 2017.

Exhibit 4.4
State Tax-supported Debt Outstanding
Components and Relationship to Personal Income
Fiscal 2016-2022
($ in Millions)

Year	General Obligation Bonds	MDOT Bonds	GARVEE	Capital Leases	Stadium Authority Bonds	Bay Restoration Bonds	Total Tax Supported Debt
2016	$9,465	$1,893	$280	$212	$147	$302	$12,299
2017	9,252	2,718	207	199	106	393	12,875
2018	9,469	3,082	130	188	86	374	13,328
2019	9,625	3,334	49	174	65	347	13,595
2020	9,746	3,415	0	161	44	319	13,685
2021	9,845	3,389	0	147	36	289	13,706
2022	9,897	3,351	0	133	28	260	13,668

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

2016	2.71	0.54	0.08	0.06	0.04	0.09	3.53
2017	2.54	0.75	0.06	0.05	0.03	0.11	3.54
2018	2.49	0.81	0.03	0.05	0.02	0.10	3.50
2019	2.43	0.84	0.01	0.04	0.02	0.09	3.43
2020	2.36	0.83	0.00	0.04	0.01	0.08	3.31
2021	2.29	0.79	0.00	0.03	0.01	0.07	3.19
2022	2.22	0.75	0.00	0.03	0.01	0.06	3.07

GARVEE: Grant Anticipation Revenue Vehicle
MDOT: Maryland Department of Transportation

Source: General Obligation, Maryland Department of Transportation Bonds, and Capital Leases: Department of Legislative Services, November 2016; Stadium Authority, Grant Anticipation Revenue Vehicle, and Bay Restoration Bonds: Capital Debt Affordability Committee, September 2016

Exhibit 4.5 shows that the debt service as a percent of revenues increases until fiscal 2018 as it reaches 7.78%. The ratio begins to decline in fiscal 2020.

Exhibit 4.5
State Tax-supported Debt Service
Components and Relationship to Revenues
Fiscal 2016-2022
($ in Millions)

Year	General Obligation	MDOT Bonds	GARVEE	Capital Leases	Stadium Authority	Bay Restoration Bonds	Total Tax-supported Debt Service
2016	$1,121	$264	$87	$35	$30	$14	$1,552
2017	1,192	307	87	27	28	23	1,665
2018	1,250	340	87	25	25	36	1,764
2019	1,310	332	87	25	24	43	1,822
2020	1,339	353	51	27	24	43	1,837
2021	1,359	405	0	26	10	43	1,844
2022	1,397	434	0	28	9	43	1,911
			State Tax Supported Debt Service as a Percent of Revenues (Affordability Criteria = 8.0%)				
2016	5.26	1.24	0.41	0.17	0.14	0.07	7.29
2017	5.43	1.40	0.40	0.12	0.13	0.11	7.59
2018	5.51	1.50	0.39	0.11	0.11	0.16	7.78
2019	5.59	1.42	0.37	0.11	0.10	0.18	7.78
2020	5.54	1.46	0.21	0.11	0.10	0.18	7.60
2021	5.56	1.66	0.00	0.11	0.04	0.18	7.54
2022	5.51	1.71	0.00	0.11	0.03	0.17	7.54

GARVEE: Grant Anticipation Revenue Vehicle
MDOT: Maryland Department of Transportation

Source: General Obligation, Maryland Department of Transportation Bonds, and Capital Leases: Department of Legislative Services, November 2016; Stadium Authority, Grant Anticipation Revenue Vehicle, and Bay Restoration Bonds: Capital Debt Affordability Committee, September 2016

Exhibit 4.6 shows that debt outstanding ratios based on DLS' personal income estimates are higher than those estimated by CDAC from fiscal 2017 to 2022. The difference between the two ratios is primarily attributable to the federal BEA reducing its estimate of State personal income and DLS projecting less transportation bond issuances.

Exhibit 4.6
State Debt to Personal Income
Comparison of DLS and CDAC Estimates
Fiscal 2017-2022

Year	DLS	CDAC
2017	3.54%	3.54%
2018	3.50%	3.61%
2019	3.43%	3.59%
2020	3.30%	3.50%
2021	3.19%	3.40%
2022	3.07%	3.30%

CDAC: Capital Debt Affordability Committee
DLS: Department of Legislative Services

Source: Capital Debt Affordability Committee, September 2016; Department of Legislative Services, November 2016

Similarly, **Exhibit 4.7** shows the debt service ratios based on the DLS forecast of revenues and those estimated by CDAC from fiscal 2017 to 2022. The difference between the two ratios relate to both revenues and debt issuances. DLS estimates higher transportation revenues than CDAC, which tends to reduce the ratio. DLS also anticipates less transportation bond issuances and higher debt service costs.

Exhibit 4.7
State Debt Service to State Revenues
Comparison of DLS and CDAC Estimates
Fiscal 2017-2022

Year	DLS	CDAC
2017	7.59%	7.58%
2018	7.78%	7.81%
2019	7.78%	7.89%
2020	7.60%	7.82%
2021	7.54%	7.84%
2022	7.54%	7.95%

CDAC: Capital Debt Affordability Committee
DLS: Department of Legislative Services

Source: Capital Debt Affordability Committee, September 2016; Department of Legislative Services, November 2016

Chapter 5. General Obligation Bonds' Long-term Costs

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

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

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

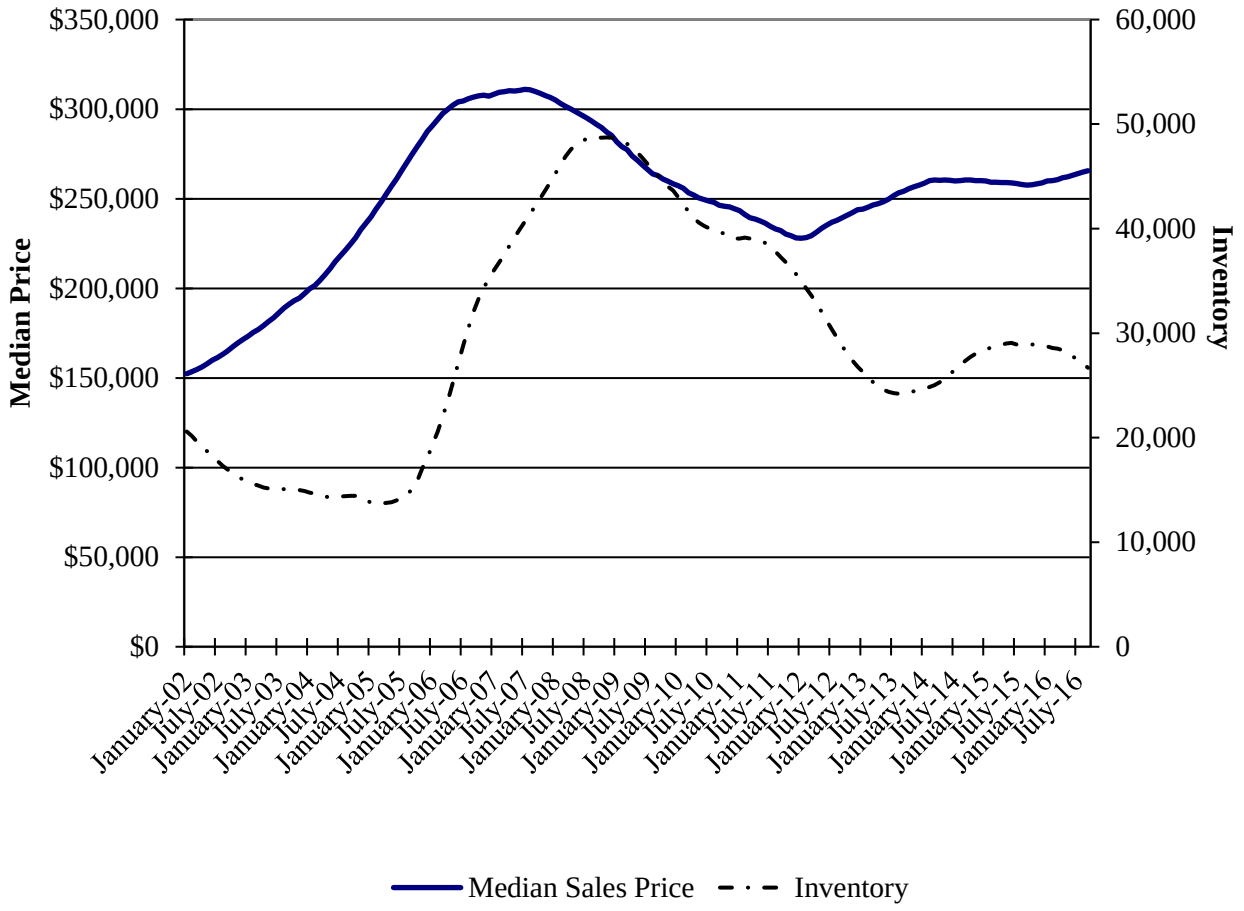
General Fund Appropriations Are Necessary to Support Debt Service

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 5.1** 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 August 2015, results have been mixed with some months seeing increases in values and others realizing decreases, but the general trend has been increasing prices.

Inventories went through a similar increase and decline. However, they lagged behind the pattern seen in home prices. Since the increase in home values in February 2012, inventories continued to decline through February 2013 and reached a nadir of approximately 21,300. In recent months, inventories have been declining.

Exhibit 5.1
Maryland Housing – Median Prices and Inventory
12-month Moving Average
January 2002-September 2016

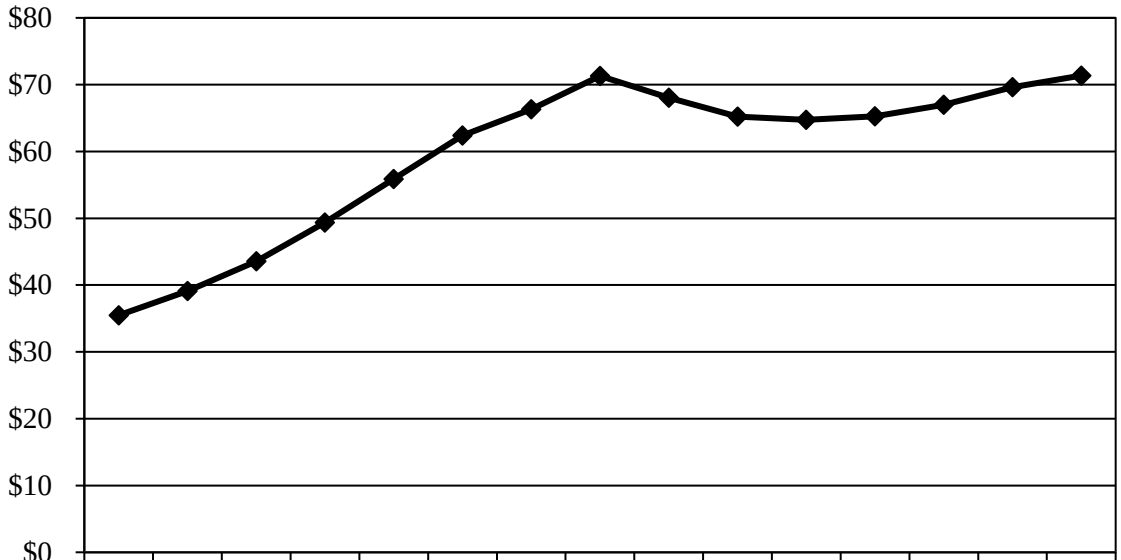


Note: Inventory represents housing units for sale according to Metropolitan Regional Information Systems, Inc. and Coastal Association of Realtors.

Source: Maryland Association of Realtors; Department of Legislative Services

As expected, the rising property values from 2002 to 2007 increased State property tax receipts. **Exhibit 5.2** shows how much revenue one cent on the State property tax has generated since fiscal 2004. From fiscal 2004 to 2011, the increases were quite steep. Revenues declined from fiscal 2011 to 2014 and increased in fiscal 2015. Revenues are expected reach the fiscal 2011 peak of $71 million for each cent in fiscal 2018. The projected out-year increase is about 1%.

Exhibit 5.2
Revenues Generated by One Cent of State Property Taxes
Fiscal 2004-2018
($ in Millions)



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Revenues	$35	$39	$44	$49	$56	$62	$66	$71	$68	$65	$65	$65	$67	$70	$71

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

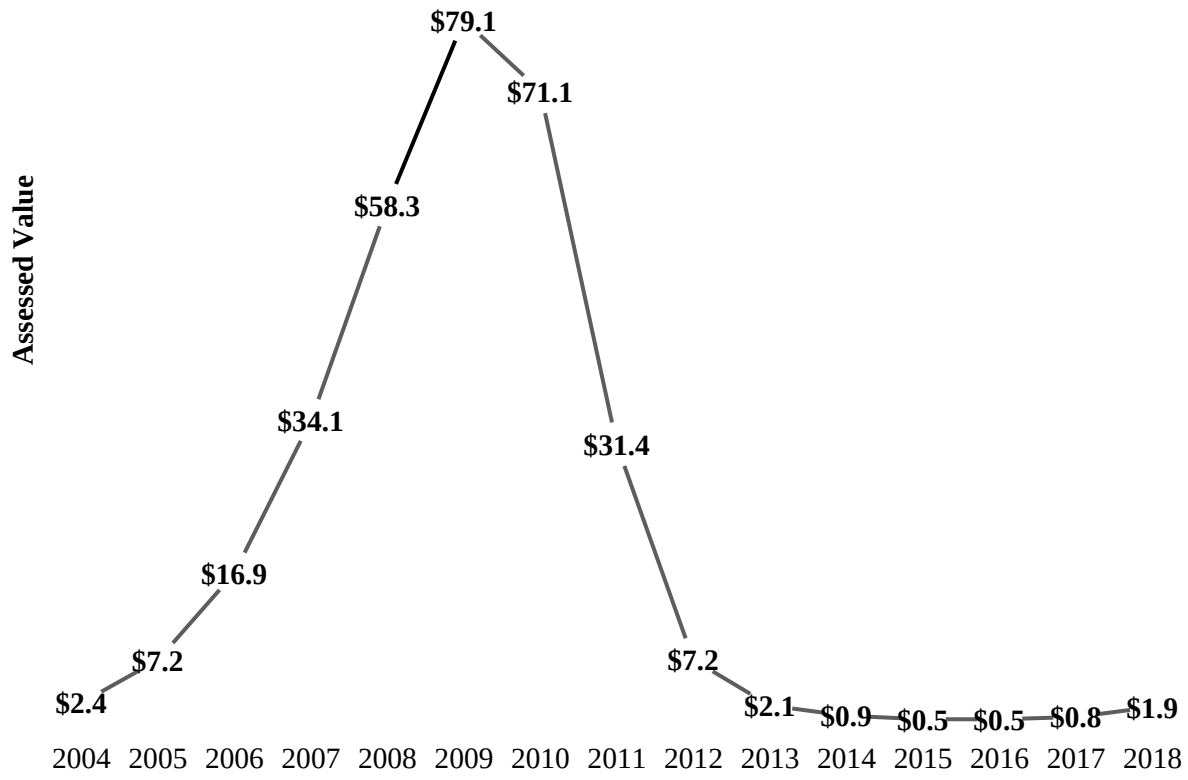
Assessment policies and the Homestead Tax Credit account for the lag between changes in the real estate market and tax receipts. Property values are assessed every three years, and increases are phased in over three years. For example, if a value increases by 9%, the State increase would be 3% in the 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 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 5.3**

shows that State credits increased to $79 billion in fiscal 2009 in response to increases in assessments. From fiscal 2014 to 2017, the aggregate homestead credits are under $1 billion each year. Credits are expected to increase to almost $2 billion in fiscal 2018.

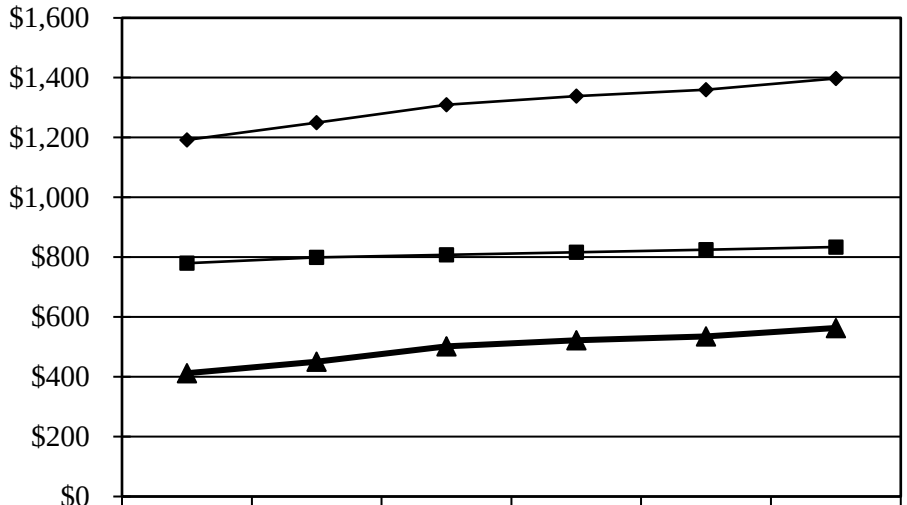
Exhibit 5.3
State Property Tax Homestead Tax Credits
Fiscal 2004-2018
($ in Billions)



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 1.4% annually from fiscal 2017 to 2022. This contrasts with debt service costs, which are expected to increase at a rate of 3.2% over the same period. **Exhibit 5.4** shows how State property tax revenues, which are $412 million less than debt service costs in fiscal 2017, are expected to be $563 million less than debt service costs in fiscal 2022.

Exhibit 5.4
GO Bond Debt Service Costs and State Property Tax Revenue Collections
Fiscal 2017-2022
($ in Millions)



	2017	2018	2019	2020	2021	2022
State Property Tax Receipts	$780	$799	$808	$816	$825	$834
GO Bond Debt Service Costs	$1,192	$1,250	$1,310	$1,339	$1,359	$1,397
Difference	$412	$451	$501	$522	$535	$563

GO: general obligation

Source: Department of Legislative Services, October 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 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 5.5 shows that general fund subsidies will support the ABF from fiscal 2017 to 2022. General fund appropriations are required despite the availability of $151 million in fund balance at the beginning of fiscal 2018 and an estimated $49 million in premiums from the fiscal 2018 bond sales. By fiscal 2019, debt service is supported almost entirely by State property taxes and general funds. At that time, the annual increase in general fund appropriations will be a more moderate rate of 4%.

Exhibit 5.5
Revenues Supporting Debt Service
Fiscal 2017-2022
($ in Millions)

	2017	2018	2019	2020	2021	2022
Special Fund Revenues						
State Property Tax Receipts	$780	$799	$808	$816	$825	$834
Bond Sale Premiums[1]	50	49	3	0	0	0
Other Revenues	3	3	3	3	3	3
ABF Fund Balance Transferred from Prior Year	209	151	1	1	1	1
Subtotal Special Fund Revenues	***$1,042***	***$1,002***	***$816***	***$821***	***$829***	***$838***
General Funds	283	231	477	501	515	544
Transfer Tax Special Funds[2]	7	7	7	7	7	7
Federal Funds[3]	11	11	11	11	10	9
Total Revenues	**$1,343**	**$1,251**	**$1,311**	**$1,340**	**$1,361**	**$1,399**
Debt Service Expenditures	**$1,192**	**$1,250**	**$1,310**	**$1,339**	**$1,359**	**$1,397**
ABF End-of-year Fund Balance	**$151**	**$1**	**$1**	**$1**	**$1**	**$1**

ABF: Annuity Bond Fund

[1] Estimated bond sale premiums total $49.7 million in March 2017, $25.5 million in summer 2017, $23.1 million in March 2018, and $3.0 million in summer 2018.
[2] This supports $70.0 million of general obligation bonds issued in 2010 for Program Open Space.
[3] 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, October 2016

Levels of General Fund Appropriations for Debt Service

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

Exhibit 5.6 shows that the Department of Legislative Services projects that general fund appropriations for debt service will approach 40% of debt service appropriations by fiscal 2019. 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 to 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 again, the State appears to be heading into a period in which general fund support will again be 40% of GO bond debt service appropriations.

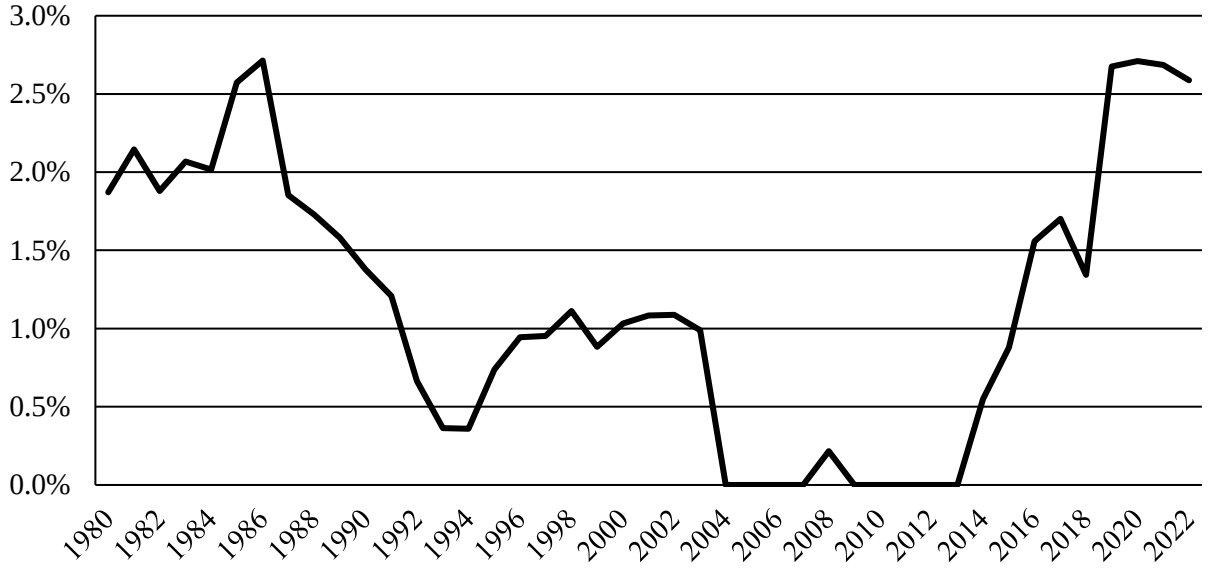
Exhibit 5.6
General Funds as a Percent of Debt Service Appropriations
Fiscal 1980-2022

Note: Fiscal 1985 to 2003 includes general funds appropriated in the 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

Exhibit 5.7 shows that general fund costs for debt service will peak at 2.7% of general fund revenues in fiscal 2020. This is about the same level as the previous peak in 1986. From fiscal 2004 to 2013, the State appropriated general funds only once. The State property tax rate was increased from $0.084 to $0.132 per $100 of assessable base in fiscal 2004. The State also benefited from low interest rates, which generated large bond sale premiums that were used to support debt service payments. (Bond sale premiums are discussed in more detail in Chapter 8.) The State property tax rate was reduced to its current rate, $0.112 per $100 of assessable base, in fiscal 2007.

Exhibit 5.7
General Fund Debt Service Appropriations
As a Percentage of General Fund Revenues
Fiscal 1980-2022



Source: State Treasurer's Office; Department of Legislative Services, October 2016

Rating Agencies Are Concerned about Pension Liabilities

Another consideration is the State debt rating. Maryland has been rated AAA by all three major rating agencies for decades. High ratings tend to reduce interest costs. The current estimate is that a AAA rating reduces interest rates by about 0.2% (20 basis points). When reviewing debt, rating agencies have commented on pension liabilities. Pension costs and debt service represent the State's two largest long-term liabilities. High pension liabilities are often cited when rating agencies downgrade a State or municipality's debt. For example, Standard and Poor's cited pension liabilities when the state of Illinois' debt rating was recently downgraded. Pension concerns were also cited when ratings for the city of Fort Worth, Texas and the state of Connecticut were downgraded.

This section examines State pension trends. The good news is that all three rating agencies have acknowledged Maryland's efforts to limit costs.

Overview of Defined Benefit Plans

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

The State employees, judges, State Police, and Law Enforcement Officers pension funds are funded in agency budgets. These pension funds are primarily supported by the General Fund. Special and federal funds support pension costs associated with positions funded by special funds (such as the Maryland Department of Transportation) and federal funds (such as the Department of Health and Mental Hygiene). Fiscal 2017 appropriations total $786 million, of which $486 million are supported by the General Fund, and $255 million are supported by higher education funds.

About 97% of the teachers' pension fund supports the staff of the local school boards. By statute, the local school boards pay the normal costs (which is the annual increase in the pension liability), and the State is responsible for any remaining costs (which is the unfunded liability). In fiscal 2017, pension contributions totaled $1.105 billion, of which $280 million is the normal cost paid by local school boards, and the remainder is almost entirely general funds.

Pension Costs Have Increased in Recent Years

State pension costs have increased in recent years. The primary reason for the increased costs are market losses suffered in fiscal 2008 and 2009 when the pension fund lost 5.4% and 20.0%, respectively. This reduced the funded ratio from 80.4% at the beginning of fiscal 2008 to 65.0% at the end of fiscal 2009. To reduce the unfunded liability, higher appropriations are necessary from the State. The amount that the State appropriates each year is determined by the actuarial funding method. It is State policy for the Governor to propose and the General Assembly to appropriate the amount certified by the State Retirement and Pension System Board. Pension costs have increased substantially in recent years; total pension contributions increased from $1.0 billion in fiscal 2010 to $1.6 billion in fiscal 2017.

Pension Costs Contained in Response to Increasing Liabilities

In response to increasing liabilities, the State has made efforts to slow the cost growth by reducing benefits, increasing contributions, and requiring local jurisdictions to share in the costs of teacher pensions.

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

- reducing cost-of-living adjustments earned after fiscal 2011;

- increasing employee contributions from 5.0% to 7.0% for most employees (judges, for example, were excluded);

- increasing the vesting period for employees hired after June 30, 2011, from 5 years to 10 years;

- reducing the multiplier for employees hired after June 30, 2011, to 1.5% of salary per year worked[1]; and

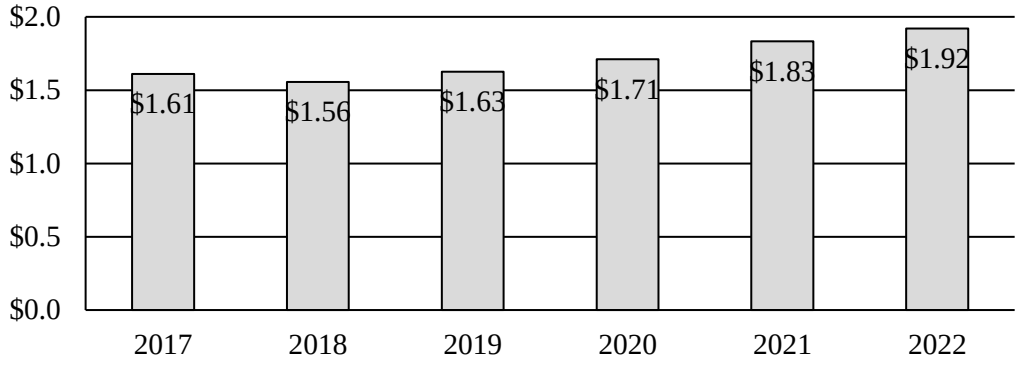
- appropriating a share of savings to overfund pension contributions.

The State also required local governments to begin sharing in teacher pension costs in fiscal 2013. The funding approach was also modified beginning in fiscal 2017 as the State phases out the corridor method and adopts an actuarial approach. Taken together, these reforms reduce the State's out-year liabilities.

Pension Cost Outlook

Exhibit 5.8 shows that total pension costs are expected to increase from $1.6 billion in fiscal 2017 to $1.9 billion in fiscal 2022. This is an annual increase of 3.6%.

Exhibit 5.8
Total State Pension Costs
Fiscal 2017-2022
($ in Billions)



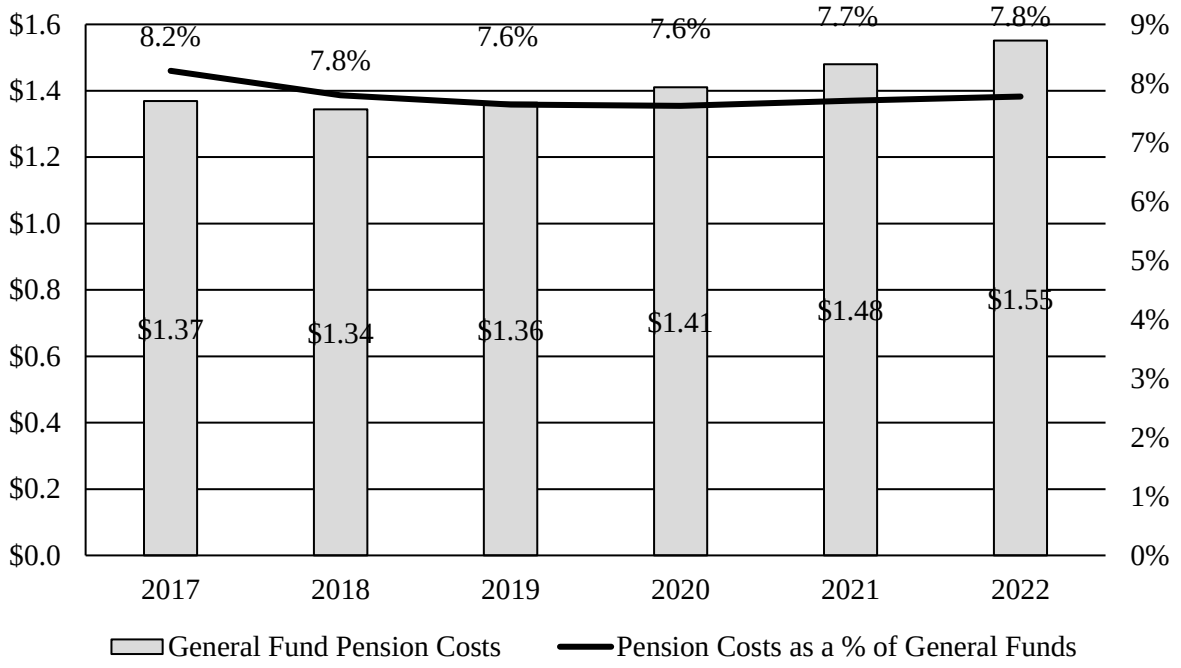
Note: State pension contribution excludes local teacher pension cost sharing and other local contributions.

Source: Gabriel Roeder Smith and Company; Department of Legislative Services, October 2016

[1] The multiplier remains at 1.8% per year worked for employees hired before June 30, 2011.

Exhibit 5.9 shows that general fund costs for pensions are approximately 8% of general fund revenues in the out-years. Increases in pension costs have slowed, in part due to pension reforms. Rapid turnover in system membership has accelerated the benefits of pension reform. The turnover has resulted in nearly one-third of teachers and employees participating in the reformed pension plan.

Exhibit 5.9
General Fund Pension Costs
As a Percentage of General Fund Revenues
Fiscal 2017-2022
($ in Billions)



Note: State pension contribution excludes local teacher pension cost sharing and higher education institutions.

Source: Gabriel Roeder Smith and Company; Department of Legislative Services, October 2016

Chapter 6. Analysis of Factors Influencing Bonds' Interest Cost

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.

The financial literature provides information about factors that influence the TIC of State and municipal bond sales. Since 2006, the Department of Legislative Services (DLS) has prepared a statistical analysis to evaluate these financial factors. In this chapter, the sum of least squares regression is used to evaluate what factors influence the TIC that Maryland receives on general obligation (GO) bond sales. **Appendix 3** shows the data used in the analysis.

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

Financial theory suggests factors that could influence Maryland's GO bond's TIC. Research has confirmed a number of significant influences in other states and in national studies that include Maryland. To build the least squares regression equation, data was collected and analyzed for the 64 bond issuances since March 1991 (refunding sales are excluded): 52 competitively bid, tax-exempt bond issuances; 8 negotiated, retail bond issuances; and 4 Build America Bond (BAB) issuances. The data collected includes:

- TIC;
- *The Bond Buyer* 20-bond Index[1];
- date of the bond sale, fiscal year, and calendar years the bonds were sold;
- if the bond sale includes one of the various call provisions offered since 1991;
- average years to maturity;
- amount of debt sold;
- Consumer Price Index to examine if inflation affected the market's perception of the amount of debt sold;

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

- use of a financial advisor;

- ratio of Maryland personal income to U.S. personal income; and

- ratio of Maryland gross State product to U.S. gross domestic product, both nominal and adjusted for inflation.

The Equation Identifies Statistically Significant Factors Influencing Interest Costs

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

- ***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. DLS has collected the estimated yields since 1991.

- ***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 0.77% (77 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.

- ***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 35.0% 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.

Exhibit 6.1
TIC Regression Equation – Evaluating the Independent Variables

Ind. Variable	Coefficient	Std. Error	Beta	t-test	Sig.	Tol.	Comment
The Bond Buyer 20-bond Index	0.859	0.045	0.63	18.934	0.000	0.57	Highest t-test suggests with confidence that the index is significant.
Years to Maturity	0.259	0.028	0.34	9.267	0.000	0.47	Positive coefficient means that longer maturities tend to have higher TICs.
Post-financial Crisis	-0.774	0.086	-0.32	-8.963	0.000	0.49	Maryland bonds' yields are reduced since the crisis.
BABs	-1.116	0.188	-0.23	-5.944	0.000	0.43	Negative coefficient suggests BABs are less expensive.
Constant	-2.496						

BABs: Build America Bonds
Ind.: independent
Sig.: significance or confidence interval
Std.: standard
TIC: true interest cost
Tol:. tolerance, a test of multicollinearity

Source: Department of Legislative Services, October 2016

Statistical Analysis Suggests That the Equation Explains the TIC Extremely Well

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. **Exhibit 6.2** shows the equation's statistics.

Exhibit 6.2
TIC Regression Equation – Evaluating the Entire Equation

What Is Measured	Statistic Used to Measure	Value of Statistic	Explanation
Confidence in the equation	F Statistic	384.0	We are over 99.9% confident that the independent variables influence the dependent variable.
Margin of error	Standard error of the estimate	0.239	We expect the actual TIC to be within 0.24% (24 basis points) of the estimate.
Estimate in relation to actual data	Adjusted R Square	0.961	The model's estimates explain 96.1% of the actual data.
Serial or autocorrelation	Durbin-Watson	1.516	The ideal value is 2.0. If the number deviates too far from 2.0, it suggests that there are patterns in the errors, such as missing a key independent variable.

TIC: true interest cost

Source: Department of Legislative Services, October 2016

Examining the Effectiveness of the Regression Equation – An Intuitive Approach

As previously noted, the appendices provide all the statistical data. This allows statisticians to examine DLS' least squares regression equation. In addition to the statistical data, a more intuitive analysis of the regression equation may be made.

In the past, DLS has compared the TIC to the 20-bond index to examine the State's GO bond yields. The purpose of the exercise is to improve upon this approach and to determine what factors are statistically significant and to what extent they influence the TIC. For the regression equation to be useful, it should be able to better estimate the TIC than any particular index (such as the 20-bond index) alone. While the index is a good proxy for general market conditions, it does not reflect any independent variables specific to Maryland's financial condition or a bond sale's attributes (such as the length of issuance).

Exhibit 6.3 compares the DLS regression equation and the 20-bond index to the actual TIC and shows that the DLS regression equation is more often closer to the TIC than the 20-bond index. Of the 64 bond sales analyzed, the DLS estimate is closer to the actual TIC than the 20-bond index 63 times (98% of bond sales). The 20-bond index is closer than the DLS equation 1 time (2% of bond sales). The average error of the DLS regression equation is 18 basis points, compared to 112 basis points for the 20-bond index.

Exhibit 6.3

Comparison of the DLS Regression Equation and *The Bond Buyer* 20-bond Index to Actual TIC

Bond Sale Date	TIC	DLS Model	20-Bond Index	Difference Between TIC and DLS	Difference Between TIC and 20-Bond Index	Closer Estimate
03/13/91	6.31	6.34	7.32	0.03	1.01	DLS Model's Estimate
07/10/91	6.37	6.25	7.21	0.12	0.84	DLS Model's Estimate
10/09/91	5.80	5.76	6.66	0.04	0.86	DLS Model's Estimate
05/13/92	5.80	5.66	6.54	0.14	0.74	DLS Model's Estimate
01/13/93	5.38	5.34	6.19	0.04	0.81	DLS Model's Estimate
05/19/93	5.10	4.98	5.77	0.12	0.67	DLS Model's Estimate
10/06/93	4.45	4.58	5.30	0.13	0.85	DLS Model's Estimate
02/16/94	4.48	4.68	5.42	0.20	0.94	DLS Model's Estimate
05/18/94	5.36	5.30	6.14	0.06	0.78	DLS Model's Estimate
10/05/94	5.69	5.60	6.50	0.09	0.81	DLS Model's Estimate
03/08/95	5.51	5.35	6.18	0.16	0.67	DLS Model's Estimate
10/11/95	4.95	5.00	5.82	0.05	0.87	DLS Model's Estimate
02/14/96	4.51	4.58	5.33	0.07	0.82	DLS Model's Estimate
06/05/96	5.30	5.12	5.94	0.18	0.64	DLS Model's Estimate
10/09/96	4.97	4.94	5.73	0.03	0.76	DLS Model's Estimate
02/26/97	4.90	4.86	5.65	0.04	0.75	DLS Model's Estimate
07/30/97	4.64	4.50	5.23	0.14	0.59	DLS Model's Estimate
02/18/98	4.43	4.37	5.07	0.06	0.64	DLS Model's Estimate
07/08/98	4.57	4.41	5.12	0.16	0.55	DLS Model's Estimate
02/24/99	4.26	4.35	5.08	0.09	0.82	DLS Model's Estimate
07/14/99	4.83	4.59	5.36	0.24	0.53	DLS Model's Estimate
07/19/00	5.05	4.83	5.60	0.22	0.55	DLS Model's Estimate
02/21/01	4.37	4.49	5.21	0.12	0.84	DLS Model's Estimate
07/11/01	4.41	4.50	5.22	0.09	0.81	DLS Model's Estimate
03/06/02	4.23	4.45	5.19	0.22	0.96	DLS Model's Estimate
07/31/02	3.86	4.30	5.00	0.44	1.14	DLS Model's Estimate
02/19/03	3.69	4.11	4.79	0.42	1.10	DLS Model's Estimate
07/16/03	3.71	4.05	4.71	0.34	1.00	DLS Model's Estimate
07/21/04	3.89	4.17	4.84	0.28	0.95	DLS Model's Estimate
03/02/05	3.81	3.88	4.50	0.07	0.69	DLS Model's Estimate

Bond Sale Date	TIC	DLS Model	20-Bond Index	Difference Between TIC and DLS	Difference Between TIC and 20-Bond Index	Closer Estimate
07/20/05	3.79	3.76	4.36	0.03	0.57	DLS Model's Estimate
03/01/06	3.87	3.78	4.39	0.09	0.52	DLS Model's Estimate
07/26/06	4.18	3.91	4.55	0.27	0.37	DLS Model's Estimate
02/28/07	3.86	3.52	4.10	0.34	0.24	20-bond Index
08/01/07	4.15	3.88	4.51	0.27	0.36	DLS Model's Estimate
02/27/08	4.14	4.39	5.11	0.25	0.97	DLS Model's Estimate
07/16/08	3.86	3.21	4.65	0.65	0.79	DLS Model's Estimate
03/04/09	3.39	3.32	4.96	0.07	1.57	DLS Model's Estimate
03/02/09	3.63	3.51	4.87	0.12	1.24	DLS Model's Estimate
08/05/09	2.93	3.04	4.65	0.11	1.72	DLS Model's Estimate
08/03/09	3.20	3.09	4.69	0.11	1.49	DLS Model's Estimate
08/05/09	3.02	3.49	4.65	0.47	1.63	DLS Model's Estimate
10/21/09	2.93	2.48	4.31	0.45	1.38	DLS Model's Estimate
10/21/09	3.06	2.95	4.31	0.11	1.25	DLS Model's Estimate
02/24/10	2.85	2.49	4.36	0.36	1.51	DLS Model's Estimate
07/28/10	1.64	1.73	4.21	0.09	2.57	DLS Model's Estimate
07/28/10	1.91	1.95	4.21	0.04	2.30	DLS Model's Estimate
07/28/10	2.74	2.73	4.21	0.01	1.47	DLS Model's Estimate
03/07/11	2.69	2.72	4.90	0.03	2.21	DLS Model's Estimate
03/09/11	3.49	3.67	4.91	0.18	1.42	DLS Model's Estimate
07/25/11	1.99	2.02	4.46	0.03	2.47	DLS Model's Estimate
07/27/11	3.08	3.17	4.47	0.09	1.39	DLS Model's Estimate
03/02/12	2.18	2.08	3.72	0.10	1.54	DLS Model's Estimate
03/07/12	2.42	2.54	3.84	0.12	1.42	DLS Model's Estimate
07/27/12	2.52	2.19	3.61	0.33	1.09	DLS Model's Estimate
08/01/12	2.17	2.39	3.66	0.22	1.49	DLS Model's Estimate
03/06/13	2.35	2.53	3.86	0.18	1.51	DLS Model's Estimate
07/24/13	3.15	3.47	4.77	0.32	1.62	DLS Model's Estimate
03/05/14	2.84	3.14	4.41	0.30	1.57	DLS Model's Estimate
07/18/14	1.27	1.69	4.36	0.42	3.09	DLS Model's Estimate
07/23/14	2.65	3.05	4.29	0.40	1.64	DLS Model's Estimate
03/05/15	2.65	2.39	3.68	0.26	1.03	DLS Model's Estimate
07/16/15	2.83	2.69	3.82	0.14	0.99	DLS Model's Estimate
06/08/16	2.17	1.82	3.03	0.35	0.86	DLS Model's Estimate
Total Error				**11.35**	**70.42**	
Average Error				**0.18**	**1.12**	

DLS: Department of Legislative Services
TIC: true interest cost

Source: Department of Legislative Services, October 2016

Chapter 7. Nontax-supported Debt

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

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

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

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

Revenue and Private Activity Bonds

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

The U.S. Tax Reform Act of 2006 established an annual limit on the amount of tax-exempt private activity bonds that may be issued by any state in any calendar year. This limit is based on a per capita limit adjusted annually for inflation. Maryland's 2016 allocation totaled $600.6 million.

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

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

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

Reporting of Bond Activity

As the State's single allocating authority agency, Commerce is required to collect and submit allocation and issuance data annually to the Internal Revenue Service. Section 13-804 of the article requires each agency that issues private activity bonds to annually submit to Commerce by September 15 the following information:

- the amount of the total allocation of the Maryland State ceiling allocated in that year to the issuer;

- the amount and type of bonds issued in that year pursuant to the total allocation to the issuer in that year;

- the amount and type of bonds not issued, but anticipated to be issued on or before September 30 of that year, pursuant to the total allocation to the issuer in that year; and

- any other information that the Secretary may request.

Although the article requires State entities that issue private activity bonds to annually report to Commerce, it does not set forth a reporting requirement from Commerce to the Spending Affordability Committee (SAC) or any other State entity. Instead, State Government Article § 2-1010 requires any State agency with private activity bond issuance authority to annually submit to SAC a report that provides the actual level of private activity bonds issued in the prior year and the projected level of private activity bonds to be issued in the current year.

While the agencies do not adhere to the reporting under State Government Article 2-1010, Commerce does maintain this information as required by Financial Institutions Article 13-804, and the Department of Legislative Services annually publishes the aggregate data in this report. Moreover, there is a separate annual report published by the Department of Budget and Management required under Executive Order 01.01.1998.07 that provides information on the financing transactions and level of outstanding debt of State agencies whose debt limit is not limited in amount by State law which includes private activity bond issuances.

Allocation of Private Activity Bonds

Exhibit 7.1 provides the calendar 2012 through 2016 figures for the amount of available tax-exempt bond authority and the level of issuances made under the volume cap limits. Total carry forward continues to grow because it has outpaced annual issuances recently; in some years, CDA does not issue any debt directly against that year's allocation if sufficient amounts of carry forwards are available to support program activity.

Exhibit 7.1
Allocation of Private Activity Bonds
Calendar 2012-2016
($ in Millions)

	2012	2013	2014	2015	YTD 2016
Fund Sources					
Annual Cap	$553.7	$559.0	$592.9	$597.6	$600.6
Carry Forward from Prior Years	1,193.0	1,461.2	1,528.6	1,576.0	1,596.5
Total Capacity Available	**$1,746.7**	**$2,020.2**	**$2,121.5**	**$2,173.6**	**$2,197.1**
Issuances					
Single-family Housing	$0.0	$306.0	$343.7	$24.7	$0.0
Multifamily Housing	31.0	130.8	170.4	250.7	95.7
Housing – Other	18.0	22.6	16.5	25.5	20.5
Industrial Development Bonds	0.0	0.0	14.5	25.6	8.0
Nonhousing County	8.6	0.0	0.0	0.0	0.0
Total Issuances	**$57.6**	**$459.4**	**$545.1**	**$326.5**	**$124.2**
Prior Year Carry Forward Abandoned	$258.9	$32.3	$0.2	$250.6	n/a
Carry Forward	$1,430.2	$1,528.5	$1,576.4	$1,596.5	n/a

YTD: year-to-date

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

Source: Department of Commerce

To date in 2016, CDA has not issued any bonds for its single-family housing program, marking the second straight year of little to no issuances. The current mortgage market has made the issuance of bonds in the single-family program unattractive, as rates in the private market are competitive with what CDA can offer when the added administrative burden on the bond buyer is considered. However, the Maryland Mortgage Program (MMP), which provides mortgages to first-time homebuyers and other qualified homebuyers, continues to operate. MMP mortgages represent between 5% and 10% of single-family home sales in the State within DHCD's price limits, excluding investment purchases. When the bond market is unfavorable, to fund its single-family program CDA instead securitizes mortgages to be sold on the open market to private investors. The relevant difference between these two funding methods is that the securitization of mortgages means both the debt and the asset (the mortgage) are not held by CDA, while when CDA issues bonds, it typically holds either the mortgages or a mortgage security. Under these market conditions, the State may be forced to abandon some private activity allocations.

Multifamily issuances continued an upward trend through 2015, primarily due to increased State general obligation (GO) bond funding available in DHCD's primary multifamily housing

program, Rental Housing Works, which aims to increase the supply of affordable rental housing in the State.

A portion of CDA's debt also represents refinancing prior issuances and issuing taxable bonds. Debt issued for these purposes is not subject to the federal volume cap. Total issuance remain volatile primarily due to the alternative funding option available for the single-family program, which limits the amount of debt issued.

Expansion of CDA Authority

During the 2016 session, the legislature passed two pieces of legislation that increased the scope of CDA's lending authority. Chapter 482 of 2016 authorized CDA (as well as the Maryland Housing Fund) to lend to business projects, and expanded the geographic area in which DHCD's Neighborhood Business Development Program can operate to include all priority funding areas designated in the State Finance and Procurement Article. Chapter 146 of 2016 allows CDA to provide loans to home buyers and make payments on the homeowner's student loan debt. It remains to be seen how this new legislation will impact CDA's operations and amount of debt issuances.

Debt Outstanding

Exhibit 7.2 summarizes the change in debt outstanding for different types of debt between fiscal 2006 and 2016:

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

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

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

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

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

Exhibit 7.2
Debt Outstanding as of June 30
Fiscal 2006 and 2016
($ in Millions)

	2006	2016	Total Change	Annual % Change
Agency Debt Subject to State Regulatory Cap	$864	$3,120	$2,256	13.7%
Agency Debt Not Subject to State Regulatory Cap	3,924	4,408	484	1.2%
Tax-supported Debt	6,471	12,554	6,083	6.9%
Authorities and Corporations without Caps	8,054	11,091	3,037	3.3%
Total	**$19,312**	**$31,173**	**$11,861**	**4.9%**

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

Source: Department of Budget and Management

Debt Service on University Academic and Auxiliary Revenue Bonds

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

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

University System of Maryland

USM issues 20-year bonds with serial maturities and level debt service payments. The first year is interest only and the principal is retired in the remaining 19 years. USM's debt management policies aim to reassure investors and the rating agencies of the system's financial stability and control over debt. USM aims for debt service to be less than 4.5% of operating revenues plus State

appropriations including grants and contracts. This ratio was developed after discussions with its financial advisor (Public Financial Management's Higher Education Office), rating agencies, and investors.

Since the economic downturn, the ratings of many higher education institutions were downgraded due to their weaker financial positions. With a strong debt management policy, USM reports that it expects to maintain the current rating of AA1 (stable) from Moody's and the equivalent AA+ from both Fitch (stable) and Standard & Poor's (which removed the system from negative watch). All three ratings were reviewed in January 2016.

Exhibit 7.3 shows that USM will be under the 4.5% debt service goal for fiscal 2016 to 2022. Including debt issued in fiscal 2017, total debt service will be approximately $143 million, or 3.0%, of fiscal 2017 operating revenues plus State appropriations including grants and contracts revenues. The forecast indicates that the ratio will stay between 2.9% and 3.2% over the next five years, with fiscal 2022 projected to be 3.2%.

Exhibit 7.3
University System of Maryland Debt Service as Related to Operating Funds Plus State Appropriations
Fiscal 2009-2022 Estimated
($ in Millions)

Year	Total Debt Outstanding	Total Debt Service	Operating Revenues Plus State Appropriations	Ratio of Debt Service to Operating Revenues Plus State Appropriations
2009	$1,029	$111	$3,730	3.0%
2010	1,083	116	3,788	3.1%
2011	1,129	127	4,065	3.1%
2012	1,170	124	4,204	3.0%
2013	1,271	137	4,283	3.2%
2014	1,200	141	4,478	3.1%
2015	1,218	138	4,567	3.0%
2016	1,270	143	4,645	3.1%
2017 Estimated	1,291	143	4,738	3.0%
2018 Estimated	1,313	142	4,833	2.9%
2019 Estimated	1,330	150	4,929	3.0%
2020 Estimated	1,346	154	5,028	3.1%
2021 Estimated	1,361	157	5,128	3.1%
2022 Estimated	1,374	172	5,336	3.2%

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

Source: University System of Maryland

USM also has a goal for the ratio of expendable resources (defined as unrestricted assets of USM and the affiliated foundation with adjustments for certain long-term liabilities) to debt outstanding. With advice from its financial advisor, USM's goal is for expendable resources to be no less than 55% of total debt outstanding. This goal was established a decade ago when the ratings that USM held at the time were at a lower rating level and at risk of downgrade. Subsequently, the system improved its financial strength and received rating upgrades, which it manages resources and spending to protect. **Exhibit 7.4** shows USM's expendable resources to debt outstanding ratio for fiscal 2009 to 2022. It has exceeded the target minimum throughout the entire period, and the ratio has grown in recent years, indicating capacity to issue more debt under the criterion. In fiscal 2018, the system will seek a total of $32 million in ARBs to provide facility renewal and capital project funding for USM institutions.

Exhibit 7.4

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

Fiscal 2009-2022 Estimated

($ in Millions)

Year	Available Resources	Debt Outstanding	Ratio of Available Resources to Debt Outstanding
2009	$1,130	$1,029	109.9%
2010	1,188	1,083	109.7%
2011	1,432	1,129	126.9%
2012	1,622	1,170	138.6%
2013	1,752	1,196	146.6%
2014	1,728	1,269	136.2%
2015	1,787	1,194	149.7%
2016	1,919	1,270	151.1%
2017 Estimated	1,858	1,291	143.9%
2018 Estimated	1,870	1,313	142.4%
2019 Estimated	1,918	1,330	144.2%
2020 Estimated	1,943	1,346	144.3%
2021 Estimated	1,973	1,361	144.9%
2022 Estimated	2,050	1,374	149.2%

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

Source: University System of Maryland

St. Mary's College of Maryland

SMCM's outstanding debt consists of auxiliary and capital lease debt. SMCM has no outstanding academic debt. The total debt in fiscal 2017 is estimated to be $32.5 million and is expected to decrease to $22.7 million by fiscal 2022. As shown in **Exhibit 7.5**, the college's ratio of debt service to unrestricted expenditures is also expected to decline from an estimated 5.2% in fiscal 2017 to 4.0% in fiscal 2022. From fiscal 2009 to 2010, SMCM exceeded the 5.5% debt ratio goal in order to construct additional residential buildings to house increasing enrollment. In September 2015, SMCM's bond rating was affirmed by Moody's at A2 given a history of strong State support to the college, and because the college's bonds are issued at a fixed rate, there is no effect on existing bonds. Also, in fiscal 2015, SMCM issued $4.0 million in auxiliary revenue bonds to renovate residence halls. The bonds are in the form of a drawdown arrangement with interest only for 1 year followed by a 10-year amortization period.

Exhibit 7.5
St. Mary's College of Maryland Debt Service Related to Unrestricted Funds
Fiscal 2009-2022 Estimated
($ in Thousands)

Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures	Ratio of Debt Service to Unrestricted Expenditures
2009	$46,790	$3,517	$62,787	5.6%
2010	45,333	3,522	63,883	5.5%
2011	41,753	3,500	65,187	5.4%
2012	38,313	3,416	66,817	5.1%
2013	38,311	3,211	63,082	5.1%
2014	36,387	3,208	61,031	5.3%
2015	34,268	3,200	65,858	4.9%
2016	33,904	3,436	70,310	4.9%
2017 Estimated	32,491	3,668	70,406	5.2%
2018 Estimated	31,898	3,495	72,166	4.8%
2019 Estimated	29,578	3,388	73,970	4.6%
2020 Estimated	27,289	3,375	75,820	4.5%
2021 Estimated	24,939	3,164	77,715	4.1%
2022 Estimated	22,719	3,162	79,658	4.0%

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

Source: St. Mary's College of Maryland

Baltimore City Community College

BCCC has not taken advantage of its ability to issue auxiliary or academic debt but is authorized to issue up to $65 million. According to a previous report submitted by the college to the Capital Debt Affordability Committee, possible uses of debt could include the financing of a new parking garage or a capital lease for an academic facility elsewhere within Baltimore City.

Since both the amount and eligible uses of its debt authorization were expanded in the 2009 session, BCCC has repeatedly postponed plans to initiate the bond rating process and issue debt. At one point, BCCC reported that it expected to initiate the bond rating process in fiscal 2013 with the intent of issuing debt the following year. However, the college has more recently decided not to pursue the rating process and has no plans to issue debt in the foreseeable future. By comparison, both USM and MSU have used ARBs to finance the construction and renovation of academic facilities, and USM regularly allocates a portion of its annual ARB authorization to academic projects in conjunction with GO bond funds as a means to advance system priority projects.

Morgan State University

As shown in **Exhibit 7.6**, MSU estimates $48.5 million of debt in fiscal 2017. This figure includes academic, auxiliary, and capital lease debt. Auxiliary debt is the largest of the three, totaling $28.6 million. The ratio of debt service to unrestricted expenditures is estimated to be 4.3% in fiscal 2017, below MSU's 5.5% goal ratio. MSU is not planning to issue more debt in the next five years, and the college's projected debt ratio is expected to stay between 2.0% and 4.3% through fiscal 2022. Like USM, MSU issues 20-year bonds with serial maturities and level debt service payments. The first year is interest only and the principal is retired in the remaining 19 years. MSU was most recently rated A1 Stable by Moody's in April 2016 and A+ (stable) by Standard & Poor's in February 2015. MSU advises that the large decline in its debt service in fiscal 2022 is due to the maturation of its 1993 series bonds and that this is in line with the institution's financial planning.

Exhibit 7.6
Morgan State University Debt Service as Related to Unrestricted Funds
Fiscal 2009-2022 Estimated
($ in Thousands)

Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures	Ratio of Debt Service to Unrestricted Expenditures
2009	$67,825	$7,700	$148,538	5.2%
2010	64,354	8,015	146,641	5.5%
2011	59,556	8,034	150,429	5.3%
2012	55,165	7,429	157,647	4.7%
2013	47,761	5,776	165,502	3.5%
2014	43,770	6,422	164,211	3.9%
2015	43,145	6,078	177,568	3.4%
2016	54,409	7,100	183,346	3.9%
2017 Estimated	48,481	8,312	191,346	4.3%
2018 Estimated	42,265	8,332	198,346	4.2%
2019 Estimated	35,768	8,329	204,346	4.1%
2020 Estimated	28,989	8,314	210,846	3.9%
2021 Estimated	25,168	5,028	217,846	2.3%
2022 Estimated	21,851	4,376	223,846	2.0%

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

Source: Morgan State University

Chapter 8. Issues

Key issues examined in this chapter are:

- capacity available to increase general obligation (GO) bond authorizations;
- bond sale premiums, why the State realizes them, and what can be done with them;
- data from recent bond sales that show that taxable debt is more expensive than tax-exempt debt; and
- affordability policies that link authorizations more closely to debt service costs and the revenues that support them.

Capacity Is Sufficient for Modest Increases in Authorizations

The Capital Debt Affordability Committee (CDAC) recommendation is to continue to limit GO bond authorizations to $995 million. This is affordable. Under this limit, debt service peaks at 7.78% of revenues and debt outstanding peaks at 3.54% of personal income.

In 2015, the Spending Affordability Committee (SAC) recommended that GO bond authorizations be limited to $1,055 million in fiscal 2017 and that subsequent increases be limited to 1%. This approach links increases in authorizations to projected increases in the major revenue source that supports debt service, which is the State property tax. State property tax revenues are projected to increase at a rate of 1% to 2%. Cost are contained at a rate of growth that does not exceed projected increases in the revenues that support them.

Exhibit 8.1 shows that this level of authorizations is still affordable, even after the recent revenue write-down. Debt service to revenues peaks at 7.79% in fiscal 2019. Debt service costs increase slightly at first. As the program ramps up, costs increase at a higher rate.

Another slow growth approach is to begin with the fiscal 2017 authorization, $995 million, and increase it at a rate of 1% annually. This keeps increases in authorizations below the expected increases in State property taxes. **Exhibit 8.2** shows that debt service to revenues peak at 7.78% in fiscal 2018 and 2019.

Exhibit 8.1
Impact of 2015 Spending Affordability Committee Recommendations on Debt Service and Affordability Ratios
Fiscal 2017-2022
($ in Millions)

Fiscal Year	Authorization	Additional Debt Service	Debt Service to Revenues	Debt Outstanding to Personal Income
2017	$1,055	$0	7.57%	3.54%
2018	1,065	1	7.78%	3.51%
2019	1,075	2	7.79%	3.44%
2020	1,085	5	7.62%	3.34%
2021	1,095	9	7.58%	3.24%
2022	1,105	16	7.60%	3.14%

Source: Department of Legislative Services, November 2016

Exhibit 8.2
Impact of 1% Increases in Bond Authorizations on Debt Service and Affordability Ratios
Fiscal 2017-2022
($ in Millions)

Year	Authorization	Additional Debt Service	Debt Service to Revenues	Debt Outstanding to Personal Income
2017	$995	$0	7.57%	3.54%
2018	1,005	0	7.78%	3.50%
2019	1,015	0	7.78%	3.43%
2020	1,025	1	7.60%	3.32%
2021	1,035	2	7.55%	3.21%
2022	1,045	4	7.56%	3.09%

Source: Department of Legislative Services, November 2016

Bond Sale Premiums: Why We Get Them, Why We Must Be Careful, and What We 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 State Treasurer's Office determines how many bonds are sold (par value of the bonds) and when the bonds mature.[1] 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.[2] 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 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.

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

In the current environment, interest rates are more likely to increase than decrease. Current interest rates are historically low. According to data from the Federal Reserve Board, the yield on 10-year treasury notes on the Friday, June 10, 2016 (the time of the most recent bond sale), was among the lowest since 1962. In fact, only 21 out of 2,840 weeks had lower interest costs; over 99% 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.

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

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

To protect the value of their investment, bonds can be purchased at a premium. **Exhibit 8.3** 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.

Exhibit 8.3
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%

	Premium Bonds	Sold at Par	Explanation
Value at Sale	$6,080	$5,000	This is what you paid for the bonds
Value After Interest Rates Increase	$5,000	$4,038	This is what your bonds are now worth
Total Loss	-$1,080	-$962	This is how much you lose due to rate change
Percent Loss	-17.8%	-19.2%	This is what matters, value lost

TIC: true interest cost

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

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

Why Should We 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, the Department of Legislative Services (DLS) anticipates that bond sales will continue to generate premiums in fiscal 2017.

A concern with budgeting premiums 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 from 3.49% to 3.74%. Such an increase substantially decreases a bond sale premium.

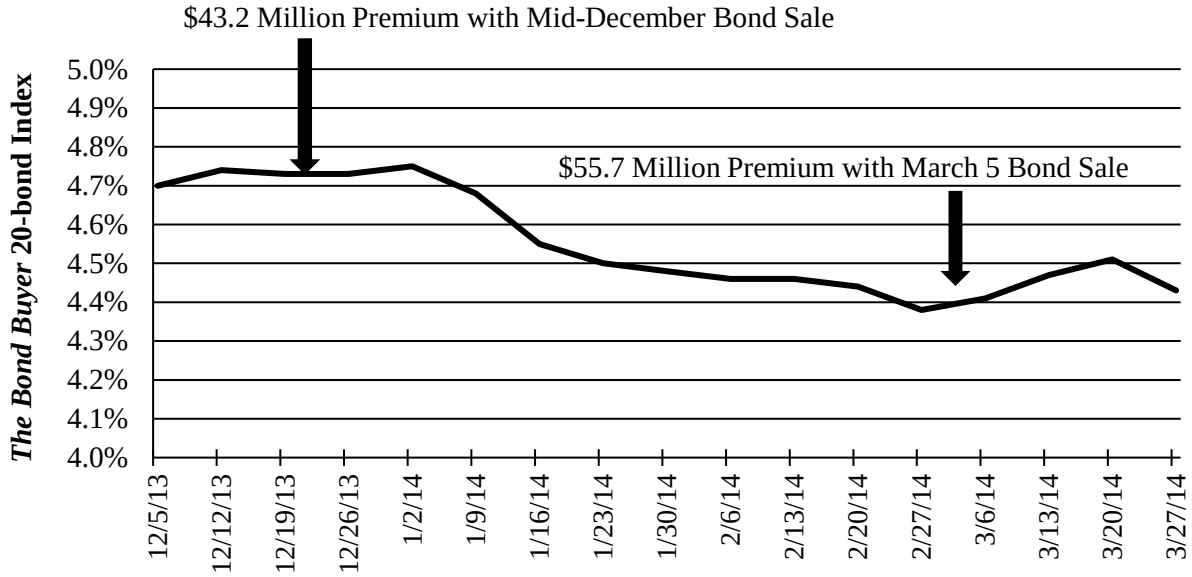
Most of this volatility cannot be foreseen. This means that the key variables used to estimate premiums are impossible to predict with any precision. An example of this is the March 6, 2014 bond sale. The State projected a $40.8 million premium. This forecast was prepared in December 2013 and used in the Governor's fiscal 2015 budget. Using interest rates from December 2013, DLS forecasted a $43.2 million premium. DLS' conclusion was 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 2014 sale was $55.7 million. This is $14.9 million more than the Department of Budget and Management (DBM) projected. The reason for this difference is a sudden decline in interest rates. **Exhibit 8.4** 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.

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 conclusion, why should we budget premiums carefully? Because interest rates in this environment are volatile, and even estimates prepared weeks before a bond sale are routinely off tens of millions of dollars.

Exhibit 8.4
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 Chapter 6. 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

What Can We 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 Annuity Bond Fund (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; and

- ***Resize the Bond Sale:*** If the objective is to generate a specific level of bond proceeds, the amount of bond 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 February 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.

Reducing Taxable Debt Authorizations Reduces Interest Payments

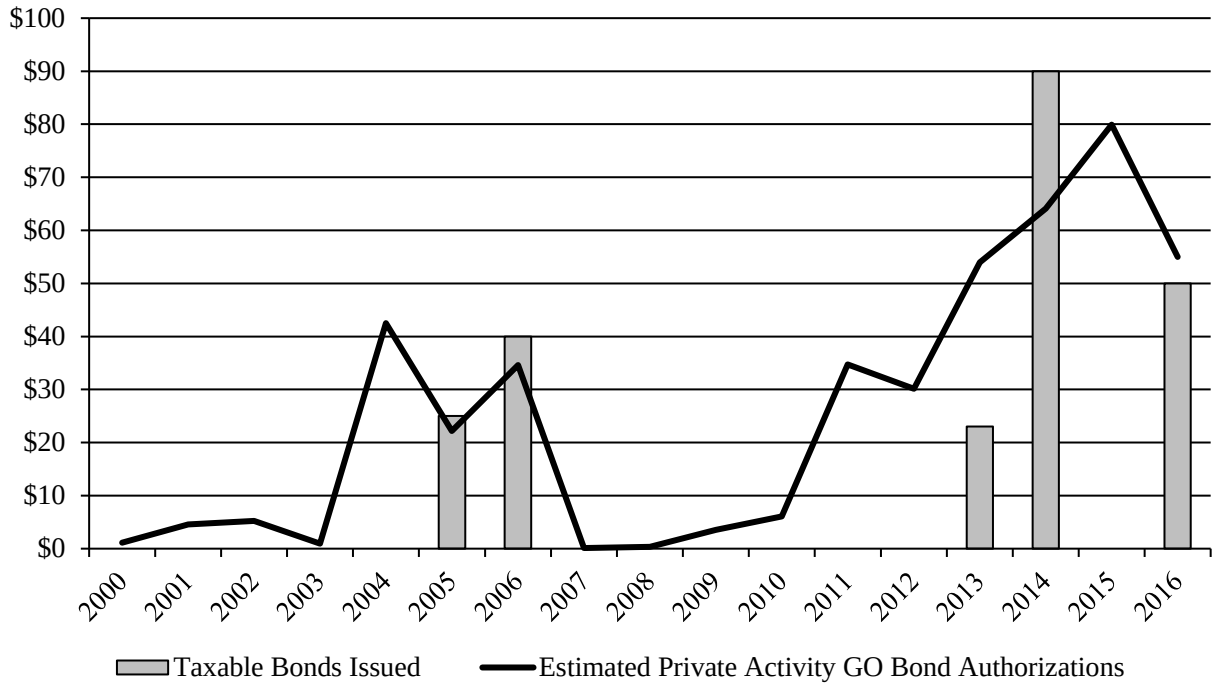
The State's capital program supports a number of different public policy areas, such as health, environment, public safety, education, housing, and economic development. Federal government regulations allow the State to issue debt that does not require the buyer to pay federal taxes on interest earnings. 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); the Public Safety Communications program of the Department of Information Technology; and the Physical Sciences Complex 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 8.5** 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 GO bonds for additional private activity projects, additional taxable bond sales are expected.

Exhibit 8.5
Private Activity Authorizations and Taxable Bond Issuances
Fiscal 2000-2016
($ 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.

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.

Legislature Funds Taxable Programs with General Funds to Avoid Higher Cost Taxable Debt

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.

For fiscal 2017, the General Assembly acted to reduce the reliance on taxable bonds. As introduced, the fiscal 2017 capital budget included $48 million in private activity authorizations. To reduce debt service costs, the budget enacted by the General Assembly restricted $43 million in general funds for projects introduced by the Administration as taxable bond projects. The Governor initially agreed to fund these projects with PAYGO but has subsequently reduced funding. On November 2, 2016, BPW reduced DHCD PAYGO appropriations by $7 million and MDE PAYGO appropriations by the entire $10 million. The Administration may propose taxable bonds to support these programs.

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

Exhibit 8.6 shows that out-year private activity authorizations range from $46 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. These large authorizations are likely to result in the issuance of taxable bonds in the out-years. **To reduce debt service cost, DLS recommends that DBM reduce the level of private activity authorizations for fiscal 2018.**

Exhibit 8.6
Private Activity Authorizations by Department
Fiscal 2018-2021
($ in Thousands)

	2018	2019	2020	2021	Total
Private Business Use					
State Agency					
Morgan State University	$56	$0	$0	$0	$56
University System of Maryland	3,994	2,244	2,316	0	8,554
Subtotal	***$4,049***	***$2,244***	***$2,316***	***$0***	***$8,610***
Private Loans					
State Agency					
Department of Housing and Community Development	$33,800	$32,900	$33,100	$31,600	$131,400
Maryland Department of the Environment	7,510	7,510	7,510	7,510	30,040
Department of Planning	150	150	150	150	600
Subtotal	***$41,460***	***$40,560***	***$40,760***	***$39,260***	***$162,040***
Total	**$45,509**	**$42,804**	**$43,076**	**$39,260**	**$170,650**

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

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

Assessing Affordability: Committee Should Consider Policies that Align Increased Authorizations to Debt Service Costs and Link Authorizations to Revenues

To develop State debt policies and advise the Governor and General Assembly, CDAC was established by Chapter 43 of 1978. CDAC meets in public, has adopted affordability guidelines, and recommends GO bond levels each fall. Although the recommendation is neither binding for the Governor nor the General Assembly, each typically observes the level recommended by the committee.

In 1979, the committee adopted three criteria to evaluate affordability: State debt outstanding cannot exceed 3.2% of State personal income; State debt service cannot exceed 8.0% of State revenues; and new authorizations should be kept in the range of redemptions of existing debt. When the criteria were adopted, the State did not meet either the debt outstanding or debt service criterion.

In 1987, CDAC determined that the criterion limiting new authorizations to redemptions was no longer an applicable guideline. The goal of reducing debt had been met, and the committee's objective was no longer to reduce debt but rather to maintain a stable capital program. At the time, the high ratings of the State's debt indicated that the existing level of debt and the planned increases were acceptable to the rating agencies. The criterion also tied annual authorizations to the amount of debt issued as much as 15 years before, thereby, producing highly variable bond authorizations which is inconsistent with a stable capital program. For these reasons, the committee dropped the criterion.

In the November 2008 report, the committee again recommended changing the affordability criteria. As it reviewed the criteria, the committee consulted with rating agencies, investment bankers, and its financial advisor. CDAC met in public a half dozen times in 2007 and 2008 to discuss debt policy and the criteria. The committee determined that targets of the two criteria were no longer appropriate and recommended increasing the debt outstanding to State personal income criterion from 3.2% to 4.0% of personal income. No change was made to the limit on debt service. The policy increased the amount of total debt that the State was able to issue. This total debt had been increasing in recent years as the State expanded GO bond authorizations and issued new kinds of debt that were not supported by the State's general fund, such as bay restoration bonds and Grant Anticipation Revenue Vehicles.

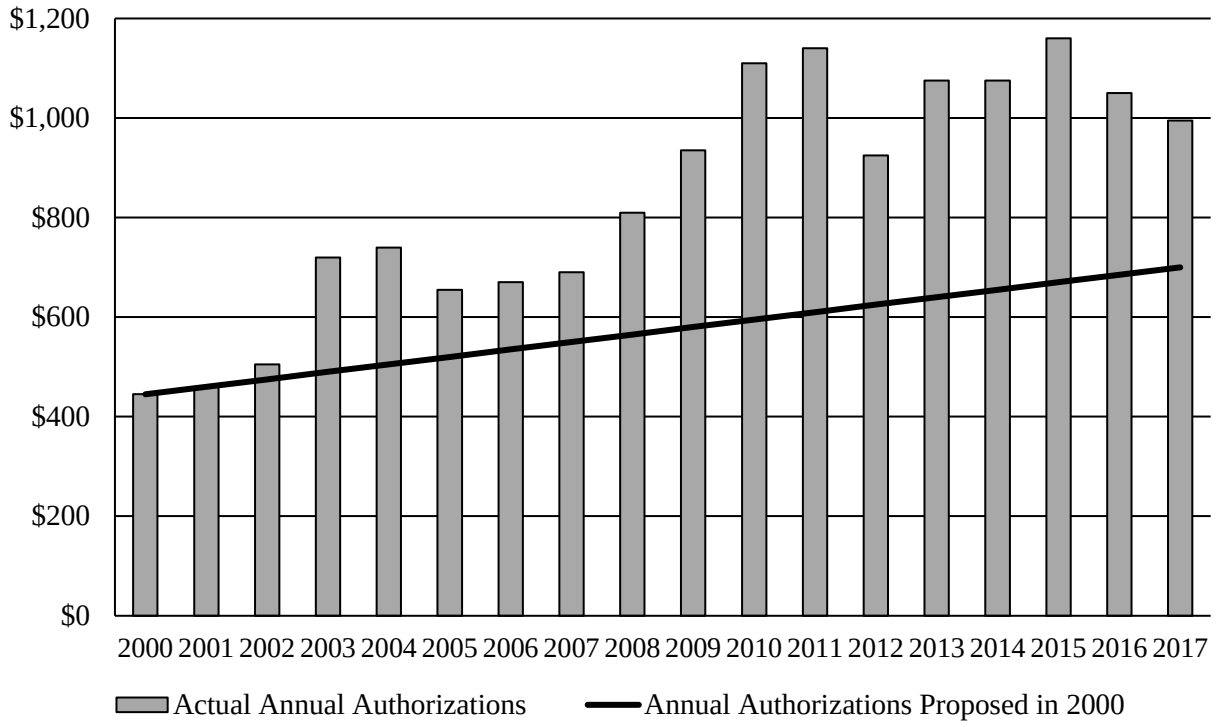
Criteria Have Constrained Debt Authorizations and Issuances

CDAC has been successful at constraining State debt. When CDAC first introduced the criteria in fiscal 1979, State debt outstanding was 5.4% of personal income, and debt service was 11.3% of revenues. These ratios were steadily reduced by fiscal 1987, when debt outstanding was 3.2% of income, and debt service was less than 8.0% of revenues. The State has also reduced authorizations after revenues declined. During the Great Recession, State general fund revenue declined as much as 5.0% in fiscal 2009. Realizing that revenues were insufficient to meet the debt service to revenue criterion, CDAC reduced the fiscal 2011 to 2015 capital program by $400 million.

But Criteria Did Not Keep the State from Continuously Expanding State Debt Authorizations

While the CDAC process has constrained debt, it did not keep the State from continuously increasing authorizations. In fiscal 2000, the policy was to increase authorizations by $15 million annually. **Exhibit 8.7** shows that levels have grown above this limit since fiscal 2002.

Exhibit 8.7
Actual Bond Authorizations Compared to Level Projected in Fiscal 2000
Fiscal 2000-2017
($ in Millions)



Source: Department of Legislative Services, November 2016

In the 16 legislative sessions since 2000, net GO bond authorizations were increased in all but 5 legislative sessions. **Appendix 5** provides a list of debt legislation since 2000. As the State's economy and population grows, the need for capital projects also grows. To meet this need, CDAC has developed policies to allow for limited increases in bond authorizations. However, the committee revised these policies every few years. This resulted in some substantial increases that became a new floor, off of which future increases based. The problem is not that authorizations increased, rather, the problem is that CDAC consistently approved large increases that expanded capital spending. The most substantial increases are:

- in the 2004 legislative session, the GO program was increased by $100 million a year from fiscal 2005 to 2009;

- in the 2006 legislative session, the State modified the annual increase from a fixed $15 million to 3%. Another $100 million was permanently added annually to the program beginning in fiscal 2010 to avert a reduction in the program created by the proposed level of authorizations made in calendar 2004;

- in the 2008 legislative session, authorizations were permanently increased by $100 million annually; and

- in the 2013 legislative session, authorizations were increased by $150 million annually from fiscal 2014 to 2018.

Exhibit 8.8 shows how increasing authorizations effects debt service and debt outstanding. GO bond debt outstanding and debt service costs more than doubled between fiscal 2000 and 2017, increasing at an annual rate of 5.77%. Even relative statistics increased; debt service has increased from 5.79% of revenues in fiscal 2000 to 7.57% of revenues in fiscal 2017.

Exhibit 8.8
Change in Debt Service and Debt Outstanding
Fiscal 2000 and 2017
($ in Millions)

Year	GO Bond Debt Service	Total Debt Service	Debt Service as Percent of Revenue	GO Bond Debt Outstanding	Total Debt Outstanding	Debt Outstanding as a Percent of Personal Income
2000	$459	$640	5.79%	$3,348	$4,468	2.51%
2017	1,192	1,662	7.57%	9,252	12,875	3.54%

GO: general obligation

Source: *Report of the Capital Debt Affordability on Recommended Debt Authorizations;* Department of Legislative Services, November 2016

Changes in Debt Service Costs Lag Changes in Authorizations

One key attribute of State debt policies is that there is a lag between the bond authorizations and debt service payments. Two factors are responsible for this lag:

- **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 pays 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.

- **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% are spread over 4 years.

Taken together, a typical authorization's first payment is an interest only payment of less than one-third of the bonds authorized. In other words, a minute amount of the debt service for an authorized bond is paid in the first year. This lag also affects debt service when reducing costs. By reducing authorizations, the initial benefit is minimal. DBM's fiscal 2017 to 2021 *Capital Improvement Program* (CIP) is a good example of how difficult this challenge is. DBM is proposing $995 million in GO bonds from fiscal 2017 to fiscal 2021. This is $400 million less than the level proposed by SAC in 2015. Initial annual savings are $1 million in fiscal 2018 and $2 million in fiscal 2019. Annual savings total $9 million in fiscal 2021.

Debt Affordability Process Recommendations

The State's debt affordability process has been effective at limiting GO bond authorizations. The State has limited debt outstanding and debt service so that they remain within the affordability guidelines. But the process is a blunt tool that has been less effective at evaluating incremental increases in GO bond authorizations, specifically:

- **The Affordability Process Undervalues the Cost of Issuing Debt:** The affordability process does not recognize debt service costs until the bonds are issued, and even then, the process recognizes only a fraction of the costs that are imminent. Once a bond is authorized, the bonds will be issued and that, typically, the State will be paying the authorization's debt service cost for 20 years.[3] It usually take 8 years until the full annual debt service cost is appropriated, which is over $10 million for a $100 million authorization. Over the life of the debt, the authorization's debt service costs will total $148 million but less than $1 million is booked in the first year.

- **The Affordability Process Does Not Consider the State's Current or Projected Fiscal Condition:** From a budgetary perspective, evaluating new initiatives is considered in the context of expected revenues and expenditures. It is not prudent to expand programs if projected revenues do not provide sufficient funding for those programs. During the 2014 session, the budget proposed by the Administration included $195 million in general fund support for debt service because ABF did not have sufficient revenues to support debt service without this subsidy. The general fund appropriation was expected to

[3] It takes each authorization an average of 5 years to issue bonds. Each bond sold is 15 years, so it takes about 20 years to retire debt that is authorized.

increase to $524 million by the end of the forecast period (fiscal 2019). During this same session, the capital budget included $75 million in additional GO bond authorizations. Based on CDAC criteria, the additional authorization was affordable. Though the criteria limit debt service to 8% of revenues the criteria do not evaluate current conditions, which are that general fund subsidies are needed to support GO bond debt service. The criteria also do not relate to the specific revenues supporting debt service, which is the State property tax. Current estimates expect State property tax receipts to increase by 1% annually while GO bond debt service costs increase by 6% annually. This will continue to strain the general fund and crowd out other programs while debt service becomes an ever-increasing share of general fund expenditures.

These concerns can be addressed by changes in the CDAC processes. Specifically, the process could be revised to:

- **Evaluate Maximum Annual Debt Service Costs When Expanded GO Bond Authorizations Are Proposed:** The current process undervalues the cost of expanding debt because the debt service costs are initially quite small and are not fully realized until about a decade after bonds are authorized. Based on current market conditions, authorizing $100.0 million in additional bonds increases debt service payments in the first fiscal year by approximately $0.5 million. Debt service costs increase to over $10.5 million by the eighth year. When evaluating the cost of increasing authorizations, CDAC could consider the maximum debt service costs, instead of the projected cash flow. In the example above, the full $10.5 million in debt service costs would be evaluated. This provides a hedge against revenue underattainment.

- **Consider Linking Annual Increases in Debt Authorizations to State Property Tax Revenues Instead of Project Inflation:** In its 2005 report, CDAC recommended annually increasing GO bond authorizations by 3.0%, instead of just $15.0 million annually. The committee attempted to link the increases with capital project inflation. Current estimates are that State property tax receipts, which support GO bond debt service costs, will be increasing 1.0% annually. The inflationary 3.0% increase is an aspirational target that focuses spending increases on maintaining the program, not on maintaining a program that is supported by dedicated revenues. Reducing the annual increase to 1.0% would align the capital program with the revenues supporting debt service instead of demands on the program.

- **Adopt a Target Debt Service to Revenue Ratio to Provide a Hedge Against Reduced Revenues:** State policy is to limit State debt service to 8.0% of revenues. As we have seen in the last year, revenue underattainment can increase debt ratios even if the State has not increased any debt authorizations. To protect against underattainment, the State could adopt a target ratio. For example, a target ratio of 7.7% would provide some additional capacity in case of revised revenue estimates. This is done in some states. Florida, for example, has a limit of 7.0% and a 6.0% target.

- **Modify Amortization Policies so that Principal is Retired in the First Year:** The Constitution of Maryland requires that State debt is retired within 15 years of issuance. Under current policies, the State makes interest only payments in the first 2 years, and principal and interest payments are made in the last 13 years. Making principal payments in all 15 years reduces total debt service costs. For example, issuing $100.0 million in bonds under the current market conditions (a 5.0% interest rate) generates $148.4 million in debt service costs. Paying interest in the first and second year reduces total interest payments to $144.9 million, a savings of $3.5 million. This also reduces the maximum payment from $10.6 million to $9.6 million. In the short term, this does result in higher debt service costs of $4.6 million annually, as costs increase from $5.0 million to $9.6 million.

Taken together, these changes align the CDAC process more closely with the State's fiscal condition. Since increasing authorizations has almost no impact on short-term expenditures, the cost of increasing authorizations is understated. Accounting for the maximum amount of debt service would immediately recognize the fiscal impact of increasing authorizations. Also, the current process provides for annual increases that relate to maintaining program purchasing power instead of relating to the revenues available to support the program. Reducing the annual increase aligns growth with revenues instead of demand, thus making future GO bond authorizations more affordable. **DLS recommends that CDAC consider debt policies that realize the cost of debt more quickly and that limit growth in authorizations to the revenues supporting the debt.**

Appendix 1
General Obligation Bond Request
Fiscal 2018-2022
($ in Millions)

	2018	2019	2020	2021	2022	Total	Category Totals
State Facilities							**$569.3**
Board of Public Works	$72.3	$28.5	$101.1	$109.6	$99.0	$410.5	
Veterans Affairs	0.0	0.0	1.5	9.9	10.9	22.3	
Military	3.6	8.4	23.6	14.3	5.1	55.1	
Disabilities	1.6	1.6	1.6	1.6	1.6	8.0	
Maryland Public Broadcasting	1.2	5.2	5.8	0.0	0.0	12.1	
Information Technology	33.2	17.5	10.7	0.0	0.0	61.3	
Health and Social Services							**$467.3**
Health and Mental Hygiene	$8.2	$8.8	$11.3	$27.7	$19.1	$75.1	
University of Maryland Medical System	13.6	10.0	19.0	29.0	29.0	100.6	
Senior Citizen Activity Center	1.6	1.6	1.6	1.6	1.6	8.0	
Juvenile Services	26.7	17.4	27.3	40.4	26.8	138.5	
Private Hospital Grant Program	9.5	5.0	5.0	5.0	5.0	29.5	
Prince George's County Hospital	67.5	48.0	0.0	0.0	0.0	115.5	
Environment							**$338.8**
Natural Resources	$22.4	$21.6	$21.4	$12.0	$11.2	$88.6	
Agriculture	17.5	15.9	8.0	8.0	8.0	57.4	
Environment	52.3	13.0	13.0	13.0	13.0	104.3	
Maryland Environmental Service	22.4	19.6	19.9	15.4	11.3	88.5	
Education							**$3,571.5**
Education Other	$37.0	$9.5	$5.0	$5.0	$5.0	$61.5	
Maryland School for the Deaf	0.0	0.1	1.6	0.7	5.4	7.8	
Public School Construction[1]	760.0	743.3	698.3	638.5	662.0	3,502.1	
Higher Education							**$2,572.7**
University System of Maryland[2]	$321.8	$275.3	$261.6	$276.1	$353.2	$1,487.9	
Baltimore City Community College	0.4	5.1	19.6	17.6	0.0	42.6	
St. Mary's College	13.0	5.0	21.9	39.0	5.3	84.1	
Morgan State University	18.7	53.8	42.3	70.3	119.2	304.3	
Community Colleges	88.4	94.4	164.7	120.6	133.8	602.0	
Private Facilities Grant Program	9.9	16.0	14.5	1.5	9.9	51.8	

	2018	2019	2020	2021	2022	Total	Category Totals
Public Safety							**$812.9**
Public Safety	$27.4	$80.7	$172.9	$237.4	$230.4	$748.7	
State Police	7.0	11.6	8.8	11.3	4.9	43.5	
Local Jails	10.4	6.9	3.4	0.0	0.0	20.6	
Housing and Economic Development							**$239.0**
Housing and Community Development	$40.7	$39.8	$40.0	$38.5	$38.5	$197.5	
Historic St. Mary's City	0.2	0.6	12.7	6.1	2.0	21.6	
Planning	1.6	4.8	5.2	4.1	4.2	19.9	
Legislative Initiatives[3]	$35.0	$35.0	$35.0	$35.0	$35.0	$175.0	
Miscellaneous[4]	25.0	25.0	25.0	25.0	25.0	125.0	
Subtotal Request	***$1,750.0***	***$1,629.1***	***$1,803.0***	***$1,814.2***	***$1,875.1***	***$8,871.5***	***$8,871.5***
Debt Affordability Limits 2015 SAC	**$1,065.0**	**$1,075.0**	**$1,085.0**	**$1,095.0**	**$1,105.0**	**$5,425.0**	
Debt Affordability Limits 2015 CDAC	**$995.0**	**$995.0**	**$995.0**	**$995.0**	**$995.0**	**$4,975.0**	
Variance 2015 SAC	**$685.0**	**$554.1**	**$718.0**	**$719.2**	**$770.1**	**$3,446.5**	
Variance 2016 CDAC	**$755.0**	**$634.1**	**$808.0**	**$819.2**	**$880.1**	**$3,896.5**	

CDAC: Capital Spending Affordability Committee
SAC: Spending Affordability Committee

[1]Figures represent requests made by Local Education Agencies to the Interagency Committee on School Construction as of December 1, 2015.
[2]In addition to the general obligation bond request, the University System of Maryland has requested academic revenue bond funding of $22 million in fiscal 2018 and $32 million in fiscal 2019 through 2022.
[3]Figures represent an estimated average of the total funding requests received through legislative local bond bills.
[4]Figures represent an estimated average of the total funding requests received through Administrative-sponsored capital miscellaneous projects.

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

Source: Department of Budget and Management

Appendix 2
Estimated General Obligation Issuances
($ in Thousands)

Fiscal Year	Proposed Auth.	Estimated Issuances During Fiscal Year (a) ====> 2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Post 2026	Total Issued
2018	$995,000	$0	$348,000	$269,000	$179,000	$129,000	$70,000						$995,000
2019	995,000		0	348,000	269,000	179,000	129,000	$70,000					995,000
2020	995,000			0	348,000	269,000	179,000	129,000	$70,000				995,000
2021	995,000				0	348,000	269,000	179,000	129,000	$70,000			995,000
2022	995,000					0	348,000	269,000	179,000	129,000	$70,000		995,000
2023	995,000						0	348,000	269,000	179,000	129,000	$70,000	995,000
2024	995,000							0	348,000	269,000	179,000	199,000	995,000
2025	995,000								0	348,000	269,000	378,000	995,000
2026	995,000									0	348,000	647,000	
Total New Authorization		**$0**	**$348,000**	**$617,000**	**$796,000**	**$925,000**	**$995,000**	**$995,000**	**$995,000**	**$995,000**	**$995,000**	**$2,289,000**	
Previously Authorized GO Bonds:	$1,986,257	$568,000	$697,000	$413,000	$229,000	$80,000	$0	$0	$0	$0	$0	$0	$1,987,000
Total Issuances		**$568,000**	**$1,045,000**	**$1,030,000**	**$1,025,000**	**$1,005,000**	**$995,000**	**$995,000**	**$995,000**	**$995,000**	**$995,000**	**$2,289,000**	**$9,648,000**

Percentage Issuance Assumptions by Fiscal Year

Fiscal Year Following Year of Authorization	1st	2nd	3rd	4th	5th
Percent of Authorization Issued	35.0%	27.0%	18.0%	13.0%	7.0%

Appendix 3
Maryland General Obligation Bond Debt True Interest Cost Analysis
Statistically Significant Variables

Bond Sale Date	TIC	20-Bond Index	YTM	BABs	Post-crisis
03/13/91	6.31%	7.32%	9.84	No	No
07/10/91	6.37%	7.21%	9.85	No	No
10/09/91	5.80%	6.66%	9.80	No	No
05/13/92	5.80%	6.54%	9.80	No	No
01/13/93	5.38%	6.19%	9.73	No	No
05/19/93	5.10%	5.77%	9.73	No	No
10/06/93	4.45%	5.30%	9.73	No	No
02/16/94	4.48%	5.42%	9.74	No	No
05/18/94	5.36%	6.14%	9.74	No	No
10/05/94	5.69%	6.50%	9.72	No	No
03/08/95	5.51%	6.18%	9.78	No	No
10/11/95	4.95%	5.82%	9.65	No	No
02/14/96	4.51%	5.33%	9.65	No	No
06/05/96	5.30%	5.94%	9.69	No	No
10/09/96	4.97%	5.73%	9.70	No	No
02/26/97	4.90%	5.65%	9.68	No	No
07/30/97	4.64%	5.23%	9.68	No	No
02/18/98	4.43%	5.07%	9.68	No	No
07/08/98	4.57%	5.12%	9.68	No	No
02/24/99	4.26%	5.08%	9.60	No	No
07/14/99	4.83%	5.36%	9.60	No	No
07/19/00	5.05%	5.60%	9.72	No	No
02/21/01	4.37%	5.21%	9.71	No	No
07/11/01	4.41%	5.22%	9.68	No	No
03/06/02	4.23%	5.19%	9.61	No	No
07/31/02	3.86%	5.00%	9.66	No	No
02/19/03	3.69%	4.79%	9.60	No	No
07/16/03	3.71%	4.71%	9.67	No	No
07/21/04	3.89%	4.84%	9.70	No	No
03/02/05	3.81%	4.50%	9.70	No	No
07/20/05	3.79%	4.36%	9.69	No	No
03/01/06	3.87%	4.39%	9.68	No	No
07/26/06	4.18%	4.55%	9.64	No	No
02/28/07	3.86%	4.10%	9.64	No	No
08/01/07	4.15%	4.51%	9.65	No	No
02/27/08	4.14%	5.11%	9.64	No	No

Bond Sale Date	TIC	20-Bond Index	YTM	BABs	Post-crisis
07/16/08	3.86%	4.65%	9.60	No	Yes
03/04/09	3.39%	4.96%	9.01	No	Yes
03/02/09	3.63%	4.87%	10.04	No	Yes
08/05/09	2.93%	4.65%	8.96	No	Yes
08/03/09	3.20%	4.69%	9.01	No	Yes
08/05/09	3.02%	4.65%	14.99	Yes	Yes
10/21/09	2.93%	4.31%	7.91	No	Yes
10/21/09	3.06%	4.31%	14.03	Yes	Yes
02/24/10	2.85%	4.36%	12.09	Yes	Yes
07/28/10	1.64%	4.21%	5.34	No	Yes
07/28/10	1.91%	4.21%	6.20	No	Yes
07/28/10	2.74%	4.21%	13.51	Yes	Yes
03/07/11	2.69%	4.90%	6.86	No	Yes
03/09/11	3.49%	4.91%	10.51	No	Yes
07/25/11	1.99%	4.46%	5.65	No	Yes
07/27/11	3.08%	4.47%	10.05	No	Yes
03/02/12	2.18%	3.72%	8.33	No	Yes
03/07/12	2.42%	3.84%	9.71	No	Yes
07/27/12	2.52%	3.61%	9.10	No	Yes
08/01/12	2.17%	3.66%	9.71	No	Yes
03/06/13	2.35%	3.86%	9.61	No	Yes
07/24/13	3.15%	4.77%	10.20	No	Yes
03/05/14	2.84%	4.41%	10.14	No	Yes
07/18/14	1.27%	4.36%	4.69	No	Yes
07/23/14	2.65%	4.29%	10.16	No	Yes
03/05/15	2.65%	3.68%	9.63	No	Yes
07/16/15	2.83%	3.82%	10.33	No	Yes
06/08/16	2.17%	3.03%	9.62	No	Yes

BAB: Build America Bonds
TIC: true interest cost
YTM: years to maturity

Source for 20-bond Index: *The Bond Buyer*
Source for personal income: Federal Bureau of Economic Analysis
Remaining Source: Bond Sale Official Statements

Appendix 4
Agency Debt Outstanding
Fiscal 2006-2016
($ in Millions)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change 2006-16	Average Annual % Change 2006-16
Agency Debt Subject to Ceiling and Allocation Caps													
Maryland Environmental Service	$24.5	$19.6	$18.7	$19.8	$28.5	$31.2	$27.5	$25.2	$27.9	$26.4	$24.8	$0.3	0.1%
Maryland Wholesale Food Center Authority	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n/a
Maryland Transportation Authority	765.1	1,055.3	1,877.4	2,247.1	2,708.2	3,292.9	3,292.9	3,303.2	3,179.3	3,176.4	3,062.0	2,296.9	14.9%
Maryland Water Quality Financing Administration[1]	73.9	65.7	104.9	140.0	126.3	112.0	57.7	47.2	36.7	33.2	33.2	-40.7	-7.7%
Revenue Cap Total	**$863.5**	**$1,140.6**	**$2,001.0**	**$2,406.9**	**$2,863.0**	**$3,436.1**	**$3,378.1**	**$3,375.6**	**$3,243.9**	**$3,235.9**	**$3,120.0**	**$2,256.5**	**13.7%**
% Change/Prior Year	**-2.1%**	**32.1%**	**75.4%**	**20.3%**	**18.9%**	**20.0%**	**-1.7%**	**-0.1%**	**-3.9%**	**-0.2%**	**-3.6%**		
Agency Debt Not Subject to Ceiling and Allocation Caps													
Baltimore City Community College	$0.8	$0.8	$0.7	$0.7	$0.7	$1.2	$1.0	$0.9	$0.0	$0.0	$0.0	-$0.8	-100.0%
Department of Housing and Community Development[2]	2,248.1	3,204.3	3,259.4	3,177.5	3,345.9	3,238.7	3,106.5	2,979.0	2,783.2	2,557.0	2,535.9	287.8	1.2%
Local Government Infrastructure (CDA)	117.0	122.0	135.1	121.6	109.7	127.2	122.8	129.6	137.1	164.1	156.1	39.1	2.9%
Maryland Industrial Development Financing Authority	409.6	387.1	382.0	344.9	375.7	484.8	492.6	347.7	335.1	312.6	288.3	-121.3	-3.4%
MDOT – County Revenue Bonds	30.0	58.4	56.8	98.5	95.1	89.1	82.9	101.7	94.9	87.9	120.2	90.2	14.9%
MDOT – Nontax-supported Issuances	72.6	68.5	64.2	59.9	57.3	54.2	51.1	47.7	44.7	41.5	38.2	-34.4	-6.2%
Morgan State University	67.7	69.6	68.4	67.8	64.4	59.6	55.2	47.8	44.3	43.5	58.3	-9.4	-1.5%
St. Mary's College of Maryland	43.8	49.5	48.2	46.8	45.3	41.8	38.3	36.1	34.3	34.6	32.5	-11.3	-2.9%
University System of Maryland	934.8	954.8	969.9	1,028.5	1,082.9	1,129.2	1,170.0	1,195.0	1,269.0	1,128.5	1,178.7	243.9	2.3%
Noncap Total	**$3,924.4**	**$4,915.0**	**$4,984.7**	**$4,946.2**	**$5,177.0**	**$5,225.8**	**$5,120.4**	**$4,885.5**	**$4,742.7**	**$4,369.7**	**$4,408.2**	**$483.8**	**1.2%**
% Change/Prior Year	**0.2%**	**25.2%**	**1.4%**	**-0.8%**	**4.7%**	**0.9%**	**-2.0%**	**-4.6%**	**-2.9%**	**-7.9%**	**0.9%**		

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change 2006-16	Average Annual % Change 2006-16
Tax-supported Debt													
Transportation Debt	$1,078.5	$1,111.1	$1,268.8	$1,582.6	$1,645.0	$1,561.8	$1,562.6	$1,618.0	$1,813.0	$2,020.3	$2,146.1	$1,067.6	7.1%
Grant Anticipation Revenue Vehicles	0.0	325.0	300.7	704.4	651.8	596.9	539.4	479.0	415.8	349.4	279.8	279.8	n/a
Capital Leases	226.9	247.9	247.4	266.8	242.5	166.4	310.3	286.2	260.3	242.2	236.0	9.1	0.4%
Maryland Stadium Authority	296.8	283.1	271.6	256.0	243.6	225.7	218.3	193.0	168.9	145.0	125.2	-171.6	-8.3%
Bay Restoration Bonds	0.0	0.0	50.0	46.8	44.2	41.6	38.8	36.0	133.1	130.0	301.6	301.6	n/a
General Obligation Debt	4,868.5	5,142.2	5,493.8	5,873.6	6,523.2	6,982.8	7,541.1	8,005.8	8,362.3	8,677.2	9,465.3	4,596.8	6.9%
Tax-supported Debt Total	**$6,470.7**	**$7,109.3**	**$7,632.3**	**$8,730.2**	**$9,350.3**	**$9,575.2**	**$10,210.5**	**$10,618.0**	**$11,153.4**	**$11,564.1**	**$12,554.0**	**$6,083.3**	**6.9%**
% Change/Prior Year	**6.7%**	**9.9%**	**7.4%**	**14.4%**	**7.1%**	**2.4%**	**6.6%**	**4.0%**	**5.0%**	**3.7%**	**8.6%**		
Authorities and Corporations Not Subject to Ceiling and Allocation Caps													
Health/Higher Education Facilities Authority	$6,181.1	$7,262.0	$8,204.8	$8,466.8	$8,660.7	$8,656.4	$8,913.1	$8,835.3	$8,837.2	$8,779.5	$8,664.0	$2,482.9	3.4%
Maryland Economic Development Corporation	1,872.4	1,894.2	2,094.0	2,115.1	2,329.9	2,471.2	2,471.2	2,376.7	2,244.8	2,192.7	2,426.6	554.2	2.6%
Authorities and Corporations Total	**$8,053.5**	**$9,156.2**	**$10,298.8**	**$10,581.9**	**$10,990.6**	**$11,127.6**	**$11,384.3**	**$11,212.0**	**$11,082.0**	**$10,972.2**	**$11,090.6**	**$3,037.1**	**3.3%**
% Change/Prior Year	**12.1%**	**13.7%**	**12.5%**	**2.7%**	**3.9%**	**1.2%**	**2.3%**	**-1.5%**	**-1.2%**	**-1.0%**	**1.1%**		

CDA: Community Development Administration
MDOT: Maryland Department of Transportation

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

Appendix 5
Actions to Increase Debt Authorizations Since 2001 Legislative Session

Initial Authorization	Type of Debt Authorized	Amount Authorized	Supporting Revenues	Effect on Capital Spending
Chapter 111 of 2001	GO Bonds	$30 million annually	State property taxes and general fund	Increase the State capital program
Chapter 103 of 2001	GO Bonds	$5 million annually	State property taxes and general fund	Fund Tobacco Transition Program
Chapter 440 of 2002	CTB	Increased debt limit from $1.2 billion to $1.5 billion	Transportation Trust Fund revenues	Increase State transportation capital program
Chapter 290 of 2002	GO Bonds	$200 million in fiscal 2003	State property taxes and general fund	Move PAYGO capital projects into GO bond program
Chapter 204 of 2003	GO Bonds	$200 million in fiscal 2004	State property taxes and general fund	Move PAYGO capital projects into GO bond program
Chapter 432 of 2004	GO Bonds	$100 million annually for five years	State property taxes and general fund	Increase the State capital program
Chapter 430 of 2004	CTB	Increased debt limit from $1.5 billion to $2.0 billion	Transportation Trust Fund revenues	Increase revenues to increase State transportation capital program
Chapter 428 of 2004	BRF	Estimated $530 million in total issuances	Bay restoration fee	Fund wastewater treatment plant improvements
Chapter 472 of 2005	GARVEEs	Not to exceed $750 million	Federal transportation funds	Fund Intercounty Connector

Initial Authorization	Type of Debt Authorized	Amount Authorized	Supporting Revenues	Effect on Capital Spending
Chapter 46 of 2006	GO Bonds	Increase escalation from $15 million to 3%, $100 million annually beginning in fiscal 2010	State property taxes and general fund	Increase the State capital program
Chapter 488 of 2007	GO Bonds	$100 million annually	State property taxes and general fund	Increase the State capital program
Chapter 6 of the First Special Session of 2007	CTB	Increased debt limit from $2.0 billion to $2.6 billion	Transportation Trust Fund revenues	Increase State transportation capital program
Chapter 336 of 2008	GO Bonds	$100 million annually	State property taxes and general fund	Increase the State capital program
Chapter 485 of 2009	GO Bonds	$150 million in fiscal 2010	State property taxes and general fund	Increase the State capital program
Chapter 419 of 2009	POS Bonds	$70 million in fiscal 2010	State share of transfer tax revenues	Maintain POS spending in fiscal 2010
Chapter 719 of 2009	GO Bonds	$2 million	State property taxes and general fund reimbursed by Community Development Administration	Contingent authorization for local government infrastructure bonds
Chapter 483 of 2010	GO Bonds	$150 million in fiscal 2011 and reduces fiscal 2012 to 2017 authorizations by $960 million	State property taxes and general fund	Move PAYGO capital projects into GO bond program

Initial Authorization	Type of Debt Authorized	Amount Authorized	Supporting Revenues	Effect on Capital Spending
Chapter 444 of the 2012 Regular Session	GO Bonds	Increase fiscal 2013 by $150 million and decrease fiscal 2018 by $150 million	State property taxes and general fund	Move forward capital projects
Chapter 429 of 2013	CTB	Increased debt limit from $2.6 billion to $4.5 billion	Transportation Trust Fund revenues	Increase revenues to increase State transportation capital program
Chapter 424 of 2013	GO Bonds	Increase fiscal 2014 to 2018 spending by $150 million annually	State property taxes and general fund	Increase total spending by $750 million
Chapter 463 of 2014	GO Bonds	Increase fiscal 2015 to 2019 spending by $75 million annually	State property taxes and general fund	Increase total spending by $75 million

BRF: Bay Restoration Fund
CTB: Consolidated Transportation Bond
GARVEE: Grant Anticipation Revenue Vehicle
GO: general obligation
PAYGO: pay-as-you-go