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

DEPARTMENT OF LEGISLATIVE SERVICES 2012

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Department of Legislative Services
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November 2012

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, Richard Harris, Jaclyn Hartman, Matthew Klein, Jonathan Martin, and Jody Sprinkle. The manuscript was prepared by Judy Callahan.

Respectfully submitted,

Warren G. Deschenaux
Director

WGD/jac

Contents

Chapter 1. Recommendations of the Department of Legislative Services

New General Obligation Bond Authorization

The Capital Debt Affordability Committee (CDAC) recommended a limit of $925 million for new general obligation (GO) bond authorizations during the 2013 legislative session. The recommendation is equal to the amount authorized in the 2012 legislative session. This amount is consistent with the committee's affordability limits, which limits debt service costs to 8% of revenues.

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. Current projections require general fund subsidies to support debt service costs at a time when there is a substantial structural deficit. The current proposal also increases authorizations beyond the current term of the Administration and legislature. It is possible that the next Administration and legislature have different priorities, which could be different projects or less debt service. Finally, it is unclear what projects this initiative will support. **DLS recommends that the increase in GO bond authorizations be limited to two years and reconsidered in the 2015 interim. The General Assembly may want to consider dedicating a portion or all of these funds for transportation projects.**

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. **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 $32 million for fiscal 2014. Academic bond issuances are discussed in Chapter 6. **DLS concurs with the committee's assessment that issuing $32 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 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 $1.075 billion limit on new GO debt authorization for the 2013 session. Although this figure is the same amount authorized by the General Assembly in the 2012 session, it reflects a $150 million increase over what the committee programmed for the 2013 session in last year's CDAC report. Moreover, the committee's long-range plan adjusts annual GO authorization levels upward by $150 million for each of the 2013 through 2017 sessions over what the committee planned for in its 2011 report.

The increase in authorizations was proposed by the Department of Budget and Management. In support of the increase, Secretary T. Eloise Foster noted that there are "shovel-ready projects," interest rates are low, capacity is squeezed by legislative pre-authorizations, and the capital budget provides operating budget relief. She also noted that, even if authorizations are increased, this September's debt service to revenue ratio is less than the ratio was in September 2011.

Exhibit 2.1 illustrates recent fluctuations in CDAC's recommendations for new GO bond authorization levels. In order to keep authorization levels within affordability limits, which limits debt service to no more than 8% of revenues and total outstanding debt to no more than 4% of personal income measures, the committee significantly reduced authorization levels programmed for the forecast period with the 2010 session budget submission. With more recent improvements in the State's economy, CDAC's current recommendation would restore most of the previous reductions by adding $750 million of new GO bond authorizations over the next five fiscal years. It is noteworthy that the recent contraction in the level of planned out-year authorization levels was not considered permanent and reflected a return to previously planned higher authorization levels beginning with the 2017 session. Hence the committee's affordability analysis and long-range estimates and assumptions were and are predicated upon the debt authorization levels returning to levels proposed by CDAC in previous reports to the extent that the State's revenue and economic picture improves and constraints on tax-supported debt issuance lessen. GO bond authorizations, issuances, and costs are discussed in more detail in Chapter 3.

Exhibit 2.1

Effect of Proposed Capital Debt Affordability Committee General Obligation Bond Authorizations

2013-2021 Legislative Sessions

($ in Millions)

Session	Proposed GO Authorizations 2012 CDAC	Change from 2011 CDAC Authorization	Change from 2009 CDAC Authorization
2013	$1,075	$150	-$5
2014	1,085	150	-25
2015	1,095	150	-45
2016	1,105	150	-65
2017	1,200	150	0
2018	1,240	0	0
2019	1,280	0	0
2020	1,320	0	0
2021	1,360	0	0
Total	**$10,760**	**$750**	**-$140**

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*, October 2012

To the extent that the State's affordability ratios remain near the benchmarks, and any change in State revenue estimates could directly impact the amount of future GO bond authorizations, the committee has advised that it intends to meet following the Board of Revenue Estimates' December forecast to make any necessary modifications to the committee's recommendations.

Higher Education Academic Debt

CDAC recommends increasing new debt authorization of Academic Revenue Bonds (ARB) to $32 million beginning in the 2013 legislative session. This is the same amount authorized for the 2012 legislative session and is consistent with the long-range plan adopted by the committee prior to the 2011 session which included $5 million more on an annual basis to support a long-term campuswide infrastructure improvement program at the University of Maryland, College Park.

Chapter 3. State Debt

Maryland's statutes allow for the issuance of the following types of State debt:

- 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);
- 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 2014 through 2018.

New General Obligation Bond Authorizations: Increased Out-year Authorizations

The Capital Debt Affordability Committee (CDAC) recommended a limit of $1.075 billion for new authorizations of GO bonds during the 2013 session. Although the recommended level of new authorizations is the same amount authorized in the 2012 session, it represents a $150 million increase over what the committee planned for the 2013 session in its

2011 report. **Exhibit 3.1** shows CDAC's long-term forecast recommends a total of $6.8 billion in new GO bond authorizations for the 2013 through 2018 sessions. Compared to last year's forecasted levels, annual authorizations would increase by $150 million and total authorizations by $750 million over the 2013 through 2017 sessions.

Exhibit 3.1

Effect of New Policy on General Obligation Bond Authorizations

2013-2018 Legislative Sessions

($ in Millions)

Session	2009 Recommended Authorizations	2011 Recommended Authorizations	2012 Recommended Authorizations	2009-11 Difference	2009-12 Difference
2013	$1,080	$925	$1,075	-$155	-$5
2014	1,110	935	1,085	-175	-25
2015	1,140	945	1,095	-195	-45
2016	1,170	955	1,105	-215	-65
2017	1,200	1,050	1,200	-150	0
2018	1,240	1,240	1,240	0	0
Total	**$6,940**	**$6,050**	**$6,800**	**-$890**	**-$140**

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*, 2009, 2011, and 2012

The committee's 2010 and 2011 forecasted recommended 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. Had the committee's 2011 recommendation carried forward to 2012 as planned, authorizations would be $890 million less than what was forecasted by the committee in December 2009. However, the 2012 recommendation essentially restores the forecasted authorization levels to what was recommended in December 2009 falling just short of equaling what was recommended in December 2009 by $140 million. Although not reflected in Exhibit 3.1, beginning in the 2018 session and continuing through the committee's long-term forecast period, recommended authorization levels return to what was forecast by the committee in December 2009 prior to the write-down and are also the same as what was forecast in each of the last two years.

CDAC's current 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. Furthermore, the State's improving overall fiscal outlook provides increased debt capacity over what was estimated last year. Citing additional debt capacity, the need to program funding for projects accelerated by the legislature in the 2012 session, and the stimulative effect of additional GO bond funding on employment and revenues, the committee's recommendation seeks to fund

capital priorities that would otherwise continue to be deferred under the 2011 recommendations. As has been the case in recent years, the committee has advised that it intends to review the State's fiscal outlook and revenue estimates again in December 2012, 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 2014 through 2022 would be issued. **Exhibit 3.2** compares the issuance stream projected by the Department of Legislative Services (DLS) based on the CDAC authorization levels in its December 2011 analysis and the 2012 DLS estimate based on the recommended increase over the planning period. The 2012 DLS projections show the State issuing $206 million more through fiscal 2017. The difference between the two projected issuance streams reflects the impact of the $750 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 3.2
Proposed Issuance Stream
Fiscal 2013-2017
($ in Millions)

Fiscal Year	2011 Estimate	2012 Estimate	Difference
2013	$960	$1,028	$68
2014	1,055	977	-78
2015	995	995	0
2016	935	1,013	78
2017	930	1,068	138
Total	**$4,875**	**$5,081**	**$206**

Source: *Capital Debt Affordability Committee on Recommended Debt Authorizations*, December 19, 2011; Department of Legislative Services, October 2012

General Obligation Bond Debt Service Costs

Exhibit 3.3 shows that debt service costs are expected to be $160 million more than what DLS projected in the 2012 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 2011 report. The difference in projected debt service costs is attributable to the increased issuance stream which is a function of the higher GO bond authorizations recommended for fiscal 2014 through 2018, as well as changes in capital project cash flow needs. In addition, refundings of previously issued bonds which took place in March and August of 2012 result in $31 million in debt service savings over the remaining life of the bonds.

Exhibit 3.3
Projected Debt Service Costs
Fiscal 2014-2021
($ in Millions)

Fiscal Year	2011 Estimate	2012 Estimate	Difference
2014	$994	$989	-$5
2015	1,049	1,052	3
2016	1,141	1,147	7
2017	1,198	1,207	9
2018	1,255	1,275	20
2019	1,282	1,309	27
2020	1,333	1,382	49
2021	1,367	1,418	51
Total	**$9,619**	**$9,779**	**$160**

Note: Totals may not sum due to rounding.

Sources: *Capital Debt Affordability Committee on Recommended Debt Authorizations*, December 19, 2011; Department of Legislative Services, October 2012

General Obligation Bond Refunding

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. The following issuances refunded bonds:

- In the December 2009 bond sale, the State issued $602.8 million in GO bonds to refund $606.3 million in GO bonds. The refunding bonds yielded net present value savings totaling $24.9 million from fiscal 2010 to 2020.

- The February 2010 bond sale issued $195.3 million in bonds and supported the advanced refunding of $200.4 million in previously issued bonds. The issuance generated $8.6 million in present value debt service savings.

- In September 2011, the State issued $254.9 million in tax-exempt GO bonds to advance refund $264.6 million in previously issued GO bonds. The sale realized $11.6 million in present value debt service savings.

- In March 2012, the State issued $138.3 million to refund $140.1 million. The issuance generated $10.2 million in present value debt service savings and $12.6 million in nominal debt service savings.

- In August 2012, the State issued $191.6 million to retire $194.5 million in previously issued bonds. The issuance generated $16.1 million in present value debt service savings and $18.7 million in nominal debt service savings.

These recent bond sale refunding issuances reduced present value GO bond debt service costs by a total of $71.4 million. 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.

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 by Transfer Tax – Program Open Space Bonds – Land and Easement Acquisition (Chapter 419 of 2009). The bonds were intended to replace funds lost due to the transfer of up to $70 million in Program Open Space 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 were issued as part of two State issuances, February and July 2010, as shown in **Exhibit 3.4.** 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 statute has been met. The Department of Natural Resources (DNR) received $65 million, and the Maryland Department of Agriculture (MDA) received $5 million of the $70 million issuance.

Exhibit 3.4
Program Open Space GO Bond Issuances
($ in Thousands)

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

Source: Department of Budget and Management, January 2011

Exhibit 3.5 shows that debt service costs are $1.6 million in 2013, when the debt service payment is limited to interest payments. Debt service costs increase to over $6.1 million when the principal is retired beginning in fiscal 2014. The debt service is deducted from transfer tax revenues allocated to DNR and MDA proportionately based on the share of the issuance each received.

Exhibit 3.5
Program Open Space GO Bonds Debt Service Payment Schedule
Fiscal 2013-2018
($ in Millions)

	2013	2014	2015	2016	2017	2018
Debt Outstanding	$70.0	$65.4	$60.7	$55.7	$50.5	$45.1
Debt Service	1.6	6.1	6.3	6.4	6.6	6.7

Source: Department of Budget and Management, January 2011

Federal Tax Credit and Direct Payment Bonds

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

To date, the State has issued $185 million in QZABs, QSCBs, and QECBs to support education construction projects. **Exhibit 3.6** shows that DLS estimates that the lower costs associated with these bonds reduced total debt service payments by almost $59 million.

Exhibit 3.6
Federal Tax Credit and Direct Pay Issuances Supporting Public School Capital Projects
($ in Thousands)

Type	Year Issued	Amount Issued	Sinking Fund Payments	Debt Service Payments	Similar GO Payments[1]	Savings
QZAB	2001	$18,098	$12,432	$0	$27,182	$14,750
QZAB	2004	9,043	7,356	0	12,393	5,038
QZAB	2006	4,378	3,609	0	6,132	2,523
QZAB	2007	4,986	4,089	0	6,967	2,877
QZAB	2008	5,563	0	6,142	7,606	1,464
QZAB	2009	5,563	0	6,275	7,052	778
QSCB[2]	2009	50,320	49,964	0	63,791	13,827
QSCB[2]	2010	45,175	44,663	0	52,731	8,068
QZAB[2]	2010	4,543	4,543	0	5,302	759
QZAB	2011	15,900	0	15,900	20,267	4,367
QECB	2011	6,500	0	7,080	8,285	1,206
QZAB	2012	15,230	0	15,230	18,303	3,073
Total		**$185,299**	**$126,656**	**$50,627**	**$236,011**	**$58,730**

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.

[2] Sinking fund payments are estimated, and the final amount may change when final arrangements are made.

Note: Subtotals and totals may not sum due to rounding.

Source: Comptroller; State Treasurer's Office, October 2012

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 approved new 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 3.6 showed, even with a supplemental coupon, QZABs are still less expensive than GO bonds.

Recently, the federal government has 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.

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% 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.

Transportation Debt

MDOT issues 15-year, tax-supported consolidated transportation bonds. Bond proceeds usually support highway construction. 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 nine outstanding issuances of nontraditional debt, two are tax-supported and are included in the State debt affordability analysis in the Capital Lease section. The General Assembly annually adopts budget language that imposes a ceiling on MDOT's nontraditional debt.

Consolidated Transportation Bonds

The issuance of transportation bonds is limited by two criteria: an outstanding debt limit and a coverage test. Section 3-202(b) of the Transportation Article establishes the maximum aggregate and unpaid principal balance of consolidated transportation bonds that may be outstanding at any one time. During the 2007 special session, the maximum outstanding debt limit was increased to $2.6 billion (from $2.0 billion) in recognition of the enactment of several revenue enhancements including transferring a portion of sales tax receipts to the TTF.

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 2013 budget bill set the maximum ceiling for June 30, 2013, at $1,913,290,000. DLS estimates that as of June 30, 2013, debt outstanding will total $1,564,655,000, due to smaller bond sales than originally estimated.

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, 2013, MDOT will have net income coverage of 3.5 and pledged taxes coverage of 6.4.

As shown in **Exhibit 3.7**, MDOT has issued new (*e.g.*, nonrefunding) consolidated transportation bonds in 17 of the past 23 years.

Exhibit 3.7
Consolidated Transportation Bond Issuance*
($ in Millions)

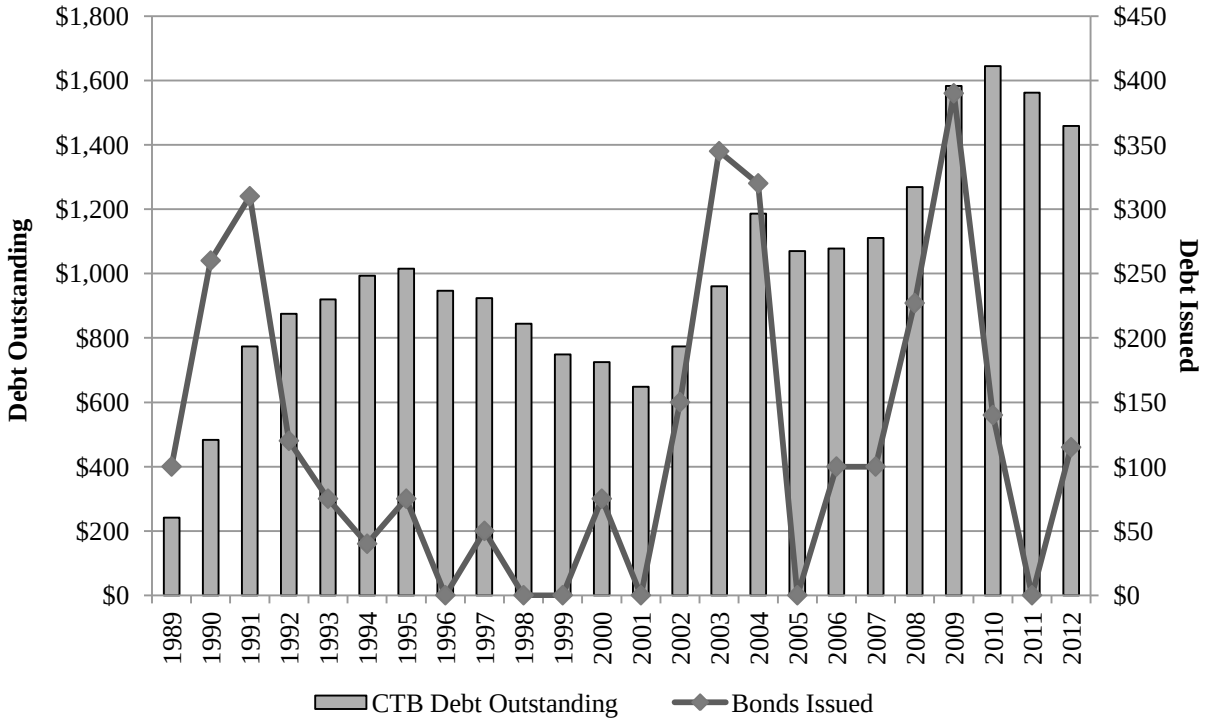
Fiscal Year	Bonds Issued
1990	$260
1991	310
1992	120
1993	75
1994	40
1995	75
1996	0
1997	50
1998	0
1999	0
2000	75
2001	0
2002	150
2003	345
2004	320
2005	0
2006	100
2007	100
2008	227
2009	390
2010	140
2011	0
2012	115
Total	**$2,892**

*Exclusive of refinancing. Five refinancing issuances were made from fiscal 1990 through 2012, including most recently in fiscal 2011, when a total of $238,000,000 was refinanced.

Source: Maryland Department of Transportation, September 2012

Exhibit 3.8 illustrates annual bond sales and changes in debt outstanding from fiscal 1989 to 2012. In fiscal 2012, MDOT's net debt outstanding was $1.5 billion, well under the $2.6 billion debt outstanding debt limit.

Exhibit 3.8
Maryland Department of Transportation
Bonds Issued and Net Debt Outstanding
Fiscal 1989-2012
($ 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 moderately in fiscal 2013 and 2014 as the economy continues to recover and then even out in later fiscal years. MDOT's revenue estimates assume more robust growth in titling tax receipts. 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 in the future and transit and winter maintenance costs which reduces what is available for capital. Finally, under the DLS forecast, the TTF will maintain its coverage ratio at 2.5 through fiscal 2022. As a result of higher operating budget spending and lower revenue assumptions, DLS estimates that bond sales will total $240 million over the six years compared

to MDOT's estimate of $1,860 million. **Exhibit 3.9** shows that DLS estimates MDOT will be able to issue debt of approximately $100 million in fiscal 2013 and $70 million in fiscal 2014. The DLS estimate of bond issuances highlights the risks associated with MDOT's financial forecast.

Exhibit 3.9
Department of Legislative Services' Estimate
Consolidated Transportation Bonds – MDOT Projected Issuances
Fiscal 2013-2018
($ in Millions)

Fiscal Year	Amount
2013	$100
2014	70
2015	40
2016	30
2017	0
2018	0
Total	**$240**

Source: Department of Legislative Services

Debt Outstanding

Exhibit 3.10 shows the amount of estimated debt outstanding from fiscal 2013 to 2018. From fiscal 2013 to 2018, debt outstanding is estimated to decline by $646 million. This decline is due to the amount of debt retired being greater than the amount of debt issued over this period.

Exhibit 3.10
Consolidated Transportation Bonds – MDOT Projected Debt Outstanding
Fiscal 2013-2018
($ in Millions)

Fiscal Year	Amount
2013	$1,565
2014	1,504
2015	1,397
2016	1,271
2017	1,093
2018	919

Source: Department of Legislative Services

Debt Service

Exhibit 3.11 shows that debt service costs are projected to increase steadily from $180 million in fiscal 2013 to $220 million in fiscal 2018. The growth is attributable to increased principal payments from prior issuances even though there are minimal new issuances of debt.

Exhibit 3.11
Projected Transportation Debt Service
Fiscal 2013-2018
($ in Millions)

Fiscal Year	Projected Debt Service
2013	$180
2014	199
2015	213
2016	216
2017	230
2018	220
Total	**$1,258**

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 DLS forecast constrains future debt issuances due to lower revenue estimates and higher operating budget spending reducing the level of net income. The impact of reduced bond sales is that MDOT's capital program is reduced. **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 3.12 shows that projected tax-supported capital lease debt outstanding totals $310 million as of June 30, 2012. Debt outstanding is projected to decrease to $284 million on June 30, 2013. The $26 million decline in the amount outstanding on current leases is expected to be offset by $5 million in new equipment leases.

Exhibit 3.12
Tax-supported Capital Lease Debt Outstanding
As of June 30, 2012 and Projected June 30, 2013
($ in Millions)

State Agency/Facility	Amount Outstanding June 2012	Projected Amount Outstanding June 2013	Difference
State Treasurer's Office			
Capital Equipment Leases	$28.7	$17.3	-$11.4
Energy Performance Projects	7.7	6.4	-1.3
Maryland Department of Transportation			
Headquarters Office Building	22.6	20.7	-1.9
Maryland Aviation Administration Shuttle Buses	6.4	5.1	-1.3
Department of General Services			
St. Mary's County Multi-service Center	0.7	0.0	-0.7
Hilton Street Facility	1.3	1.1	-0.2
Prince George's County Justice Center	19.2	18.4	-0.7
Maryland State Lottery			
Ocean Downs and Perryville Video Lottery Equipment	33.0	25.0	-8.0
Maryland Transportation Authority			
Annapolis State Office Parking Garage	20.0	19.3	-0.7
Department of Health and Mental Hygiene			
Public Health Lab	170.9	170.9	0.0
Subtotal – Current Leases	**$310.5**	**$284.2**	**-$26.3**
Proposed Leases			
New Capital Equipment Leases	0.0	5.0	5.0
Total	**$310.5**	**$289.2**	**-$21.3**

Note: Subtotals and totals may not sum due to rounding.

Source: State Treasurer's Office, September 2012

Changes to Lease Accounting Being Examined

Under current Generally Accepted Accounting Principles (GAAP), 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.

The Governmental Accounting Standards Board (GASB) is the independent organization that establishes and improves standards of accounting and financial reporting for U.S. states and local governments. In 2012, GASB is examining changes to lease accounting so that all lease obligations and the related right-to-use are reported on balance sheets. The accounting change could substantially increase the amount of leases included in the debt affordability calculation. To date, no change has been made. The affordability analysis only includes debt under the currently applicable definition.

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 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 energy performance contracts are monitored in accordance with the reporting requirements adopted by CDAC. Also, the *Joint Chairmen's Report* requires that the Department of General Services (DGS) solicit a third party to audit and verify EPC savings. DGS is required to submit a report of the findings every December.

The Treasurer's Office advises that 22 EPCs can be excluded from CDAC's debt affordability calculation. Five projects, whose fiscal 2013 and 2014 debt service costs total $1.7 million, cannot be excluded and are included in the affordability calculation.

Bay Restoration Bonds

The Bay Restoration Fund (BRF) was created in 2004 primarily to provide grants for enhanced nutrient removal (ENR) pollution reduction upgrades at the State's 67 major wastewater treatment plants (WWTP), which are defined as 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. 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 concured 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 Doubled

The BRF fee was roughly doubled by Chapter 150 of 2012 (Environment – Bay Restoration Fund – Fees and Uses), and year-over-year revenue comparisons will be available in the second quarter of fiscal 2013. A full doubling was not achieved due to exemptions of the increase for areas outside of the Chesapeake Bay watershed – parts of Garrett, Cecil, and Worcester counties – and the assumption that a greater number of hardship exemptions will be sought.

In addition to doubling the fee, Chapter 150 established additional authorized uses for the BRF beginning in fiscal 2018. These additional uses include the following, after the payment of outstanding bonds and the allocation of funds to other required uses, in order of priority: (1) funding an upgrade of a wastewater facility with a design capacity of 500,000 gallons or more per day to enhanced nutrient removal; (2) funding for the most cost-effective ENR upgrades at WWTP with a design capacity of less than 500,000 gallons per day; (3) costs associated with upgrading septic systems and sewage holding tanks; and (4) 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 3.13** shows that the program projects issuing debt each year between fiscal 2013 and 2017 and that by fiscal 2016, debt outstanding will peak at $457.8 million. Debt service costs increase to $50.8 million in fiscal 2018. These issuances are limited by the revenues generated by the WWTP Fund.

Exhibit 3.13
Bay Restoration Fund – Current Law
Fiscal 2012-2018
($ in Millions)

	2012	2013	2014	2015	2016	2017	2018
Revenue Bonds Issued	$0.0	$50.0	$150.0	$160.0	$100.0	$20.0	$0.0
Debt Outstanding	38.8	86.0	230.7	378.3	457.8	451.7	423.5
Debt Service	4.6	4.6	9.4	23.9	39.3	48.9	50.8

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

Source: Maryland Department of the Environment; Department of Legislative Services; October 2011

The debt issuances for the WWTP Fund have been delayed 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 (PAYGO) basis and does not involve revenue bond proceeds.

Bay Restoration Funds Now Deemed Sufficient to Meet State Goal

The bay fund legislation developed clear goals. Current estimates indicate that the funding provided will be able to meet the ENR upgrade goals due to the roughly doubling of the Bay Restoration Fund fee and the reduction in cost estimates. For instance, Maryland's share of the ENR grant is approximately $44.0 million lower for the Patapsco project and $56.5 million lower for the Washington Suburban Sanitary Commission portion of the Blue Plains WWTP upgrade. Conversely, the overall ENR grant share estimate for the other major WWTP – Back River – is now estimated to be $9.0 million higher.

Overall, the program plans to issue $530.0 million in revenue bonds through fiscal 2017. These revenue bonds, in addition to revenues expended from the fund as PAYGO special funds, would fund the entirety of the currently projected $1,259 million upgrade cost, leaving a surplus projected to begin in fiscal 2016 and building to a cash balance of $53.3 million at the end of fiscal 2018.[1] Currently, it is anticipated that the $76.9 million that was programmed in the 2012 *Capital Improvement Program* for the out-years will not be needed in order to meet the nitrogen reduction from WWTP point source bay fund goals.

[1]MDE estimates that the cost to upgrade the 67 major wastewater treatment plants has decreased from $1,385 million to $1,259 million since last year. As noted above, this decrease is due to the delayed debt issuance noted above and revised estimates for the Patapsco and Blue Plains WWTP upgrades.

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

Exhibit 3.14
Maryland Stadium Authority
Revenue Debt Authorizations, Debt Outstanding, and Debt Service
($ in Millions)

Project	Authorized	Outstanding as of July 2012	Debt Service Fiscal 2013
Baseball and Football Stadiums	$235.0	$154.3	$21.3
Baltimore City Convention Center	55.0	13.5	5.1
Montgomery County Conference Center	23.2	16.0	1.8
Hippodrome Performing Arts Center	20.3	13.6	1.4
Ocean City Convention Center	17.3	5.3	1.4
Camden Station	8.7	7.2	0.7
Equipment Leases	n/a	7.1	1.0
Total	**$359.5**	**$217.0**	**$32.7**

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 are being 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. This 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 was 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 $55.0 million in revenue bonds for the Baltimore City Convention Center as authorized by 1993 legislation. Baltimore City issued $50.0 million in city bonds, and the State contributed another $58.0 million in GO bond funding toward the construction cost of the project, which was completed in 1997. The fiscal 2013 debt service cost for the revenue bonds is $5.1 million and subject to State appropriation. Chapter 320 of 2008 extended the date by which MSA is obligated to contribute two-thirds of the operating deficits of the Baltimore Convention Center to December 31, 2014. The State is also statutorily required to contribute $200,000 annually to a capital improvement fund.

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 2013 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 audio-visual 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 fiscal 2011 and 2012 capital budget bill. Construction should be completed in fall 2012.

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 fund 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, the MSA submitted an Amended Comprehensive Plan of Financing for the center to refund the existing issuance at a lower rate. The fiscal 2013 debt service costs for these revenue bonds are $1.8 million. Savings from the reissuance will be realized in fiscal 2014.

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.

Debt service payments were averaging $1.8 million annually for the 20-year term of the bond and are subject to appropriation. 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. 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. For fiscal 2013, the reissuance lowered the debt service from $1.8 million to $1.4 million. The maturity date remains the same.

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 are used to pay capitalized interest, costs of issuance, and bond insurance. The capital interest period covered biannual debt service payments though June 15, 2006. The fiscal 2012 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 Baltimore City recently released a market and economic study of an expanded convention center, a new arena and a new hotel in Baltimore. A second phase of the study, to include a discussion of design, is pending a submission of a Memorandum of Understanding between the project stakeholders. Also, MSA and the City of Annapolis are sharing the costs of a study to evaluate whether the region could support a new performing arts center. Similarly, MSA and the Chesapeake Bayhawks lacrosse team are sharing the costs of a market study of a new lacrosse facility in Bowie. Other studies to be conducted include the Hagerstown Minor League Stadium, an expansion to the Arthur Purdue Stadium in Wicomico County, and the Show Place Arena and Equestrian Center in Prince George's 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, it would add to the State debt load and reduce the State's debt capacity.

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 differ from those of CDAC. CDAC is using the Board of Revenue Estimates' (BRE) September 2012 personal income estimates, which **Exhibit 4.1** shows, are more than personal income estimates used by DLS. Decreased 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 2012 to 2018
($ in Millions)

Calendar Year	DLS Personal Income Estimate	% Change	CDAC Personal Income Estimate	% Change	Difference
2012	$306,566		$308,398		-$1,832
2013	316,745	3.32%	318,637	3.32%	-1,892
2014	330,965	4.49%	332,944	4.49%	-1,979
2015	347,765	5.08%	349,890	5.09%	-2,125
2016	365,778	5.18%	368,085	5.20%	-2,307
2017	382,950	4.69%	385,385	4.70%	-2,435
2018	401,026	4.72%	400,029	3.80%	997

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

Source: Capital Debt Affordability Committee, September 2012; Department of Legislative Services, October 2012

Revenue Projections

Exhibit 4.2 shows that DLS' fiscal 2012 to 2022 revenue projections are less than CDAC's. The differences relate to the DLS estimate of out-year general fund and transportation revenues. As discussed in Chapter 3, DLS does not expect transportation revenues to increase as much as the CDAC estimates. These differences, though not substantial relative to total revenues, tend to increase over time.

Exhibit 4.2
Comparison of DLS and CDAC Revenue Projections
Fiscal 2012 to 2022
($ in Millions)

Fiscal Year	General Funds	Property Tax	Other ABF	Federal Funds	ETF Slots	Transfer Taxes	Subtotal	TTF	GARVEE	Stadium	BRF	Total	CDAC Estimate	Diff.
2012	$14,071	$753	$133	$11	$91	$122	$15,181	$2,343	$440	$24	$55	$18,044	$18,165	-$121
2013	14,908	729	143	12	260	131	16,183	2,409	440	25	99	19,156	18,884	272
2014	15,318	726	47	12	311	153	16,567	2,560	440	25	100	19,692	19,697	-5
2015	15,942	720	3	12	504	180	17,361	2,618	440	23	101	20,544	20,648	-104
2016	16,715	728	3	12	590	197	18,244	2,679	440	23	102	21,488	21,523	-35
2017	17,455	735	3	12	627	207	19,039	2,702	440	23	103	22,308	22,422	-113
2018	18,186	754	3	12	666	211	19,832	2,745	440	23	104	23,144	23,301	-157
2019	18,946	772	3	12	708	215	20,657	2,812	440	23	105	24,037	24,180	-142
2020	19,722	792	3	12	753	219	21,500	2,873	440	23	106	24,942	25,128	-186
2021	20,511	812	3	11	800	224	22,360	2,937	0	9	107	25,413	25,664	-251
2022	21,331	839	3	10	850	228	23,262	3,004	0	9	108	26,383	26,693	-310

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, ETF Slots, Other Annuity Bond Fund, and Maryland Department of Transportation: Department of Legislative Services, October 2012; and (2) State Property Tax, Federal Funds, Transfer Taxes , Stadium Authority, GARVEE, Bay Restoration Fund, and Capital Debt Affordability Committee Revenues: Capital Debt Affordability Committee, September 2012

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 in 2012 within two years of receiving the federal authorizations. DLS does not anticipate transportation revenues will be sufficient to support the program proposed by MDOT and has scaled back issuances.

Exhibit 4.3
Projected New Debt Issuances
($ in Millions)

Fiscal Year	GO Bond Auth.	GO Bond Issuances	QZABs	Trans. Bonds	GARVEE	Capital Leases	Stadium Authority	Bay Restoration Bonds
2013	$1,075	$1,028	$15	$100	$0	$5	$0	$50
2014	1,075	977	5	70	0	38	0	150
2015	1,085	1,013	0	40	0	25	0	160
2016	1,095	1,068	0	30	0	5	0	100
2017	1,105	1,125	0	0	0	5	0	20
2018	1,200	1,163	0	0	0	5	0	0
2019	1,240	1,212	0	0	0	5	0	0
2020	1,280	1,255	0	0	0	5	0	0
2021	1,320	1,255	0	0	0	5	0	0
2022	1,360	1,300	0	0	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, October 2012; and (2) Stadium Authority, GARVEE, and Bay Restoration Bonds: Capital Debt Affordability Committee, September 2012

Exhibit 4.4 shows that, for the forecast period, debt outstanding as a percent of personal income peaks at 3.35% in fiscal 2013 and 2014. **Exhibit 4.5** shows that the debt service as a percent of revenues increases until fiscal 2018 as it reaches 7.46% and then declines to 6.78% in fiscal 2022.

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

Fiscal Year	General Obligation	MDOT Bonds	GARVEE	Capital Leases	Stadium Authority	Bay Restoration Bonds	Total Tax-supported Debt	Fiscal Year
2012	$7,541	$1,459	$539	$310	$218	$39	$10,107	2012
2013	8,005	1,565	479	289	195	86	10,618	2013
2014	8,372	1,494	416	295	171	231	10,979	2014
2015	8,710	1,367	349	298	147	378	11,249	2015
2016	8,970	1,211	280	274	127	458	11,319	2016
2017	9,256	1,033	207	253	108	452	11,308	2017
2018	9,549	859	130	233	88	423	11,282	2018
2019	9,861	711	49	212	67	394	11,294	2019
2020	10,167	603	0	191	45	363	11,368	2020
2021	10,498	481	0	175	37	330	11,521	2021
2022	10,832	361	0	159	28	295	11,675	2022

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

2012	2.46	0.48	0.18	0.10	0.07	0.01	3.30	2012
2013	2.53	0.49	0.15	0.09	0.06	0.03	3.35	2013
2014	2.53	0.45	0.13	0.09	0.05	0.07	3.32	2014
2015	2.50	0.39	0.10	0.09	0.04	0.11	3.23	2015
2016	2.45	0.33	0.08	0.07	0.03	0.13	3.09	2016
2017	2.42	0.27	0.05	0.07	0.03	0.12	2.95	2017
2018	2.38	0.21	0.03	0.06	0.02	0.11	2.81	2018
2019	2.35	0.17	0.01	0.05	0.02	0.09	2.69	2019
2020	2.32	0.14	0.00	0.04	0.01	0.08	2.59	2020
2021	2.29	0.10	0.00	0.04	0.01	0.07	2.51	2021
2022	2.26	0.08	0.00	0.03	0.01	0.06	2.44	2022

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, October 2012; and (2) Stadium Authority, GARVEE, and Bay Restoration Bonds: Capital Debt Affordability Committee, September 2012

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

Fiscal Year	General Obligation	MDOT Bonds	GARVEE	Capital Leases	Stadium Authority	Bay Restoration Bonds	Total Tax-supported Debt Service	Fiscal Year
2012	$878	$174	$87	$37	$33	$5	$1,214	2012
2013	916	180	87	31	33	5	1,253	2013
2014	989	199	87	36	33	9	1,353	2014
2015	1,052	212	87	40	32	24	1,447	2015
2016	1,147	213	87	44	27	39	1,559	2016
2017	1,207	227	87	37	26	49	1,634	2017
2018	1,275	216	87	35	26	51	1,690	2018
2019	1,309	173	87	35	25	51	1,680	2019
2020	1,382	137	51	32	25	51	1,678	2020
2021	1,418	147	0	28	11	51	1,655	2021
2022	1,481	140	0	28	11	51	1,711	2022

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

2012	4.87	0.96	0.48	0.21	0.18	0.03	6.73	2012
2013	4.78	0.94	0.46	0.16	0.17	0.02	6.54	2013
2014	5.02	1.01	0.44	0.18	0.17	0.05	6.87	2014
2015	5.12	1.03	0.43	0.19	0.16	0.12	7.04	2015
2016	5.34	0.99	0.41	0.21	0.13	0.18	7.25	2016
2017	5.41	1.02	0.39	0.17	0.11	0.22	7.32	2017
2018	5.51	0.93	0.38	0.15	0.11	0.22	7.30	2018
2019	5.45	0.72	0.36	0.15	0.10	0.21	6.99	2019
2020	5.54	0.55	0.21	0.13	0.10	0.20	6.73	2020
2021	5.58	0.58	0.00	0.11	0.04	0.20	6.51	2021
2022	5.61	0.53	0.00	0.11	0.04	0.19	6.49	2022

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, October 2012; and (2) Stadium Authority, GARVEE, and Bay Restoration Bonds: Capital Debt Affordability Committee, September 2012

Exhibit 4.6 shows that debt outstanding ratios based on DLS' personal income estimates are lower than those estimated by CDAC from fiscal 2013 to 2022. The difference between the two ratios is attributable to MDOT, which is considerably less in the DLS estimate.

Exhibit 4.6
State Debt to Personal Income
Comparison of DLS and CDAC Estimates

Fiscal Year	DLS	CDAC
2013	3.35%	3.30%
2014	3.35%	3.45%
2015	3.30%	3.23%
2016	3.19%	3.09%
2017	3.07%	2.95%
2018	2.96%	2.81%
2019	2.86%	2.69%
2020	2.74%	2.59%
2021	2.55%	2.51%
2022	2.55%	2.44%

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

Source: Capital Debt Affordability Committee, October 2012; Department of Legislative Services, October 2012

Similarly, **Exhibit 4.7** shows the debt service ratios based on the DLS' forecast of revenues and those estimated by CDAC from fiscal 2013 to 2022. 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 reduced transportation bond issuances.

Exhibit 4.7
State Debt Service to State Revenues
Comparison of DLS and CDAC Estimates

Fiscal Year	DLS	CDAC
2013	6.54%	6.54%
2014	6.88%	6.87%
2015	7.07%	7.04%
2016	7.31%	7.25%
2017	7.43%	7.32%
2018	7.46%	7.30%
2019	7.20%	6.99%
2020	6.98%	6.73%
2021	6.79%	6.51%
2022	6.78%	6.49%

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

Source: Capital Debt Affordability Committee, October 2012; Department of Legislative Services, October 2012

Chapter 5. 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 3** shows the data used in the analysis.

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

Financial theory suggests factors that could influence Maryland's GO bond's TIC. Research has confirmed a number of significant influences in other states and in national studies that include Maryland. To build the least squares regression equation, data was collected and analyzed for the 56 bond sales since March 1991 (refunding sales are excluded): 45 competitively bid, tax-exempt bond sales; 4 competitively bid Build America Bonds (BABs); and 7 negotiated, retail bond sales. 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 5.1** shows the data for the statistically significant variables.

- ***Bond Buyer 20-bond Index[2]:*** 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 United States 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.

[2]This is the first year that the Bond Buyer 20-bond index is used. In past years, an index of 10-year, AAA-rated bonds prepared by the Delphis-Hanover Corporation was used. The firm, which priced bonds daily since 1963, closed in April 2012 because its founder, Austin C. Tobin, became ill.

Exhibit 5.1
TIC Regression Equation – Evaluating the Independent Variables

Ind. Variable	Coefficient	Std. Error	Beta	t-test	Sig.	Tol.	Comment
Bond Buyer 20-bond Index	0.88	0.04	0.65	21.083	0.000	0.63	Highest t-test suggests with confidence that the index is significant.
MD PI/US PI	-2.15	0.73	-0.10	-2.926	0.005	0.50	Negative coefficient suggests that as the Maryland economy strengthens, compared to the United States, the TIC declines.
Years to Maturity	0.25	0.03	0.33	8.115	0.000	0.34	Positive coefficient means that longer maturities tend to have higher TICs.
BABs	-1.17	0.20	-0.26	-5.862	0.000	0.29	Negative coefficient suggests BABs are less expensive.
Post-financial Crisis	-0.53	0.10	-0.22	-5.210	0.000	0.32	Maryland bonds yields are reduced since the crisis.
Constant	2.189						

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 2012

- ***Build America Bonds:*** In February 2009, the American Recovery and Reinvestment Act authorized the issuance of BABs. The bonds are taxable bonds that support the same types of projects that traditional tax-exempt bonds support. The difference is that the buyers do not receive any federal tax credits or deductions so that the interest earnings are subject to federal taxes. Instead, Maryland receives a subsidy equal to 35.0% of the interest costs from the federal government. In concept, the bonds expand the number of buyers of State and municipal debt since the bonds are also attractive to individuals and

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

- ***Post-financial Crisis:*** This 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 0.53% (53 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 a AA-rated index is used, a variable measuring the increasing spread between AAA and AA bonds results in an improved equation.

Finally, what is not statistically significant can be as interesting as what is significant. Last year's analysis included data from bonds issued less than a month after Maryland was placed on Credit Review by Moody's Investors Service, Inc. After the initial bond sale, the data implied that this action increased the yield on Maryland bonds. The State has now issued additional bonds in 2012 while still on Credit Review. After including the 2012 bond sales, Credit Review is no longer statistically significant. This analysis suggests that that, if there were initially additional costs attributable to the credit review, these additional costs have faded away.

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 5.2** shows the equation's statistics.

Exhibit 5.2
TIC Regression Equation – Evaluating the Entire Equation

What Is Measured	Statistic Used to Measure	Value of Statistic	Explanation
Confidence in the equation	F Statistic	328.2	We are over 99.9% confident that the independent variables influence the dependent variable.
Margin of error	Standard error of the estimate	0.207	We expect the actual TIC to be within 0.21% (21 basis points) of the estimate.
Estimate in relation to actual data	Adjusted R Square	0.967	The model's estimates explain 96.7% of the actual data.
Serial or autocorrelation	Durbin-Watson	1.683	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 2012

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).

Exhibit 5.3 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 56 bond sales analyzed, the DLS estimate is closer to the actual TIC than the 20-bond index 54 times (96%). The 20-bond index is closer one time (2%), and they produce the same estimate one time (2%). The total error of the DLS regression equation is 906 basis points, compared to 5,897 basis points for the 20-bond index.

This comparison shows that including variables, such as Maryland personal income to U.S. personal income, provide an estimate that is quite close to the actual TIC and provides an estimate that is usually closer than the 20-bond index alone.

Exhibit 5.3
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	6.24	7.32	0.07	1.01	DLS Equation
07/10/91	6.37	6.20	7.21	0.17	0.84	DLS Equation
10/09/91	5.80	5.72	6.66	0.08	0.86	DLS Equation
05/13/92	5.80	5.64	6.54	0.16	0.74	DLS Equation
01/13/93	5.38	5.31	6.19	0.07	0.81	DLS Equation
05/19/93	5.10	4.96	5.77	0.14	0.67	DLS Equation
10/06/93	4.45	4.56	5.30	0.11	0.85	DLS Equation
02/16/94	4.48	4.66	5.42	0.18	0.94	DLS Equation
05/18/94	5.36	5.31	6.14	0.05	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	5.09	5.82	0.14	0.87	DLS Equation
02/14/96	4.51	4.67	5.33	0.16	0.82	DLS Equation
06/05/96	5.30	5.24	5.94	0.06	0.64	DLS Equation
10/09/96	4.97	5.06	5.73	0.09	0.76	DLS Equation
02/26/97	4.90	5.00	5.65	0.10	0.75	DLS Equation
07/30/97	4.64	4.64	5.23	0.00	0.59	DLS Equation
02/18/98	4.43	4.53	5.07	0.10	0.64	DLS Equation
07/08/98	4.57	4.56	5.12	0.01	0.55	DLS Equation
02/24/99	4.26	4.49	5.08	0.23	0.82	DLS Equation
07/14/99	4.83	4.71	5.36	0.12	0.53	DLS Equation
07/19/00	5.05	4.93	5.60	0.12	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	4.37	5.19	0.14	0.96	DLS Equation
07/31/02	3.86	4.20	5.00	0.34	1.14	DLS Equation
02/19/03	3.69	4.02	4.79	0.33	1.10	DLS Equation
07/16/03	3.71	3.93	4.71	0.22	1.00	DLS Equation
07/21/04	3.89	4.04	4.84	0.15	0.95	DLS Equation
03/02/05	3.81	3.73	4.50	0.08	0.69	DLS Equation
07/20/05	3.79	3.59	4.36	0.20	0.57	DLS Equation
03/01/06	3.87	3.67	4.39	0.20	0.52	DLS Equation
07/26/06	4.18	3.81	4.55	0.37	0.37	Same

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	3.43	4.10	0.43	0.24	20-bond Index
08/01/07	4.15	3.82	4.51	0.33	0.36	DLS Equation
02/27/08	4.14	4.36	5.11	0.22	0.97	DLS Equation
07/16/08	3.86	3.41	4.65	0.45	0.79	DLS Equation
03/04/09	3.39	3.37	4.96	0.02	1.57	DLS Equation
03/02/09	3.63	3.55	4.87	0.08	1.24	DLS Equation
08/05/09	2.93	3.05	4.65	0.12	1.72	DLS Equation
08/03/09	3.20	3.10	4.69	0.10	1.49	DLS Equation
08/05/09	3.02	3.41	4.65	0.39	1.63	DLS Equation
10/21/09	2.93	2.62	4.31	0.31	1.38	DLS Equation
10/21/09	3.06	3.00	4.31	0.06	1.25	DLS Equation
02/24/10	2.85	2.51	4.36	0.34	1.51	DLS Equation
07/28/10	1.64	1.85	4.21	0.21	2.57	DLS Equation
07/28/10	1.91	2.07	4.21	0.16	2.30	DLS Equation
07/28/10	2.74	2.74	4.21	0.00	1.47	DLS Equation
03/07/11	2.69	2.78	4.90	0.09	2.21	DLS Equation
03/09/11	3.49	3.71	4.91	0.22	1.42	DLS Equation
07/25/11	1.99	2.06	4.46	0.07	2.47	DLS Equation
07/27/11	3.08	3.18	4.47	0.10	1.39	DLS Equation
03/02/12	2.18	2.07	3.72	0.11	1.54	DLS Equation
03/07/12	2.42	2.52	3.84	0.10	1.42	DLS Equation
07/27/12	2.52	2.23	3.61	0.29	1.09	DLS Equation
08/01/12	2.17	2.43	3.66	0.26	1.49	DLS Equation
Total Error				**9.06**	**58.97**	

DLS: Department of Legislative Services
TIC: true interest cost

Source: Department of Legislative Services, October 2012

Chapter 6. Non-tax-supported Debt

In addition to the tax-supported debt that Maryland issues, there are various forms of non-tax-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.

Non-tax-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 (DHCD) Community Development Administration (CDA) makes housing loans with revenue bond proceeds, and the mortgage payments help pay debt service. Likewise, MDTA constructs toll facilities with bond proceeds, and the tolls collected pay off the bonds. Other State agencies issue bonds for various purposes. This agency debt is funded through what are referred to as private activity bonds.

The 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 $95 per capita, adjusted annually for inflation. Maryland's 2012 allocation totaled $554 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 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 multifamily housing bonds than can be accomplished by 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 the Department of Business and Economic Development (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.

Exhibit 6.1 provides the calendar 2008 through 2012 figures for the amount of available tax-exempt bond authority and the level of issuances made under the volume cap limits. In 2008 through 2010, total issuances under the volume cap were relatively low. A reduction in single-family housing issuances primarily drove the decrease, although other issuances decreased as well. Also, the Secretary's Reserve abandoned a large amount of prior-year carry forward in 2008 and in 2010. Nevertheless, total carry forward continues to grow because it has outpaced annual issuances for the time being. In 2010, for instance, the CDA did not issue any single-family housing debt. Moreover, in some years, such as 2008, CDA does not issue any debt directly against that year's allocation if prior year carry forwards are sufficient to support the activity for its single- and multi-family programs.

Exhibit 6.1
Allocation of Private Activity Bonds
Calendar 2008-2012
($ in Millions)

	2008	2009	2010	2011	Est. 2012
Fund Sources					
Annual Cap	$477.6	$507.0	$513.0	$548.5	$553.7
Special Housing Allocations	175.9	161.3	72.5	-	-
Carry Forward from Prior Years	390.8	462.7	779.1	1,118.4	1,224.1
Total Capacity Available	**$1,044.3**	**$1,131.0**	**$1,364.5**	**$1,666.8**	**$1,777.8**
Issuances					
Single-family Housing	$98.7	$235.2	-	$350.9	$0.0
Multi-family Housing	106.0	25.7	$90.2	72.4	48.5
Housing – Other	21.2	9.5	65.6	19.4	18.0
Industrial Development Bonds	38.6	9.1	17.9	-	14.0
Total Issuances	**$264.5**	**$279.5**	**$173.7**	**$442.7**	**$80.5**
Prior Year Carry Forward Abandoned	55.8	-	72.5	-	-
Carry Forward	$724.0	$851.6	$1,118.4	$1,224.1	

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

Source: Bond Market Association; Department of Business and Economic Development; Department of Housing and Community Development

A portion of the 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 reflected above nonetheless mark a sizable decrease in CDA bond activity as demand for mortgage products dropped off in 2008 through 2010. While CDA did not issue any single-family program bonds in 2010, it issued $351 million in 2011.

The federal Housing and Economic Recovery Act (HERA) of 2008 includes several funding provisions to help states address rising foreclosures. As part of this package, Maryland received an additional $175.9 million in Mortgage Revenue Bond funds, allowing DHCD to refinance existing mortgages for the first time. This separate, one-time allocation is above and beyond the annual cap and has special restrictions. The bonds could be issued under either the single-family or multifamily bond programs and, unlike the annual federally mandated volume cap, any unused portion of this authorization had to be abandoned after two years, not three.

Therefore, this one-time authorization to issue bonds expired in 2010. Refinancing assistance under this authorization adhered to CDA's established income and purchase price limits.

The HERA also created the New Issue Bond Program (NIBP) to assist housing finance agencies (HFA) that were facing challenges in providing affordable financing due to difficulties with liquidity and credit downgrades. The program temporarily eases the rules pertaining to bond issuances to make borrowing easier and more affordable. Under NIBP, the U.S. Treasury purchases up to 60% of each bond issue, providing HFAs such as CDA with the ability to make affordable interest rates available to homeowners by lowering CDA's borrowing costs. CDA received approximately $92 million under NIBP which will allow it to make roughly $150 million in loans. NIBP also provides HFAs with the ability to issue bonds to refund taxable variable rate debt as tax-exempt variable rate debt. All loans under NIBP will close in 2010 and 2011 in accordance with federal law, after which the temporary easing of the rules will be suspended.

Debt Outstanding

Containing the amount of non-tax-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 Senate Bill 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.

The Department of Budget and Management (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 revenues 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 6.2 summarizes the increase in debt outstanding for various categories between fiscal 2002 and 2012. A table containing debt outstanding by year for the individual agencies is included as **Appendix 4**.

Exhibit 6.2
Debt Outstanding as of June 30
Fiscal 2002 and 2012
($ in Millions)

	2002	2012	Total Change	Annual % Change
Agency debt subject to State regulatory cap	$821	$3,432	$2,611	15.4%
Agency debt not subject to State regulatory cap	4,316	5,123	807	1.7%
Tax-supported debt	4,726	10,107	5,381	7.9%
Authorities and corporations without caps	5,343	11,384	6,041	7.9%
Total	**$15,206**	**$30,047**	**$14,841**	**7.0%**

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

Source: Department of Budget and Management

Debt Service on University Academic and Auxiliary Revenue Bonds

Chapter 93 of 1989 gave Morgan State University (MSU), St. Mary's College of Maryland (SMCM), and the University System of Maryland (USM) the authority to issue bonds for academic and auxiliary facilities. Chapter 208 of 1992 gave Baltimore City Community College (BCCC) the authority to issue bonds for auxiliary facilities, and Chapter 213 of 2009 extended its authority to include academic revenue bonds (ARBs) 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. The current debt limits are $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 stable debt management policy, USM expects to maintain the current rating of AA1 from Moody's and AA+ from Fitch and Standard & Poor's.

Exhibit 6.3 shows that USM will be under the 4.5% debt service goal for fiscal 2013-2018. Including debt issued in fiscal 2013, total debt service will be approximately $140 million, or 4.0%, of fiscal 2013 operating revenues plus State appropriations including grants and contracts. The forecast indicates the ratio will stay between 3.9% and 4.1% over the next five years, with fiscal 2016 projected to be 4.1%. This is somewhat higher than fiscal 2008-2012 but still below the 4.5% target maximum.

Exhibit 6.3
University System of Maryland Debt Service as Related to Unrestricted Funds
Fiscal 2008-2018
($ in Millions)

Fiscal Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures	Ratio of Debt Service to Unrestricted Expenditures
2008	$970	$105	$2,980	3.5%
2009	1,029	112	3,123	3.6%
2010	1,083	111	3,157	3.5%
2011	1,129	120	3,262	3.7%
2012	1,170	136	3,438	4.0%
2013 Estimated	1,203	140	3,541	4.0%
2014 Estimated	1,239	142	3,647	3.9%
2015 Estimated	1,271	149	3,756	4.0%
2016 Estimated	1,295	159	3,869	4.1%
2017 Estimated	1,317	164	3,985	4.1%
2018 Estimated	1,337	169	4,105	4.1%

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. **Exhibit 6.4** shows USM's expendable resources to debt outstanding ratio for fiscal 2008-2018. It has exceeded the target minimum throughout the entire period and has grown in recent years, indicating some 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.

Exhibit 6.4
Summary of Expendable Resources to Debt Outstanding for the University System of Maryland
Fiscal 2008-2018
($ in Millions)

Fiscal Year	Available Resources	Debt Outstanding	Ratio of Expendable Resources to Debt Outstanding
2008	$1,044	$970	107.6%
2009	1,130	1,029	109.9%
2010	1,187	1,083	109.6%
2011	1,430	1,129	126.6%
2012	1,620	1,170	138.4%
2013 Estimated	1,393	1,203	115.8%
2014 Estimated	1,395	1,239	112.6%
2015 Estimated	1,427	1,271	112.3%
2016 Estimated	1,459	1,295	112.6%
2017 Estimated	1,491	1,317	113.2%
2018 Estimated	1,523	1,337	113.9%

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 does not have any outstanding academic debt. The total debt in fiscal 2013 is estimated to be $36.4 million and is expected to decrease to $26.7 million by fiscal 2018. As shown in **Exhibit 6.5,** the college's ratio of debt service to unrestricted expenditures is also expected to decline from an estimated 4.9% in fiscal 2013 to 3.9% in fiscal 2018. From fiscal 2008 to 2010, SMCM exceeded the 5.5% debt ratio goal in order to construct additional residential buildings to house increasing enrollment.

Exhibit 6.5
St. Mary's College of Maryland Debt Service Related to Unrestricted Funds
Fiscal 2008-2018
($ in Thousands)

Fiscal Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures	Ratio of Debt Service to Unrestricted Expenditures
2008	$48,199	$3,452	$60,781	5.7%
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	38,311	3,416	65,999	5.2%
2013 Estimated	36,387	3,208	65,804	4.9%
2014 Estimated	34,536	3,207	67,449	4.8%
2015 Estimated	32,637	3,211	69,136	4.6%
2016 Estimated	30,677	3,127	70,864	4.4%
2017 Estimated	28,652	2,936	72,636	4.0%
2018 Estimated	26,742	2,929	74,451	3.9%

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

Source: St. Mary's College of Maryland

In fiscal 2012, SMCM issued $15.8 million in auxiliary revenue bonds to refund outstanding debt issued in fiscal 2002 and 2003. This refinancing plan will result in lower debt service payments in the long term.

Baltimore City Community College

BCCC has never issued auxiliary or academic debt but is authorized to issue up to $65 million. A year ago, 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 to postpone the rating process and has no plans to issue debt in the immediate future. According to a report submitted by the college to the Capital Debt Affordability Committee, possible uses of debt could include the financing of a parking garage or a capital lease for an academic facility on the east side of 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. By comparison, both USM and MSU have used ARBs to finance the construction and renovation of academic facilities, and USM regularly allocates a portion of its annual ARB authorization to academic projects in conjunction with GO bond funds as a means to advance system priority projects.

Use of BCCC's debt capacity could advance capital projects that the college deems a priority. There are important caveats to consider, however. The first is the interest rate BCCC issued bonds would receive from the rating agencies. MSU, for instance, the closest State college in terms of size, is rated as A+ by Standard and 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.

A second issue is BCCC's plans for an academic facility on the east side of Baltimore City. Statute requires that all academic facilities be approved by an act of the General Assembly. BCCC's initial plan for this project was for the Maryland Economic Development Corporation (MEDCO) to issue debt to finance the purchase and renovation of an abandoned high school currently owned by Baltimore City. The college's board of trustees is currently reviewing the project, and its status is unknown at this time.

This project has proceeded without scant oversight by the General Assembly, the Maryland Higher Education Commission which also has oversight authority relating to academic programs in the State, or the Department of Budget and Management (DBM). Furthermore, all project requests should be incorporated in the State's annual *Capital Improvement Program*, which requires the submission of program plan justification documents for review and approval by DBM prior to seeking legislative consideration of any legislation authorizing debt financing.

To support future debt payments, BCCC is increasing its capital reserve. The capital reserve is funded by a Facilities Capital Fee charged to students and generates approximately $0.2 million annually. The most current fund balance as of September 2012 is $1.1 million. BCCC's capital reserve is held in the college's fund balance, which totaled $17.8 million at the end of fiscal 2012. 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 6.6,** MSU estimates $51.1 million of debt in fiscal 2013. This figure includes academic, auxiliary, and capital lease debt. Auxiliary debt is the largest of the three, totaling $44.7 million. The ratio of debt service to unrestricted expenditures is estimated to be 3.9% in fiscal 2013, 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 2018.

Exhibit 6.6
Morgan State University Debt Service as Related to Unrestricted Funds
Fiscal 2008-2018
($ in Thousands)

Fiscal Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures	Ratio of Debt Service to Unrestricted Expenditures
2008	$68,430	$7,322	$152,655	4.8%
2009	67,825	7,700	161,907	4.8%
2010	64,354	8,015	166,262	4.8%
2011	59,556	8,034	169,964	4.7%
2012	55,165	7,429	172,609	4.3%
2013 Estimated	51,139	6,974	177,788	3.9%
2014 Estimated	47,057	6,739	183,121	3.7%
2015 Estimated	45,980	6,390	188,615	3.4%
2016 Estimated	41,283	7,049	194,273	3.6%
2017 Estimated	39,378	7,015	200,101	3.5%
2018 Estimated	33,621	7,719	206,104	3.7%

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

Source: Morgan State University

Chapter 7. State Debt Outlook

Maryland has a large debt program. The State ended fiscal 2012 with $7.5 billion of general obligation (GO) bond debt outstanding and $10.2 billion in State debt outstanding. GO bond debt service was $878 million in fiscal 2012, while total debt service is under $1.3 billion. This section examines the following State debt issues:

- State property tax revenues are projected to be insufficient to support debt service in the out-years; and

- the Capital Debt Affordability Committee (CDAC) approved increasing GO bond authorizations by $750 million from fiscal 2014 to 2018.

State Property Tax Revenues Are Projected to Be Insufficient to Support Debt Service in the Out-years

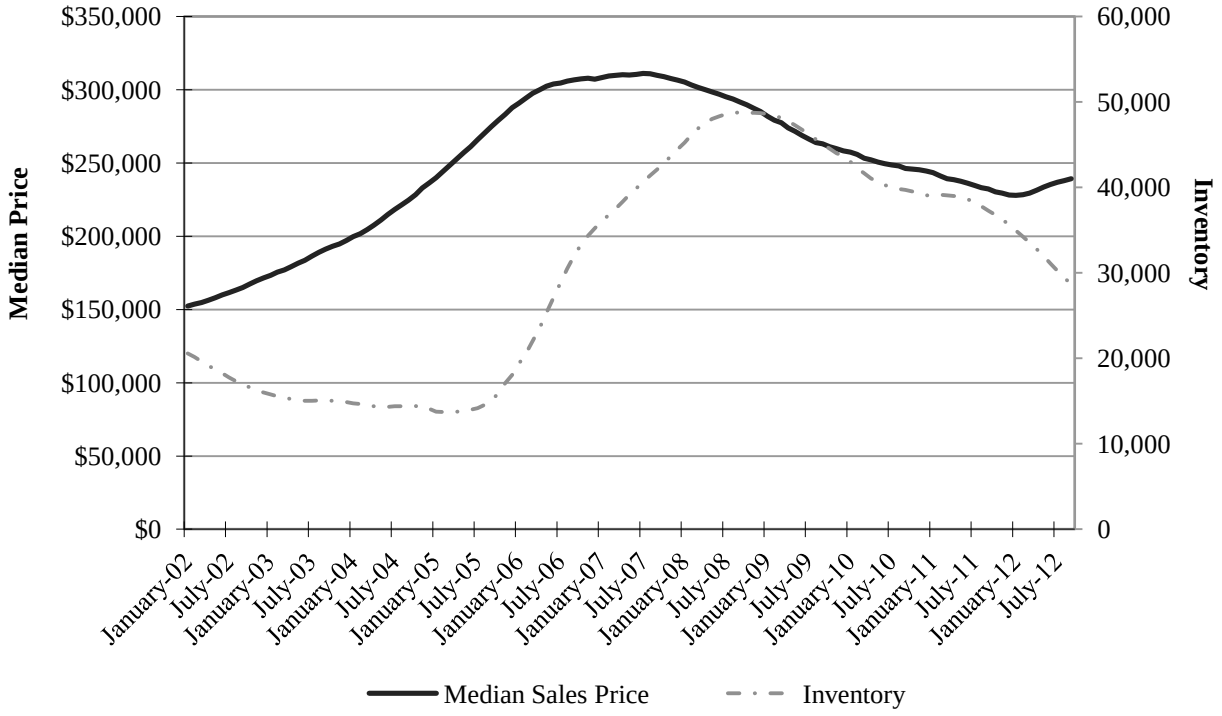
GO bond debt service costs are supported by the Annuity Bond Fund (ABF). The fund's largest revenue sources include State property tax revenues and proceeds from bond sale premiums. Other revenue sources include interest and penalties on property taxes and repayments for local bonds. When the ABF has not generated sufficient revenues to fully support debt service, general funds have subsidized debt service payments. In April 2006, the State property tax rate was set at $0.112 per $100 of assessable base.

The major revenue source supporting debt service payments is the State property tax. State property tax collections are influenced by trends in the housing market. **Exhibit 7.1** 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. Since February 2012, each month has seen a year-over-year increase in prices.

Inventories went through a similar increase and decline. However, they lagged behind the pattern seen in home prices. Since the increase in home values in February, inventories have continued to decline. In September 2012, inventories totaled approximately 27,000. This is more than inventories were in September 2000, which totaled about 25,000.

In November 2011, the State Department of Assessment and Taxation (SDAT) will revise State property tax estimates. In recent years those revisions have resulted in lowering estimates. It is possible that the recent housing data will reverse that trend.

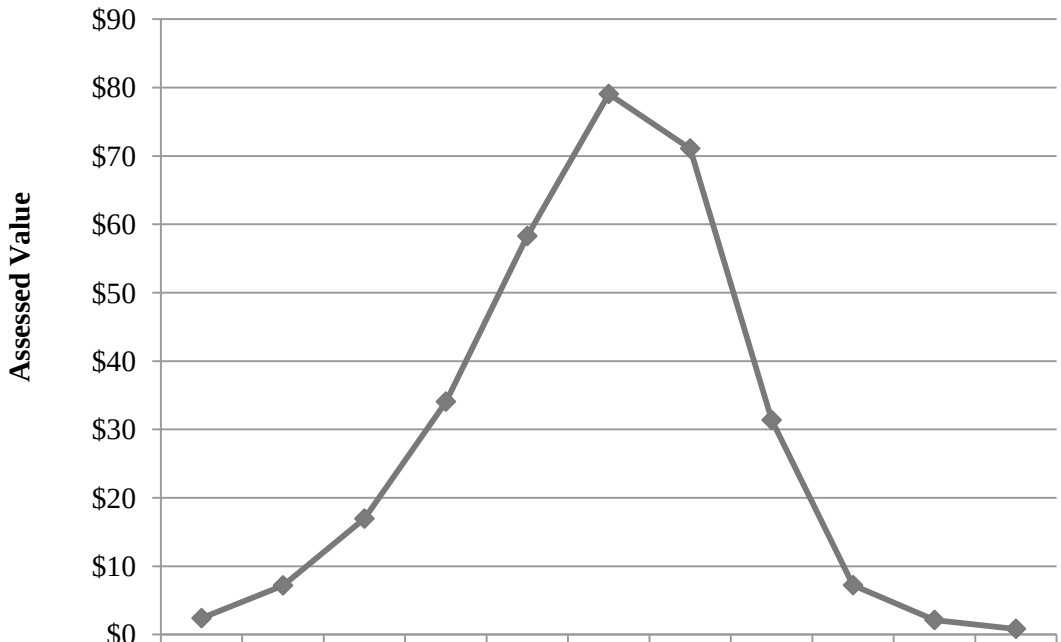
Exhibit 7.1
Maryland Housing – Median Prices and Inventory
12-month Moving Average
January 2002 to September 2012



Source: Maryland Association of Realtors

When home values increased from 2001 to 2007, State property tax collections did not increase correspondingly; similarly, the decline in home values since 2007 did not result in a corresponding decline in revenues. One reason for this is the Homestead Tax Credit. This 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%. This limits growth in revenues when property values rise quickly. It also provides the State a hedge should property values decline. As home values declined, the homestead credit declined and revenues continued to slowly increase. The result was to smooth State revenues; State property tax revenue growth was slower as home values increased, and there was no decline in revenues when home values decreased. **Exhibit 7.2** 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 7.2
State Property Tax Homestead Tax Credits
Fiscal 2004-2014
($ in Billions)

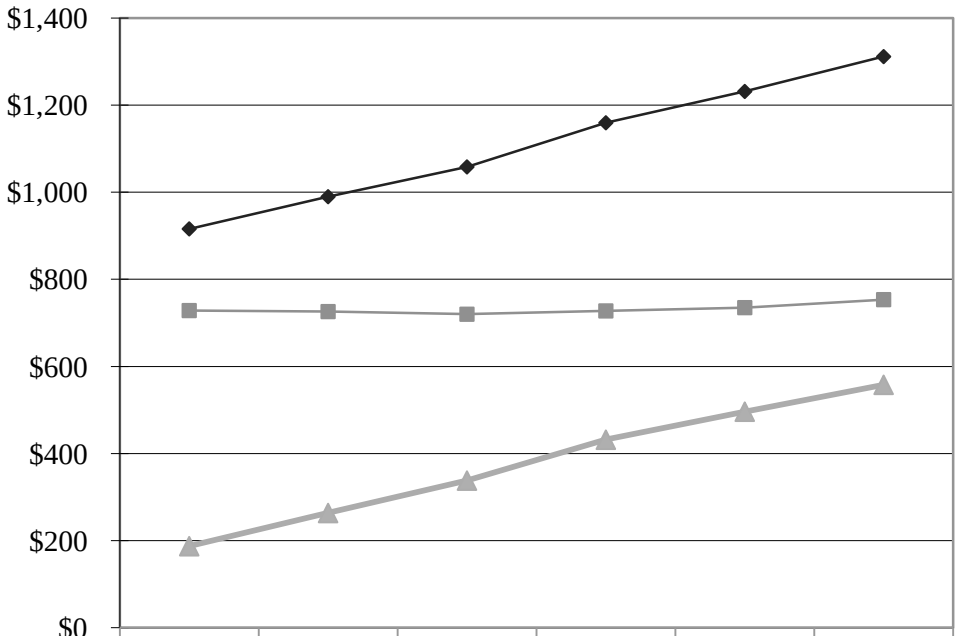


	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Homestead Tax Credit	2.4	7.2	16.9	34.1	58.3	79.1	71.1	31.4	7.2	2.1	0.8

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 7.3** shows how State property taxes, which are $188 million less than debt service costs in fiscal 2013, are expected to be $558 million less than debt service costs in fiscal 2018.

Exhibit 7.3
GO Bond Debt Service Costs and State Property Tax Revenue Collections
Fiscal 2013-2018
($ in Millions)



	2013	2014	2015	2016	2017	2018
State Property Tax Receipts	$728	$726	$720	$728	$735	$754
GO Bond Debt Service Costs	$916	$990	$1,058	$1,160	$1,231	$1,312
Difference	$188	$264	$338	$432	$496	$558

GO: general obligation

Source: Department of Legislative Services, October 2012

In fiscal 2013, the shortfall in State property tax receipts is not a problem because the ABF has 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 bond's 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 7.4** shows that fiscal 2013 has $182 million in prior year fund balances, most of which are derived from bond sale premiums. This provides sufficient funds to support debt service in fiscal 2013.

Exhibit 7.4
Revenues Supporting Debt Service
Fiscal 2013-2018
($ in Millions)

	2013	2014	2015	2016	2017	2018
Special Fund Revenues						
State Property Tax Receipts	$728	$726	$720	$728	$735	$754
Bond Sale Premiums	136	105	97	19	0	0
Other Revenues	3	3	3	3	3	3
ABF Fund Balance Transferred from Prior Year	182	147	10	1	1	1
Subtotal Special Fund Revenues Available	**$1,050**	**$981**	**$829**	**$750**	**$739**	**$757**
General Funds	0	0	211	392	475	537
Reimbursable Funds	2	6	6	6	7	7
Federal Funds	12	12	12	12	12	12
Total Revenues	**$1,063**	**$1,000**	**$1,059**	**$1,160**	**$1,232**	**$1,313**
Projected Debt Service Expenditures	**$916**	**$990**	**$1,058**	**$1,160**	**$1,231**	**$1,312**
ABF End-of-year Fund Balance	**$147**	**$10**	**$1**	**$1**	**$1**	**$1**

ABF: Annuity Bond Fund

[1]Estimated bond sale premiums total $62.1 million in March 2013, $47.4 million in August 2013, $57.7 million in March 2014, $48.4 million in August 2014, $48.4 in March 2015, and $18.8 million in August 2015.

[2]Supports $70.0 million of GO bonds issued in 2010 to support Program Open Space.

[3]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 2012

Even with debt service costs exceeding State property tax revenues by $264 million in fiscal 2014, it appears likely that the State will not need to raise State property tax rates or appropriate general funds. This is attributable to the fund balance at the end of fiscal 2013, which totals $182 million, and the premiums generated in fiscal 2014, which are estimated to be $105 million. The estimate of premiums assumes that the Federal Reserve will maintain interest rates near zero through the summer of calendar 2015, as it has announced, and that this will keep the TIC on GO bonds low.

The estimated fiscal 2014 ABF balance could be revised substantially by:

- ***Revised Property Tax Estimates:*** SDAT will update the property tax revenue estimates at the end of November 2012. For the first time since 2007, year-over-year median home values have increased. 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. For example, either increasing the TIC or reducing the coupon rate by a combination of 0.25% (25 basis points) reduces the projected March 2013 premium by $12 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 2013 sale, which tends to increase the premium. For example, adding $25 million to the sale adds $3 million to the premium.

$750 Million Expansion of the Capital Budget Is Proposed

Since the CDAC process was established in 1979, the State has gone through different periods of reducing and expanding State debt. The most recent expansion began in 2001. In every legislative session from 2001 to 2009, legislation expanding State debt was enacted. Some of the major actions include 2006 (when GO bond authorizations were increased by $100 million annually in perpetuity and the annual escalation was increased to 3%) and 2009 (when GO authorizations were increased $150 million annually). Two new kinds of debt were also authorized: Bay Restoration Bonds were authorized in 2004 and Grant Anticipation Revenue Vehicles (GARVEEs) were authorized in 2005.

These new and expanded authorizations increased the amount of debt outstanding. At the end of fiscal 1999, State debt outstanding totaled $4.7 billion. By the end of fiscal 2011, total debt outstanding increased to $9.6 billion (an increase of 6.1% annually). In 1999, GO bond authorizations totaled $4.5 billion of which $3.5 billion was issued and $1.0 billion was authorized but unissued. By the end of fiscal 2011, GO bond authorizations increased to $9.3 billion of which $7.0 billion was issued and $2.3 billion was authorized but unissued.

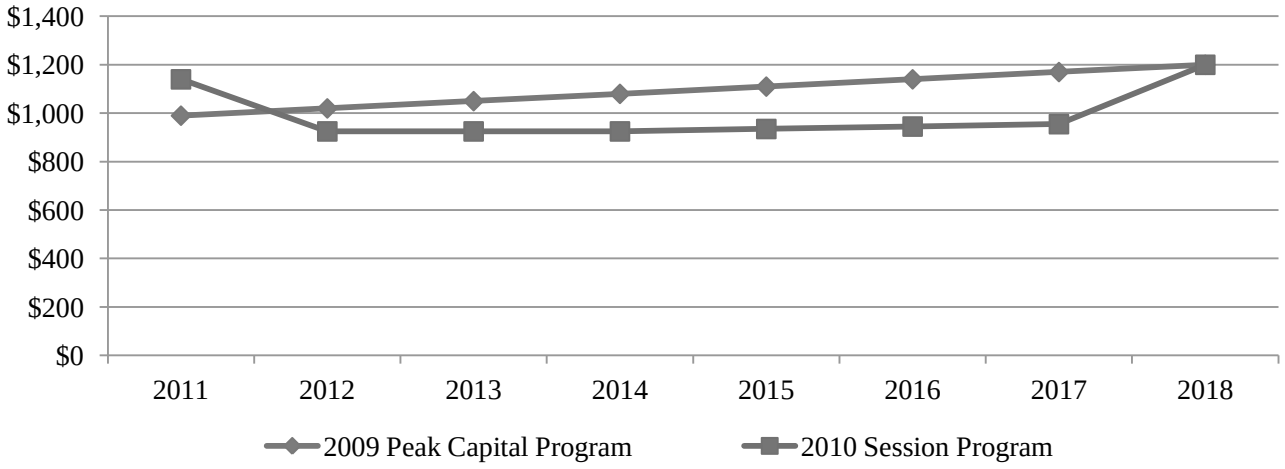
Committee Reduces General Obligation Debt Authorizations When State Reaches Affordability Limit in December 2009

By the end of 2009, State debt reached its affordability limit. A sudden decline in revenues, coupled with the recent expansion in debt, brought the State to the limit. The 2007 through 2009 recession was especially deep and resulted in lower out-year income and revenue estimates, which have reduced the State's debt capacity.

In December 2009, CDAC met to revise its recommended GO bond authorization. Since the committee had made its recommendation in September 2009, the Board of Revenue Estimates (BRE) had substantially reduced the State's general fund revenue projections. The revised revenue projections were low enough to reduce the State debt service to revenues ratio to the point that it exceeded the CDAC's 8% limit.

In response to these lower revenues, the committee reduced the out-year GO bond authorizations so that the debt service to revenues ratio was below the limit. **Exhibit 7.5** shows that the plan proposed for the 2010 legislative session increased authorizations in fiscal 2011 and then reduced authorization from fiscal 2012 to 2017. In fiscal 2018, spending would go back to the previous trajectory. This reduced fiscal 2011 to 2018 authorizations from $8,760 million in the 2009 "peak" program to $7,950 million in the 2010 session plan, a reduction of $810 million.

Exhibit 7.5
Reductions to GO Bond Program
Fiscal 2011-2018
($ in Millions)



Source: Capital Debt Affordability Committee, 2009 and 2010

Administration Proposes to Increase General Obligation Debt by $750 Million Over Five Years

State revenues have improved since 2009. The improvement is attributable to revenues exceeding expectations and revenue enhancements enacted by the General Assembly, most notably increasing income tax rates in the first special session of 2012. Since State debt is limited to 8% of revenues, increasing revenues also increase debt capacity. Consequently, these additional revenues have increased debt capacity.

In September 2012, the Department of Budget and Management (DBM) proposed to increase GO bond authorizations by $150 million per year from fiscal 2014 to 2018, adding $750 million to the capital budget. DBM's justification for increasing authorizations was that there are "shovel-ready projects," interest rates are low, capacity is squeezed by legislative pre-authorizations, and the capital budget provides operating budget relief. DBM also noted that, even if authorizations are increased, this September's debt service to revenue ratio is less than the ratio was in September 2011. This increase was approved by CDAC.

Increasing GO bond authorizations does not add much to State debt service costs, initially. However, over time the costs become substantial. **Exhibit 7.6** shows that the increased program is not expected to add to fiscal 2014 debt service costs. By fiscal 2022, $65 million in additional debt service costs are projected. Initially, costs increase slowly because capital projects are phased in over a period of years and because the State only pays interest for the first two years after a bond is issued. With respect to capital project phasing, the State Treasurer's Office estimates that 31% of capital project bonds are issued in the first year.

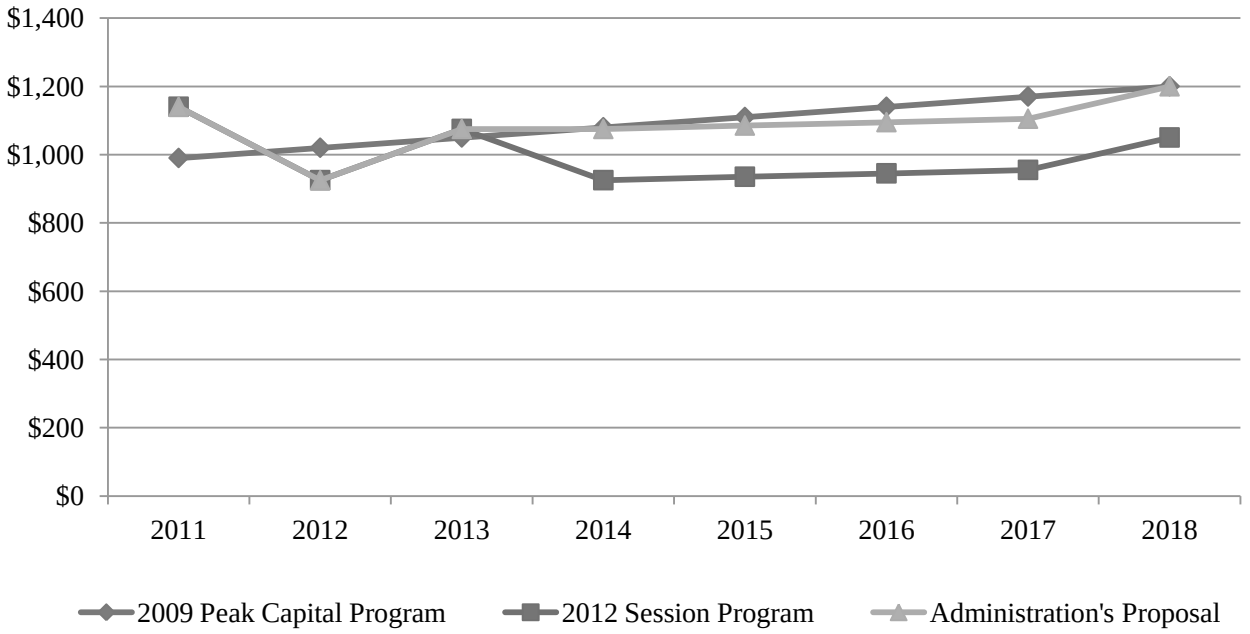
Exhibit 7.6
Effect of Increasing GO Bond Authorizations
Fiscal 2014-2022
($ in Millions)

Fiscal Year	Increase in Authorizations	Additional Debt Service
2014	$150.0	$0.5
2015	150.0	3.3
2016	150.0	8.0
2017	150.0	16.2
2018	150.0	28.0
2019	0.0	41.3
2020	0.0	53.8
2021	0.0	65.0
2022	0.0	72.3

Source: Department of Legislative Services, October 2012

If approved by the General Assembly, adding $750 million to the capital program would almost bring GO bond authorizations back to the peak level that was proposed in 2009. **Exhibit 7.7** shows that the proposed program raises capital authorizations to $1,075 million in fiscal 2014 and $1,085 million in fiscal 2015, compared to the $1,080 million in fiscal 2014 and $1,110 million in fiscal 2015 that was proposed in 2009. Total authorizations from fiscal 2011 to 2018 would be $8,700 million, which is $60 million less than was proposed in 2009.

Exhibit 7.7
Reductions to GO Bond Program
Fiscal 2011-2018
($ in Millions)



Source: Capital Debt Affordability Committee, 2009, 2011, and 2012

Additional Bond Authorizations Should Be Reduced and Focused on the State's Greatest Needs

DLS is concerned about such a substantial increase in State debt, specifically:

- ***Increasing GO Bond Authorizations Adds to the Out-year Revenue Shortfall:*** In spite of the actions taken in recent years, the State general fund still has a structural deficit. As discussed earlier, State property taxes are insufficient to support GO bond debt service costs. The proposal is projected to add $65 million in debt service costs in fiscal 2018.

- ***Authorizations Are Increased Beyond the Current Term:*** The current Administration and legislature's terms will end in two years, but the proposal funds five years worth of projects. Presumably, the *Capital Improvement Program* will make commitments in the final three years, after the Administration and legislature's term is over. It is possible that the next Administration and legislature have different priorities, which could be different projects or less debt service.

- ***It Is Unclear What the Additional Authorizations Will Support:*** DBM has indicated that it is early in the planning process so it is unclear which projects will be ready and cannot identify what projects the additional authorizations will support.

One approach to keep costs down is to limit the higher authorizations to two years. This funds a larger program in the final two years of the Administration and legislature's term and does not burden the next Administration or legislature. It also reduces the cost of this initiative. **Exhibit 7.8** shows that limiting the increase to two years reduces debt service costs to $13 million in fiscal 2018. In the long-run, costs will be reduced by 60%.

Exhibit 7.8
Effect of Increasing GO Bond Authorizations
Fiscal 2014-2022
($ in Millions)

Fiscal Year	Increase in Authorizations	Additional Debt Service
2014	$150.0	$0.5
2015	150.0	3.3
2016	0.0	7.3
2017	0.0	12.9
2018	0.0	20.2
2019	0.0	25.5
2020	0.0	28.9
2021	0.0	30.9
2022	0.0	31.7

Source: Department of Legislative Services, October 2012

The General Assembly could also require that the funds support projects that can demonstrate the greatest need. As discussed in Chapter 3, the transportation capital program will likely shrink over the next six years if transportation revenues are not increased. To provide the additional resources, the additional authorizations could be dedicated to support the transportation program. The program is planning various highway and transit projects for which there is insufficient funding.

DLS recommends that the increase in GO bond authorizations be limited to two years and reconsidered in the 2015 interim. The General Assembly may want to consider dedicating all or a portion of this fund for transportation projects.

Appendix 1
General Obligation Bond Requests: Fiscal 2014-2018
($ in Millions)

	Fiscal Years						Category
	2014	2015	2016	2017	2018	Total	Totals
State Facilities							**$692.6**
Board of Public Works	$54.7	$160.7	$122.4	$106.9	$81.7	$526.3	
Military	13.4	5.0	0.0	5.0	0.0	23.4	
Disabilities	1.6	1.6	1.6	1.6	1.6	8.0	
Information Technology*	45.4	42.1	26.6	20.8	0.0	134.9	
Health and Social Services							**$654.0**
Health and Mental Hygiene	$9.1	$30.3	$31.2	$9.4	$38.6	$118.7	
University of MD Medical System	15.2	10.5	1.5	1.5	15.9	44.5	
Senior Citizen Activity Center	0.8	2.0	2.0	2.0	2.0	8.8	
Juvenile Services	33.3	103.4	92.7	118.1	108.7	456.3	
Private Hospital Grant Program	5.8	5.0	5.0	5.0	5.0	25.8	
Environment							**$482.0**
Natural Resources	$84.6	$68.5	$19.8	$19.8	$14.8	$207.5	
Agriculture	17.7	14.6	8.5	8.5	8.5	57.8	
Environment	51.9	45.2	50.2	3.9	3.9	155.1	
MD Environmental Service	16.4	8.6	12.7	13.2	10.7	61.6	
Education							**$2,979.3**
Education	$5.0	$22.2	$37.9	$45.3	$5.0	$115.4	
MD School for the Deaf	2.3	0.0	0.2	2.0	0.1	4.6	
Public School Construction	660.9	491.2	649.1	607.9	450.3	2,859.4	
Higher Education							**$2,529.0**
University System of MD**	$204.5	$288.6	$318.2	$280.4	$242.0	$1,333.6	
Baltimore City Comm. College	0.0	1.0	9.8	29.0	39.7	79.5	
St. Mary's College	5.6	20.7	13.0	4.8	6.6	50.8	
Morgan State University	66.4	65.0	85.1	98.3	158.2	473.0	
Community Colleges	117.9	82.9	124.1	96.7	104.8	526.4	
Southern MD Higher Educ. Center	10.3	0.8	0.0	0.8	0.0	11.9	
Private Facilities Grant Program	10.5	12.3	12.0	11.0	8.0	53.8	
Public Safety							**$408.3**
Public Safety	$47.0	$62.5	$27.5	$84.7	$84.5	$306.2	
State Police	8.7	21.9	19.7	1.2	7.6	58.9	
Local Jails	5.6	7.5	10.0	10.0	10.0	43.1	
Housing and Economic							**$225.5**
Housing and Comm. Development	$52.1	$41.4	$40.3	$39.4	$38.4	$211.6	
Historic St. Mary's City	0.0	0.0	0.0	0.0	0.0	0.0	
Planning	1.2	1.4	6.1	4.1	1.3	13.9	
							$392.9
Legislative Initiatives* **	$50.0	$50.0	$50.0	$50.0	$50.0	$250.0	
Miscellaneous	66.7	42.4	13.8	10.0	10.0	142.9	
Subtotal Request	**$1,664.4**	**$1,709.4**	**$1,790.9**	**$1,691.1**	**$1,507.9**	**$8,363.6**	**$8,363.6**
Debt Affordability Limits 2011	**$925.0**	**$935.0**	**$945.0**	**$955.0**	**$1,050.0**	**$4,810.0**	
Debt Affordability Limits 2012	**$1,075.0**	**$1,085.0**	**$1,095.0**	**$1,105.0**	**$1,200.0**	**$5,560.0**	
Variance 2011 CDAC	**$739.4**	**$774.4**	**$845.9**	**$736.1**	**$457.9**	**$3,553.6**	
Variance 2012 CDAC	**$589.4**	**$624.4**	**$695.9**	**$586.1**	**$307.9**	**$2,803.6**	

CDAC: Capital Debt Affordability Committee

*Funding request reflects estimated cost to build out Phase I of the Public Safety Communications System.

**In addition to the general obligation bond request, the University System of Maryland has requested academic revenue bond funding of $32 million annually for fiscal 2014-2018.

***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) ====> 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Post 2022	Total Issued
2013	$1,075,000	$0	$333,000	$269,000	$215,000	$161,000	$97,000						$1,075,000
2014	1,075,000		0	333,000	269,000	215,000	161,000	$97,000					1,075,000
2015	1,085,000			0	336,000	271,000	217,000	163,000	$98,000				1,085,000
2016	1,095,000				0	339,000	274,000	219,000	164,000	$99,000			1,095,000
2017	1,105,000					0	343,000	276,000	221,000	166,000	$99,000		1,105,000
2018	1,200,000						0	372,000	300,000	240,000	180,000	$108,000	1,200,000
2019	1,240,000							0	384,000	310,000	248,000	298,000	1,240,000
2020	1,280,000								0	397,000	320,000	563,000	1,280,000
2021	1,320,000									0	409,000	911,000	1,320,000
2022	1,360,000										0	1,360,000	1,360,000
Total New Authorization		**$0**	**$333,000**	**$602,000**	**$820,000**	**$986,000**	**$1,092,000**	**$1,127,000**	**$1,167,000**	**$1,212,000**	**$1,256,000**	**$3,240,000**	
Previously Authorized GO Bonds	$2,330,441	1,028,000	597,000	354,000	164,000	62,000	25,000	33,000	33,000	33,000	1,441	0	$2,330,441
Total Issuances		**$1,028,000**	**$930,000**	**$956,000**	**$984,000**	**$1,048,000**	**$1,117,000**	**$1,160,000**	**$1,200,000**	**$1,245,000**	**$1,257,441**	**$3,240,000**	

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
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
March 13, 1991	6.31%	7.32%	2.261	No	No	No
July 10, 1991	6.37%	7.21%	2.240	No	No	No
October 9, 1991	5.80%	6.66%	2.230	No	No	No
May 13, 1992	5.80%	6.54%	2.220	No	No	No
January 13, 1993	5.38%	6.19%	2.221	No	No	No
May 19, 1993	5.10%	5.77%	2.212	No	No	No
October 6, 1993	4.45%	5.30%	2.206	No	No	No
February 16, 1994	4.48%	5.42%	2.208	No	No	No
May 18, 1994	5.36%	6.14%	2.199	No	No	No
October 5, 1994	5.69%	6.50%	2.191	No	No	No
March 8, 1995	5.51%	6.18%	2.184	No	No	No
October 11, 1995	4.95%	5.82%	2.163	No	No	No
February 14, 1996	4.51%	5.33%	2.159	No	No	No
June 5, 1996	5.30%	5.94%	2.144	No	No	No
October 9, 1996	4.97%	5.73%	2.144	No	No	No
February 26, 1997	4.90%	5.65%	2.136	No	No	No
July 30, 1997	4.64%	5.23%	2.135	No	No	No
February 18, 1998	4.43%	5.07%	2.119	No	No	No
July 8, 1998	4.57%	5.12%	2.128	No	No	No
February 24, 1999	4.26%	5.08%	2.134	No	No	No
July 14, 1999	4.83%	5.36%	2.146	No	No	No
July 19, 2000	5.05%	5.60%	2.157	No	No	No
February 21, 2001	4.37%	5.21%	2.178	No	No	No
July 11, 2001	4.41%	5.22%	2.201	No	No	No
March 6, 2002	4.23%	5.19%	2.233	No	No	No
July 31, 2002	3.86%	5.00%	2.241	No	No	No
February 19, 2003	3.69%	4.79%	2.235	No	No	No
July 16, 2003	3.71%	4.71%	2.250	No	No	No
July 21, 2004	3.89%	4.84%	2.254	No	No	No
March 2, 2005	3.81%	4.50%	2.259	No	No	No
July 20, 2005	3.79%	4.36%	2.268	No	No	No
March 1, 2006	3.87%	4.39%	2.242	No	No	No
July 26, 2006	4.18%	4.55%	2.238	No	No	No
February 28, 2007	3.86%	4.10%	2.228	No	No	No
August 1, 2007	4.15%	4.51%	2.218	No	No	No
February 27, 2008	4.14%	5.11%	2.208	No	No	No

Bond Sale Date	TIC	20-bond Index	MD/US PI	YTM	BABs	Post-crisis
July 16, 2008	3.86%	4.65%	2.213	No	No	Yes
March 4, 2009	3.39%	4.96%	2.287	No	No	Yes
March 2, 2009	3.63%	4.87%	2.287	No	No	Yes
August 5, 2009	2.93%	4.65%	2.303	No	No	Yes
August 3, 2009	3.20%	4.69%	2.303	No	No	Yes
August 5, 2009	3.02%	4.65%	2.303	Yes	Yes	Yes
October 21, 2009	2.93%	4.31%	2.242	No	No	Yes
October 21, 2009	3.06%	4.31%	2.242	Yes	Yes	Yes
February 24, 2010	2.85%	4.36%	2.262	Yes	Yes	Yes
July 28, 2010	1.64%	4.21%	2.259	No	No	Yes
July 28, 2010	1.91%	4.21%	2.259	No	No	Yes
July 28, 2010	2.74%	4.21%	2.259	Yes	Yes	Yes
March 7, 2011	2.69%	4.90%	2.286	No	No	Yes
March 9, 2011	3.49%	4.91%	2.286	No	No	Yes
July 25, 2011	1.99%	4.46%	2.299	No	No	Yes
July 27, 2011	3.08%	4.47%	2.299	No	No	Yes
March 2, 2012	2.18%	3.72%	2.306	No	No	Yes
March 7, 2012	2.42%	3.84%	2.306	No	No	Yes
July 27, 2012	2.52%	3.61%	2.277	No	No	Yes
August 1, 2012	2.17%	3.66%	2.277	No	No	Yes

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

Source for 20-bond Index: The Bond Buyer
Source for Personal Income: Federal Bureau of Economic Analysis
Remaining Sources: Bond Sale Official Statements

Appendix 4
Agency Debt Outstanding
Fiscal 2002-2012
($ in Millions)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Change 2002-2012	Average Annual % Change 2002-2012
Agency Debt Subject to Ceiling and Allocation Caps													
Maryland Environmental Service	$36.5	$33.7	$30.5	$30.5	$24.5	$19.6	$18.7	$19.8	$28.5	$31.2	$27.5	-$9.0	-2.8%
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	668.8	575.6	627.2	763.6	765.1	1,055.3	1,877.4	2,247.1	2,708.2	3,292.9	3,292.9	2,624.1	17.3%
Maryland Water Quality Financing Administration[1]	115.9	105.6	96.6	88.2	73.9	65.7	104.9	123.1	82.1	70.5	112.0	-3.9	-0.3%
Revenue Cap Total	**$821.2**	**$714.9**	**$754.3**	**$882.3**	**$863.5**	**$1,140.6**	**$2,001.0**	**$2,390.0**	**$2,818.8**	**$3,394.6**	**$3,432.5**	**$2,611.3**	**15.4%**
% Change/Prior Year	**76.2%**	**-12.9%**	**5.5%**	**17.0%**	**-2.1%**	**32.1%**	**75.4%**	**19.4%**	**17.9%**	**20.4%**	**1.1%**		
Agency Debt Not Subject to Ceiling and Allocation Caps													
Baltimore City Community College	$1.1	$1.0	$0.9	$0.9	$0.8	$0.8	$0.7	$0.7	$0.7	$1.2	$1.0	-$0.1	-0.9%
Dept. of Housing and Community Development[2]	2,705.8	2,672.8	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	400.7	1.4%
Local Government Infrastructure (CDA)	91.7	105.6	114.6	122.5	117.0	122.0	135.1	121.6	109.7	127.2	122.8	31.1	3.0%
Maryland Industrial Development Financing Authority	581.4	568.4	411.1	395.0	409.6	387.1	382.0	344.9	375.7	484.8	495.6	-85.8	-1.6%
MDOT – County Revenue Bonds	12.9	7.9	4.5	31.8	30.0	58.4	56.8	98.5	95.1	89.1	82.9	70.0	20.5%
MDOT – Nontax-supported Issuances	65.2	57.7	54.0	49.7	72.6	68.5	64.2	59.9	57.3	54.2	51.1	-14.2	-2.4%
Morgan State University	33.4	72.2	70.0	68.6	67.7	69.6	68.4	67.8	64.4	59.6	55.2	21.8	5.1%
St. Mary's College of Maryland	27.5	40.6	39.7	40.6	43.8	49.5	48.2	46.8	45.3	41.8	38.3	10.8	3.4%
University System of Maryland	797.0	960.0	973.0	1,012.8	934.8	954.8	969.9	1,028.5	1,082.9	1,129.2	1,170.0	373.0	3.9%
Noncap Total	**$4,316.0**	**$4,486.2**	**$4,082.9**	**$3,916.5**	**$3,924.4**	**$4,915.0**	**$4,984.7**	**$4,946.2**	**$5,177.0**	**$5,225.8**	**$5,123.4**	**$807.4**	**1.7%**
% Change/Prior Year	**-2.4%**	**3.9%**	**-9.0%**	**-4.1%**	**0.2%**	**25.2%**	**1.4%**	**-0.8%**	**4.7%**	**0.9%**	**-2.0%**		
Tax-supported Debt													
Transportation Debt	$717.3	$963.7	$1,187.3	$1,070.8	$1,078.5	$1,111.1	$1,268.8	$1,582.6	$1,645.0	$1,561.8	$1,459.0	$741.7	7.4%
Grant Anticipation Revenue Vehicles	0.0	0.0	0.0	0.0	0.0	325.0	300.7	704.4	651.8	596.9	539.4	539.4	n/a
Capital Leases	186.2	193.1	198.6	175.1	226.9	247.9	247.4	266.8	242.6	166.6	310.5	124.3	5.2%
Maryland Stadium Authority	278.0	323.2	321.0	309.2	296.8	283.1	271.6	256.0	251.9	225.7	217.9	-60.1	-2.4%
Bay Restoration Bonds	0.0	0.0	0.0	0.0	0.0	0.0	50.0	46.8	44.2	41.6	38.8	38.8	n/a
General Obligation Debt	3,544.2	3,932.5	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	3,996.9	7.8%
Tax-supported Debt Total	**$4,725.7**	**$5,412.5**	**$5,809.2**	**$6,066.9**	**$6,470.7**	**$7,109.3**	**$7,632.3**	**$8,730.2**	**$9,358.7**	**$9,575.4**	**$10,106.6**	**$5,380.9**	**7.9%**
% Change/Prior Year	**3.0%**	**14.5%**	**7.3%**	**4.4%**	**6.7%**	**9.9%**	**7.4%**	**14.4%**	**7.2%**	**2.3%**	**5.5%**		
Authorities and Corporations Not Subject to Ceiling and Allocation Caps													
Health/Higher Education Facilities Authority	$4,265.4	$4,619.5	$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	$4,647.7	7.6%
Maryland Economic Development Corporation	1,077.7	1,485.9	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	1,393.5	8.7%
Authorities and Corporations Total	**$5,343.1**	**$6,105.4**	**$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**	**$6,041.2**	**7.9%**
% Change/Prior Year	**18.3%**	**14.3%**	**13.2%**	**4.0%**	**12.1%**	**13.7%**	**12.5%**	**2.7%**	**3.9%**	**1.2%**	**2.3%**		

CDA: Community Development Administration
MDOT: Maryland Department of Transportation

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