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

DEPARTMENT OF LEGISLATIVE SERVICES 2014

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

Department of Legislative Services
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November 2014

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November 2014

The Honorable James E. DeGrange, Sr.
Senate Chairman, Spending Affordability Committee

The Honorable John L. Bohanan, Jr.
House Chairman, Spending Affordability Committee

Dear Chairman DeGrange and Chairman Bohanan:

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 Jackson, Matthew Klein, Jason Kramer, Steven McCulloch, and Jody Sprinkle. The manuscript was prepared by Judy Callahan.

Respectfully submitted,

Warren G. Deschenaux
Director

WGD/jac

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Chapter 1. Recommendations of the Department of Legislative Services

New General Obligation Bond Authorization

The Capital Debt Affordability Committee (CDAC) recommended a limit of $1,170 million for new authorizations of general obligation (GO) bonds during the 2015 session. This recommendation is equal to what the committee planned for the 2015 session in its 2013 report. While CDAC recommended a $75 million annual increase for the 2014 through 2018 sessions in its 2013 report, the Spending Affordability Committee (SAC) adopted CDAC's recommendation for the 2014 session only.

As discussed in Chapter 5, the Department of Legislative Services (DLS) is concerned that GO bond debt service costs are increasing at a higher rate than the State property tax revenues supporting them. State pension costs are also increasing in the out-years. As a result, the general fund share of GO bond debt service and State pension costs increase from 8.0% of general fund revenues in fiscal 2013 to 10.6% of general fund revenues in fiscal 2018.

In recent years, the General Assembly has made it a priority to reduce the unfunded pension liability and slow the growth in out-year pension contributions. Actions taken include reducing benefits, increasing employee payments, implementing local pension cost sharing, and modifying how annual contributions are calculated by adopting an actuarially approved funding approach. To reduce these long-term liabilities, the State should consider actions to reduce debt service costs next.

DLS is also concerned that the growth in State property tax receipts is substantially less than the growth in debt service costs (see Chapter 5). This will result in as much as $500 million in general fund appropriations if the State property tax rate is maintained at the current level. Reducing GO bond authorizations slows this increase in debt service costs and reduces the need for general fund appropriations or increasing State property tax rates.

Since last year, the State has come closer to the debt affordability limits. A year ago, CDAC estimated that debt service would be 7.67% of revenues in fiscal 2018. The current CDAC estimate is that debt service will be 7.93% of revenues in fiscal 2018. DLS' estimate is that debt service will peak at 7.98% of revenues in fiscal 2018. Should revenues underattain, debt service will exceed the 8% threshold, and reductions to the capital program will be necessary if the State wants to stay within current affordability limits.

Last year, CDAC recommended increasing GO bond authorizations by $75 million annually for five years. DLS recommended against this increase. Not much has changed since last year; in fact, the case against increasing authorizations is now stronger than it was last year. **As one step toward constraining the growth in long-term obligations, DLS recommends that the debt authorization level previously established by SAC be maintained.**

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 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 the 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 7. **To reduce debt service cost, DLS recommends that the Department of Budget and Management reduce private activity authorizations for fiscal 2016.**

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 debt 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 for academic facilities to $34.5 million for fiscal 2016. Academic bond issuances are discussed in Chapter 7. **DLS concurs with the committee's assessment that issuing $34.5 million in new University System of Maryland academic revenue bonds 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, Secretaries of the Department of Transportation and the Department 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 (USM) 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. The committee recommended a $1.17 billion limit on new GO debt authorization for the 2015 session, which is equal to the planning amount proposed by CDAC for fiscal 2016 in its 2013 report. CDAC's long-range plan is also equal to the planning amounts proposed by the committee for fiscal 2017 through 2023 in its 2013 report, adjusting annual GO authorization levels upward by $75 million for each of the 2016 through 2019 sessions over what the committee planned for in its 2012 report. Recommended authorization levels return to baseline levels in the 2020 session.

The increase in authorizations was proposed by the Department of Budget and Management. In support of the increase, the department noted that the increase will allow the State to accommodate expenses associated with the State Highway Administration's portion of the Chesapeake Watershed Implementation Plan (WIP) funding requirement included in the Transportation Infrastructure Investment Act of 2013 (Chapter 429 of 2013). The Act requires the Governor to include general funds or GO bond funds in the budget to comply with WIP. The funding plan established in the Act requires $65 million in fiscal 2016, $85 million in fiscal 2017, and $100 million annually in fiscal 2018 and 2019 for WIP compliance. The department also notes

that capital funding also stimulates the economy by adding eight jobs for every $1 million in construction funding.

Exhibit 2.1 shows that CDAC's planned authorizations include steady increases throughout the forecast period.

Exhibit 2.1
Effect of Proposed Capital Debt Affordability Committee General Obligation Bond Authorizations
2015-2023 Legislative Sessions
($ in Millions)

Session	Proposed GO Authorizations 2013/2014 CDAC	Change from 2012 CDAC Authorizations
2015	$1,170	$75
2016	1,180	75
2017	1,275	75
2018	1,315	75
2019	1,355	75
2020	1,320	0
2021	1,360	0
2022	1,400	0
2023	1,440	0
Total	**$11,815**	**$375**

CDAC: Capital Debt Affordability Committee
GO: general obligation

Source: *Affordability Analysis: September Baseline*, Capital Debt Affordability Committee, October 2014

Higher Education Academic Debt

CDAC recommends limiting new debt authorization of academic revenue bonds to $34.5 million beginning in the 2015 legislative session. This amount reflects a $2.5 million increase over the $32.0 million programmed by the committee for the 2014 legislative session and is for the purpose of supporting additional USM capital projects.

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; 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 2016 through 2020.

New General Obligation Bond Authorizations: Increased Out-year Authorizations

The Capital Debt Affordability Committee (CDAC) recommended a limit of $1.170 billion for new authorizations of GO bonds during the 2015 session. This recommendation is equal to what the committee planned for the 2015 session in its 2013 report. While CDAC recommended a $75 million annual increase for the 2014 through 2018 sessions in its 2013 report, the Spending Affordability Committee (SAC) adopted CDAC's recommendation for the 2014 session only. As a result, the $75 million annual increase programmed by CDAC for the 2015 through 2019 sessions was not included in the Department of Budget and Management's *Capital Improvement Program*. **Exhibit 3.1** shows the difference between CDAC's 2013 recommended authorizations and SAC's 2013 recommendation.

Exhibit 3.1
CDAC Recommended Authorizations and SAC Action
2014-2019 Legislative Sessions
($ in Millions)

Session	2013 CDAC Recommendation	2013 SAC Action	Difference
2014	$1,160	$1,160	$0
2015	1,170	1,095	75
2016	1,180	1,105	75
2017	1,275	1,200	75
2018	1,315	1,240	75
2019	1,355	1,280	75
Total	**$7,455**	**$7,080**	**$375**

CDAC: Capital Debt Affordability Committee
SAC: Spending Affordability Committee

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*, 2013; *Spending Affordability Committee 2013 Interim Report*, December 2013

Exhibit 3.2 shows CDAC's long-term forecast recommends a total of $6.2 billion in new GO bond authorizations for the 2015 through 2019 sessions. Annual authorizations will increase by $75 million in the 2015 through 2019 sessions. Total authorizations will increase by $375 million over the 2015 through 2019 sessions.

Exhibit 3.2
Effect of New Policy on General Obligation Bond Authorizations
2015-2019 Legislative Sessions
($ in Millions)

Session	2012 Recommended Authorizations	2013/2014 Recommended Authorizations	Difference
2015	$1,095	$1,170	$75
2016	1,105	1,180	75
2017	1,200	1,275	75
2018	1,240	1,315	75
2019	1,280	1,355	75
Total	**$5,920**	**$6,295**	**$375**

Source: *Affordability Analysis: September Baseline*, Capital Debt Affordability Committee, October 2014; *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*, 2012 and 2013

The committee's 2010 and 2011 forecasted authorization levels reflected a policy of reduced authorizations relative to the committee's December 2009 recommendations. This write-down in out-year authorizations became necessary to keep the State debt within debt affordability limits and reflected the recession's impact on the State's capital program. This action reduced the fiscal 2011 to 2018 capital budget by $810 million. The 2012 recommendation almost restored forecasted authorization levels to what was recommended in December 2009, falling just short of what was recommended in December 2009 by $60 million.

CDAC's currently recommended out-year authorization levels are within the debt affordability benchmarks which limit State tax-supported debt outstanding to more than 4% of State personal income and debt service to no more than 8% of revenues. Citing the Watershed Implementation Plan funding requirement and the positive effect of additional GO bond funding on employment and revenues, the committee's recommendation seeks to fund capital priorities that would otherwise be deferred. As has been the case in recent years, the committee may review the State's fiscal outlook and revenue estimates again in December 2014, when the Board of Revenue Estimates provides its next revenues estimate, to determine if further adjustments and modifications to its recommendations are prudent.

General Obligation Bond Issuance Stream

GO bonds authorized in a given year are not 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 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 GO bonds are authorized and the time the bonds affect debt outstanding and debt service levels.

Appendix 2 shows how the proposed authorizations for fiscal 2016 through 2024 would be issued. **Exhibit 3.3** compares the issuance stream projected by the Department of Legislative Services (DLS) based on the CDAC authorization levels in its December 2012 analysis and the 2014 DLS estimate based on the recommended increase over the planning period. The 2014 DLS projections show the State issuing $391 million more through fiscal 2020. The difference between the two projected issuance streams reflects the impact of the $375 million of additional GO bond authorizations recommended by CDAC in the planning period, as well as changes in issuance patterns attributable to capital project spending needs.

Exhibit 3.3
Proposed Issuance Stream
Fiscal 2016-2020
($ in Millions)

Fiscal Year	2012 Estimate	2013/2014 Estimate	Difference
2016	$984	$1,057	$73
2017	1,048	1,126	78
2018	1,117	1,193	76
2019	1,160	1,240	80
2020	1,200	1,284	84
Total	**$5,509**	**$5,899**	**$391**

Source: *Effect of Long-term Debt on the Financial Condition of the State*, November 2012; Department of Legislative Services, October 2014

General Obligation Bond Debt Service Costs

Exhibit 3.4 shows that debt service costs are expected to be $47 million less than what DLS projected in the 2013 session. Debt service costs are attributable to interest rate assumptions and issuance amounts. The forecast assumes that the interest rate on bonds issued in the out-years is 5%, which is the same assumption made in the 2013 report. Differences in projected debt service costs are attributable to refunding previously issued bonds in March 2014 (which resulted in approximately $55 million in debt service savings over the remaining life of the bonds), an increased issuance stream, and changes in capital project cash flow needs.

Exhibit 3.4
Projected Debt Service Costs
Fiscal 2016-2023
($ in Millions)

Fiscal Year	2013 Estimate	2014 Estimate	Difference
2016	$1,142	$1,130	-$12
2017	1,206	1,199	-7
2018	1,277	1,270	-7
2019	1,318	1,309	-9
2020	1,389	1,381	-8
2021	1,440	1,425	-15
2022	1,505	1,490	-15
2023	1,537	1,563	26
Total	**$10,814**	**$10,767**	**-$47**

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

Sources: Department of Legislative Services, October 2014

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 3.5** shows that refunding reduced debt service costs by $173 million since December 2009.

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.

Exhibit 3.5
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
Total	**$2,426.9**	**$2,516.1**	**$172.5**	**$149.9**

Source: Public Financial Management, Inc.

Program Open Space Debt Service Payments

Program Open Space (POS) bonds totaling $70 million were authorized as the Program Open Space Acquisition and Opportunity Loan of 2009 legislation enacted in 2009 (Chapter 419 of 2009). 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 of 2009). Prior Authorizations of State Debt to Fund Capital Projects – Alterations Act of 2010 (Chapter 372 of 2010) 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 3.6.** 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 Build America Bonds. The bonds include federal direct payment subsidies that were reduced by sequestration. The reduction is less than $100,000.

Exhibit 3.6
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 3.7 shows that debt service costs are $6.4 million in 2016. 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 3.7
Program Open Space GO Bonds Debt Service Payment Schedule
Fiscal 2015-2020
($ in Millions)

	2015	2016	2017	2018	2019	2020
Debt Outstanding	$60.7	$55.7	$50.5	$45.1	$39.2	$33.5
Debt Service	6.3	6.4	6.6	6.7	7.1	6.9

GO: general obligation

Source: Department of Budget and Management, October 2013

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 $190 million in QZABs, QSCBs, and QECBs, most of which support education construction projects. **Exhibit 3.8** shows that DLS estimates that the lower costs associated with these bonds reduced total debt service payments by $60 million.

Exhibit 3.8
Federal Tax Credit and Direct Pay Issuances
($ in Thousands)

Type	Date Issued	Amount Issued	Sinking Fund Payments	Debt Service Payments	Similar GO Payments[1]	Savings
QZAB	Nov-01	$18,098	$12,432	$0	$27,182	$14,750
QZAB	Nov-04	9,043	7,356	0	12,393	5,038
QZAB	Dec-06	4,378	3,609	0	6,132	2,523
QZAB	Dec-07	4,986	4,089	0	6,967	2,877
QZAB	Dec-08	5,563	0	6,142	7,606	1,464
QZAB	Dec-09	5,563	0	6,275	7,052	778
QSCB	Dec-09	50,320	49,964	0	63,791	13,827
QSCB	Aug-10	45,175	44,663	0	52,731	8,068
QZAB	Dec-10	4,543	4,543	0	5,302	759
QZAB	Aug-11	15,900	0	15,900	20,267	4,367
QECB	Aug-11	6,500	0	7,080	8,285	1,206
QZAB	Aug-12	15,230	0	15,230	18,303	3,073
QZAB	Dec-13	4,549	0	4,549	5,875	1,326
Total		**$189,848**	**$126,655**	**$55,175**	**$241,887**	**$60,057**

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

[1] Estimates the cost of issuing an equal amount of bond assuming the true interest cost of the nearest general obligation bond sale.

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

Source: Comptroller of Maryland; State Treasurer's Office, October 2014

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 receive a federal income tax credit for each year the bond is held. The State is not required to make payments on the principal until the bonds are redeemed. For example, under its 2001 agreement with Bank of America, the State, through the State Treasurer's Office, makes annual payments into a sinking fund invested into a guaranteed rate of interest. Since the funds are invested in interest-bearing accounts, the repayment of the principal by the State is less than the par value of QZABs, making QZABs less expensive than GO bonds.

The 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 1.60% supplemental coupon. As Exhibit 3.8 showed, even with a supplemental coupon, QZABs are still less expensive than GO bonds.

For a while, 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% 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 $4.6 million by December 2014 and another $4.6 million by December 2015. 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 2015 to 2032.

Qualified School Construction Bonds

QSCBs were created under the federal American Recovery and Reinvestment Act of 2009 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 State's second QSCB bond sale was in July 2010 when the State sold $45.2 million in QSCBs. 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 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 American Recovery and Reinvestment Act of 2009 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 $137,000. The federal subsidy is $117,000, requiring a net interest payment that is just over $19,000 from the State. Over the life of the bonds, payments will total $7.1 million.

Build America Bonds

The American Recovery and Reinvestment Act of 2009 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 $583.2 million. The BABs are structured similarly to tax-exempt GO bonds. In January 2011, DLS estimated that BABs reduced State GO bond debt service costs by $39.0 million over the life of the bonds.

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.

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 3.9** shows that by fiscal 2015, 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 3.9
Effect of Sequestration on Federal Fund Revenues
Fiscal 2015-2020
($ in Thousands)

	2015	2016	2017	2018	2019	2020
July 2009 BABs	$796	$796	$796	$796	$796	$796
October 2009 BABs	942	942	942	942	942	942
February 2010 BABs	6,036	6,036	6,036	6,036	6,036	5,302
July 2010 BABs	1,094	1,094	1,094	1,094	1,094	1,094
July 2010 QSCBs	1,965	1,965	1,965	1,965	1,965	1,965
December 2010 QZABs	228	228	228	228	228	228
August 2011 QZABs	660	660	660	660	660	660
August 2011 QECBs	234	234	234	234	234	234
August 2012 QZABs	426	426	426	426	426	426
Less Sequestration	-891	-891	-891	-891	-891	-839
Total	**$11,490**	**$11,490**	**$11,490**	**$11,490**	**$11,490**	**$10,808**

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

Source: State Treasurer's Office, October 2014

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 issues debt referred to as nontraditional debt. Nontraditional debt currently includes Certificates of Participation, Maryland Economic Development Corporation debt, and debt sold on MDOT's behalf by MDTA. Of the 10 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.

Chapter 429 of 2013 provided additional revenues for the TTF by indexing the motor fuel tax rate to the Consumer Price Index and creating a sales and use tax equivalent rate applied to the average annual price of motor fuel. This additional revenue will be used to support additional capital spending. The additional revenue generated from Chapter 429 also allows for the department to issue more debt to support the capital program.

Consolidated Transportation Bonds

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

Section 3-202(c) of the Transportation Article further requires the General Assembly to establish each year in the State budget the maximum unpaid principal balance in bonds that may be outstanding at the end of the forthcoming year. The fiscal 2015 budget bill set the maximum ceiling for June 30, 2015, at $2,530,255,000. DLS estimates that as of June 30, 2015, debt outstanding will total $2,276,055,000.

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, 2015, MDOT will have net income coverage of 2.9 and pledged taxes coverage of 5.1.

As shown in **Exhibit 3.10**, MDOT has issued new (*e.g.*, nonrefunding) consolidated transportation bonds in 18 of the past 24 years.

Exhibit 3.10
Consolidated Transportation Bond Issuance*
($ in Millions)

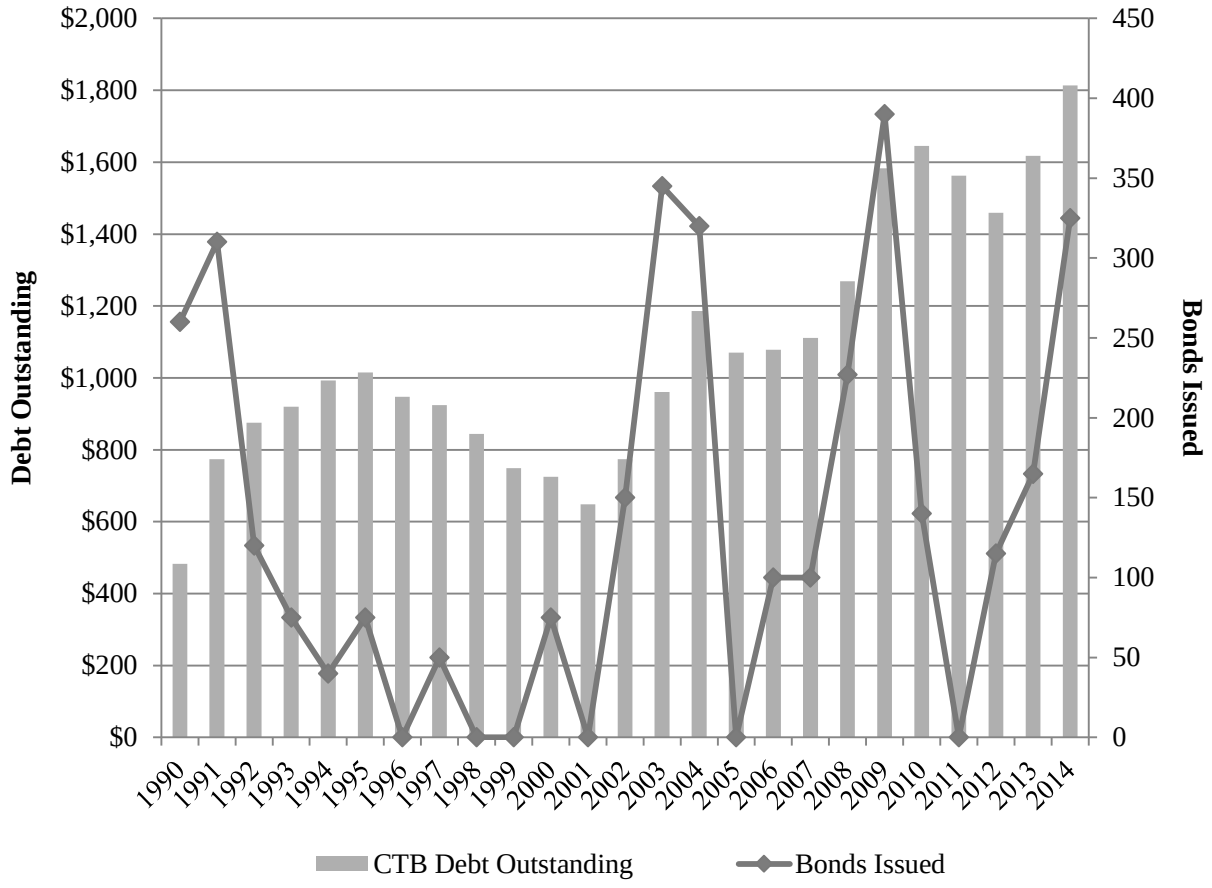
Fiscal Year	Bonds Issued
1991	$310
1992	120
1993	75
1994	40
1995	75
1996	0
1997	50
1998	0
1999	0
2000	75
2001	0
2002	150
2003	345
2004	320
2005	0
2006	100
2007	100
2008	227
2009	390
2010	140
2011	0
2012	115
2013	180
2014	325
Total	**$3,137**

*Exclusive of refinancing. Five refinancing issuances were made from fiscal 1990 through 2014, including most recently in fiscal 2011, when a total of $238,000,000 was refinanced.

Source: Maryland Department of Transportation, September 2014

Exhibit 3.11 illustrates annual bond sales and changes in debt outstanding from fiscal 1990 to 2014. In fiscal 2014, MDOT's net debt outstanding was $1.8 billion, well under the $4.5 billion debt outstanding debt limit.

Exhibit 3.11
Maryland Department of Transportation
Bonds Issued and Net Debt Outstanding
Fiscal 1990-2014
($ 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 5.1% and 10.0% in fiscal 2015 and 2016, respectively, as the motor fuel tax rate increases take effect and as the economy continues to improve. Revenue growth declines through the remainder of the forecast. Overall, the DLS estimate for revenues is $360 million lower than the MDOT September 2014 draft forecast over the entire forecast period. The TTF forecast assumes that capital funds are available after operating needs have been met. The DLS TTF forecast assumes greater operating expenditures – attributable to employee compensation and benefit costs, transit costs, particularly in the Mobility program, and winter maintenance costs – which reduces the amount available for capital. Finally, under the DLS forecast, the TTF will maintain its net income coverage ratio at no less than 2.5 through the forecast period. Despite the lower revenue and higher operating expense assumptions, DLS assumes a slightly higher level of bond issuances which are affordable due to the additional amount of revenue MDOT will be receiving. **Exhibit 3.12** shows the DLS estimate for bond issuance levels for fiscal 2015-2020.

Exhibit 3.12
Department of Legislative Services' Estimate
Consolidated Transportation Bonds – MDOT Projected Issuances
Fiscal 2015-2020
($ in Millions)

Fiscal Year	Amount
2015	$616
2016	915
2017	905
2018	556
2019	415
2020	430
Total	**$3,836**

MDOT: Maryland Department of Transportation

Source: Department of Legislative Services

Debt Outstanding

Exhibit 3.13 shows the amount of estimated debt outstanding from fiscal 2015 to 2020. From fiscal 2015 to 2020, debt outstanding is estimated to increase by $2.2 billion. 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 3.13
Consolidated Transportation Bonds – MDOT Projected Debt Outstanding
Fiscal 2015-2020
($ in Millions)

Fiscal Year	Amount
2015	$2,276
2016	3,020
2017	3,720
2018	4,065
2019	4,288
2020	4,515

MDOT: Maryland Department of Transportation

Source: Department of Legislative Services

Debt Service

Exhibit 3.14 shows that debt service costs are projected to increase steadily from $246 million in fiscal 2015 to $418 million in fiscal 2020. The growth is attributable to increased principal payments from prior issuances and the costs associated with issuing the debt from fiscal 2015 to 2020.

Exhibit 3.14
Projected Transportation Debt Service
Fiscal 2015-2020
($ in Millions)

Fiscal Year	Projected Debt Service
2015	$246
2016	292
2017	365
2018	398
2019	394
2020	418
Total	**$2,113**

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 infusion of additional revenue has increased MDOT's and the State's ability to issue debt for capital projects. **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 Section 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 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 3.15 shows that projected tax-supported capital lease debt outstanding totals $260 million as of June 30, 2014. Debt outstanding is projected to decrease to $252 million on June 30, 2015. The $27 million decline in the amount outstanding on current leases is expected to be offset by $19 million in new equipment leases.

Exhibit 3.15
Tax-supported Capital Lease Debt Outstanding
As of June 30, 2014 and Projected June 30, 2015
($ in Millions)

State Agency/Facility	Amount Outstanding June 2014	Projected Amount Outstanding June 2015	Difference
State Treasurer's Office			
Capital Equipment Leases	$13.2	$8.2	-$4.9
Energy Performance Projects	5.9	3.8	-2.1
Maryland Department of Transportation			
Headquarters Office Building	18.7	16.7	-2.0
Maryland Aviation Administration Shuttle Buses	3.8	2.5	-1.3
Department of General Services			
Hilton Street Facility	0.9	0.7	-0.2
Prince George's County Justice Center	17.7	16.9	-0.8
Maryland State Lottery			
Ocean Downs and Perryville Video Lottery Equipment	16.9	8.6	-8.3
Maryland Transportation Authority			
Annapolis State Office Parking Garage	18.6	17.8	-0.7
Department of Health and Mental Hygiene			
Public Health Lab	164.7	158.2	-6.5
Subtotal – Current Leases	**$260.3**	**$233.4**	**-$26.9**
Proposed Leases			
New Capital Equipment Leases	0.0	19.0	19.0
Total	**$260.3**	**$252.4**	**-$7.9**

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

Source: State Treasurer's Office, September 2014

Energy Performance Contract Policies

Chapter 163 of 2011 changed how the State classifies EPCs. Prior to the enactment of the legislation, Section 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. The Department of General Services reviews these EPCs to determine if they do in fact generate savings. The Treasurer's Office advises that 19 EPCs can be excluded from CDAC's debt affordability calculation. Six projects, whose fiscal 2014 debt service costs total $2.3 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 are 90% or more of the fair value of the property.

Currently, 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.

A comment period is scheduled to begin in December 2014 and end in February 2015. Public hearings are scheduled in April 2015. The final statement should be issued in November 2016. This project is being performed in concert with the Financial Accounting Standards Board and the International Accounting Standards Board.

If GASB proposes changes to leasing standards, the new standards could substantially increase the amount of leases included in the debt affordability calculation. DLS will continue to monitor this issue and report if there are any changes to leasing standards.

Bay Restoration Bonds

The Bay Restoration Fund 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 wastewater treatment plants 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.

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. 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.

Bay Restoration Fund Fee Future Use

Chapter 150 of 2012 (Environment – Bay Restoration Fund – Fees and Uses) established additional authorized uses for the Bay Restoration Fund beginning in fiscal 2018. After the payment of debt service on outstanding bonds and the allocation of funds to other required uses, these additional uses include the following, in order of priority:

- funding an upgrade of a wastewater facility with a design capacity of 500,000 gallons or more per day to ENR;
- funding for the most cost-effective ENR upgrades at WWTP with a design capacity of less than 500,000 gallons per day;
- costs associated with upgrading septic systems and sewage holding tanks; and
- grants for local government stormwater control measures for jurisdictions that have implemented a specified system of charges under current authority.

Based on the current priority list and estimated capital cost of ENR upgrades, **Exhibit 3.16** shows that the program issued $100 million in debt in fiscal 2014 and anticipates issuing debt again in fiscal 2016 and 2017. Of note, the overall projected need has decreased from $530 million to $430 million. The debt outstanding will peak at $393 million in fiscal 2017. Debt service costs increase to $44 million in fiscal 2021. These issuances are limited by the revenues generated by the WWTP Fund, overall State debt considerations, and the spending on additional uses allowed under Chapter 150 of 2012 beginning in fiscal 2018.

Exhibit 3.16
Bay Restoration Fund
Fiscal 2014-2020
($ in Millions)

	2014	2015	2016	2017	2018	2019	2020
Revenue Bonds Issued	$100.0	$0.0	$180.0	$100.0	$0.0	$0.0	$0.0
Debt Outstanding	133.1	130.0	301.6	392.9	373.3	346.3	318.0
Debt Service	4.6	8.2	14.3	22.4	37.4	43.8	43.9

Note: In fiscal 2008, $50 million in revenue bond debt was issued.

Source: Maryland Department of the Environment; Department of Legislative Services; October 2014

The debt issuances for the WWTP Fund have been delayed again because projects have been delayed due to the magnitude of the projects and the number of years involved in design and construction. The Septic Fund is operated on a pay-as-you-go basis and does not involve revenue bond proceeds.

Bay Restoration Funds Now Deemed Sufficient to Reduce Authorization Need

MDE attributes the decrease in overall revenue bond issuances from $530 million to $430 million to three factors:

- due to favorable conditions the bond interest rate assumption has been reduced from 5.0% to 4.5% which reduces borrowing costs and allows for the use of more cash;
- the overall cost to upgrade the 67 major WWTPs is now estimated to be approximately $1,225 million, which is $72 million less than projected last year; and
- more cash has been used in place of debt as a result of changed assumptions about local government reimbursement schedules.

As a result of the $100 million reduction in projected revenue bond issuance, there is more bond capacity for other State projects. In addition, looking forward there is decreased likelihood of the authorization of GO bonds for Chesapeake and Atlantic Coastal Bays 2010 Trust Fund storm water management projects since there will be Bay Restoration Fund special fund revenue available for that purpose per Chapter 150 of 2012. For instance, there was $25 million in GO bonds authorized for this purpose in fiscal 2015.

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.

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. **Exhibit 3.17** lists MSA's tax-supported authorized debt, debt outstanding, and annual debt service.

Exhibit 3.17
Maryland Stadium Authority
Revenue Debt Authorizations, Debt Outstanding, and Debt Service
($ in Millions)

Project	Authorized	Outstanding as of July 2014	Debt Service Fiscal 2015
Baseball and Football Stadiums	$235.0	$127.0	$20.1
Baltimore City Convention Center	55.0	4.8	5.0
Montgomery County Conference Center	23.2	12.0	1.6
Hippodrome Performing Arts Center	20.3	11.5	1.6
Ocean City Convention Center	17.3	2.8	1.4
Camden Station	8.7	6.5	0.7
Equipment Leases	n/a	4.4	1.0
Total	**$359.5**	**$169.0**	**$31.4**

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

Source: Maryland Stadium Authority

Camden Yards Sports Complex

Provisions of the Financial Institutions Article limit the amount of bonds 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 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 will be 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.

Baltimore and Ocean City Convention Centers

MSA issued $55 million in revenue bonds for the Baltimore City Convention Center as authorized by 1993 legislation. Baltimore City issued $50 million in city bonds, and the State contributed another $58 million in GO bond funding toward the construction cost of the project, which was completed in 1997. The fiscal 2015 debt service cost for the revenue bonds is $5 million and subject to State appropriation. Chapter 286 of 2013 extended the date by which MSA is obligated to contribute two-thirds of the operating deficits of the Baltimore Convention Center to December 31, 2019. The State is also statutorily required to contribute $200,000 annually to a capital improvement fund. However, debt service will be retired after fiscal 2015.

MSA issued $17.3 million in revenue bonds for the Ocean City Convention Center (OCCC), which was authorized in 1995 and matched by a contribution from the Town of Ocean City. The fiscal 2015 debt service cost for these revenue bonds is $1.4 million and subject to State appropriation. As amended by Chapter 630 of 2012, the State is also statutorily required

to contribute one-half toward OCCC's annual operating deficit through fiscal 2036 and $50,000 annually to a capital improvement fund.

In December 2008, MSA and the Town of Ocean City released a feasibility study on the proposed expansion of the OCCC. The study recommended a moderate expansion and remodeling to the convention center to modernize audiovisual and technical amenities, provide more function space, and increase prime exhibit space. In December 2009, MSA submitted an Amended Comprehensive Plan of Financing for the OCCC expansion. The plan called for MSA to issue tax-exempt lease-revenue bonds to pay for the project. However, in order to realize a lower cost of capital, the expansion was ultimately funded with GO bonds through the capital budget bill. Construction was completed in fall 2012. A second phase of construction is currently underway with an expected completion date in the winter of 2015.

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 2015 debt service costs for these revenue bonds are $1.6 million, a savings of over $200,000. MSA is currently serving as the construction manager for a new parking garage for the center, to be paid for by the county.

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 MSA's

financing fund. Accordingly, in 2012, MSA submitted an Amended Comprehensive Plan of Financing for the center to refund the existing issuance at a lower rate in order to lower the State's contribution to debt service. The fiscal 2015 debt service is $1.6 million.

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 2014 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 Babe Ruth Museum rents approximately 22,551 square feet in the basement and on the first floor, and Geppi's Entertainment Museum rents approximately 17,254 square feet on the second and third floor.

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. Currently, MSA is providing technical assistance in support of the State's interests in the redevelopment of State Center. 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. MSA and Wicomico County recently released a market and economic study of Perdue Stadium that included a discussion of what enhancements and amenities are necessary to keep the facility competitive and to retain the team when the lease expires in 2015. Also, MSA recently released the second phase of a study, in conjunction with the Maryland-National Capital Park and Planning Commission, on a proposed lacrosse stadium and youth sports complex in Prince George's County. Other studies to be conducted include the second phase of the Showplace Arena study and potential multi-purpose civic center in Charles County.

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.

In 2013, the General Assembly adopted House Bill 860 (Chapter 647) authorizing MSA to issue up to $1.1 billion in debt for the purpose of constructing and improving public school facilities in Baltimore City. Any debt issued by MSA to finance construction or improvement of Baltimore City public school facilities is not a debt, liability, or pledge of the faith and credit or taxing power of the State. MSA expects to release its first debt issuance in the fall of 2015. 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 that are dedicated to school construction and 10% of the participation rent paid by the video lottery facility operator to Baltimore City;
- $10 million in fiscal 2016 State education aid due to the Baltimore City Board of School Commissioners (BCBSC) from the shift of retiree health care costs from Baltimore City to BCBSC, as well as $10 million diverted from State education aid to BCBSC in fiscal 2016 and $20 million in each fiscal year thereafter;
- $20 million in annual proceeds from the State lottery;
- proceeds from the sale of 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.

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

The Department of Legislative Services' (DLS) estimates of personal income are the same as those of CDAC through fiscal 2018. CDAC is using the Board of Revenue Estimates' September 2014 personal income estimates, which **Exhibit 4.1** shows are less than personal income estimates used by DLS in fiscal 2019 and 2020. Lower Maryland personal income reduces the ratio of debt outstanding to personal income.

Exhibit 4.1
Maryland Personnel Income
Comparison of Department of Legislative Services and Capital Debt Affordability Committee Projections
Calendar 2014-2020
($ in Millions)

Calendar Year	DLS Personal Income Estimate	% Change	CDAC Personal Income Estimate	% Change	Difference
2014	$331,860	3.32%	$331,860	3.32%	$0
2015	344,999	3.96%	344,999	3.96%	0
2016	359,678	4.25%	359,678	4.25%	0
2017	376,790	4.76%	376,790	4.76%	0
2018	392,982	4.30%	392,982	4.30%	0
2019	408,368	3.92%	406,736	3.50%	1,632
2020	424,379	3.92%	420,484	3.38%	3,895

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

Source: Capital Debt Affordability Committee, October 2014; Department of Legislative Services, October 2014

Revenue Projections

Exhibit 4.2 shows that DLS' out-year revenue projections are less than CDAC's through fiscal 2021. The differences primarily relate to the DLS estimate of out-year transportation revenues. DLS does not expect transportation revenues to increase as much as the CDAC estimates. DLS also anticipates bond sale premiums in the out-years.

Exhibit 4.2

Comparison of DLS and CDAC Revenue Projections

Fiscal 2014-2020

($ in Millions)

Fiscal Year	General Funds	Property Tax	Other ABF	ETF Slots	Transfer Taxes	Subtotal	TTF	GARVEE	Stadium	BRF	Total	CDAC Estimate	Diff.
2014	$15,106	$725	$119	$328	$75	$16,353	$2,664	$467	$23	$108	$19,616	$19,617	$0
2015	15,815	730	125	396	18	17,084	2,819	466	22	110	20,501	20,520	-19
2016	16,393	732	72	414	100	17,711	3,086	466	22	111	21,396	21,387	9
2017	17,104	744	54	532	105	18,539	3,345	466	22	112	22,485	22,484	1
2018	17,778	756	41	560	108	19,243	3,416	466	22	113	23,260	23,296	-36
2019	18,353	767	39	567	202	19,929	3,485	466	22	114	24,015	24,064	-49
2020	19,117	787	39	573	212	20,727	3,554	466	22	115	24,884	24,951	-67

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

Source: (1) General Fund, Other Annuity Bond Fund, and Maryland Department of Transportation: Department of Legislative Services, November 2014; and (2) State Property Tax, Federal Funds, ETF Slots, Transfer Taxes, Stadium Authority, GARVEE, Bay Restoration Fund, and Capital Debt Affordability Committee Revenues: Capital Debt Affordability Committee, October 2014

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 GO bond, Grant Anticipation Revenue Vehicle (GARVEE), 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 2015. DLS does not anticipate transportation revenues will be sufficient to support the program proposed by MDOT. DLS also anticipates additional operating expenses, which reduces what is available for the capital program. To maintain the program, additional debt is issued.

Exhibit 4.3
Projected New Debt Issuances
Fiscal 2015-2020
($ in Millions)

Fiscal Year	GO Bond Auth.	GO Bond Issuances	QZABs	Trans. Bonds	GARVEE	Capital Leases	Stadium Authority Bonds	Bay Restoration Bonds
2015	$1,160	$1,018	$5	$616	$0	$19	$0	$0
2016	1,170	1,057	5	915	0	69	0	100
2017	1,180	1,126	0	905	0	5	0	180
2018	1,275	1,193	0	556	0	5	0	0
2019	1,315	1,240	0	415	0	5	0	0
2020	1,355	1,284	0	430	0	5	0	0

GARVEE: Grant Anticipation Revenue Vehicle
GO: General Obligation
QZAB: Qualified Zone Academy Bond

Source: (1) General Obligation, Maryland Department of Transportation Bonds, QZAB, and Capital Leases: Department of Legislative Services, November 2014; and (2) Stadium Authority, GARVEE, and Bay Restoration Bonds: Capital Debt Affordability Committee, October 2014

Exhibit 4.4 shows that, for the forecast period, debt outstanding as a percent of personal income peaks at 3.76% in fiscal 2018.

Exhibit 4.4
State Tax-supported Debt Outstanding
Components and Relationship to Personal Income
Fiscal 2014-2020
($ in Millions)

Fiscal Year	General Obligation Bonds	MDOT Bonds	GARVEE	Capital Leases	Stadium Authority Bonds	Bay Restoration Bonds	Total Tax-supported Debt	Fiscal Year
2014	$8,362	$1,645	$416	$286	$193	$36	$10,938	2014
2015	8,722	2,276	349	271	169	123	11,911	2015
2016	9,026	3,020	280	263	145	260	12,994	2016
2017	9,366	3,720	207	301	125	392	14,111	2017
2018	9,723	4,065	130	279	106	457	14,760	2018
2019	10,110	4,288	49	253	86	463	15,249	2019
2020	10,480	4,515	0	226	65	433	15,719	2020

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

2014	2.52	0.50	0.13	0.09	0.06	0.01	3.30	2014
2015	2.53	0.66	0.10	0.08	0.05	0.04	3.45	2015
2016	2.51	0.84	0.08	0.07	0.04	0.07	3.61	2016
2017	2.49	0.99	0.05	0.08	0.03	0.10	3.74	2017
2018	2.47	1.03	0.03	0.07	0.03	0.12	3.76	2018
2019	2.48	1.05	0.01	0.06	0.02	0.11	3.73	2019
2020	2.46	1.06	0.00	0.05	0.02	0.10	3.70	2020

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

Source: (1) General Obligation, Maryland Department of Transportation Bonds, and Capital Leases: Department of Legislative Services, November 2014; and (2) Stadium Authority, GARVEE, and Bay Restoration Bonds: Capital Debt Affordability Committee, October 2014

Exhibit 4.5 shows that the debt service as a percent of revenues increases until fiscal 2018 as it reaches 7.98% and then declines.

Exhibit 4.5
State Tax-supported Debt Service
Components and Relationship to Revenues
Fiscal 2014-2024
($ in Millions)

Fiscal Year	General Obligation	MDOT Bonds	GARVEE	Capital Leases	Stadium Authority	Bay Restoration Bonds	Total Tax-supported Debt Service	Fiscal Year
2014	$981	$207	$87	$36	$33	$5	$1,348	2014
2015	1,027	246	87	37	31	8	1,437	2015
2016	1,130	292	87	41	26	14	1,592	2016
2017	1,199	365	87	40	25	22	1,738	2017
2018	1,270	398	87	39	25	37	1,857	2018
2019	1,309	394	87	39	24	44	1,898	2019
2020	1,381	418	51	38	24	44	1,956	2020

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

2014	5.00	1.06	0.45	0.18	0.17	0.02	6.87	2014
2015	5.01	1.20	0.43	0.18	0.15	0.04	7.01	2015
2016	5.28	1.37	0.41	0.19	0.12	0.07	7.44	2016
2017	5.33	1.62	0.39	0.18	0.11	0.10	7.73	2017
2018	5.46	1.71	0.38	0.17	0.11	0.16	7.98	2018
2019	5.45	1.64	0.36	0.16	0.10	0.18	7.91	2019
2020	5.55	1.68	0.21	0.15	0.10	0.18	7.86	2020

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

Source: (1) General Obligation, Maryland Department of Transportation Bonds, and Capital Leases: Department of Legislative Services, November 2014; and (2) Stadium Authority, GARVEE, and Bay Restoration Bonds: Capital Debt Affordability Committee, October 2014

Exhibit 4.6 shows that debt outstanding ratios based on DLS' personal income estimates are lower than those estimated by CDAC from fiscal 2015 to 2020. The difference between the two ratios is primarily attributable to MDOT bond issuances, which are more in the DLS estimate.

Exhibit 4.6
State Debt to Personal Income
Comparison of DLS and CDAC Estimates
Fiscal 2015-2020

Fiscal Year	DLS	CDAC
2015	3.45%	3.43%
2016	3.61%	3.59%
2017	3.74%	3.67%
2018	3.76%	3.65%
2019	3.73%	3.64%
2020	3.70%	3.63%

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

Source: Capital Debt Affordability Committee, October 2014; Department of Legislative Services, November 2014

Similarly, **Exhibit 4.7** shows the debt service ratios based on the DLS forecast of revenues and those estimated by CDAC from fiscal 2015 to 2024. The difference between the two ratios relate to both revenues and debt issuances. DLS estimates lower transportation revenues than CDAC. On the debt service side of the ratio, DLS anticipates additional transportation bond issuances and higher debt service costs.

Exhibit 4.7
State Debt Service to State Revenues
Comparison of DLS and CDAC Estimates
Fiscal 2015-2020

Fiscal Year	DLS	CDAC
2015	7.01%	6.95%
2016	7.44%	7.44%
2017	7.73%	7.70%
2018	7.98%	7.93%
2019	7.91%	7.83%
2020	7.86%	7.77%

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

Source: Capital Debt Affordability Committee, October 2014; Department of Legislative Services, November 2014

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 (CDAC) debt affordability criteria. The committee compares debt outstanding to personal income and debt service costs to revenues. Personal income limits growth of total liabilities to Marylanders' wealth and revenues limit annual debt service costs to how much total revenue is collected.

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 the revenues that support general obligation (GO) bond costs;
- a comparison of debt service and pension costs (the State's other large long-term liability) to general fund revenues; and
- the effect of the general fund appropriations for debt service on the general fund's structural balance.

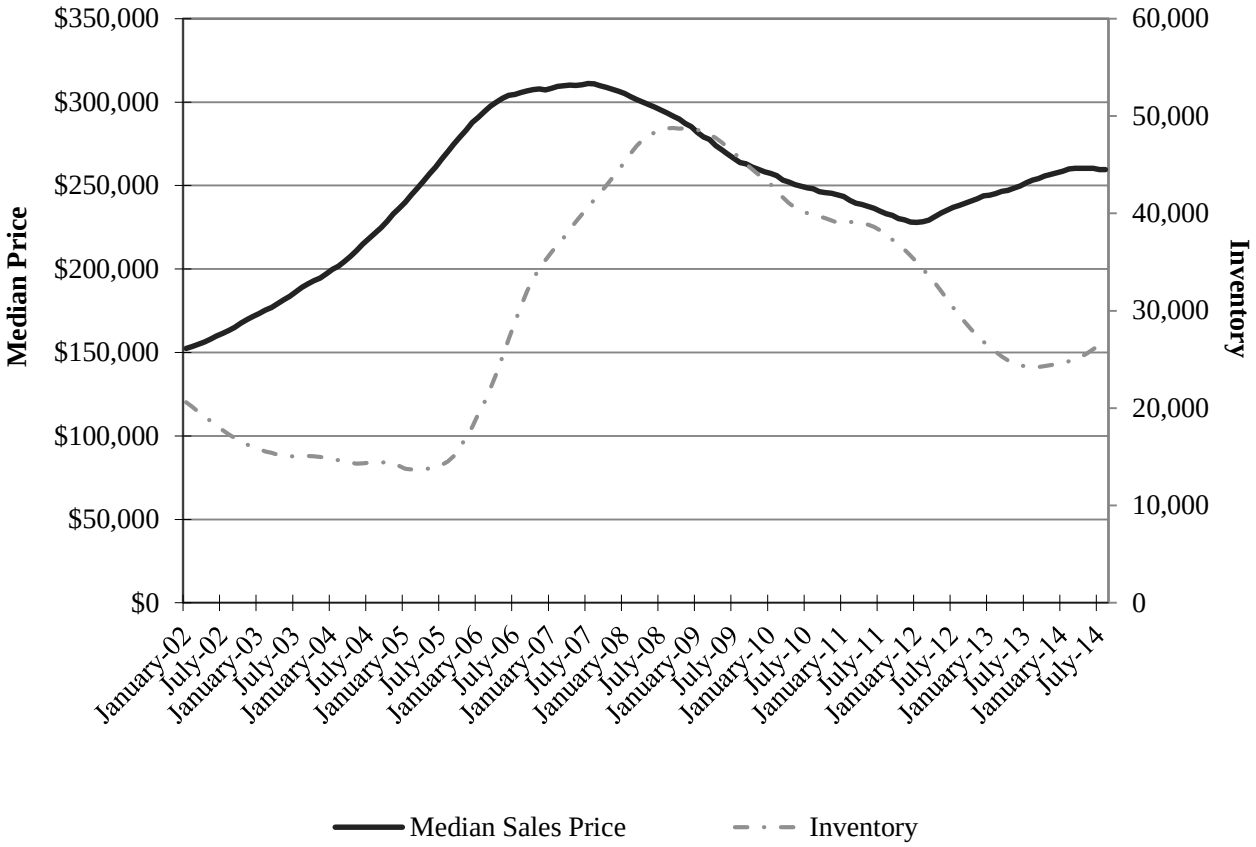
State Property Tax Revenues Are Insufficient to Support Debt Service

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 this decade has seen 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, each month has seen a year-over-year increase in prices. Since April 2014, results have been mixed with some months seeing increases in values while others realizing decreases.

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 August 2014, inventories increased to approximately 31,100. This is more than the inventory in September 2000, which totaled about 25,000.

Exhibit 5.1
Maryland Housing – Median Prices and Inventory
12-month Moving Average
January 2002 to August 2014

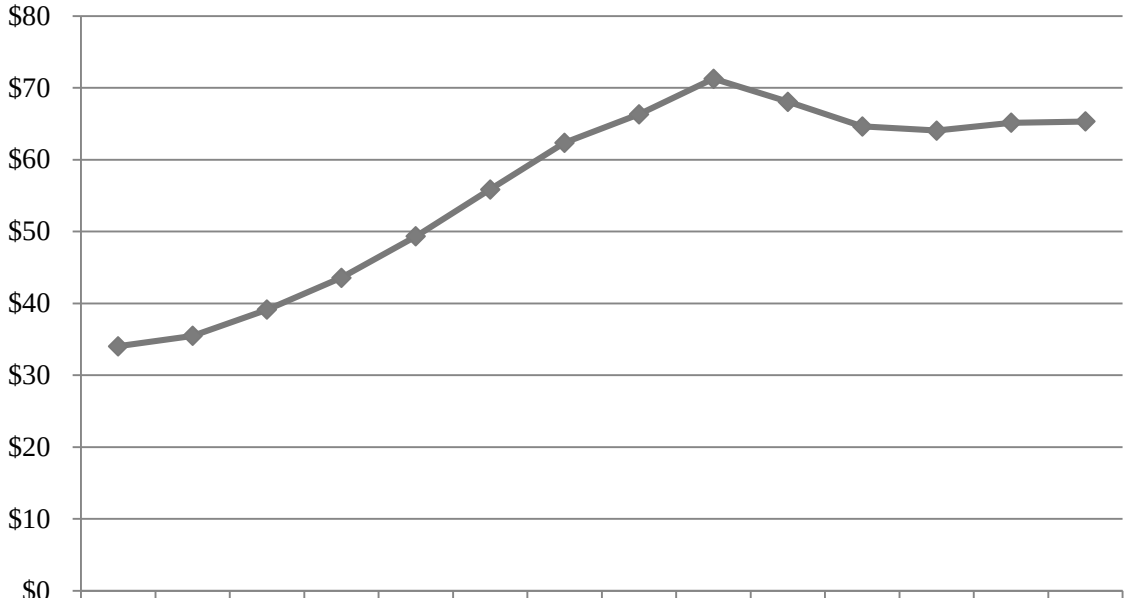


Note: Inventory represents housing units for sale according to Metropolitan Regional Information Systems, Inc. and Coastal Association of Realtors

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 2003. In fiscal 2003, there was a modest increase, and from fiscal 2004 to 2011, the increases were quite steep. Revenues declined from fiscal 2011 to 2014 and are expected to increase slightly after fiscal 2014.

Exhibit 5.2
Revenues Generated by One Cent of State Property Taxes
Fiscal 2003-2016
($ in Millions)



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Revenues	$34	$35	$39	$44	$49	$56	$62	$66	$71	$68	$65	$64	$65	$65

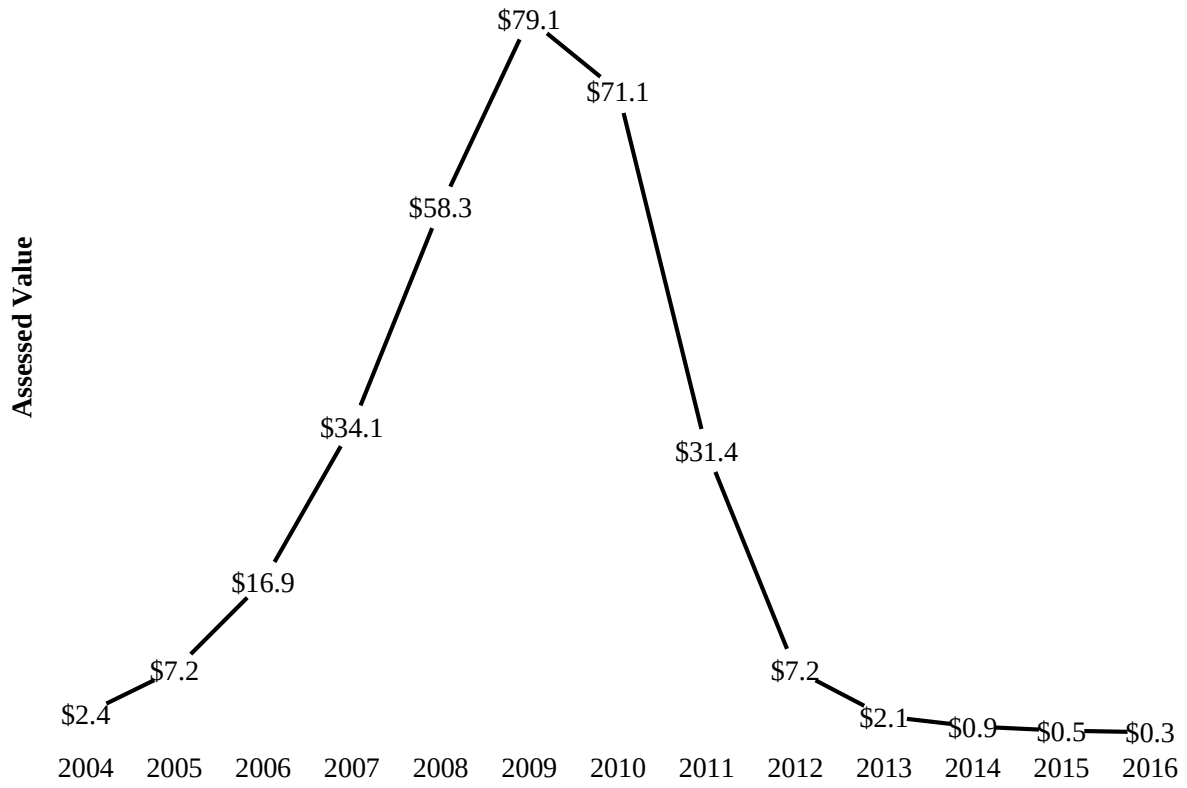
Source: State Department of Assessments and Taxation; Department of Budget and Management; Department of Legislative Services

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 increase in State property assessments subject to the property tax to 10%. If reassessing a resident's property results in an increase that exceeds 10%, the homeowner receives a credit for any amount above 10%. For example, if property value increases 25%, the homeowner's assessment increases 10%, and the homeowner receives a 15% credit. 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. By fiscal 2014, the aggregate homestead credits are projected to be under $1 billion.

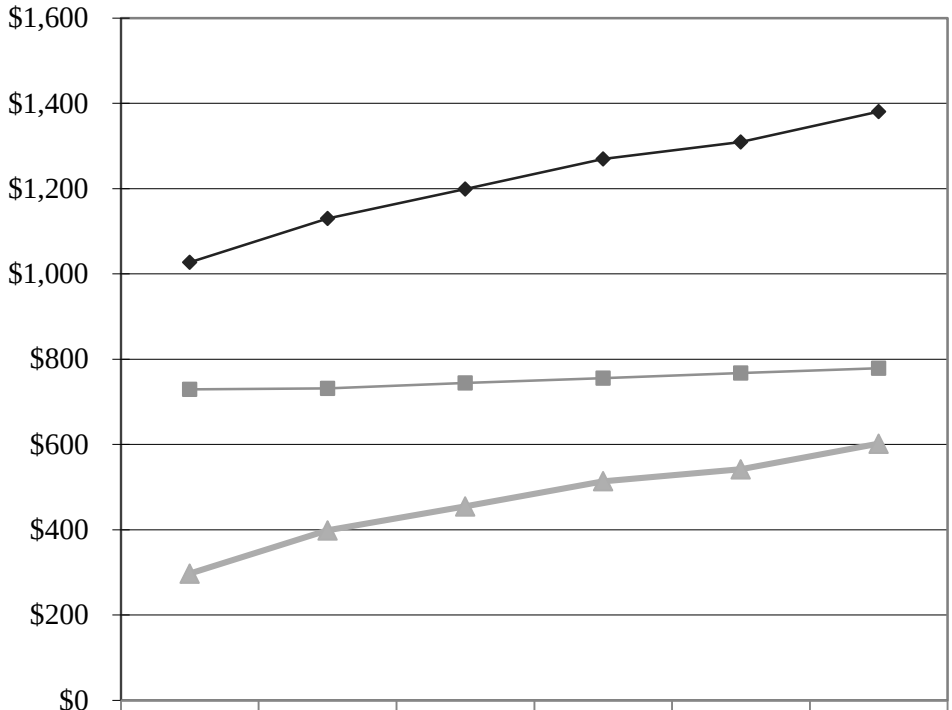
Exhibit 5.3
State Property Tax Homestead Tax Credits
Fiscal 2004-2016
($ in Billions)



Source: State Department of Assessments and Taxation

Over the next few years, State property tax revenues are estimated to remain fairly flat. This contrasts with debt service costs, which are expected to increase steadily in the out-years. **Exhibit 5.4** shows how State property taxes, which are $297 million less than debt service costs in fiscal 2015, are expected to be $602 million less than debt service costs in fiscal 2020.

Exhibit 5.4
GO Bond Debt Service Costs and State Property Tax Revenue Collections
Fiscal 2015-2020
($ in Millions)



	2015	2016	2017	2018	2019	2020
State Property Tax Receipts	$730	$732	$744	$756	$767	$779
GO Bond Debt Service Costs	$1,027	$1,130	$1,199	$1,270	$1,309	$1,381
Difference	$297	$399	$455	$514	$542	$602

GO: general obligation

Source: Department of Legislative Services, October 2014

Before fiscal 2014, the shortfall in State property tax receipts was not a problem because the ABF had a large fund balance. In recent years, the State has benefited from the low interest rates offered for AAA-rated State and municipal bonds. These low rates have reduced GO bonds' true interest cost (TIC), which resulted in higher bond sale premiums. These premiums have been deposited into the ABF to support debt service costs. **Exhibit 5.5** shows that fiscal 2015 begins with $113 million in prior year fund balances, most of which are derived from bond sale premiums.

Exhibit 5.5
Revenues Supporting Debt Service
Fiscal 2015-2020
($ in Millions)

	2015	2016	2017	2018	2019	2020
Special Fund Revenues						
State Property Tax Receipts	$730	$732	$744	$756	$767	$779
Bond Sale Premiums[1]	108	55	37	24	22	22
Other Revenues	3	3	3	3	3	3
ABF Fund Balance Transferred from Prior Year	113	85	30	18	10	10
Subtotal Special Fund Revenues Available	***$954***	***$874***	***$814***	***$802***	***$802***	***$814***
General Funds	140	268	385	460	498	559
Transfer Tax Special Funds[2]	6	6	7	7	7	7
Federal Funds[3]	11	11	11	11	11	11
Total Revenues	**$1,112**	**$1,160**	**$1,217**	**$1,280**	**$1,319**	**$1,390**
Projected Debt Service Expenditures	**$1,027**	**$1,130**	**$1,199**	**$1,270**	**$1,309**	**$1,381**
ABF End-of-year Fund Balance	**$85**	**$30**	**$18**	**$10**	**$10**	**$9**
Property Tax Rate Per $100 of Assessable Base	$0.112	$0.112	$0.112	$0.112	$0.112	$0.112

ABF: Annuity Bond Fund

[1]Estimated bond sale premiums total $38.2 million in March 2015, $26.9 million in August 2015, $28.3 in March 2016, $19.0 million in July 2016, $18.5 million in March 2017, and approximately $10.0 per bond sale after March 2017.

[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 2014

By fiscal 2015, the fund balance is insufficient to support debt service costs. Even if bond sale premiums are assumed in fiscal 2016, the Department of Legislative Services (DLS) estimates that $268 million in general fund appropriations will be needed. The general fund appropriations are projected to increase to $559 million in fiscal 2020.

Bond Sale Premiums Are Anticipated in the Out-years; Mitigating the Effect of Slow State Property Tax Revenue Growth

Bond sales realize premiums because the market interest rate is less than the coupon rate paid on the bonds that are sold. This is because the purchasers for bonds demand a rate that is higher than the market rate. Bonds selling at a premium lose less value if interest rates rise. **Appendix 3** provides the DLS analysis of bond sale premiums and demonstrates why investors prefer premiums under current conditions.

Interest rates are expected to remain low, so DLS anticipates bond sale premiums with each bond sale in the out-years. This is consistent with the U.S. Federal Reserve policy to keep interest rates low. Based on data and forecasts provided by Global Insight, DLS anticipates that interest rates will begin to rise in the second half of fiscal 2015 and reach a plateau in fiscal 2018. The interest rates assumed when estimating bond premiums reflect this general increase in rates. The result is diminishing bond premiums. But as long as interest rates tend to rise, buying bonds at a premium reduces losses suffered by owners of fixed-rate bonds. Consequently, it is likely that there will still be premiums as rates rise slowly as projected by Global Insight; they are just expected to be smaller.

The fiscal 2016 ABF balance estimate considers bond sales, revenues, interest rates, and a number of other factors. Given the uncertainty in financial markets, the out-year ABF forecast can change substantially. Key factors that could result in revisions include:

- ***Revised Property Tax Estimates:*** The State Department of Assessments and Taxation will update the property tax revenue estimates at the end of November 2014. Since 2012, year-over-year median home values have tended to increase, but this has stalled somewhat since March 2014. It is unclear how this will affect revenues, but if the estimate is revised upward, the shortfall in the ABF is reduced.

- ***Interest Rates Changes:*** Bond sale premiums are sensitive to changes in market interest rates. Even modest changes can substantially increase or decrease the amount of premiums received. In the current interest rate environment, either increasing the TIC or reducing the coupon rate by a combination of 0.25% (25 basis points) reduces the premium of a $500 million bond issuance by $11 million.

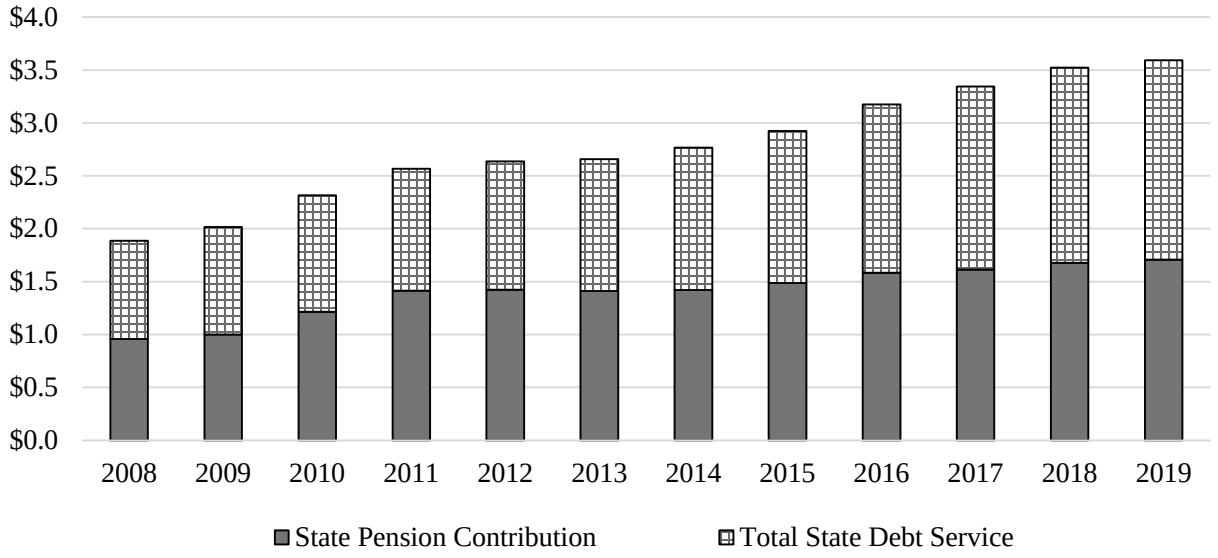
- ***The Amount of Bonds Sold:*** Should capital projects be moving faster than currently anticipated, the State could require additional bond proceeds from the March 2014 sale, which tends to increase the premium. For example, it is estimated that adding $25 million to a sale adds $3 million to the premium.

Efforts Have Been Made to Reduce Pension Liabilities, Which Has Slowed Out-year Growth Rates

The State budget supports two substantial long-term liabilities: a large capital construction program and pension benefits for State employees and local teachers. State GO bond debt funds the capital program. This debt is issued at fixed rates, and debt service payments are made for 15 years. The State also provides a defined benefit pension plan for State employees and local teachers at public schools. By offering these plans, the State is required 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 also are a long-term liability.

The cost of these long-term liabilities has increased substantially in recent years. For example, in fiscal 2008, GO bond debt service costs totaled $929 million and employer pension contributions totaled $957 million. By fiscal 2014, debt service costs totaled $1,348 million, an increase of 6.6% annually. Pension contributions totaled $1,419 million, which is a 6.8% annual increase. These total costs are expected to continue increasing. With respect to pensions, much of the growth occurred in fiscal 2010 and 2011, which had 21.3% and 16.6% growth, respectively. **Exhibit 5.6** shows that total debt service and pension costs are expected to increase from $1.9 billion in fiscal 2008 to $3.6 billion in fiscal 2019. This is an annual increase of 6.0%.

Exhibit 5.6
General Obligation Bond and Pension Costs
Fiscal 2008-2019
($ in Billions)

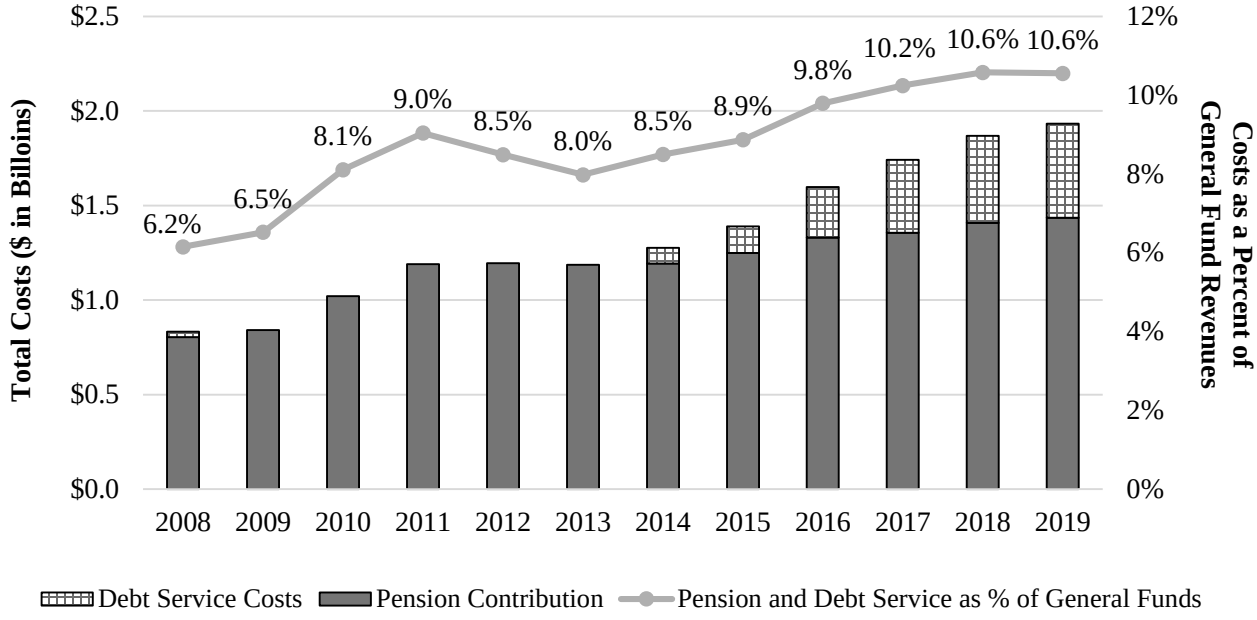


Source: Gabriel Roeder Smith and Company; Cheiron,Inc.; Segal Consulting; State Treasurer's Office; Department of Legislative Services, October 2014

To manage pension costs, the State has adopted a number of changes. In 2011, the State reduced pension benefits earned beginning in fiscal 2012 and increased employee contributions from 5% to 7% for most employees. The State also required local school boards to begin sharing costs in fiscal 2013. The actuarial approach was also modified beginning in fiscal 2014, as the State phases out of the corridor method and adopts an actuarial approach. Taken together, these changes reduce the growth rate of the State's out-year liabilities and lead to slower growth in general fund costs. Because of losses attributable to the Great Recession, pension contributions increase substantially from fiscal 2008 to 2011. Primarily due to the enacted pension changes, State contributions increase at a more moderate rate in the out-years. The annual increase in contributions slows to between 1.9% and 3.9% after fiscal 2016.

Debt service and pension costs' share of general fund revenues is consistent with the total costs trend. When pension costs begin to increase substantially in fiscal 2010, their share of general funds increase from 6% to 9%, as shown in **Exhibit 5.7**. Slowing growth in pensions is offset by the need for general funds for debt service (as discussed in the previous section of this chapter). By fiscal 2017, the combined cost exceeds 10% of general fund revenues.

Exhibit 5.7
General Fund Debt Service and Pension Costs and Costs as a Share of General Fund Revenues
($ in Billions)



Source: Gabriel Roeder Smith and Company; Cheiron,Inc.; Segal Consulting; State Treasurer's Office; Department of Legislative Services, October 2014

DLS' concern is that bond and pension liabilities are long-term financial commitments that are placing an increasing burden on the State budget, particularly the general fund. In recent years, the General Assembly has made it a priority to reduce the unfunded pension liability and slow the growth in out-year pension contributions. Actions taken include reducing benefits, increasing employee and State payments (including a supplemental payment by the State), implementing local pension cost sharing, and modifying how annual contributions are calculated by adopting an actuarially approved funding approach.

To reduce these long-term liabilities further, the State may consider actions to reduce debt service costs next. Debt service reduction can be accomplished through CDAC or the Spending Affordability Committee by constraining, rather than increasing, the level of debt to be incurred. Alternatively, raising the State property tax, while not impacting overall costs, would reduce general fund debt service costs.

Bond Program Is a Major Contributor to the State General Fund's Structural Deficit

With each budget, DLS prepares an out-year forecast of general fund spending and revenues. Recent forecasts have projected spending in excess of revenues. **Exhibit 5.8** shows that the structural deficit increases to over $1 billion. The recent increase in the general fund subsidy for debt service is a major contributor to the structural deficit. In some years, debt service is responsible for over half of the structural deficit.

Exhibit 5.8
General Fund Forecast
Fiscal 2015-2020
($ in Millions)

Fiscal Year	Projected Structural Balance	Debt Service Appropriation	Debt Service's Share of Structural Deficit
2015	-$645	$140	22%
2016	-525	268	51%
2017	-493	385	78%
2018	-659	460	70%
2019	-931	498	54%
2020	-1,045	559	53%

Source: Department of Legislative Services, November 2014

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 Maryland receives on general obligation (GO) bond sales. **Appendix 4** 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 61 bond issuances since March 1991 (refunding sales are excluded): 49 competitively bid, tax-exempt bond issuances; 8 negotiated, retail bond issuances; and 4 Build America Bond issuances. The data collected includes:

- true interest cost;
- 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 least squares regression analysis dependent variable is the TIC. All the other variables are independent variables that are included to control the factors that could influence the TIC. The question that the regression equation addresses is which of the independent variables influence the dependent variable (TIC). The regression equation examines the variables previously listed and identifies five statistically significant variables at the 95% confidence level that affect the TIC. **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.
- ***Ratio of Maryland Total Personal Income to the U.S. Total Personal Income:*** One perspective on interest rates is to consider them as a return for risk. The higher the risk, the higher interest rate investors will expect. One factor of risk is the fiscal health of the entity selling the debt. In the DLS regression equation, State personal income is used as a proxy for fiscal health. The equation uses a ratio that compares State personal income to U.S. personal income. If the ratio increases, Maryland is doing relatively better than the rest of the United States, and a GO bond issuance's TIC tends to decline.
- ***Years to Maturity:*** Under normal economic conditions, bonds with shorter maturities have lower interest costs than bonds with longer maturities. This is referred to as a positive yield curve. The analysis estimates that every year adds 0.25% (25 basis points) to the TIC.
- ***Post-financial Crisis:*** This is a variable that indicates if a bond was sold before or after Lehman Brothers collapsed in September 2008. The equation estimates that Maryland bond yields are 0.62% (62 basis points) less since the September 2008. This is consistent with the "flight to quality" that some believe has resulted since the financial crisis of 2008. The average bond in the index is a lower quality bond than Maryland bonds. The negative coefficient projects that the yield on higher rated bonds has been reduced when compared to AA-rated bonds. This variable was not necessary in previous years. The analysis used an index of AAA-rated bonds which would not identify an increasing spread between higher and lower rated bonds. Now that an AA-rated index is used, a variable measuring the increasing spread between AAA and AA bonds results in an improved equation.

Exhibit 6.1
TIC Regression Equation – Evaluating the Independent Variables

Ind. Variable	Coefficient	Std. Error	Beta	t-test	Sig.	Tol.	Comment
Bond Buyer 20-bond Index	0.881	0.046	0.62	19.351	0.000	0.60	Highest t-test suggests with confidence that the index is significant.
MD PI/US PI	-1.670	0.795	-0.07	-2.101	0.040	0.49	Negative coefficient suggests that as the Maryland economy strengthens, compared to the United States, the TIC declines.
Years to Maturity	0.252	0.028	0.34	9.091	0.000	0.44	Positive coefficient means that longer maturities tend to have higher TICs.
Post-financial Crisis	-0.665	0.103	-0.28	-6.452	0.000	0.33	Maryland bonds yields are reduced since the crisis.
BABs	-1.061	0.188	-0.22	-5.641	0.000	0.39	Negative coefficient suggests BABs are less expensive.
Constant	1.126						

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

Source: Department of Legislative Services, October 2014

- ***Build America Bonds:*** In February 2009, the American Recovery and Reinvestment Act authorized the issuance of Build America Bonds (BABs). The bonds are taxable bonds that support the same types of projects that traditional tax-exempt bonds support. The difference is that the buyers do not receive any federal tax credits or deductions so that the interest earnings are subject to federal taxes. Instead, Maryland receives a subsidy equal to 35% of the interest costs from the federal government. In concept, the bonds expand the number of buyers of State and municipal debt since the bonds are also attractive to

individuals and institutions that do not pay federal taxes. Because the tax-exempt bonds' benefit is greater for shorter maturities, the State issued tax-exempt bonds with shorter maturities and BABs with longer maturities.

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.

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 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 strength of the economy, including a call provision, or the length of issuance).

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	317.8	We are over 99.9% confident that the independent variables influence the dependent variable.
Margin of error	Standard error of the estimate	0.228	We expect the actual TIC to be within 0.23% (23 basis points) of the estimate.
Estimate in relation to actual data	Adjusted R Square	0.964	The model's estimates explain 96.4% of the actual data.
Serial or autocorrelation	Durbin-Watson	1.449	The ideal value is 2.0. If the number deviates too far from 2.0, it suggests that there are patterns in the errors, and a key independent variable is missing.

TIC: true interest cost

Source: Department of Legislative Services, October 2014

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 61 bond sales analyzed, the DLS estimate is closer to the actual TIC than the 20-bond index 60 times (98%). The 20-bond index is closer one time (2%). The total error of the DLS regression equation is 1,037 basis points, compared to 6,840 basis points for the 20-bond index.

This comparison shows that including variables, such as Maryland personal income to U.S. personal income, provides an estimate that is quite close to the actual TIC and provides an estimate that is usually closer than a general index of tax-exempt interest rates.

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	Closer Estimate
03/13/91	6.31	6.28	7.32	0.03	1.01	DLS Equation
07/10/91	6.37	6.22	7.21	0.15	0.84	DLS Equation
10/09/91	5.80	5.74	6.66	0.06	0.86	DLS Equation
05/13/92	5.80	5.65	6.54	0.15	0.74	DLS Equation
01/13/93	5.38	5.32	6.19	0.06	0.81	DLS Equation
05/19/93	5.10	4.97	5.77	0.13	0.67	DLS Equation
10/06/93	4.45	4.56	5.30	0.11	0.85	DLS Equation
02/16/94	4.48	4.67	5.42	0.19	0.94	DLS Equation
05/18/94	5.36	5.32	6.14	0.04	0.78	DLS Equation
10/05/94	5.69	5.64	6.50	0.05	0.81	DLS Equation
03/08/95	5.51	5.39	6.18	0.12	0.67	DLS Equation
10/11/95	4.95	5.07	5.82	0.12	0.87	DLS Equation
02/14/96	4.51	4.65	5.33	0.14	0.82	DLS Equation
06/05/96	5.30	5.22	5.94	0.08	0.64	DLS Equation
10/09/96	4.97	5.04	5.73	0.07	0.76	DLS Equation
02/26/97	4.90	4.98	5.65	0.08	0.75	DLS Equation
07/30/97	4.64	4.61	5.23	0.03	0.59	DLS Equation
02/18/98	4.43	4.49	5.07	0.06	0.64	DLS Equation
07/08/98	4.57	4.52	5.12	0.05	0.55	DLS Equation
02/24/99	4.26	4.46	5.08	0.20	0.82	DLS Equation
07/14/99	4.83	4.68	5.36	0.15	0.53	DLS Equation
07/19/00	5.05	4.91	5.60	0.14	0.55	DLS Equation
02/21/01	4.37	4.53	5.21	0.16	0.84	DLS Equation
07/11/01	4.41	4.49	5.22	0.08	0.81	DLS Equation
03/06/02	4.23	4.39	5.19	0.16	0.96	DLS Equation
07/31/02	3.86	4.22	5.00	0.36	1.14	DLS Equation
02/19/03	3.69	4.03	4.79	0.34	1.10	DLS Equation
07/16/03	3.71	3.95	4.71	0.24	1.00	DLS Equation
07/21/04	3.89	4.07	4.84	0.18	0.95	DLS Equation
03/02/05	3.81	3.76	4.50	0.05	0.69	DLS Equation
07/20/05	3.79	3.62	4.36	0.17	0.57	DLS Equation
03/01/06	3.87	3.69	4.39	0.18	0.52	DLS Equation
07/26/06	4.18	3.83	4.55	0.35	0.37	DLS Equation

Bond Sale Date	TIC	DLS Model	20-bond Index	Difference Between TIC and DLS	Difference Between TIC and 20-bond	Closer Estimate
02/28/07	3.86	3.45	4.10	0.41	0.24	20-bond Index
08/01/07	4.15	3.83	4.51	0.32	0.36	DLS Equation
02/27/08	4.14	4.37	5.11	0.23	0.97	DLS Equation
07/16/08	3.86	3.28	4.65	0.58	0.79	DLS Equation
03/04/09	3.39	3.28	4.96	0.11	1.57	DLS Equation
03/02/09	3.63	3.46	4.87	0.17	1.24	DLS Equation
08/05/09	2.93	2.97	4.65	0.04	1.72	DLS Equation
08/03/09	3.20	3.02	4.69	0.18	1.49	DLS Equation
08/05/09	3.02	3.43	4.65	0.41	1.63	DLS Equation
10/21/09	2.93	2.51	4.31	0.42	1.38	DLS Equation
10/21/09	3.06	2.99	4.31	0.07	1.25	DLS Equation
02/24/10	2.85	2.51	4.36	0.34	1.51	DLS Equation
07/28/10	1.64	1.74	4.21	0.10	2.57	DLS Equation
07/28/10	1.91	1.96	4.21	0.05	2.30	DLS Equation
07/28/10	2.74	2.74	4.21	0.00	1.47	DLS Equation
03/07/11	2.69	2.69	4.90	0.00	2.21	DLS Equation
03/09/11	3.49	3.62	4.91	0.13	1.42	DLS Equation
07/25/11	1.99	1.97	4.46	0.02	2.47	DLS Equation
07/27/11	3.08	3.09	4.47	0.01	1.39	DLS Equation
03/02/12	2.18	1.99	3.72	0.19	1.54	DLS Equation
03/07/12	2.42	2.44	3.84	0.02	1.42	DLS Equation
07/27/12	2.52	2.13	3.61	0.39	1.09	DLS Equation
08/01/12	2.17	2.33	3.66	0.16	1.49	DLS Equation
03/06/13	2.35	2.46	3.86	0.11	1.51	DLS Equation
07/24/13	3.15	3.42	4.77	0.27	1.62	DLS Equation
03/05/14	2.84	3.12	4.41	0.28	1.57	DLS Equation
07/18/14	1.27	1.74	4.36	0.47	3.09	DLS Equation
07/23/14	2.65	3.06	4.29	0.41	1.64	DLS Equation
Total Error				**10.37**	**68.40**	
Average Error				**0.17**	**1.12**	

DLS: Department of Legislative Services
TIC: true interest cost

Source: Department of Legislative Services, October 2014

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 primarily as conduit issuers include the Maryland Economic Development Corporation (MEDCO), the Maryland Health and Higher Educational Facilities Authority, and the Maryland Industrial Development Financing Authority.

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 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 United States' 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, presently $100 per capita, adjusted annually for inflation. Maryland's 2014 allocation totaled $593 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 Sections 13-801 through 13-807 of the Financial Institutions Article. The Secretary of the Department of Business and Economic Development (DBED) 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 Business and Economic Development and pursuant to the goals listed under Section 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 multi-family 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 the Maryland Industrial Development Financing Authority 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 DBED on September 30 of each year. DBED 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

Federal tax-exempt private activity bond allocation authority in Maryland is governed by Sections 13-801 through 13-807 of the Financial Institutions Article. The article stipulates that the Secretary of Business and Economic Development is the responsible allocating authority of private activity bonds. As the State's single allocating authority agency, DBED 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 DBED 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 DBED, it does not set forth a reporting requirement from DBED to the Spending Affordability Committee (SAC) or any other State entity. Instead, State Government Article Section 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, DBED 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 (DBM) 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 2010 through 2014 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. For instance, in 2010 or 2012, CDA did not issue any single-family housing debt, and 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 the activity of its single- and multi-family programs.

A portion of CDA's debt also represents refinancing prior issuances and issuing taxable bonds. Debt issued for these purposes are not subject to the federal volume cap. The issuances indicate CDA bond activity has rebounded after a five-year low in 2012, which reflected a reduction in demand for mortgage products after the recession of 2008. While CDA did not issue any single-family program bonds in 2010 or 2012, it issued $351 million in bonds in 2011, $306 million in bonds in 2013, and another $141 million so far in 2014, with an additional $65 million anticipated by year's end.

Exhibit 7.1
Allocation of Private Activity Bonds
Calendar 2010-2014
($ in Millions)

	2010	2011	2012	2013	YTD 2014
Fund Sources					
Annual Cap	$513.0	$548.5	$553.7	$559.0	$592.9
Carry Forward from Prior Years	978.6	1,218.4	1,193.0	1,461.2	1,583.5
Total Capacity Available	**$1,491.6**	**$1,766.9**	**$1,746.7**	**$2,020.2**	**$2,176.4**
Issuances					
Single-family Housing	$0.0	$350.9	$0.0	$306.0	$140.7
Multi-family Housing	90.2	72.4	31.0	130.8	104.3
Housing – Other	65.6	19.4	18.0	22.6	0.0
Industrial Development Bonds	17.9	0.0	0.0	0.0	9.2
Recovery Zone Facility Bonds	171.1	0.0	0.0	0.0	0.0
Non-housing County	0.0	0.0	8.6	0.0	0.0
Total Issuances	**$344.8**	**$442.7**	**$57.6**	**$471.2**	**$254.2**
Prior Year Carry Forward Abandoned	99.5	100.0	258.9	32.3	n/a
Carry Forward	$1,308.6	$1,124.2	$1,461.2	$1,528.5	n/a

YTD: Year to date

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

Source: Department of Business and Economic Development; Department of Housing and Community Development

Debt Outstanding

Containing the amount of nontax-supported agency debt has been a consistent concern of both the General Assembly and the Capital Debt Affordability Committee. During the 1989 session, the General Assembly passed SB 337 in an attempt to establish a measure of control over agency debt. This legislation was vetoed by the Governor who addressed the issue through the issue of Executive Order 01.01.1989.13 that established a procedure whereby the Governor set a revenue bond debt ceiling each year and allocated the debt allowance among the State agencies.

DBM was tasked with administering the process and was required to submit a report annually on the amount of agency debt outstanding. During the 1997 interim, a workgroup comprised of DBM staff and staff from agencies that issue revenue bonds met to review the provisions of the 1989 executive order and make recommendations for improvement. The workgroup recommended removing higher education institutions from the process because their levels of debt are already limited by statute. Additionally, the CDA Infrastructure Program was recommended for removal from the process because the program's debt is issued on behalf of local governments and is not a debt of the State. Finally, the workgroup recommended changes in reporting dates and notification requirements. It was decided that prior notification of issuances need to be made only for issuances of $25 million or more. On February 10, 1998, the Governor instituted the recommendations of the workgroup by signing Executive Order 01.01.1998.07, superseding the 1989 process.

Exhibit 7.2 summarizes the increase in debt outstanding for various categories between fiscal 2004 and 2014. A table containing debt outstanding by year for the individual agencies is included as **Appendix 5**.

Exhibit 7.2
Debt Outstanding as of June 30
Fiscal 2004 and 2014
($ in Millions)

	2004	2014	Total Change	Annual % Change
Agency debt subject to State regulatory cap	$754	$3,244	$2,529	15.7%
Agency debt not subject to State regulatory cap	4,083	4,743	256	1.5%
Tax-supported debt	5,809	11,153	5,741	6.7%
Authorities and corporations without caps	6,911	11,082	4,977	4.8%
Total	**$17,557**	**$30,222**	**$13,503**	**5.6%**

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

Source: Department of Budget and Management; Maryland State Treasurer

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 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'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 expects to maintain the current rating of AA1 (stable) from Moody's and the equivalent AA+ (stable) from both Fitch and Standard & Poor's. All three ratings were reaffirmed in January 2014.

Exhibit 7.3 shows that USM will be under the 4.5% debt service goal for fiscal 2014-2020. Including debt issued in fiscal 2015, total debt service will be approximately $139 million, or 3.2%, of fiscal 2015 operating revenues plus State appropriations including grants and contracts. The forecast indicates the ratio will stay between 3.3% and 3.5% over the next five years, with fiscal 2020 projected to be 3.4%. This is higher than fiscal 2009-2015 but still below the 4.5% target maximum.

Exhibit 7.3
University System of Maryland Debt Service as Related to Operating Funds Plus State Appropriations
Fiscal 2009-2020
($ in Millions)

Fiscal 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	1,196	132	4,256	3.1%
2014	1,271	137	4,283	3.2%
2015 Estimated	1,297	139	4,369	3.2%
2016 Estimated	1,320	144	4,456	3.2%
2017 Estimated	1,340	150	4,545	3.3%
2018 Estimated	1,358	155	4,636	3.3%
2019 Estimated	1,374	161	4,729	3.4%
2020 Estimated	1,387	165	4,824	3.4%

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 the USM held at the time were 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 2009-2020. 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. Beginning in fiscal 2013, USM began to request $5 million more in ARBs than it had been authorized each year previously. This additional money is targeted for facility renewal needs at the University of Maryland, College Park and is expected to continue for several years. In fiscal 2016 and 2017, the system will seek an additional $2.5 million in ARBs to provide additional facility renewal funding for other USM institutions.

Exhibit 7.4
Summary of Expendable Resources to Debt Outstanding for the University System of Maryland
Fiscal 2009-2020
($ in Millions)

Fiscal 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	1,271	136.0%
2015 Estimated	1,416	1,297	109.1%
2016 Estimated	1,456	1,320	110.2%
2017 Estimated	1,497	1,340	111.7%
2018 Estimated	1,539	1,358	113.3%
2019 Estimated	1,583	1,374	115.2%
2020 Estimated	1,628	1,387	117.4%

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 2015 is estimated to be $38.3 million and is expected to decrease to $26.7 million by fiscal 2020. As shown in **Exhibit 7.5**, the college's ratio of debt service to unrestricted expenditures is also expected to decline from an estimated 5.4% in fiscal 2015 to 4.6% in fiscal 2020. 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 2013, SMCM's bond rating was downgraded by Moody's from A1 to A2 due to ongoing enrollment concerns. However, given a history of strong State support to SMCM, Moody's outlook remains stable and because SMCM's bonds are issued at a fixed rate there is no effect on existing bonds.

Exhibit 7.5
St. Mary's College of Maryland Debt Service Related to Unrestricted Funds
Fiscal 2009-2020
($ in Thousands)

Fiscal 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 Estimated	38,296	3,512	65,422	5.4%
2016 Estimated	36,003	3,560	66,159	5.4%
2017 Estimated	33,658	3,549	67,813	5.2%
2018 Estimated	31,246	3,462	69,509	5.0%
2019 Estimated	28,942	3,361	71,246	4.7%
2020 Estimated	26,666	3,353	73,028	4.6%

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

Source: St. Mary's College of Maryland

Also, in fiscal 2015, SMCM issued $4 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.

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 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. With a new president, vice president of business and finance, and chief budget officer in 2014, this has the potential to change. 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 general obligation bond funds as a means to advance system priority projects.

Use of BCCC's debt capacity could advance capital projects that the college deems a priority. However, the interest rate BCCC-issued bonds would receive from the rating agencies would be a concern. For example, MSU, the closest State institution in terms of size, is rated as A+ by Standard & Poor's and AA3 according to Moody's, which is lower than the State's AAA bond rating. This results in higher interest rates and debt service on MSU-issued debt. Given other budget constraints at BCCC associated with a decline in student enrollment, it is unlikely BCCC would wish to pursue its own debt issuance without further discussion of a plan.

In order to support any potential future debt payments, BCCC would likely need to increase its capital reserve. The capital reserve is funded by a Facilities Capital Fee charged to students and generates almost $0.2 million annually. As of June 30, 2014, the capital reserve has $1.4 million. BCCC's capital reserve is held in the college's fund balance, which totaled $34.3 million at the end of fiscal 2014. The fund balances of USM, MSU, and SMCM support each institution's bond rating. Any consideration of future BCCC academic revenue bond issuances needs to include provisions for funding debt service since current annual revenue to BCCC's capital reserve fund would not support significant issuances.

Morgan State University

As shown in **Exhibit 7.6**, MSU estimates $43.1 million of debt in fiscal 2015. This figure includes academic, auxiliary, and capital lease debt. Auxiliary debt is the largest of the three, totaling $35.4 million. The ratio of debt service to unrestricted expenditures is estimated to be 3.4% in fiscal 2015, below the State'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 3.4% and 3.9% through fiscal 2020.

Exhibit 7.6
Morgan State University Debt Service as Related to Unrestricted Funds
Fiscal 2009-2020
($ in Thousands)

Fiscal 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 Estimated	43,145	6,078	177,479	3.4%
2016 Estimated	41,763	6,774	184,135	3.7%
2017 Estimated	36,338	7,505	193,341	3.9%
2018 Estimated	34,176	7,474	203,009	3.7%
2019 Estimated	29,586	8,253	213,159	3.9%
2020 Estimated	22,367	8,635	223,817	3.9%

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

Source: Morgan State University

Chapter 8. Issues

Key issues facing State debt programs are:

- close to the edge means small change in revenues could require reduced issuances; and
- data from recent bond sales shows that taxable debt is more expensive than tax-exempt debt.

Close to the Limit Means Small Reduction in Revenue Estimates Requires Reducing Bond Authorizations

As Chapter 4 demonstrates, the State is now essentially at the affordability limit. Debt service in fiscal 2018 is 7.98% of revenues, which is only two basis points below the limit. The concern is that a drop in revenues will force a reduction in debt issuances. Even more concerning, a recession could result in the State substantially exceeding the debt service to revenues ratio.

In the last two recessions, general fund revenue declined by almost 5.0% in the first year. In fiscal 2002, revenues declined 4.6%, and in fiscal 2009, revenues declined 4.8%. To simulate the effect of a recession, the Department of Legislative Services (DLS) assumed general fund revenue growth rates similar to the recession that began in fiscal 2002. In this simulation, the first year of the recession is fiscal 2017. **Exhibit 8.1** shows that a recession similar to the fiscal 2002 recession would increase the debt service to revenues ratio by 83 basis points in fiscal 2018. This increases the ratio to 8.82%.

Exhibit 8.1
Example of the Effect of a Recession on Debt Service to Revenue Ratio
Fiscal 2016-2020

Fiscal Year	Current Estimate	Recession Estimate	Difference
2016	7.44%	7.44%	0.00%
2017	7.73%	8.27%	0.54%
2018	7.98%	8.82%	0.83%
2019	7.91%	8.30%	0.40%
2020	7.86%	7.88%	0.02%

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

Source: Department of Legislative Services, November 2014

Another issue is that reductions in debt service are slow to materialize after reducing general obligation (GO) bond authorizations. The reasons for this are:

- the State does not begin to pay principal until the third year after bonds are issued; and
- bonds are not all issued in the same year that they are authorized. Typically, bonds are issued over five years, with only 33% of the bonds issued in the first year.

Consequently, even a substantial reduction in GO authorizations yields minimal savings in the early years. **Exhibit 8.2** shows that reducing the fiscal 2016 GO bond authorization by $500 million is not expected to affect fiscal 2016 expenditures at all. The first savings, which total $9 million, are realized in fiscal 2017. Not until fiscal 2023 is the full effect realized.

Exhibit 8.2
Effect of Reducing Fiscal 2016 Authorizations by $500 Million
Fiscal 2016-2030
($ in Millions)

Fiscal Year	Current Estimate	Reduction Estimate	Difference
2016	$1,130	$1,130	$0
2017	1,199	1,190	-9
2018	1,270	1,254	-16
2019	1,309	1,277	-32
2020	1,381	1,336	-44
2021	1,423	1,370	-53
2022	1,488	1,430	-58
2023	1,559	1,498	-61
2024	1,618	1,556	-61
2025	1,675	1,614	-61
2026	1,742	1,681	-61
2027	1,764	1,703	-61
2028	1,798	1,736	-61
2029	1,844	1,782	-61
2030	1,898	1,836	-61

Source: Department of Legislative Services, November 2014

Because the initial savings associated with reducing authorizations are limited, it is difficult to reduce the debt service to revenue ratio quickly if revenues underperform. **Exhibit 8.3** shows the effect of a $500 million reduction in fiscal 2016 on the debt service to revenue ratio. By fiscal 2020, it only reduced the ratio by 18 basis points.

Exhibit 8.3
Effect of $500 Million Reduction in Authorizations on Debt Service to Revenue Ration
Fiscal 2016-2020

Fiscal Year	Current Estimate	Post-reduction Estimate	Difference
2016	7.44%	7.44%	0.00%
2017	7.73%	7.69%	-0.04%
2018	7.98%	7.91%	-0.07%
2019	7.91%	7.77%	-0.13%
2020	7.86%	7.68%	-0.18%

Source: Department of Legislative Services, November 2014

Now that the State is close to the affordability limit, a small reduction in revenue estimates requires the State to reduce bond authorizations if the State is to continue adhering to current affordability guidelines. A recession would bring the ratios substantially above the limit. On the other hand, it is difficult to quickly reduce the ratio. Even a $500 million reduction in GO bond authorizations is dwarfed by the effect of a recession. The conclusion is that reducing the debt service to revenues ratio cannot be achieved easily through reducing GO bond authorizations. It requires a concerted effort over a number of years. The State may want to consider tempering bond issuances.

State debt could also become unaffordable if the status of a large project changes. As discussed in Chapter 3, capital leases are considered State debt, but operating leases are not considered to be State debt. If costs change, an operating lease could be reclassified as a capital lease.

A project that could be reclassified is the State Center project. Located in close proximity to the State Center Metro in Baltimore City, State Center consists of a grouping of State-owned office buildings that houses a number of State agencies. After several years of predevelopment efforts, including the execution of a Master Development Agreement, and several years of significant involvement from budget committees, in July 2010, the State approved ground and occupancy leases with the development team. The basic concept underpinning the proposed

multi-phase development included the State ground leasing parcels in several phases to State Center LLC, with the State then renting office space from the developer.

Efforts to start Phase I were blocked due to litigation filed by a group of downtown Baltimore City businesses principally on the grounds that the State did not comply with competitive bidding requirements and procedures. A ruling handed down by the Baltimore City Circuit Court in January 2013 voided the development contract, citing the State's failure to competitively bid the development. However, in March 2014, the State Court of Appeals reversed the decision in the State's favor allowing the development to proceed. After the lengthy delay, the Department of General Services (DGS), which is responsible for representing the State and development team, is in the process of reevaluating and reaffirming the commitments including the financial underpinnings.

Phase I is assumed by the Administration to constitute an operating lease, based in part on the requirement for annual appropriations in the budget. However, an analysis performed by the State Treasurer's Office in July 2010, while stopping short of determining the lease constitutes a capital lease, suggested that applying the Government Accounting Standards Board criteria for determining the classification of a lease as operating or capital could result in the lease being scored as a capital lease, and the State may wish to count it as such to avoid any future complications were the lease to be construed as debt of the State by the rating agencies. Moreover, the Treasurer's analysis also advised that if the actual amount of fair value of the project, as determined by the final project costs, is different from the estimated amounts, and if the actual discount rate is less than the 7% used in the initial debt calculation analysis, the final calculation may determine that the leases would need to be scored as capital leases by the State. To the extent that the project costs have likely increased, which could change the underlying lease terms, and to the extent that the discount rate in the current economic climate is likely to be much lower than the 7% used in the initial analysis, it will be imperative that a follow-up capital lease determination analysis is conducted once DGS advises the committees concerning the status of the project, including updated financials.

DGS advises that the lease payments for the State Center project are $18.5 million beginning in fiscal 2018. If the project is reclassified as a capital project, that amount is added to State debt service payments. **Exhibit 8.4** shows that this would raise the debt service to revenues ratio to 8.06%, which is slightly over the 8.00% threshold.

Exhibit 8.4
Effect of Reclassifying State Center as a Capital Lease
On Ratio of Debt Service to Revenues
Fiscal 2017-2020

Fiscal Year	Tax-supported Debt Service to Revenues Without State Center	Tax–supported Debt Service to Revenues With State Center
2017	7.73	7.73%
2018	7.98	8.06%
2019	7.91	7.98%
2020	7.86	7.94%

Source: Department of Legislative Services, November 2014

Reducing Taxable Debt Authorizations Reduces Interest Payments

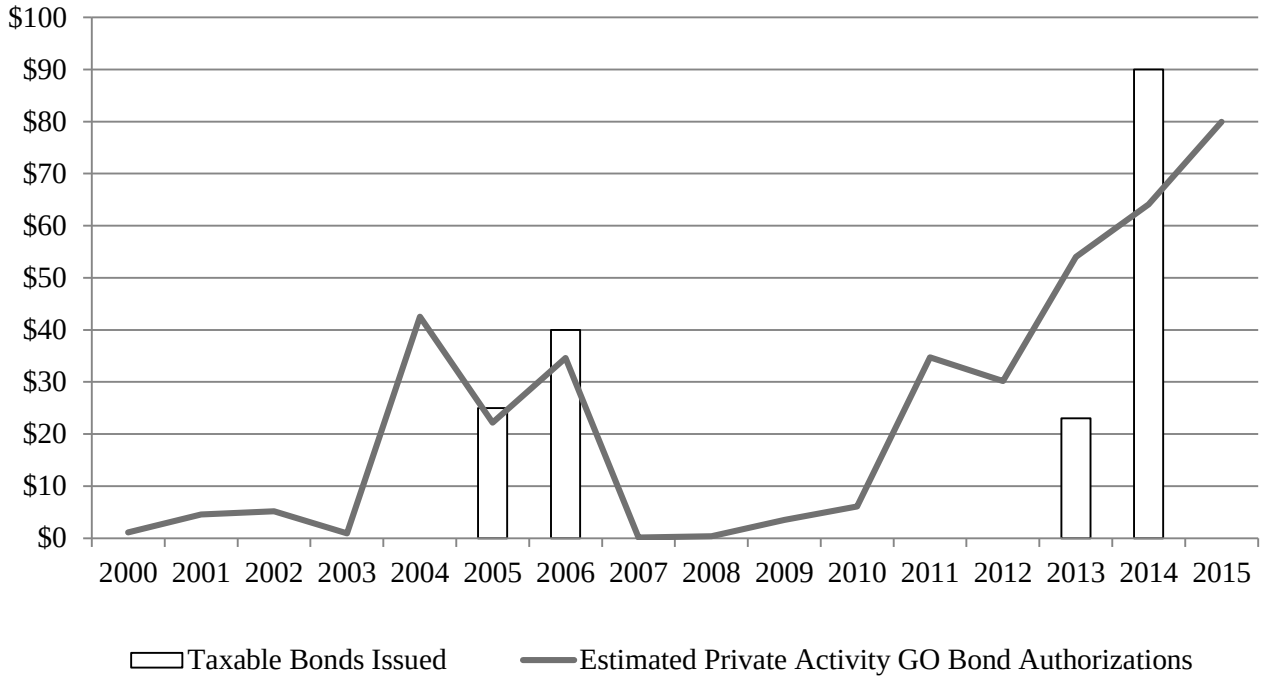
The State's capital program supports a number of different public policy areas, such as health, environmental, public safety, education, housing, and economic development. Federal government regulations allow the State to issue debt that does not require the buyer to pay federal taxes on interest earnings. 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 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, the Public Safety Communications program of the Department of Information Technology (DoIT), 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 $250 million in private activity bonds annually since fiscal 2011 and issued $46 million in taxable debt in fiscal 2013 and 2014 and plans $50 million in the March 2014 bond sale. Insofar as the State has recently authorized substantial levels of private activity projects, additional taxable bond sales are likely.

Exhibit 8.5
Private Activity Authorizations and Taxable Bond Issuances
Fiscal 2000-2015
($ 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 true interest cost (TIC) was 0.45%, and the State did not realize a premium. At the same bond sale, the State also issued $4 million in tax-exempt bonds to institutional investors. The tax-exempt bond sale had a TIC of 0.33%. In

other words, the difference between the two bonds, which were both issued on the same day, was 0.12% (12 basis points). DLS estimates that if the taxable issuance had sold at a TIC of 0.33%, instead of 0.45%, the bonds would have generated a premium totaling approximately $500,000.

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

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

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

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

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

This is not the case in the current *Capital Improvement Program*. The fiscal 2015 allowance has private activity authorizations increasing to $79 million. This is the highest level in years. **Exhibit 8.6** shows that out-year private activity authorizations range from $42 million in fiscal 2016 to $31 million in fiscal 2019. 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 with PAYGO capital funding. It also appears as though there is no attempt to reduce the reliance on GO bonds and to appropriate general funds instead for DHCD programs.

Exhibit 8.6
Private Activity Authorizations by Department
Fiscal 2015-2019
($ in Thousands)

	2015	2016	2017	2018	2019
Private Business Use					
Department of Information Technology	$3,915	$4,493	$4,275	$5,198	$0
State Department of Education	121	259	247	242	0
Morgan State University	30	0	0	0	0
University System of Maryland	1,439	1,187	0	0	0
Johns Hopkins University	750	0	0	0	0
Total Estimated Private Funds	**$6,254**	**$5,938**	**$4,522**	**$5,440**	**$0**
Private Loans*					
Department of Housing and Community Development	$64,450	$29,800	$26,100	$25,200	$24,300
Department of the Environment	9,073	6,500	6,500	6,500	6,500
Department of Planning	150	150	150	150	150
Total Estimated Private Funds	**$73,673**	**$36,450**	**$32,750**	**$31,850**	**$30,950**
Grand Total	**$79,927**	**$42,388**	**$37,272**	**$37,290**	**$30,950**
Out-year Total without Housing or Environment		**$6,088**	**$4,672**	**$5,590**	**$150**

* Excludes $600,000 from the Department of Housing and Community Development Community Legacy Program loan in which the private loan is less than 10% of the total.

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

Source: Department of Budget and Management, *Capital Improvement Program*, January 2014

As previously mentioned, federal regulations allow for some private activity in tax-exempt bonds. This allows some flexibility if there are minor changes in the use of infrastructure built or if there are some projects or programs that have a limited private activity component. Most of the agencies that have some private activity in their projects have exposure that can be managed within the federal guidelines.

The concern is that there are large private activity authorizations in the Maryland Department of the Environment and DHCD. These large authorizations are likely to result in taxable bonds in the out-years. In the fiscal 2014 budget bill, the General Assembly added

language expressing concerns about the amount of private activity bonds in the capital program. The language expressed the intent that the Administration reduce the reliance on private activity bonds. **The Administration should brief the committees on any plans it has to return to the practice of supporting private activity capital projects with general funds.**

In the previous issue relating to the use of bond sale premiums, DLS examined the use of the premiums to reduce GO bond authorizations. Since the General Assembly has expressed concerns about authorizing private activity bonds, the budget committees could consider reducing these authorizations if a plan to substitute premiums for new bond authorizations is adopted. Insofar as these private activity bonds are more expensive, this approach would further reduce debt service costs.

The concern is that there are large private activity authorizations in DoIT and DHCD. These large authorizations are likely to result in taxable bonds in the out-years. Funding these programs in the operating budget reduces the amount of private activity authorizations to $2 million or less in the out-years. This is consistent with a normal level of private activity authorizations. In fiscal 2016, this frees almost $30 million in GO bond capacity that can be used for other projects. In the out-years, moving these programs into cash reduces debt service costs. **To reduce debt service cost, DLS recommends that the Department of Budget and Management reduce the level of private activity authorizations for fiscal 2016.**

Maintaining a Fund Balance in the Annuity Bond Fund Is Necessary Due to Volatile Interest Rates

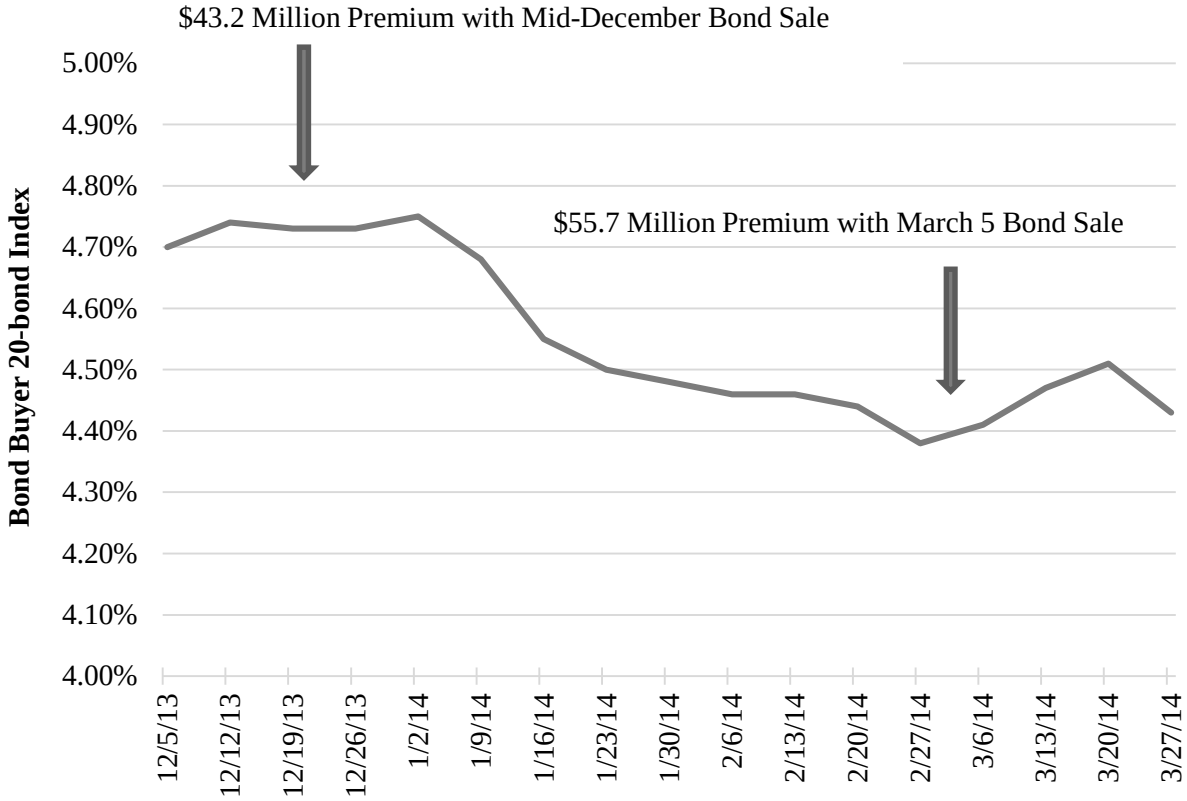
Since fiscal 2012, bond sale premiums have generated over $100 million annually. Although premiums are expected to diminish, DLS anticipates bond sales will continue to generate premiums in the out-years. DLS also includes a fund balance that is equal to the half the value of the bond sale premiums forecast in a particular year. The reason for this fund balance is the volatile nature of bond sale premiums.

As discussed in Chapter 5, small changes in interest rates can generate substantial changes in the amount of premiums realized. Currently, interest rates are highly volatile, and rates can climb or plummet in a matter of weeks. For example, from the beginning of January 2014 to the end of February 2014, The Bond Buyer 20-bond Index decreased 0.37%, from 4.75% to 4.38%. Such a drop substantially increases a bond sale premium.

Most of this volatility cannot be foreseen. This means that the key variables used to estimate premiums is impossible to predict with any precision. An example of this is the March 6, 2014 bond sale. The State projected a $40.8 million premium. This forecast was prepared in December 2013 and used in the Governor's fiscal 2015 budget. Using interest rates from December 2013, DLS forecasted a $43.2 million premium. DLS' conclusion is that the premium in the budget was entirely reasonable, based on the data that was available when the budget was prepared.

However, the actual bond sale premium for the March sale was $55.7 million. This is $14.9 million more than projected. The reason for this difference is a sudden decline in interest rates. Lower rates are favorable to the State because they reduce interest payments. If the coupon rate that the State pays bondholders remains constant, the State realizes a larger premium. **Exhibit 8.7** shows that The Bond Buyer 20-bond Index declined from over 4.70% in December 2013 to approximately 4.40% in early March 2014. The State benefited from the change by receiving a larger premium.

Exhibit 8.7
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

This volatility goes both ways. For example, the State issued bonds on July 24, 2013. There was a sharp increase in interest during July 2013. From July 3 to July 25, 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.

Had there been an increase in interest rates early in 2014, estimated fiscal 2015 general fund appropriations could have been $15 million less than required to pay debt service costs. In all likelihood a corresponding supplemental budget appropriation would have been approved late in the General Assembly's budget process. Because interest rates are volatile, DLS maintains a fund balance that is at least half the value of the annual bond sale premiums in the Annuity Bond Fund (ABF) forecast.

Appendix 1
General Obligation Bond Requests
Fiscal 2016-2020
($ in Millions)

	2016	2017	2018	2019	2020	Total	Category Totals
State Facilities							**$683.4**
Board of Public Works	$42.0	$126.8	$161.3	$110.2	$98.2	$538.6	
Military	4.4	8.7	7.4	4.9	1.8	27.2	
Disabilities	1.6	1.6	1.6	1.6	1.6	8.0	
Maryland Public Broadcasting	0.4	0.2	0.7	6.6	4.8	12.6	
Information Technology	34.9	27.1	34.1	0.0	1.0	97.0	
Health and Social Services							**$596.6**
Health and Mental Hygiene	$5.6	$18.0	$16.6	$22.8	$20.1	$83.1	
University of Maryland Medical System	15.5	15.3	13.6	0.0	0.0	44.4	
Senior Citizen Activity Center	1.0	2.0	2.0	2.0	2.0	9.0	
Juvenile Services	5.8	36.1	58.9	79.6	89.1	269.5	
Private Hospital Grant Program	3.6	5.0	5.0	6.0	6.0	25.6	
Prince George's County Hospital	40.0	35.0	90.0	0.0	0.0	165.0	
Environment							**$936.5**
Natural Resources	$120.2	$122.6	$125.7	$81.8	$49.1	$499.4	
Agriculture	30.0	29.4	30.4	25.7	28.5	143.9	
Environment	48.1	45.8	41.8	25.8	25.8	187.3	
Maryland Environmental Service	21.7	30.3	19.8	11.0	23.1	105.9	
Education							**$3,079.0**
Education	$30.9	$34.7	$34.7	$13.7	$6.9	$120.8	
Maryland School for the Deaf	3.3	0.0	0.0	0.1	1.4	4.8	
Public School Construction	631.8	586.3	630.7	569.6	535.1	2,953.4	
Higher Education							**$3,207.5**
University System of Maryland*	$366.6	$435.7	$397.5	$314.5	$430.2	$1,944.5	
Baltimore City Community College	0.0	1.9	14.9	22.2	0.0	38.9	
St. Mary's College	11.5	5.4	9.7	9.3	35.0	70.9	
Morgan State University	51.9	96.8	73.7	135.6	113.1	471.1	
Community Colleges	79.7	138.6	125.8	121.9	152.1	618.1	
Private Facilities Grant Program	12.0	13.0	13.0	13.0	13.0	64.0	
Public Safety							**$367.6**
Public Safety/Corrections	$43.5	$35.3	$64.0	$101.0	$107.2	$350.9	
State Police	0.0	0.0	0.4	4.4	3.5	8.3	
Local Jails	0.7	2.6	4.1	1.1	0.0	8.5	

	2016	2017	2018	2019	2020	Total	Category Totals
Housing and Economic Development							**$402.4**
Housing and Community Development	$79.3	$78.2	$72.3	$66.4	$66.0	$362.2	
Historic St. Mary's City	0.0	0.0	1.1	13.5	6.0	20.6	
Planning	1.4	8.4	5.1	2.2	2.6	19.6	
Transportation							**350.0**
Transportation Watershed Implementation Plan	$65.0	85.0	100.0	100.0	0.0	350.0	
							$186.9
Legislative Initiatives**	$35.0	$35.0	$35.0	$35.0	$35.0	$175.0	
Miscellaneous	10.5	1.4	0.0	0.0	0.0	11.9	
Subtotal Request	**$1,797.7**	**$2,061.8**	**$2,190.8**	**$1,901.5**	**$1,858.1**	**$9,810.0**	**$9,810.0**
Debt Affordability Limits 2013 SAC	**$1,095.0**	**$1,105.0**	**$1,200.0**	**$1,240.0**	**$1,280.0**	**$5,920.0**	
Debt Affordability Limits 2014 CDAC	**$1,170.0**	**$1,180.0**	**$1,275.0**	**$1,315.0**	**$1,280.0**	**$6,220.0**	
Variance 2013 SAC	**$702.7**	**$956.8**	**$990.8**	**$661.5**	**$578.1**	**$3,890.0**	
Variance 2014 CDAC	**$627.7**	**$881.8**	**$915.8**	**$586.5**	**$578.1**	**$3,590.0**	

CDAC: Capital Debt Affordability Committee
SAC: Spending Affordability Committee

*In addition to the general obligation bond request, the University System of Maryland has requested academic revenue bond funding of $34.5 million annually for fiscal 2016-2020.

** Figures represent an estimated average of the total funding requests received through legislative local bond bills.

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

Source: Department of Budget and Management

Appendix 2
Estimated General Obligation Issuances
($ in Thousands)

Fiscal Year	Proposed Auth.	Estimated Issuances During Fiscal Year (a) ====> 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Post-2024	Total Issued
2016	$1,170,000	$0	$363,000	$293,000	$234,000	$176,000	$104,000						$1,170,000
2017	1,180,000		0	366,000	295,000	236,000	177,000	$106,000					1,180,000
2018	1,275,000			0	395,000	319,000	255,000	191,000	$115,000				1,275,000
2019	1,315,000				0	408,000	329,000	263,000	197,000	$118,000			1,315,000
2020	1,280,000					0	397,000	320,000	256,000	192,000	$115,000		1,280,000
2021	1,320,000						0	409,000	330,000	264,000	198,000	$119,000	1,320,000
2022	1,360,000							0	422,000	340,000	272,000	326,000	1,360,000
2023	1,400,000								0	434,000	350,000	616,000	1,400,000
2024	1,440,000									0	446,000	994,000	1,440,000
Total New Authorization		**$0**	**$363,000**	**$659,000**	**$924,000**	**$1,139,000**	**$1,262,000**	**$1,289,000**	**$1,320,000**	**$1,348,000**	**$1,381,000**	**$3,535,000**	
Previously Authorized GO Bonds:	$2,536,074	1,018,000	693,550	466,700	268,750	101,350	-1,100	-1,650	-1,600	-8,000	0	0	$2,536,000
Total Issuances		**$1,018,000**	**$1,056,550**	**$1,125,700**	**$1,192,750**	**$1,240,350**	**$1,260,900**	**$1,287,350**	**$1,318,400**	**$1,340,000**	**$1,381,000**	**$3,535,000**	

Percentage Issuance Assumptions by Fiscal Year

Fiscal Year Following Year of Authorization	1st	2nd	3rd	4th	5th
Percent of Authorization Issued	31.0%	25.0%	20.0%	15.0%	9.0%

Appendix 3
Investors Are Purchasing Maryland Bonds at a Premium to Protect Against a Loss in the Value of Their Bonds If Interest Rates Increase

When bonds are sold, they have a par value (cost of the bond as shown in the Official Statement) and a coupon rate (interest rate paid to the bondholder). When the bonds are bid, the Treasurer's Office determines the value of the bonds sold and when the bonds mature. The market determines the coupon rate and the sale price of the bonds.

In the current low-interest rate climate, the coupon rate has been substantially higher than the market interest rate, as measured by the true interest cost (TIC). If the TIC is less than a bond's coupon rate, the markets bid up the price of the bonds to a level that is higher than par value. The difference between the par value and the sale price of the bonds is a premium. Conversely, when the TIC is above the coupon rate, the bonds cannot sell at par value and sell for less. This difference is referred to as a discount.

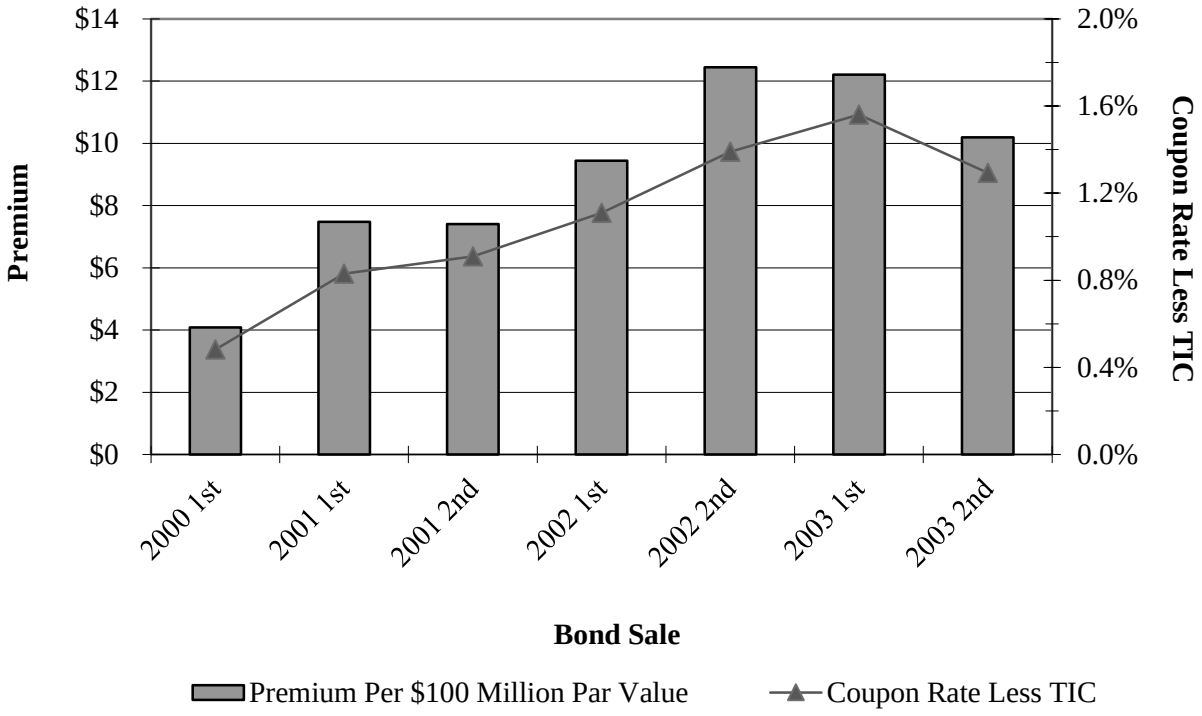
For most bond sales before 2001, the TIC was slightly below the coupon rate. This generated a small premium and provided sufficient funds for the capital program. Since 2001, interest rates have declined, while coupon rates have remained constant. The result has been substantial premiums. This relationship was examined by the Department of Legislative Services in calendar 2003 in the *Effect of Long-term Debt on the Financial Condition of the State*.

The increases in premiums are attributable to the difference between the bonds' coupon rates and the TIC. The coupon rates have declined less than market interest rates (as measured by the TIC) in recent years. **Table 1** shows how the spread between the coupon rate and the TIC affects bond sale premiums in bond sales from 2000 to 2003, when the State began realizing large premiums. Over the same period, bond sale premiums increased from $4 million per sale to $12 million per $100 million of bonds sold. The actual premium realized is even more stunning, as the total amount of bonds sold increased. The first 2000 bond sale generated an $8 million premium, while the first 2003 bond sale generated a $61 million premium.

Bond Sale Premiums Protect Investors against Rising Interest Rates

The return an investor receives for purchasing a bond is referred to as the yield. When bonds are sold, the yield is the TIC. At the July 2011 bond sale, the State competitively sold $29 million of general obligation bonds with 15-year maturities. The coupon rate of the bonds was 5.0%, and the yield was 3.3%. The value of each $5,000 bond with a 5.0% coupon rate was $5,999. The additional $999 was the premium investors paid to increase the coupon rate from 3.3% to 5.0%. At the time of the bond sale, the value of a $5,000 bond with a 3.3% coupon rate is the same as a $5,999 bond with a 5.0% coupon rate.

Table 1
Differences between Coupon Rates and True Interest Cost Affect Premiums
2000-2003 Bond Sales
($ in Millions)



TIC: true interest cost

Source: Department of Legislative Services, November 2003

Even though the two bonds in the previous example are worth the same on the day of the sale, investors prefer to purchase bonds at a premium under current market conditions. The reason for this is that bonds sold at a premium hold their value better than bonds sold at par if interest rates rise. If interest rates increase from 3.3% to 4.3%, the value of bonds sold for $5,999 decline 10.3%, while the value of bonds sold at par ($5,000) decline 11.0%.

Current interest rates are historically low. According to data from the Federal Reserve Board, the yield on 10-year treasury bills on the Friday after the most recent bond sale was among the lowest since 1962. In fact, only 3 out of 2,663 weeks had lower yields. 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.

Appendix 4
Maryland General Obligation Bond Debt True Interest Cost Analysis
Statistically Significant Variables

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

Bond Sale Date	TIC	20-bond Index	MD/US PI	YTM	BABs	Post-crisis
03/04/09	3.39%	4.96%	2.287	9.01	No	Yes
03/02/09	3.63%	4.87%	2.287	10.04	No	Yes
08/05/09	2.93%	4.65%	2.303	8.96	No	Yes
08/03/09	3.20%	4.69%	2.303	9.01	No	Yes
08/05/09	3.02%	4.65%	2.303	14.99	Yes	Yes
10/21/09	2.93%	4.31%	2.242	7.91	No	Yes
10/21/09	3.06%	4.31%	2.242	14.03	Yes	Yes
02/24/10	2.85%	4.36%	2.262	12.09	Yes	Yes
07/28/10	1.64%	4.21%	2.259	5.34	No	Yes
07/28/10	1.91%	4.21%	2.259	6.20	No	Yes
07/28/10	2.74%	4.21%	2.259	13.51	Yes	Yes
03/07/11	2.69%	4.90%	2.286	6.86	No	Yes
03/09/11	3.49%	4.91%	2.286	10.51	No	Yes
07/25/11	1.99%	4.46%	2.299	5.65	No	Yes
07/27/11	3.08%	4.47%	2.299	10.05	No	Yes
03/02/12	2.18%	3.72%	2.306	8.33	No	Yes
03/07/12	2.42%	3.84%	2.306	9.71	No	Yes
07/27/12	2.52%	3.61%	2.277	9.10	No	Yes
08/01/12	2.17%	3.66%	2.277	9.71	No	Yes
03/06/13	2.35%	3.86%	2.288	9.61	No	Yes
07/24/13	3.15%	4.77%	2.284	10.20	No	Yes
03/05/14	2.84%	4.41%	2.265	10.14	No	Yes
07/18/14	1.27%	4.36%	2.240	4.69	No	Yes
07/23/14	2.65%	4.29%	2.240	10.16	No	Yes

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

Source for 20-bond Index: The Bond Buyer

Source for personal income: Federal Bureau of Economic Analysis

Remaining Sources: Bond Sale Official Statements

Appendix 5
Agency Debt Outstanding
Fiscal 2004-2014
($ in Millions)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 2004-14	Average Annual % Change 2004-14
Agency Debt Subject to Ceiling and Allocation Caps													
Maryland Environmental Service	$30.5	$30.5	$24.5	$19.6	$18.7	$19.8	$28.5	$31.2	$27.5	$25.2	$27.9	-$2.6	-0.9%
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	627.2	763.6	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	2,552.1	17.6%
Maryland Water Quality Financing Administration[1]	96.6	88.2	73.9	65.7	104.9	140.0	126.3	112.0	57.7	47.2	36.7	-59.9	-9.2%
Revenue Cap Total	**$754.3**	**$882.3**	**$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**	**$2,529.0**	**15.7%**
% Change/Prior Year	**5.5%**	**17.0%**	**-2.1%**	**32.1%**	**75.4%**	**20.3%**	**18.9%**	**20.0%**	**-1.7%**	**-1.8%**	**-4.0%**		
Agency Debt Not Subject to Ceiling and Allocation Caps													
Baltimore City Community College	$0.9	$0.9	$0.8	$0.8	$0.7	$0.7	$0.7	$1.2	$1.0	$0.9	$0.0	-$0.9	-100.0%
Department of Housing and Community Development[2]	2,415.1	2,194.6	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	368.1	1.4%
Local Government Infrastructure (CDA)	114.6	122.5	117.0	122.0	135.1	121.6	109.7	127.2	122.8	129.6	137.1	22.5	1.8%
Maryland Industrial Development Financing Authority	411.1	395.0	409.6	387.1	382.0	344.9	375.7	484.8	492.6	347.7	335.1	-76.0	-2.0%
MDOT – County Revenue Bonds	4.5	31.8	30.0	58.4	56.8	98.5	95.1	89.1	82.9	101.7	94.9	90.4	35.6%
MDOT – Nontax-supported Issuances	54.0	49.7	72.6	68.5	64.2	59.9	57.3	54.2	51.1	47.7	44.7	-9.3	-1.9%
Morgan State University	70.0	68.6	67.7	69.6	68.4	67.8	64.4	59.6	55.2	47.8	44.3	-25.7	-4.5%
St. Mary's College of Maryland	39.7	40.6	43.8	49.5	48.2	46.8	45.3	41.8	38.3	36.1	34.3	-5.4	-1.5%
University System of Maryland	973.0	1,012.8	934.8	954.8	969.9	1,028.5	1,082.9	1,129.2	1,170.0	1,195.0	1,269.0	296.0	2.7%
Noncap Total	**$4,082.9**	**$3,916.5**	**$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**	**$256.5**	**1.5%**
% Change/Prior Year	**-9.0%**	**-4.1%**	**0.2%**	**25.2%**	**1.4%**	**-0.8%**	**4.7%**	**0.9%**	**-2.0%**	**-6.5%**	**-7.4%**		

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change 2004-14	Average Annual % Change 2004-14
Tax-supported Debt													
Transportation Debt	$1,187.3	$1,070.8	$1,078.5	$1,111.1	$1,268.8	$1,582.6	$1,645.0	$1,561.8	$1,562.6	$1,618.3	$1,812.7	$625.4	4.3%
Grant Anticipation Revenue Vehicles	0.0	0.0	0.0	325.0	300.7	704.4	651.8	596.9	539.4	479.0	415.8	415.8	n/a
Capital Leases	198.6	175.1	226.9	247.9	247.4	266.8	242.5	166.4	310.3	286.2	260.3	61.7	2.7%
Maryland Stadium Authority	321.0	309.2	296.8	283.1	271.6	256.0	243.6	225.7	218.3	193.0	168.9	-152.1	-6.2%
Bay Restoration Bonds	0.0	0.0	0.0	0.0	50.0	46.8	44.2	41.6	38.8	36.0	133.1	133.1	n/a
General Obligation Debt	4,102.3	4,511.8	4,868.5	5,142.2	5,493.8	5,873.6	6,523.2	6,982.8	7,541.1	8,005.8	8,362.0	4,259.7	7.4%
Tax-supported Debt Total	**$5,809.2**	**$6,066.9**	**$6,470.7**	**$7,109.3**	**$7,632.3**	**$8,730.2**	**$9,350.3**	**$9,575.2**	**$10,210.5**	**$10,618.3**	**$11,152.8**	**$5,740.3**	**6.7%**
% Change/Prior Year	**7.3%**	**4.4%**	**6.7%**	**9.9%**	**7.4%**	**14.4%**	**7.1%**	**2.4%**	**6.6%**	**10.9%**	**9.2%**		
Authorities and Corporations Not Subject to Ceiling and Allocation Caps													
Health/Higher Education Facilities Authority	$5,316.9	$5,544.3	$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	$4,217.7	5.2%
Maryland Economic Development Corporation	1,593.9	1,642.6	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	758.9	3.5%
Authorities and Corporations Total	**$6,910.8**	**$7,186.9**	**$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**	**$4,976.6**	**4.8%**
% Change/Prior Year	**13.2%**	**4.0%**	**12.1%**	**13.7%**	**12.5%**	**2.7%**	**3.9%**	**1.2%**	**2.3%**	**-1.5%**	**-1.2%**		

CDA: Community Development Administration
MDOT: Maryland Department of Transportation

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