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

Department of Legislative Services 2006

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

Department of Legislative Services
Office of Policy Analysis
Annapolis, Maryland

December 2006

For further information concerning this document contact:

Library and Information Services
Office of Policy Analysis
Department of Legislative Services
90 State Circle
Annapolis, Maryland 21401

Baltimore Area: 410-946-5400 ● Washington Area: 301-970-5400
Other Areas: 1-800-492-7122, Extension 5400
TDD: 410-946-5401 ● 301-970-5401
Maryland Relay Service: 1-800-735-2258
E-mail: libr@mlis.state.md.us

December 2006

The Honorable Edward J. Kasemeyer, Senate Chairman
Spending Affordability Committee

The Honorable Michael R. Gordon, House Chairman
Spending Affordability Committee

Dear Chairman Kasemeyer and Chairman Gordon:

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 essentially 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 September 10 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 of Erika Schissler, Jonathan Martin, Andrew Gray, Monica Kearns, Matthew Klein, and Theresa Tuszynski. The manuscript was prepared by Mya Pierce.

Respectfully submitted,

Warren G. Deschenaux
Director

WGD/mcp

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 $810 million for new authorizations of general obligation (GO) bonds during the 2007 legislative session. The recommendation, which is $120 million more than was authorized in the 2006 legislative session, reflects a change in application of the committee's authorization policy. To support a larger capital plan, the committee increased the authorization by $100 million. This amount remains in the base permanently. The remaining $20 million increase is consistent with the policy to increase authorizations 3 percent annually. The recommendation includes $5 million previously authorized for tobacco buyout financing.

In accordance with Section 8-113 of the State Finance and Procurement Article, the Governor notified the General Assembly on the level of State debt that is advisable. The Governor accepted the recommendation of the CDAC and provided the following preliminary allocation of the $810 million debt authorization as shown in **Exhibit 1.1**.

Exhibit 1.1
Governor's Proposed GO Bond Capital Program

	GO Debt
Public School Construction	$300,000,000
Higher Education Projects	243,000,000
Health and Public Safety Projects	160,000,000
Miscellaneous Projects	107,000,000
Total	**$810,000,000**

Source: Governor's Office, October 16, 2006

The Department of Legislative Services' (DLS) forecast of personal income and levels of outstanding debt indicates that Maryland's five-year GO debt authorization plan will be affordable according to the debt affordability criteria and that additional capacity remains. **DLS agrees that the committee's debt limit for the 2007 session of $810 million in new GO authorizations meets the affordability criteria and preserves capacity for the future.**

Dwindling Unused Capacity

DLS is concerned about increased authorizations approved since 2000. Through fiscal 2016 (the end of the CDAC's forecast period), the CDAC has increased authorizations by $3.95 billion, an increase of over 40 percent. This has moved debt outstanding, which is the controlling criterion, close to the limit. Because the State is close to the limit, a sudden change in personal income can push debt outstanding close to or over the limit. DLS is also concerned that some of the other State debt, such as transportation debt and bay bonds, are more likely to be revised upward than downward, which could also bring debt outstanding close to or over the limit. The analysis suggests that debt cannot grow as quickly in subsequent years as it has grown in the last six years without exceeding CDAC limits. **As the State gets closer to the debt limit, the State will be forced to either constrain capital spending growth or find PAYGO revenues to support the capital program.**

Debt Service Costs Exceed State Property Tax Collections

State property taxes have been reduced in fiscal 2007. At the current rate, collections are insufficient to support GO debt service costs beginning in fiscal 2008. In the past, property tax shortfalls resulted in general fund appropriations for GO debt service. The State continues to have a long-term structural deficit in the general fund. Based on current policies, authorizing additional GO debt beyond what is currently recommended will either exacerbate this structural deficit or require State property tax increases. **To limit the growth in out-year debt service, it is recommended that, in its 2007 report, the CDAC not expand the GO bond program beyond what is currently proposed**

Authorization of Transportation Debt

The Maryland Department of Transportation 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. **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 3.2 percent of personal income debt affordability criterion, and debt service within the 8.0 percent of revenues debt affordability criterion.**

Higher Education Debt

For fiscal 2008, the University System of Maryland (USM) intends to issue up to $60 million in auxiliary debt and $30 million in academic debt. This level of issuance will result in a debt service ratio below the 5.5 percent of current unrestricted funds and mandatory transfers

recommended by the system's financial advisers. This level of issuance also allows total available funds to exceed 50 percent of debt outstanding. Morgan State University, St. Mary's College, and Baltimore City Community College do not plan on issuing any debt in fiscal 2007. **DLS concurs with the committee's assessment that issuing $30 million in new USM academic revenue bonds is affordable.**

State Evaluation of Open Auctions Process Is Recommended

Currently, State GO bonds are sold in closed auctions. The State advertises a bond sale, which includes the day and time that all the bids are due. All the bids are opened at the same time and the bidder with the lowest true interest cost (TIC) is awarded the bond sale. An open auction process gives each bidder the opportunity to bid again if their initial bid is not the lowest bid. The financial literature suggests that this could reduce the true interest cost from 9 to 24 basis points (0.09 percent to 0.24 percent). A sum of least squares regression equation has been developed which could be used to evaluate the open auctions process. **It is recommended that the State begin an evaluation of the open auctions process by using this process at the next bond sale. The evaluation could be for either GO or transportation bond sales.**

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. More recently Chapter 445 of 2005 added the chair of the Capital Budget Subcommittee of the Senate Budget and Taxation Committee and the chair of the Capital Budget Subcommittee of the House Committee on Appropriations 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, consolidated transportation bonds, stadium authority bonds, bay restoration bonds, Grant Anticipation Revenue Vehicles (GARVEE) revenue bonds, and capital leases supported by State revenues. Bonds supported by nonstate revenues, such as the University System of Maryland's Auxiliary Revenue bonds or the Maryland Transportation Authority's revenue bonds, 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. GO bonds are discussed in Chapter 3. The committee recommended an $810 million new GO debt authorization limit for the 2007 session. This figure is $120 million more than last session's authorization and includes $3 million for the Southern Maryland Regional Strategy-Action Plan for Agriculture, referred to as the Tobacco Transition Program.

Exhibit 2.1 shows that the long-range plan adopted by the committee provides for 3 percent annual increases along with an additional $100 million annually over the fiscal 2007 authorization level. The additional $100 million in annual authorizations was not tied specifically to increased authorization levels for school construction projects. The Governor, however, in a letter to the Presiding Officers required by Section 8-113 of the State Finance and Procurement Article, indicated that he intends to earmark at least $300 million of GO debt for school construction in the fiscal 2008 budget which is $150 million more than previously planned in the State's *Five-year Capital Improvement Program*. A complete discussion of GO bond authorizations, issuances, and costs is provided in Chapter 3.

Exhibit 2.1
Capital Debt Affordability Committee's
Recommended Levels of General Obligation Bond Authorizations
($ in Millions)

Session	Proposed GO Bond Authorization	Change from Previous Year's Authorization
2007	$810	$120
2008	835	25
2009	860	25
2010	890	30
2011	920	30

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations,* October 2006

Higher Education Academic Debt to Be Authorized

CDAC recommends limiting new debt authorization for academic facilities to $30 million for the next fiscal year, which is $5 million more than the amount authorized in the 2006 legislative session. The entire $30 million is intended for projects on University System of Maryland (USM) campuses. The long-range plan adopted by the committees sets the annual authorization for academic facilities bonds at $25 million for fiscal 2009-2012. CDAC notes that the proposed capital financing programs for the public higher education systems result in a debt burden level, measured as debt service as a percentage of the sum of unrestricted current fund expenditures plus mandatory transfers, is well below the 10 percent "highly leveraged" threshold established by Standard & Poor's. Furthermore, USM is within its 5.5 percent debt capacity limit meaning that debt service does not exceed 5.5 percent of unrestricted current fund expenditures and mandatory transfers. Academic bond issuances are discussed in Chapter 6.

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;
- Qualified Zone Academy Bonds (QZABs) backed by the full faith and credit of the State;
- 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 (GARVEEs) pledging projected future federal transportation grants to support debt service payments. GARVEEs can be issued by MDOT and the Maryland Transportation Authority;
- revenue bonds issued by the Maryland Stadium Authority, 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 (WQFA), 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 public and private colleges and universities, public schools and community colleges, prisons and detention centers, hospitals, and low-income housing projects. **Appendix 1** shows the projects that are requested.

New General Obligation Bond Authorizations

The Capital Debt Affordability Committee (CDAC) recommended a limit of $810 million for new authorizations of GO bonds during the 2007 session. The recommendation includes a planned $5 million for tobacco buyout financing, as required by Chapter 103 of 2002.

The recommendation, which is $120 million more than was authorized in the 2006 session, reflects a change in application of the committee's authorization policy. Consistent with last year's policies, the limit is increased 3 percent ($20 million) to account for inflation and program growth. The new limit also includes an additional $100 million to permanently expand the capital program. The CDAC report does not link the increase in funding to additional public school construction. However, the funding does provide additional authorizations for spending currently not in the *Capital Improvement Program*, and these authorizations could be used to support the Public School Construction Program. In the committee's meetings, the Treasurer noted that the committee has not, and should not begin to, make specific recommendations concerning what programs and projects the authorization should fund.

Exhibit 3.1 shows that the 2006 report now recommends a total of over $4.3 billion in authorizations from 2007 to 2011. This is an increase of $565 million over the five-year period. The $100 million increase adds to the base. This results in greater inflationary (3 percent) funding increases over the period totaling $65 million.

Exhibit 3.1
Effect of New Policy on GO Bond Authorizations
2007-2011 Legislative Sessions
($ in Millions)

Session	2005 Report Recommended Authorizations	2006 Report Recommended Authorizations	Increased Authorization
2007	$710	$810	$100
2008	730	835	105
2009	745	860	115
2010	770	890	120
2011	795	920	125
Total	**$3,750**	**$4,315**	**$565**

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations,* September 2005 and October 2006

General Obligation Bond Issuance Stream

GO bonds authorized in a given year are not issued in total right away. In fact, the Treasurer's Office reports that just over half of the GO bonds authorized in a year are typically issued within the next two fiscal years. Specifically, CDAC assumes bonds authorized in a given year will be fully issued over five years (31 percent in the first year, 25 percent in the second year, 20 percent in the third year, 15 percent in the fourth year, and 9 percent in the fifth year). This delay in issuance results in a substantial lag between the time general obligation debt is authorized and when it has a significant impact on debt outstanding and debt service levels.

The bond issuance stream influences debt outstanding and debt service calculations on which the affordability calculations are based. **Appendix 2** shows how the proposed authorizations for fiscal 2006 through 2015 would be issued. **Exhibit 3.2** compares this year's issuance stream to last year's to reveal $773 million in higher issuance levels through fiscal 2015. The increased issuance is largely attributable to the increased authorizations recommended by CDAC in this year's report.

Exhibit 3.2
Proposed Issuance Stream
Fiscal 2007-2015
($ in Millions)

Fiscal Year	2005 Report	2006 Report	Increase
2007	$675	$675	$0
2008	700	700	0
2009	725	760	35
2010	725	810	85
2011	750	860	110
2012	775	900	125
2013	800	940	140
2014	825	960	135
2015	837	980	143
Total	**$6,812**	**$7,585**	**$773**

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*, September 2005 and October 2006

The table in Appendix 2 also indicates the expected issuances of current authorizations. At the beginning of fiscal 2005, approximately $1.8 billion in debt was authorized by the General Assembly but not issued. The CDAC report assumes that $449 million of this debt will be issued in fiscal 2008.

General Obligation Bond Debt Service Costs

The committee's recommendation to increase authorizations is projected to result in a net increase debt service costs in the out-years. **Exhibit 3.3** shows that debt service costs are now expected to be $142 million more than projected in the 2005 report. In the first two years, debt service costs decrease slightly. This is primarily attributable to reductions in the amount of bonds sold. The 2005 report projected $750 million in bond sales in fiscal 2006 while actual bond sales totaled $650 million. Debt service costs are expected to exceed last year's costs beginning in fiscal 2009. By fiscal 2015, debt service costs are $51 million more than previously estimated.

Exhibit 3.3
Projected Debt Service Costs
Fiscal 2007-2015
($ in Millions)

Fiscal Year	2005 Report Estimated Debt Service Costs	2006 Report Estimated Debt Service Costs	Difference
2007	$657	$654	-$3
2008	698	695	-3
2009	746	748	2
2010	779	783	4
2011	822	831	9
2012	855	872	17
2013	891	919	28
2014	918	955	37
2015	956	1,007	51
Total	**$7,322**	**$7,464**	**$142**

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations,* September 2005 and October 2006

The increase is expected to be somewhat modest in the early years. This is attributable to the issuance stream and the State's policy of paying only interest in the first two years after issuing GO debt. As previously mentioned, because most authorized projects are not fully funded in the first year, it is assumed that bonds are issued over five years. If the additional debt service supports projects with shorter planning periods, debt will be issued sooner and increased debt service payments will be more substantial in the early years. Conversely, if the new projects take longer to plan, initial debt service payments could be lower. Chapter 8 discusses long-term debt costs and its relationship with State revenues.

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:

- The March 2002 bond sale included $109.9 million in principal with $117.2 million placed into escrow (includes a $7.5 million premium) to refund the prior bonds. Over the term of the bonds, this results in debt service savings of $10.8 million.

- The July 2002 bond sale included $290.8 million in principal with $315.3 million placed into escrow (includes $24.7 million premium) to refund the prior bonds. The gross savings on this refunding is $17.5 million.

- The February 2003 bond sale issued $86.1 million in principal and placed $95.8 million in escrow (includes $9.6 million premium) to refund previously issued bonds. The debt service savings on this refunding are $6.4 million.

- The October 2004 bond sale issued $574.7 million in principal and placed $631.1 million into escrow to refund previously issued bonds. The debt service savings are $23.1 million.

- The March 2005 bond sale issued $281.2 million in bonds and placed $292.3 million into escrow to refund previously issued bonds. The debt service savings are $11.6 million.

Exhibit 3.4 shows that annual savings from these five recent bond sale refunding issuances reduced GO bond debt service costs by a total of $69 million. The State Treasurer's Office, with advice from its financial advisor, determines whether refinancing general obligation debt is advantageous. Should interest rates fall to a point where it is determined that there would be sufficient savings to warrant a refunding, such action would be presented to the Board of Public Works (BPW) for its approval.

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.

The State does not pay interest on QZABs. 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 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 comes out to be less than the par value of QZABs.

Exhibit 3.4
Savings as Attributable to Refunding Bonds
Fiscal 2002-2016
($ in Thousands)

Fiscal Year	Mar-02	Jul-02	Feb-03	Oct-04	Mar-05	Total
2002	$2,292	$0	$0	$0	$0	$2,292
2003	2,244	9,150	428	0	0	11,822
2004	2,360	1,320	660	0	0	4,341
2005	692	5,251	50	8,451	0	14,445
2006	1,620	1,359	958	1,546	1,927	7,410
2007	1,477	213	1,329	5,055	281	8,355
2008	80	187	1,472	5,331	281	7,351
2009	80	10	1,475	785	281	2,631
2010	0	4	0	796	4,776	5,576
2011	0	0	0	796	1,572	2,369
2012	0	0	0	182	21	203
2013	0	0	0	152	1,211	1,363
2014	0	0	0	14	1,192	1,206
2015	0	0	0	12	65	77
2016	0	0	0	14	0	14
Total	**$10,846**	**$17,495**	**$6,373**	**$23,134**	**$11,607**	**$69,455**

Note: Numbers may not sum due to rounding.

Source: State Treasurer's Office, Public Resources Advisory Group

To date, the State has authorized two QZAB issuances. The first issuance, which includes two authorizations, was bid in September 2001. The total amount bid was $18.1 million. Sinking fund payments total $11.5 million. The second issuance was bid in November 2004. Sinking fund payments total $6.9 million.

Exhibit 3.5 demonstrates the cost savings of issuing QZABs as opposed to GO bonds under the most recent QZAB issuance totaling $9 million. Under an issuance of GO bonds, the State's total obligation is $12.5 million as compared to $7.4 million under the QZAB issuance for a savings of $5.1 million. When issuing GO bonds the State has to pay both interest and principal to the bondholder. In the case of QZABs, the State's only liability is on the principal of the bond, which generates interest revenues while in escrow.

Exhibit 3.5
GO Bond and QZAB Debt Service Cost Comparison
Series 2004 – $9,043,000 Issuance
($ in Thousands)

Fiscal Year	GO Debt Service	QZAB Sinking Fund	QZAB Savings
2004	-$1,001[1]	$0	-$1,001
2005	452	490	-38
2006	452	490	-38
2007	962	490	472
2008	962	490	471
2009	965	490	475
2010	962	490	471
2011	962	490	472
2012	961	490	471
2013	964	490	473
2014	964	490	474
2015	963	490	473
2016	961	490	470
2017	961	490	471
2018	965	490	474
2019	964	490	474
Total	**$12,419**	**$7,356**	**$5,063**

[1]Insofar as current bond sales are generating a premium, the analysis assumes that issuing GO bonds, instead of QZABs would generate a premium. This $1 million reflects the estimated bond sale premium.

Note: Numbers may not sum due to rounding.

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

Chapter 431 of 2005 authorizes another $9.4 million in QZABs. These QZABs have not been issued. The Interagency Committee on School Construction, which administers the Aging Schools Program, advises that the federal government requires that $4.4 million of this authorization must be issued by December 31, 2006.

There is some concern that the State will not be able to issue all of the remaining QZABs. The federal government is considering revising rules that would reduce the tax benefit that QZAB purchasers receive. Currently, the purchaser receives a tax credit for the full amount purchased and the funds deposited into the sinking fund can be invested. The United States Congress is considering new rules (particularly regarding arbitrage and investment of sinking funds) that could eliminate the QZABs financial advantage. This could drive the purchasers out of the market. The Treasurer's Office also advises that project applications are lagging, so there may not be demand for the full issuance this year.

Capital Leases Supported by State Revenues

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.

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.

For energy performance projects, agencies make lease payments using the savings that result from implementation of the conservation projects. Section 8-401 to 8-407 of the State Finance and Procurement Article regulates leases. The law requires that capital leases be approved by BPW and that the Legislative Policy Committee has 45 days to review and comment on any capital lease prior to submission to BPW.

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 can 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.

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 can 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.

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; and as the leases are paid off, the savings from these projects will accrue to the State.

The CDAC's out-year forecast shows current leases and projected activities for equipment and energy performance leases. The forecast assumes that $22 to $24 million in new equipment leases annually and does not assume any new real property leases in the out-years. The nature of real property leases makes it difficult to project out-year costs since they tend to be one-time opportunities that have a short lead time. For example, there is a wide range of costs as some leases' total value is less than $10 million while others is greater than $40 million. **Exhibit 3.6** shows tax-supported capital lease debt outstanding totals $226.9 million as of June 30, 2006.

Exhibit 3.6
Tax-supported Capital Lease Debt Outstanding
As of June 30, 2006
($ in Millions)

Maryland Economic Development Corp. – MDOT Headquarters	$31.9
Maryland Aviation Administration Shuttle Buses	14.2
Annapolis Parking Garage	23.8
St. Mary's Multi-Service Center	4.2
Towson District Court	2.7
Hyattsville Multi-Service Center	3.7
Hilton Street Facility	2.3
Calvert County Multi-Purpose Center	2.4
Prince George's County Justice Center	23.1
Eastern Correctional Institution Water and Wastewater Facilities	2.9
Energy Performance Leases	35.0
Equipment Leases	80.7
Total	**$226.9**

Source: State Treasurer's Office, October 2006

Transportation Debt

MDOT issues 15-year, tax-supported consolidated transportation bonds. Bond proceeds are usually earmarked for highway construction. Revenues from taxes and fees and other funding sources accrue to the Transportation Trust Fund (TTF) to pay debt service, pay 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 known as nontraditional debt. The term nontraditional debt refers to a variety of debt instruments that are used by MDOT but that are not consolidated transportation bonds. Nontraditional debt currently includes Certificates of Participation, Maryland Economic Development Corporation (MEDCO) debt, and debt sold on MDOT's behalf by MdTA. As of June 30, 2006, MDOT had $775.8 million in nontraditional debt outstanding. Of the nine outstanding issuances of nontraditional debt, two are tax-supported and are included in the State debt affordability analysis.

Statute does not impose any limit on the total amount of nontraditional debt that MDOT may issue. However, the General Assembly adopted budget language in the fiscal 2007 budget that imposes a ceiling of $762.2 million on the total amount of nontraditional debt that may be outstanding as of June 30, 2007. MDOT may increase the aggregate outstanding unpaid and principal balance of nontraditional debt above this ceiling during the fiscal year if it notifies the budget committees explaining the reason the additional issuance is needed. MDOT expects that $750.4 million in nontraditional debt will be outstanding as of June 30, 2007. This anticipated debt outstanding limit does not include $5.6 million in debt outstanding from the Airport Facilities Project issuance being redeemed early.

Consolidated Transportation Bonds

The issuance of transportation debt 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 2004 session, the maximum outstanding debt limit was increased to $2 billion (from $1.5 billion) due to the adoption of provisions that increased vehicle registration fees.

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 2007 budget bill set the maximum ceiling for June 30, 2007, at $1,248,750,000. The Department of Legislative Services (DLS) estimates that as of June 30, 2007, MDOT will have $1,246,050,000 in debt outstanding.

The bond revenue coverage test, which is established in MDOT's bond resolutions, mandates that net revenues and pledged taxes must each equal at least twice (2.0) the maximum future debt service. 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, 2007, MDOT will have net income coverage of 4.7 and pledged taxes coverage of 8.5.

As shown in **Exhibit 3.7**, MDOT has issued new (*e.g.*, nonrefunding) consolidated transportation bonds in 14 of the past 20 years. MDOT issued new debt in January 2006 (fiscal 2006) when bonds totaling $100 million were sold. MDOT anticipated a bond sale of $105 million in fiscal 2006; however, the bond sale was reduced due to favorable interest rates resulting in a $3.8 million premium.

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

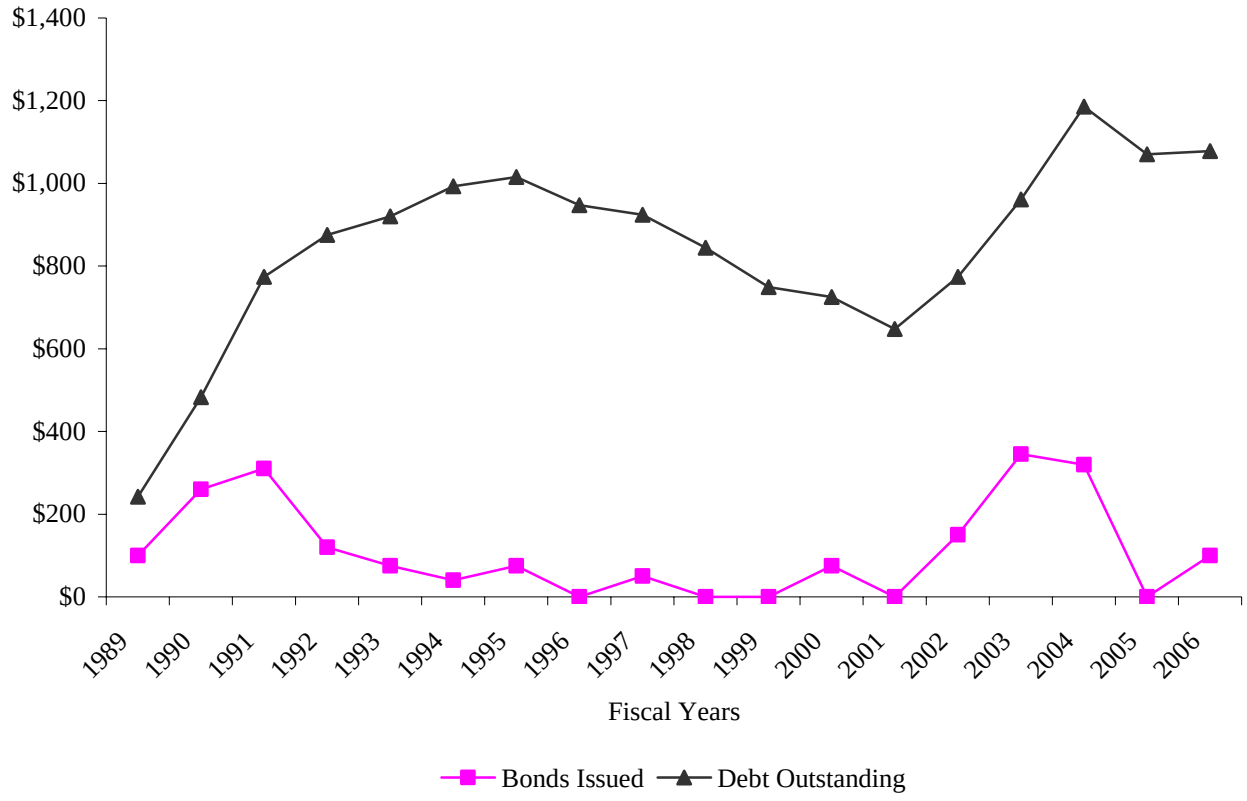
Fiscal Year	Bonds Issued
1987	$100
1988	0
1989	100
1990	260
1991	310
1992	120
1993	75
1994	40
1995	75
1996	0
1997	50
1998	0
1999	0
2000	75
2001	0
2002	150
2003	345
2004	320
2005	0
2006	100
Total	**$2,120**

*Exclusive of refinancing. Four refinancing issuances were made from fiscal 1989 through 2006, including most recently in fiscal 2004, when a total of $75,900,000 was refinanced.

Source: Maryland Department of Transportation

Exhibit 3.8 illustrates annual bond sales and changes in debt outstanding from fiscal 1989 to 2006. In fiscal 2006, MDOT's net debt outstanding was $1.078 billion and $100 million in bonds were issued. MDOT is well under the $2 billion debt outstanding debt limit.

Exhibit 3.8
MDOT Bonds Issued and Net Debt Outstanding
Seventeen-year Summary – Fiscal 1989-2006
($ in Millions)



Source: Maryland Department of Transportation

Capital Leases

In late June 2002 (fiscal 2002), MDOT entered into a $36 million transaction with MEDCO to obtain proceeds to finance the construction and acquisition of the new MDOT headquarters building. This issuance is considered to be State debt since it is repaid by TTF revenues. As such, this project is included in the State debt affordability calculation. As of June 30, 2006, there was $31.9 million in debt outstanding for this project.

Future Debt Issuance

Every fall, DLS prepares a TTF forecast. The forecast projects revenues and expenditures and adjusts debt issuances accordingly. At this time, it appears as though TTF revenues will flatten in fiscal 2007. The January 2006 forecast projected growth in fiscal 2007. Less revenue means that there are less funds available for the capital program. In the short term the program can be maintained by issuing more bonds. The increase in bond sales does not result in violating any of MDOT's own affordability criteria. In the long term, the forecast projects that the MDOT capital program is reduced significantly in the out-years. MDOT's State transportation capital spending is projected to decline from $943 million in fiscal 2007 to under $498 million in fiscal 2012.

Exhibit 3.9 shows that DLS estimates that MDOT will be able to issue approximately $665 million in fiscal 2007 and 2008, compared to only $80 million in fiscal 2011 and 2012. DLS does not necessarily recommend issuing more debt in the short term. The purpose of this exercise is to show that MDOT has the flexibility to maintain the capital program in the short term.

Exhibit 3.9
Consolidated Transportation Bonds – DLS Projected Issuances
Fiscal 2007-2012
($ in Millions)

Fiscal Year	Amount
2007	$235
2008	425
2009	220
2010	100
2011	65
2012	40
Total	**$1,085**

Source: Department of Legislative Services

Debt Outstanding

Exhibit 3.10 shows the amount of estimated debt outstanding from fiscal 2007 to 2012. Due to higher bond issuances to maintain the capital program in fiscal 2007 and 2008, debt outstanding is expected to increase by $524 million from the end of fiscal 2006 to the end of fiscal 2008. Debt outstanding will continue to grow through fiscal 2010 and then begin to decline in fiscal 2011 as bond issuances decline and prior year debt issuances are retired.

Exhibit 3.10
Consolidated Transportation Bonds – DLS Projected Debt Outstanding
Fiscal 2007-2012
($ in Millions)

Fiscal Year	Amount
2007	$1,246
2008	1,602
2009	1,746
2010	1,766
2011	1,741
2012	1,669

Source: Department of Legislative Services

Debt Service

Exhibit 3.11 shows DLS estimated debt service based on DLS issuance estimates for the period fiscal 2007 through 2012. With continued bond sales, particularly higher bond sales initially, the level of debt service will continue to increase each fiscal year. DLS projects that debt service will total $948 million from fiscal 2007 to 2012, with costs increasing steadily from $118 to $195 million.

Exhibit 3.11
DLS Projected Transportation Debt Service
Fiscal 2007-2012
($ in Millions)

Fiscal Year	Projected Debt Service
2007	$118
2008	137
2009	157
2010	166
2011	175
2012	195
Total	**$948**

Source: Department of Legislative Services

Grant Anticipation Revenue Vehicles

GARVEEs are 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.

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 million in GARVEE bonds and that bond maturity may not exceed 12 years after date of issue. MdTA plans to issue GARVEE bonds for the ICC. MdTA assumes the issuance of $370 million in fiscal 2007 and $380 million in fiscal 2009. GARVEE debt service is projected at $46 million in fiscal 2008, $52 million in fiscal 2009, $85 million in fiscal 2010, and $84 million in fiscal 2011 and 2012.

During the 2005 session, it was determined that GARVEE debt will count toward the 3.2 percent of personal income and debt service debt affordability criteria. The first GARVEE issuance of $370 million, planned for fiscal 2007, will count toward this criterion.

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. **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 3.2 percent of personal income debt affordability criterion and debt service within the 8.0 percent of revenues debt affordability criterion.**

Bay Restoration Bonds

The Bay Restoration Fund was created in 2004 primarily to provide grants for Enhanced Nutrient Removal (ENR) pollution reduction upgrades at the State's 66 major wastewater treatment plants (WWTPs). The fund is administered by MDE's WQFA. The fund is financed by a bay restoration fee (BRF) 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 to be collected by the counties. Most counties sent BRF septic bills to citizens in 2005 while three counties initiated billings in July 2006.

The fund has several revenue sources and expends funds for both operating and capital purposes. To expedite the ENR upgrades at the 66 major WWTPs, MDE intends to issue bonds starting in fiscal 2008 backed by revenue generated under this program. Since the BRF is applied broadly across the State, the bay restoration bonds are being treated as State tax supported debt for purposes of capital debt affordability and limiting the bond term up to 15 years. The fund will consist of revenue generated from the fees, net proceeds of bonds issued by WQFA, interest or other investment income, and any additional money from any other sources. While ENR grants are the fund's primary expenditure, funds are or will also be dedicated to debt service, fee collection/administrative costs, sewer infrastructure grants, ENR operations and maintenance subsidy grants, septic grants/loans, and the Maryland Department of Agriculture's cover crop program.

The timing and amount of bonds issued will depend on the actual fee revenue attained, annual funding needs, and the bond maturities and interest rates. Net special WWTP fund revenues range from the $57.7 million collected in fiscal 2006 (the first full year of revenue collections) to a projected $61.2 million in fiscal 2012. Based on the current priority list and estimated capital cost of ENR upgrades, **Exhibit 3.12** shows that the program projects issuing debt in fiscal 2008 and that by fiscal 2012, $476.9 million of debt will be outstanding. MDE provided the data on October 2, 2006, and noted that the bond issuance projections were reported to the CDAC in June 2006 and are subject to change. The Septic Fund will be operated on a PAYGO basis and does not involve revenue bond proceeds.

Exhibit 3.12
Bay Restoration Fund
($ in Millions)

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Revenue Bonds Issued	$50	$130	$200	$150	$0
Debt Outstanding	50	178	370	502	477
Debt Service	0	5	18	38	53

Source: Maryland Department of the Environment

MDE estimates that the BRF (WWTP Fund) program will issue a total of $530 million in revenue bonds through fiscal 2012. These revenue bonds only support the initially anticipated cost of approximately $750 million to upgrade the 66 major WWTPs. Recent increases in estimated WWTP project construction costs raise the concern that sufficient revenue may not be available to upgrade all 66 major WWTPs with ENR grants by 2012. If revenue bonds are still needed by fiscal 2015 and total ENR costs are $931 million, then cash flow projections suggest costs exceed revenues by $39.0 million in fiscal 2012, which increases to a maximum of $170.4 million in fiscal 2014 before declining.

The Bay Restoration Fund Advisory Committee is required to perform an analysis of the capital cost of ENR and make recommendations regarding the appropriate amount of fee to be assessed in future years to meet the financing needs. The cash flow projection model will be updated again in June 2007. Then, in the January 1, 2008 annual report, a recommendation is likely from the advisory committee, which will allow for analysis of another year's worth of actual fee revenue and capital cost data.

Maryland Stadium Authority

The Maryland Stadium Authority (MSA) was created in 1986 (Chapter 283 of 1986) to construct and operate stadium sites for professional baseball and football in the Baltimore area. MSA is authorized to issue 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 3.13** lists MSA's authorized debt, debt outstanding, and annual debt service.

Exhibit 3.13
Maryland Stadium Authority
Revenue Debt Authorizations, Debt Outstanding, and Debt Service
($ in Millions)

Project	Authorized	Outstanding as of October 2006	Debt Service Fiscal 2007
Baseball and Football Stadiums	$235.0	$193.5	$21.2
Baltimore City Convention Center	55.0	31.2	4.9
Ocean City Convention Center	17.3	10.6	1.5
Montgomery County Conference Center	23.2	20.7	1.8
Hippodrome Performing Arts Center	20.3	17.7	1.8
Camden Station	8.7	8.6	0.6
Total	**$359.5**	**$282.3**	**$31.7**

Note: Numbers may not sum 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 the Legislative Policy Committee (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. The last such reallocation took place after MSA sold $10.25 million of Sports Facilities Taxable Lease Revenue Refunding Bonds in July 2002. These bonds were sold to refund the principal of bond anticipation notes that were issued to satisfy an arbitration panel's ruling that MSA deposit $10 million in a special fund from which improvements to Orioles Park at Camden Yards are funded.

Baltimore and Ocean City Convention Centers

The authority issued $55 million in revenue bonds for the Baltimore City Convention Center as authorized by 1993 legislation. Baltimore City issued $50 million in city bonds, and the State contributed another $58 million in general obligation bond funding toward the construction cost of the project, which was completed in 1997. The fiscal 2007 debt service cost for the revenue bonds is $4.9 million and subject to State appropriation. The State is also statutorily required to contribute two-thirds toward the convention center's annual operating deficit through fiscal 2008 and $200,000 annually to a capital improvement fund.

The authority 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 2007 debt service cost for these revenue bonds is $1.5 million and subject to State appropriation. The State is also statutorily required to contribute one-half toward OCCC's annual operating deficit through fiscal 2015 and $50,000 annually to a capital improvement fund.

Montgomery County Conference Center

In July 2003, the authority 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 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. The fiscal 2007 debt service costs for these revenue bonds are $1.8 million. Montgomery County contributed $13.7 million for construction and another $2.5 million for project-related enhancements. The project opened in 2004.

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. The total cost of the Hippodrome project was $63 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 averaging $1.8 million annually for the 20-year term of the bond are derived from the State's general fund subject to appropriation. More specifically, the Hippodrome will be 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. Ticket surcharge revenues are expected to be about $900,000 in fiscal 2007.

Camden Station

Section 13-708.1 of the Financial Institutions Article provides that the authority may develop any portion of Camden Yards to generate incidental revenues for the benefit of the authority subject to approval of BPW and LPC. The authority 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, the authority 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 covers biannual debt service payments though June 15, 2006. The fiscal 2007 debt service costs for the authority's revenue bonds are $622,313 and 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

Uncodified language in Chapter 138 of 1998 (the 1998 capital budget bill) authorizes the authority to assist State agencies and local governments in managing construction projects. The budget committees must be notified and funding must be provided entirely by the agency or local government requesting assistance unless funding is specifically provided in the budget for the

project. The projects for which the authority is currently authorized to provide assistance but is not authorized to issue revenue bonds are:

- Charles County – Minor League Baseball Stadium
- Baltimore City – Feasibility Study for a new arena in downtown Baltimore
- Baltimore City – Coppin State University Physical Education Complex
- Baltimore County – Towson Center renovation at Towson University.

Feasibility Studies

The authority may conduct feasibility studies as authorized by language in the 2005 capital budget bill. The budget committees must give approval for the studies and costs must add to no more than $500,000 annually of the authority's nonbudgeted funds.

In fiscal 2007, the authority is scheduled to complete a study for a multi-purpose sports facility for the Montgomery County Department of Economic Development. The authority also is scheduled to complete a study for a National Sailing Hall of Fame in Annapolis for the Department of Natural Resources. During fiscal 2006, the authority completed a feasibility study for a new horse park complex in Anne Arundel County. The estimated capital cost of the horse park is $114.2 million. The authority also completed a study for renovation of a motor sports park in Allegany County; this study did not indicate an estimated capital cost amount.

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, it would add to the State debt load and reduce the State's debt capacity.

Chapter 4. Economic Factors and Affordability Analysis

Chapter 43, Acts of 1978 created the Capital Debt Affordability Committee (CDAC). The committee's mission is to advise the Governor and the General Assembly regarding the maximum amount of debt that can prudently be authorized. To evaluate State debt, the committee surveyed municipal finance specialists and developed criteria for evaluating debt affordability. To evaluate debt affordability, these two criteria were adopted:

- debt outstanding should be limited to 3.2 percent of Maryland personal income; and

- debt service should be limited to 8.0 percent of revenues supporting the debt service.

These criteria compare the amount of 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 the CDAC's recommendation to determine affordability.

Personal Income

The Department of Legislative Services' (DLS) estimates of personal income differ from those of CDAC. **Exhibit 4.1** shows that DLS is estimating higher personal income than CDAC.

Changes in personal income can have a large impact on the affordability of the State's debt level. Improvements in personal income levels have the effect of improving the affordability picture. In contrast, lower personal income results in higher ratios of debt outstanding for any given level of debt. Levels of outstanding debt that were projected to be affordable in past years may suddenly be close to or over the limit if poor economic conditions result in sizable downward revisions.

Exhibit 4.1
Maryland Personnel Income – Historical Data and Projections
Comparison of DLS and CDAC Projections
($ in Millions)

Calendar Year	DLS Personal Income	Percent Change	CDAC Personal Income	Percent Change	Difference
2005	$235,195	6.3%	$233,874	6.1%	$1,321
2006	250,674	6.6	246,395	5.4	4,279
2007	264,829	5.6	258,139	4.8	6,690
2008	280,780	6.0	270,123	4.6	10,657
2009	297,806	6.1	283,391	4.9	14,415
2010	315,418	5.9	297,223	4.9	18,195
2011	333,655	5.8	311,445	4.8	22,210
2012	352,356	5.6	325,402	4.5	26,954

Source: Capital Debt Affordability Committee: *Capital Debt Affordability Committee Report*, October 2006

Revenue Projections

Exhibit 4.2 shows that DLS' revenue projections exceed those of CDAC through fiscal 2012. Through fiscal 2010, the revenue projections are quite similar. However, DLS' projections are more optimistic in fiscal 2011 and 2012. Revenue levels are factored into the debt service criterion. Higher revenues result in lower ratios of debt service to revenues and increase debt service capacity.

Exhibit 4.2
Revenue History and Projections
($ in Millions)

Fiscal Year	General Fund	Property Taxes	Use of Premium	Trans.	GARVEE	Stadium Related	Bay Rest. Fund	Total DLS Revenues	CDAC Revenues	Diff.
2006	$12,390	$573	$42	$2,111	$0	$31	$0	$15,147	$15,103	$44
2007	12,892	551	3	2,066	0	31	0	15,543	15,631	-88
2008	13,471	628	0	2,109	46	33	0	16,277	16,352	-75
2009	14,178	686	0	2,169	52	33	5	17,122	17,074	47
2010	14,963	725	0	2,226	85	33	18	18,048	17,840	208
2011	15,783	766	0	2,269	84	34	38	18,972	18,615	357
2012	16,634	797	0	2,345	84	34	53	19,945	19,379	566

Trans. = Maryland Department of Transportation
Rest. = Restoration

Source of Estimates
General Fund and Transportation: Department of Legislative Services
Property Tax, Use of Premium, Stadium, and Bay Rest. Fund: *Capital Debt Affordability Committee Report*, October 2006
GARVEE: Maryland Department of Transportation
Capital Debt Affordability Committee Revenues: *Capital Debt Affordability Committee Report*, October 2006

Affordability Analysis

Exhibits 4.3 and **4.4** incorporate the general obligation (GO) debt limit recommended by CDAC, DLS estimated debt levels for GO and transportation bonds, along with the personal income and revenues estimated by DLS to determine compliance with the established guidelines for debt affordability.

Exhibit 4.3 shows that, for the forecast period, debt outstanding as a percent of personal income peaks at 2.96 percent in fiscal 2009. The forecast assumes the authorizations recommended by CDAC and an issuance stream consistent with CDAC policies.

Exhibit 4.4 shows that the debt service as a percent of revenues increases throughout the forecast period. Debt service as a percent of revenues peaks at 6.43 in fiscal 2012. If the ratio is increasing, as it is expected to, debt service costs outpace revenues and become a larger share of expenditures.

Exhibit 4.3
State Tax-supported Debt Outstanding
Components and Relationship to Personal Income

Fiscal Year	General Obligation (a)	Department of Transportation Consolidated	Department of Transportation County	Department of Transportation Total	Department of Transportation GARVEE	Capital Leases	Stadium Authority	Bay Restoration Bonds	Total Tax-supported Debt
State Tax Supported Debt Outstanding ($ in Thousands)									
2002	$3,544.2	$648.1	$3.2	$651.2	$0.0	$186.2	$278.0	$0.0	$4,659.6
2003	3,932.5	714.2	2.4	716.6	0.0	193.1	323.2	0.0	5,165.5
2004	4,102.3	961.2	1.7	962.9	0.0	198.6	321.0	0.0	5,584.7
2005	4,511.8	1,185.7	0.9	1,186.5	0.0	175.1	309.2	0.0	6,182.6
2006	4,868.5	1,078.5	0.0	1,078.5	0.0	226.9	296.3	0.0	6,470.1
2007	5,137.8	1,246.1	0.0	1,246.1	380.0	230.6	290.3	0.0	7,284.8
2008	5,409.5	1,602.1	0.0	1,602.1	356.1	221.0	300.1	50.0	7,938.7
2009	5,704.7	1,745.9	0.0	1,745.9	701.1	207.4	283.7	177.8	8,820.6
2010	6,032.6	1,765.6	0.0	1,765.6	652.1	196.5	266.4	369.6	9,282.8
2011	6,382.5	1,740.7	0.0	1,740.7	600.7	186.6	247.9	502.1	9,660.5
2012	6,753.4	1,669.1	0.0	1,669.1	546.5	179.2	228.2	476.9	9,853.2
State Tax Supported Debt Outstanding as a Percent of Personal Income (Affordability Criteria = 3.2%)									
2002	1.78	0.33	0.00	0.33	0.00	0.09	0.14	0.00	2.34
2003	1.91	0.35	0.00	0.35	0.00	0.09	0.16	0.00	2.50
2004	1.85	0.43	0.00	0.44	0.00	0.09	0.15	0.00	2.52
2005	1.92	0.50	0.00	0.50	0.00	0.07	0.13	0.00	2.63
2006	1.94	0.43	0.00	0.43	0.00	0.09	0.12	0.00	2.58
2007	1.94	0.47	0.00	0.47	0.14	0.09	0.11	0.00	2.75
2008	1.93	0.57	0.00	0.57	0.13	0.08	0.11	0.02	2.83
2009	1.92	0.59	0.00	0.59	0.24	0.07	0.10	0.06	2.96
2010	1.91	0.56	0.00	0.56	0.21	0.06	0.08	0.12	2.94
2011	1.91	0.52	0.00	0.52	0.18	0.06	0.07	0.15	2.90
2012	1.92	0.47	0.00	0.47	0.16	0.05	0.06	0.14	2.80

(a) Reflects presumed new authorizations as follows:

General Assembly Session	2007	2008	2009	2010	2011	2012
For Fiscal Year	2008	2009	2010	2011	2012	2013
($ in Millions)	$810	$835	$860	$890	$920	$950

Assumptions: ($ in Millions)	2007	2008	2009	2010	2011	2012
GO Issuances	675	700	760	810	860	900
MDOT Issuances	235	425	220	100	65	40
GARVEE	0	380	0	370	0	0
Stadium Authority Issuances	8	25	0	0	0	0
Capital Leases – Equipment & EPC	34	28	28	30	30	30
Bay Restoration Bond Issuances	0	50	130	200	150	0
Personal Income ($ in Billions)	250.7	264.8	280.8	297.8	315.4	333.7

Source GO and MDOT: Department of Legislative Services
Source Leases, Stadium Authority, and Bay Bonds: *Capital Debt Affordability Committee Report*, October 2006

Exhibit 4.4
State Tax-supported Debt Service
Components and Relationship to Revenues

Fiscal Year	General Obligation (a)	MDOT Consolidated (b)	GARVEE	Capital Leases	Stadium Authority	Bay Restoration Bonds	Total Tax-supported Debt Service
			State Tax Supported Debt Service ($ in Thousands)				
2002	$495.2	$113.2	$0.0	$38.0	$27.4	$0.0	$673.8
2003	496.9	128.7	0.0	46.2	27.0	0.0	698.8
2004	536.8	134.9	0.0	52.1	27.3	0.0	751.2
2005	553.8	153.7	0.0	52.2	30.5	0.0	790.2
2006	625.2	141.2	0.0	43.5	31.1	0.0	841.0
2007	654.1	117.8	0.0	41.0	31.4	0.0	844.3
2008	692.7	137.0	46.0	47.7	32.7	0.0	956.1
2009	744.5	156.8	52.4	51.3	33.4	5.0	1,043.4
2010	780.9	165.6	84.5	50.3	33.5	17.9	1,132.8
2011	829.7	175.3	84.5	48.6	33.5	37.9	1,209.5
2012	870.0	195.3	84.4	46.4	33.7	52.8	1,282.6
			State Tax Supported Debt Service as a Percent of Revenues (Affordability Criteria = 8.0%)				
2002	4.31	0.99	0.00	0.33	0.24	0.00	5.87
2003	4.39	1.14	0.00	0.41	0.24	0.00	6.18
2004	4.22	1.06	0.00	0.41	0.21	0.00	5.91
2005	3.88	1.08	0.00	0.37	0.21	0.00	5.54
2006	4.13	0.93	0.00	0.29	0.21	0.00	5.55
2007	4.21	0.76	0.00	0.26	0.20	0.00	5.43
2008	4.26	0.84	0.28	0.29	0.20	0.00	5.87
2009	4.35	0.92	0.31	0.30	0.20	0.03	6.09
2010	4.33	0.92	0.47	0.28	0.19	0.10	6.28
2011	4.37	0.92	0.45	0.26	0.18	0.20	6.38
2012	4.36	0.98	0.42	0.23	0.17	0.26	6.43

a) Reflects payments for Qualified Zone Academy Bonds (QZABs) issued in September 2001 and October 2004. The Interagency Committee on School Construction has not indicated when QZABs authorized in 2005 will be issued. DLS projects they will be issued in the last half of fiscal 2006.
(b) Does not include debt service on county transportation bonds. Repayments from counties equal or exceed debt service requirements.

Reflects presumed new authorizations as follows:

	2007	2008	2009	2010	2011	2012
($ in Millions)	$810	$835	$860	$890	$920	$950

Source GO, MDOT Consolidated, and GARVEE: Department of Legislative Services
Source Leases, Stadium Authority, and Bay Bonds: *Capital Debt Affordability Committee Report*, October 2006

Exhibit 4.5 shows that debt outstanding ratios based on DLS personal income estimates are slightly lower than those estimated by CDAC throughout the forecast period. As previously noted, the differences are attributable to recent economic data. DLS estimates provide the State with more debt capacity than the CDAC estimates.

Exhibit 4.5
State Debt to Personal Income
Comparison of DLS and CDAC Estimates

Fiscal Year	DLS	CDAC
2007	2.75%	2.83%
2008	2.83	2.88
2009	2.96	3.06
2010	2.94	3.10
2011	2.90	3.13
2012	2.80	3.09

Source: *Capital Debt Affordability Committee Report*, October 2006

Similarly, **Exhibit 4.6** shows that debt service ratios based on the DLS baseline forecast of general fund revenues are similar than those estimated by the CDAC.

Exhibit 4.6
State Debt Service to State Revenues
Comparison of DLS and CDAC Estimates

Fiscal Year	DLS	CDAC
2007	5.43%	5.44%
2008	5.87	5.84
2009	6.09	6.08
2010	6.28	6.33
2011	6.38	6.49
2012	6.43	6.65

Source: *Capital Debt Affordability Committee Report*, October 2006

For both affordability criteria, the forecasts for personal income and general funds provide capacity under the projected annual debt limits.

Chapter 5. Analysis of Factors Influencing General Obligation Bonds' Interest Costs

The interest rate that Maryland pays for the bonds it sells is referred to as the true interest cost (TIC). This rate is derived by calculating a bond sale's Internal Rate of Return. The TIC is calculated at each bond sale, and the bidder with the lowest TIC is awarded the bid. The financial literature provides information about factors that influence the TIC of State and municipal bond sales. A statistical methodology standard in financial analysis can be used to evaluate these financial factors. In the chapter, the Department of Legislative Services (DLS) uses the sum of least squares regression to evaluate what factors influence the TIC Maryland receives on general obligation (GO) bond sales.

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

Financial theory suggests factors that could influence Maryland's GO bond TIC. Research has confirmed each of the following as significant influences in other states and in national studies that include Maryland.

- ***Market Interest Rates:*** The most important variable is current market interest rates. Because of the tremendous size of the State and municipal bond market, there are independent companies that gather information about the yield on State and municipal bonds. One such independent company, the Delphis Hanover Corporation, prepares an index that measures the average yield on State and municipal bonds based on daily market activity (Delphis Scale). When collecting data, DLS called the Delphis Hanover Corporation to discuss how they estimate bond yields. Corporate representatives advised that they have been estimating yields since 1963 and collect the yield for every bond issue over $10 million for competitive and negotiated sales, as well as secondary market data. With respect to the secondary market, they exclude any outliers. Maryland has collected the estimated 10-year yield for AAA bonds for every bond sale since 1991. The 10-year yield is used because the State's GO bonds' average maturity is just under 10 years.

- ***Issuing Callable Bonds:*** A call is an option that allows the seller to retire debt early. This can be advantageous if interest rates decline below the rate the seller is paying. Consequently, buyers often require higher interest rates if an issuance includes a call provision. Maryland usually issues callable bonds.

- ***Amount of Debt Sold:*** At times, it is more difficult to sell large quantities of debt than small quantities of debt. If this is the case, the State may need to pay a premium for large bond sales, which increases the TIC. Often, this relationship is nonlinear. The regression equation

can account for a nonlinear relationship by raising the amount sold to the second, third, and fourth powers, which changes the slope of the curve.

- ***Years to Maturity:*** Interest rates usually vary depending on how long it takes bonds to mature. Generally, long-term interest rates are higher than short-term rates. Changing the length of time it takes a bond to mature can change the TIC. Maryland makes adjustments to the maturities of its bonds from sale to sale, depending on projected interest rates.

- ***Use of Financial Advisor:*** Financial advisors provide technical support that may result in savings either directly or through the practices they recommend.

- ***Factors Not Relevant to Maryland:*** Tax-exempt debt, refunding bonds, and bond ratings also affect the TIC. In Maryland's case, the State has AAA-rated debt since it was first rated over a half century ago. Because this does not vary, it cannot be included as a regression variable. This analysis excludes taxable and refunding debt to concentrate on initial, tax-exempt issuance, which is the most common type of GO bond sold by Maryland and the most common on the market throughout the country.

Building a Least Squares Regression Equation to Measure the Effect of Factors That Influence the True Interest Cost

To build the least squares regression equation, the following data were collected and analyzed for the 33 tax-exempt GO bond sales since March 1991 (refunding sales are excluded):

- true interest cost;

- Delphis Scale for 10-year, AAA bonds;

- date of the bond sale;

- fiscal and calendar years the bonds were sold;

- if the bond sale includes one of the three call provisions offered since 1991;

- average years to maturity;

- amount of debt sold, which was converted into the natural log of the amount as well as the amount raised to the second, third, fourth, and fifth power;

- use of a financial advisor;
- ratio of Maryland personal income to United States personal income; and
- Consumer Price Index.

The least squares regression analysis dependent variable is the TIC. All the other variables are independent variables that are included to control the things that could influence the TIC. The question that the regression equation attempts to answer is which of the independent variables influence the TIC. The regression equation identifies three statistically significant variables at the 5 percent level that affect the TIC: the Delphis Scale, inclusion of a call provision, and the ratio of Maryland personal income to United States personal income.

The equation was tested to demonstrate to what extent the independent variables explain the variation in the dependent variable (R^2) and if the equation is statistically significant as a whole (F test). The R^2 estimates that the independent variables explain over 98 percent of the TIC, and the F test is statistically significant. This is 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.

There is little serial correlation (Durbin-Watson is 2.146, compared to an ideal of 2.000). Serial correlation occurs when there are patterns in a regression equation's errors that could bias the results. This could occur if the regression equation is not including a significant independent variable or if a temporal dependency existed between variables.

The regression equation also has little multicollinearity. This occurs if two independent variables are related to another variable. For example, if the regression equation includes two variables for the amount of bonds sold, there would be multicollinearity since both variables for the amount of bonds sold would be quite similar. The measure for mulitcollinearity is referred to as the tolerance (the range is 0 to 1 with tolerances below 0.20 suggesting a problem). The tolerance was 0.89, well above the threshold.

Appendix 3 shows the values of the statistically significant independent variables. **Appendix 4** summarizes the regression equation's statistical data, such as coefficients, statistical significance, and analysis of variance.

Effect of the Market Interest Rates on the True Interest Cost

As expected, the most significant variable is one that estimates market interest rates at the time of the sale. For this regression equation, the Delphis Scale is used to characterize market rates. The beta (a measurement that estimates the unique predictive importance of an independent variable) for the Delphis Scale is over 0.97. This suggests that market conditions are by far the most significant influence on a bond sale's TIC.

The regression equation estimates that Maryland's TIC is slightly below market conditions. The coefficient is 0.972 with a standard error of 0.020. This essentially means that the regression equation expects Maryland's TIC to be about 97.00 percent of the Delphis Scale, give or take 2.00 percent. For example, if the Delphis Scale estimated a yield of 5.00 percent, the regression equation would expect Maryland's TIC to average 4.86 percent, with two-thirds ranging between 4.76 and 4.96 percent.

When discussing their methodology with DLS, the Delphis Hanover Corporation noted that Maryland's GO bonds tend to be in high demand so they would expect Maryland's yields to be lower, all other things equal. Hence, it was expected that the coefficient for the Delphis Scale is less than 1 (meaning Maryland's TIC tends to be less than the Delphis Scale), and the statistical analysis confirms it.

Effect of the State's Fiscal Health Compared to the Rest of the Nation on the True Interest Cost

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 regression equation, State personal income is used as a proxy for fiscal health. The regression equation uses a ratio that compares State personal income to United States 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 should tend to decline. Decreasing ratios should tend to push up the TIC.

The regression equation estimates that as Maryland's personal income increases in relation to the United States personal income, the TIC tends to decline. If the ratio of Maryland to United States personal income rises one-tenth of a percentage point, the TIC is expected to decline seven basis points (0.07 percent). The standard error is 4 to 10 basis points (0.04 to 0.10 percent). This result is statistically significant.

Effect of Call Provisions on the True Interest Cost

Since 1991, the State has issued GO bonds with three different call provisions. A call allows the State to retire the debt early, which could result in substantial savings for the State if interest rates decline. In recent years, the State has realized such savings by calling and refunding previously sold bonds. Financial theory predicts that issuing callable bonds increases the TIC.

The analysis examined the effect of these provisions as a group and individually. The conclusion is that, as a group, the call provisions have a statistically significant effect on Maryland's TIC. The analysis estimates that calls added nine basis points (0.09 percent) to the TIC. The standard error is just over four basis points (0.04 percent). Thus, the call provision is expected to increase borrowing costs by 5 to 13 basis points (0.05 to 0.13 percent) for two-thirds of sales with callable bonds.

There are varying schools of thought with respect to how to determine if a dummy variable, like the call, is statistically significant. The traditional approach to evaluate statistical significance is the t-test, which was first published by William Sealy Gossett in 1908. (He was hired by the Guinness brewery in Dublin, Ireland to monitor the quality of beer brews. There he developed the t-test and published it under the pseudonym student. The pseudonym was used because the procedure was considered a trade secret.) The t-test was computed for the call variable and is statistically significant.

In recent years, some have argued that the t-test is insufficient to measure the significance of dummy variables. Instead, significance should be tested by first testing the significance of the regression equation as a whole for the nondummy variables (F test). Then to add the dummy variable and determine the incremental change and determine if this is significant (R^2 change). This procedure was also performed, and the call variable is again statistically significant.

Furthermore, adding the call provision reduces the equation's standard error from above 0.084 to below 0.080. This shows that the variable makes the equation more closely track the actual TIC.

The t-test is statistically significant, and the R^2 change is statistically significant. Adding a call provision to the regression equation also reduces the standard error, resulting in an equation that tracks the TIC more closely. Insofar as both significance tests are statistically significant and the call reduces the equation's standard error, a call variable is included in the regression equation.

Variables That Did Not Affect the True Interest Cost

Some of the data collected was not statistically significant. The variables measuring the date of the bond sale, fiscal and calendar year of the bond sale, Consumer Price Index (CPI), use of a financial advisor, size of the bond sale, and years to maturity were all tested. They were not found to be statistically significant and were rejected.

The date of the bond sale as well as the fiscal and calendar year were tested to determine if there is a systematic change in market conditions over time. They were not determined to be statistically significant, so the hypothesis was rejected.

Given the change in prices over the last 15 years, it is possible that inflation has had some effect on the TIC. According to the CPI, prices are over 50 percent greater in 2006 than in 1991. Because of the increase in prices, it may be easier to sell $250 million in 2006 than in 1991. It turns out that including the CPI in the variables was not statistically significant, so the hypothesis was rejected.

The Treasurer's Office advises that since 1993, the State has used a financial advisor. A statistical analysis suggests that using a financial advisor does reduce the TIC; however, this was not statistically significant.

From March 1991 to July 2006, the State sold tax-exempt bonds 33 times (excluding refunding bond sales). The smallest bond sale was $95 million in March 1991, and the two largest were $500 million in February and again in July 2003. With respect to the amount of debt sold, the

following five variables were tested: the amount of debt sold as well as the amount sold raised to the second, third, fourth, and fifth powers. (The natural log of these amounts was used, making the numbers more manageable. For example, 500 million cubed is 1.25×10^{26}.) The result was that increasing the amount sold tends to increase the TIC. However, the results were not statistically significant, so the hypothesis that the size of the bond sale matters was rejected.

Interest rates usually vary depending on how long it takes bonds to mature. Generally, long-term interest rates are higher than short-term rates. Changing the length of time it takes a bond to mature can change the TIC. The analysis also evaluated the effect that years to maturity have on the TIC. It was not statistically significant, so it is not included in the regression equation. This may be because Maryland's bonds are all structured very similarly. All sales provide that Maryland begins retiring debt in the third year and that all debt is retired by the fifteenth year. From the third to the fifteenth year, interest payments are held constant. All bond sales' average years to maturity was just under 10 years. The variation between the longest and shortest maturity was approximately 90 days. This is not a particularly long period over 10 years, which may explain why the effect is insignificant.

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 can be made.

In the past, DLS has compared the TIC to the Delphis Scale 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 Delphis Scale alone. While the Delphis Scale is an excellent proxy for general market conditions, it does not reflect any independent variables specific to Maryland financial condition or a bond sale's attributes (such as issuing callable bonds).

Exhibit 5.1 compares the DLS regression equation and the Delphis Scale to the actual TIC and shows that the DLS regression equation is more likely to be closer to the TIC than the Delphis Scale. Of the 33 bond sales analyzed, the DLS estimate is closer to the actual TIC than the Delphis Scale 21 times (64 percent). The Delphis Scale is closer nine times (27 percent), and they produce the same estimate three times (9 percent). The total error of the DLS regression equation is 2.10 basis points, compared to 3.29 basis points for the Delphis Scale. The DLS regression equation has an average error of 6 basis points (0.06 percent) while the Delphis Scale has an average error of 10 basis points (0.10 percent).

Although this is not a scientific analysis, it does show that including variables for personal income and call provisions provides an estimate that is quite close to the actual TIC and provides an estimate that is usually closer than the Delphis Scale alone.

Exhibit 5.1

Comparison of the DLS Regression Equation and Delphis Scale to Actual TIC

Bond Sale Date	TIC	DLS Equation	Delphis Scale	Difference Between TIC & DLS Regression Equation	Difference Between TIC & Delphis Scale	Estimate Closer to Actual TIC
03/13/91	6.31	6.16	6.15	0.15	0.16	DLS
07/10/91	6.37	6.52	6.50	0.15	0.13	Delphis Scale
10/09/91	5.80	5.75	5.70	0.05	0.10	DLS
05/13/92	5.80	5.80	5.75	0.00	0.05	DLS
01/13/93	5.38	5.46	5.40	0.08	0.02	Delphis Scale
05/19/93	5.10	5.18	5.10	0.08	0.00	Delphis Scale
10/06/93	4.45	4.55	4.45	0.10	0.00	Delphis Scale
02/16/94	4.48	4.59	4.50	0.11	0.02	Delphis Scale
05/18/94	5.36	5.43	5.35	0.07	0.01	Delphis Scale
10/05/94	5.69	5.58	5.50	0.11	0.19	DLS
03/08/95	5.51	5.44	5.35	0.07	0.16	DLS
10/11/95	4.95	4.92	4.80	0.03	0.15	DLS
02/14/96	4.51	4.48	4.35	0.03	0.16	DLS
06/05/96	5.30	5.22	5.10	0.08	0.20	DLS
10/09/96	4.97	5.03	4.90	0.06	0.07	DLS
02/26/97	4.90	4.84	4.70	0.06	0.20	DLS
07/30/97	4.64	4.65	4.50	0.01	0.14	DLS
02/18/98	4.43	4.41	4.25	0.02	0.18	DLS
07/08/98	4.57	4.55	4.40	0.02	0.17	DLS
02/24/99	4.26	4.26	4.10	0.00	0.16	DLS
07/14/99	4.83	4.93	4.80	0.10	0.03	Delphis Scale
07/19/00	5.05	4.97	4.85	0.08	0.20	DLS
02/21/01	4.37	4.32	4.28	0.05	0.09	DLS
07/11/01	4.41	4.41	4.39	0.00	0.02	DLS
03/06/02	4.23	4.17	4.17	0.06	0.06	Same
07/31/02	3.86	3.89	3.89	0.03	0.03	Same
02/19/03	3.69	3.77	3.77	0.08	0.08	Same
07/16/03	3.71	3.65	3.56	0.06	0.15	DLS
07/21/04	3.89	3.99	3.89	0.10	0.00	Delphis Scale
03/02/05	3.81	3.78	3.72	0.03	0.09	DLS
07/20/05	3.79	3.68	3.63	0.11	0.16	DLS
03/01/06	3.87	3.95	3.89	0.08	0.02	Delphis Scale
07/26/06	4.18	4.14	4.09	0.04	0.09	DLS
Total Error				**2.10**	**3.29**	

Source: Department of Legislative Services, October 2006

Conclusion: True Interest Cost Is Measurably Influenced by Market Interest Rates, State's Fiscal Health Compared to the Rest of the Nation, and Issuing Callable Bonds

This chapter applies financial and statistical theory to estimate which factors influence the Maryland GO bonds' TIC. While there are a number of factors that may influence the TIC, there are only three that are statistically significant: market interest rates, Maryland's fiscal health with respect to the rest of the nation, and the type of call provisions. By far, the most influential factor is market interest rates. Also affecting the TIC is the State's financial health. When Maryland's personal income rises faster than the national average, the TIC tends fall. Finally, the analysis shows that call provisions increased the TIC by an average of 10 basis points (0.10 percent).

Chapter 6. Non-tax-supported Debt

In addition to the seven types of 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 criteria, 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 (MHHEFA), and the Maryland Industrial Development Financing Authority.

Revenue and Private Activity Bonds

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

The United State's Tax Reform Act of 2006 established an annual limit on the amount of tax-exempt private activity bonds that may be issued by any state in any calendar year. This limit is based on a per capita limit, presently $80 per capita, adjusted annually for inflation. As shown in **Appendix 5**, Maryland's 2006 allocation totaled $448 million.

The Tax Reform Act of 1986 specifically allows states to set up there own allocation procedures for use of their individual bond limit. Bond allocation authority in Maryland is determined by Section 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, bond issuing ability is initially allocated to each individual county, to incorporated municipalities, CDA, and to what is referred to as the "Secretary's Reserve." 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. 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, can request allocations from the Secretary's reserve.

Private activity bonds are subject to the unified volume cap set by Congress in the Tax Reform Acts of 1986. Allocations, however, can be carried forward by eligible users and for specific purposes but expire at the end of three years if unissued. Historically, any remaining nonhousing allocations are reallocated to CDA at year end for carry-forward purposes.

Exhibit 6.1 provides the calendar 2002 through 2006 figures for the amount of available tax-exempt bond authority and the level of issuances made under the volume cap limits. From calendar 2002 through 2005, total issuances under the volume cap remained at very low levels. This coincided with a downturn in the national and Maryland economies and changes in the federal allocation guidelines which made tax-exempt financing less desirable and practical in the highly regulated tax-exempt financing marketplace and produced substantial increases in annual allocation and available volume cap levels. At the close of 2005, Maryland, for the first time ever, was forced to abandon allocations carried forward from previous years. Estimates for 2006 indicated a much stronger tax-exempt financing marketplace. According to the Department of Business and Economic Development, the designated State allocating authority, issuances of $966 million are planned for 2006, which is more than four previous years combined.

Exhibit 6.1
Allocation of Private Activity Bonds
Calendar 2002-2006
($ in Millions)

	2002	2003	2004	2005	2006 Est.
Fund Sources					
Annual Cap	$403.1	$409.4	$440.7	$444.6	$448.0
Carry Forward from Prior Years	213.0	455.6	710.0	945.4	1,040.6
Total Capacity Available	**$616.1**	**$865.0**	**$1,150.7**	**$1,390.0**	**$1,488.6**
Issuances					
Mortgage Revenue Bonds	$0.9	$20.7	$84.9	$95.8	$506.2
Multifamily Housing	77.9	130.3	109.5	133.0	23.6
Housing Not Broken Out	54.1	0.0	0.0	34.6	13.6
Industrial Development Bonds	15.8	4.0	10.9	8.1	70.2
Exempt Facilities	11.8	0.0	0.0	3.8	352.8
Other	0.0	0.0	0.0	0.0	0.0
Total Issuances	**$159.6**	**$155.0**	**$205.3**	**$275.3**	**$966.4**
Prior Year Carry Forward Abandoned	0.0	0.0	0.0	74.1	0.0
Carry Forward	$455.6	$710.0	$945.4	$1,040.6	$522.2

Note: Numbers may not sum due to rounding.

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

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 debt of that program 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 superceding the 1989 process.

Exhibit 6.2 summarizes the increase in debt outstanding for various categories between fiscal 1996 and 2006. A table containing debt outstanding by year for the individual agencies included in the summary is included as **Appendix 6**.

Exhibit 6.2
Debt Outstanding as of June 30
($ in Millions)

	1996	2006	% Change
Agency debt subject to issuance cap	$613.8	$863.5	41%
Agency debt not subject to issuance cap	3,240.1	3,924.4	21%
General obligation and State lease debt	2,975.7	5,094.5	71%
Transportation debt	977.6	1,078.5	10%
Authorities and corporations without caps	2,489.4	8,053.5	223%
Total	**$10,296.2**	**$19,014.4**	**85%**

Note: Numbers may not sum due to rounding.

Source: Department of Budget and Management report, *Debt Issued by Maryland State Agencies and Independent Authorities, fiscal 2006*

From fiscal 1996 through 2006 general obligation bond and State capital lease debt outstanding has increased by 71 percent. Over the same period, agency debt subject to the Governor's issuance cap has increased $250 million, an increase of 41 percent. Agency debt that is not subject to the Governor's cap (excluding debt of the Maryland Industrial Financing Authority for which debt outstanding figures for years prior to 1997 is unavailable) has grown by $684 million, an increase of 21 percent. Debt for authorities/corporations without caps increased by close to $5.6 billion, or 223 percent.

Growth in Non-tax-supported Debt Burden

Exhibit 6.3 shows the total amount and the average annual growth in outstanding non-tax-supported debt for fiscal 2000, 2003, and 2006 (this excludes higher education academic and auxiliary debt which is discussed in the next section). From fiscal 2000 through 2003, outstanding non-tax-supported debt increased at an average annual rate of 7.8 percent. This exceeded the growth in personal income for this time period which increased at an average annual rate of 4.3 percent. From fiscal 2003 through 2006, outstanding non-tax-supported debt increased at an average annual rate 10.2 percent, compared to 6.7 percent for personal income. Most of the growth is attributable to the increased issuance activity for MEDCO and MHHEFA.

Exhibit 6.3
Agency Debt Outstanding[1]
Fiscal 2000-2006
($ in Millions)

Agency	FY 2000	FY 2003	FY 2006	Avg. Annual Increase FY 00-03	Avg. Annual Increase FY 03-06
MD Environmental Service	$29.4	$33.7	$24.5	4.6%	-10.0%
MD Food Center Authority	6.8	0.0	0.0	0.0	0.0
MD Transportation Authority	318.7	575.6	765.1	21.8	9.9
Water Quality Financing Administration	131.3	105.6	73.9	-7.0	-11.2
Department of Housing and Community Development Administration	2,712.5	2,778.4	2,365.1	0.8	-5.2
MD Industrial Dev. Financing Authority[2]	718.4	568.4	409.6	-7.5	-10.3
MD Dept. of Transportation Certificates of Participation and County Revenue Bonds	68.1	65.6	102.6	-1.2	16.1
MD Economic Development Corporation	635.4	1,485.9	1,872.4	37.7	8.0
Health and Higher Education Facility Authority	3,555.0	4,619.5	6,181.1	9.1	10.2
Total	**$8,175.6**	**$10,232.7**	**$11,794.3**	**7.8%**	**10.2%**

[1] Excludes higher education institution debt discussed later in this chapter.

[2] Legislation, effective January 2002, abolished the Maryland Energy Financing Administration. The outstanding debt is now reflected under the Maryland Industrial Development Financing Authority.

Source: Department of Budget and Management

Debt Service on Academic and Auxiliary Revenue Bonds

Chapter 93, Acts 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, Acts of 1992 granted Baltimore City Community College (BCCC) the authority to issue bonds for auxiliary facilities only. Academic facilities are primarily used for instruction of students. Auxiliary facilities are those that produce income from fees charged for the 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, or grants.

The 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 that lists the specific academic projects that require authorization. This legislation may also increase the USM total debt limit when warranted. The USM debt limit is $1.05 billion, the MSU limit is $88 million, the SMCM limit is $60 million, and the BCCC limit is $15 million.

University System of Maryland

In 1995 the USM Board of Regents adopted a debt capacity policy recommended by consultants that limits the percentage of unrestricted funds and mandatory transfers used for debt service to 5.5 percent. In 2001 a new debt capacity study was conducted that reaffirmed 5.5 percent as the maximum annual debt service percentage. **Exhibit 6.4** shows the USM debt service to unrestricted funds ratios for fiscal 2003 through 2012. Including debt issued in fiscal 2007, total debt service will be approximately $107.6 million, or 3.7 percent of unrestricted funds and mandatory transfers which is below the recommended limit. The forecast does indicate a slight increase in the ratio in the next five years with fiscal 2009 projected to produce the highest percentage through fiscal 2012 at 4.0 percent. However, the annual debt service percentage does not exceed the 5.5 percent limit.

In the past, rating agencies have expressed concerns regarding USM's liquidity (liquidity is defined as the ratio between expendable resources and debt) as compared to other top-rated colleges and universities. USM consulted with financial advisors and, although there is no official policy that states specific targets for the ratio of expendable resources (defined as unrestricted assets of USM and its affiliated foundation with adjustments for certain long-term liabilities) to debt outstanding, USM has come to an agreement with the Board of Regents that established the target of 50-70 percent. **Exhibit 6.5** shows fiscal 2003 through 2012 USM expendable resources to debt outstanding ratios. USM expects to maintain its current credit rating of "AA."

Exhibit 6.4
University System of Maryland Debt Service as Related to Unrestricted Funds
Fiscal 2003-2012
($ in Thousands)

Fiscal Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures and Mandatory Transfers	Ratio of Debt Service to Unrestricted Expenditures Plus Mandatory Transfers
2003	$855,142	$88,585	$2,242,726	3.9%
2004	998,073	96,146	2,301,908	4.2
2005	1,000,727	99,257	2,482,083	4.0
2006	934,826	110,290	2,589,380	4.3
2007 Estimated	1,044,634	107,638	2,879,093	3.7
2008 Estimated	1,078,012	115,935	2,998,248	3.9
2009 Estimated	1,106,067	123,993	3,121,599	4.0
2010 Estimated	1,132,941	127,794	3,245,304	3.9
2011 Estimated	1,159,073	131,183	3,373,393	3.9
2012 Estimated	1,184,948	133,904	3,505,803	3.8

Source: University System of Maryland

Exhibit 6.5
Summary of Expendable Resources to Debt Outstanding for the University System of Maryland
Fiscal 2003-2012
($ in Thousands)

Fiscal Year	Expendable Resources	Debt Outstanding	Ratio of Expendable Resources to Debt Outstanding
2003	$516,956	$855,142	60.5%
2004	641,410	998,073	64.3
2005	743,327	1,000,727	74.3
2006	835,304	934,826	89.4
2007 Estimated	783,619	1,044,634	75.0
2008 Estimated	850,354	1,078,012	78.9
2009 Estimated	885,604	1,106,067	80.1
2010 Estimated	899,304	1,132,941	79.4
2011 Estimated	927,804	1,159,073	80.0
2012 Estimated	953,304	1,184,948	80.5

Note: Debt Outstanding includes auxiliary, academic, and capital leases debt.

Source: University System of Maryland

Morgan State University

As shown in **Exhibit 6.6**, MSU has $66 million of total debt in fiscal 2007. This consists of $6.8 million in academic debt, $57 million in auxiliary debt, and $2.1 million in capital leases debt. The ratio of debt service to unrestricted funds and mandatory transfers remains below the 5.5 percent threshold through the fiscal 2007 to 2012 planning period. In fact, the ratio is expected to consistently decline from 4.2 to 2.5 percent.

MSU's debt limit was increased from $77 million to $88 million this past year. MSU is continually looking for options for additional student housing as enrollment grows. Although they have no specific plans for additional housing, the higher debt limit allows them the ability to issue additional debt should an opportunity arise. MSU currently has no room on campus to expand, so the debt would likely be used for acquiring off-campus property. With this additional debt capacity, MSU estimates that they have a $20 million buffer in their debt capacity for housing purposes.

Exhibit 6.6
Morgan State University Debt Service as Related to Unrestricted Funds
Fiscal 2003-2012
($ in Thousands)

Fiscal Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures and Mandatory Transfers	Ratio of Debt Service to Unrestricted Expenditures Plus Mandatory Transfers
2003	$70,022	$3,675	$119,594	3.1%
2004	68,553	5,420	115,559	4.7
2005	67,088	5,414	126,356	4.3
2006	67,742	5,682	127,921	4.4
2007 Estimated	66,014	6,039	142,943	4.2
2008 Estimated	64,235	6,160	147,502	4.2
2009 Estimated	62,417	6,267	168,811	3.7
2010 Estimated	60,582	6,296	193,221	3.3
2011 Estimated	57,417	6,325	221,289	2.9
2012 Estimated	54,081	6,336	253,545	2.5

Note: Total Debt Outstanding and Total Debt Service includes academic, auxiliary, and capital leases debt.

Source: Morgan State University

St. Mary's College of Maryland

SMCM's outstanding debt consists of auxiliary debt and capital leases debt. SMCM does not have any outstanding academic debt. Considering auxiliary debt combined with capital leases debt, the total debt in fiscal 2007 is estimated to be $49.1 million and is expected to decrease to $39.7 million by fiscal 2012. When considering auxiliary debt alone, the debt is estimated to be $46.1 million in fiscal 2007 and $39.7 million in fiscal 2012. Starting in fiscal 2011, all outstanding debt is expected to be auxiliary debt.

Since fiscal 2004, SMCM has exceeded the 5.5 percent debt ratio in order to build more residential buildings to house increasing enrollment. An additional residence hall is currently under construction. As shown in **Exhibit 6.7**, the debt ratio declined to 5.5 percent in fiscal 2006. In fiscal 2007, SMCM is expected to have a 5.9 percent debt ratio. However, it is expected to start declining again in fiscal 2008 and continue to decline to 5.0 by fiscal 2012. Enrollment trends at SMCM continue to be strong and the debt ratio is only slightly above the 5.5 threshold. Considering these factors together the college's credit rating has remained unchanged.

Exhibit 6.7
St. Mary's College of Maryland Debt Service as Related to Unrestricted Funds
Fiscal 2003-2012
($ in Thousands)

Fiscal Year	Total Debt Outstanding	Total Debt Service	Unrestricted Expenditures and Mandatory Transfers	Ratio of Debt Service to Unrestricted Expenditures Plus Mandatory Transfers
2003	$40,448	$1,978	$40,225	4.9%
2004	40,158	2,440	41,599	5.9
2005	40,565	2,743	46,505	5.9
2006	43,757	2,797	50,621	5.5
2007 Estimated	49,135	3,243	54,817	5.9
2008 Estimated	47,755	3,312	56,950	5.8
2009 Estimated	46,270	3,279	59,062	5.6
2010 Estimated	44,735	3,374	61,389	5.5
2011 Estimated	41,050	3,274	63,609	5.1
2012 Estimated	39,710	3,274	66,022	5.0

Note: Total Debt Outstanding and Total Debt Service include auxiliary and capital lease debt. St. Mary's College of Maryland does not have any academic debt.

Source: St. Mary's College of Maryland

Chapter 7. Issues and Recommendations

This section discusses issues related to Maryland debt and debt management. These issues address major policy concerns or funding recommendations. Specific issues are:

- Since 2000, the State has aggressively increased actual and proposed general obligation (GO) bond authorizations. The State has also authorized new kinds of State debt. It also appears as though the current estimates of debt outstanding for transportation, bay bonds, and other State debt are more likely to be revised upward than downward. Unused debt capacity (as measured by the ratio of debt outstanding to State personal income) has diminished considerably.

- In April 2006, the Board of Public Works (BPW) reduced the State property tax rate from $0.132 per $100 of assessable base to $0.112 per $100 of assessable base. Consequently, the Annuity Bond Fund (ABF), which supports GO bond debt service payments, cannot generate sufficient revenues to fully fund debt service payments. The issue examines factors influencing the fund's revenues and projects future funding needs.

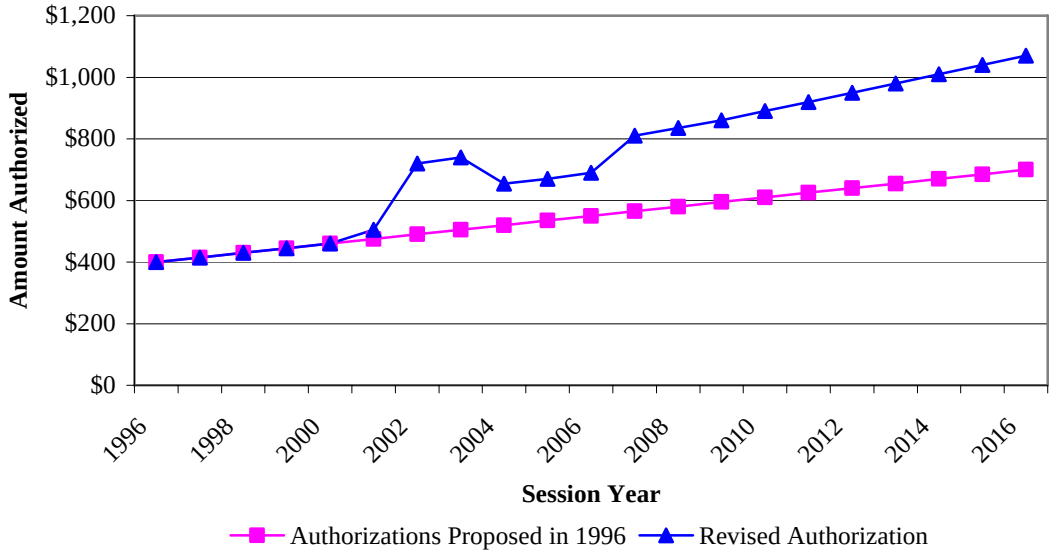
- Currently, State GO bonds are sold in closed auctions. The State advertises a bond sale, which includes the day and time that all the bids are due. All the bids are opened at the same time and the bidder with the lowest true interest cost (TIC) is awarded the bond sale. This issue examines the open auction process, which gives each bidder the opportunity to bid again if their initial bid is not the lowest bid. The financial literature suggests that this could reduce State debt costs.

Unused Debt Capacity Continues to Decline

State General Obligation Bond Authorizations Have Increased Substantially Since 2001

Prior to the 2001 legislative session, the State policy was to increase debt authorizations by $15.0 million annually. This policy had been in place for over a decade. At the time, this provided the program with about a 3 percent increase every year. In 2001, this steady growth policy was changed. Since 2001, the State has regularly increased the GO bond authorizations. **Exhibit 7.1** compares the mid-1990s proposed authorization trend line with the revised authorizations. In 1996, the Capital Debt Affordability Committee (CDAC) proposed authorizing $9.9 billion over the period. Since 2001, proposed authorizations have increased by over $3.9 billion.

Exhibit 7.1
GO Bond Growth
Growth in GO Bond Authorizations Since the 2001 Legislative Session
($ in Millions)



Notes:
(1) The source for 1996 to 2006 revised authorizations is the *Sine Die Report* and *90 Day Report* data of actual authorizations.
(2) The source for 2007 to 2012 revised authorizations is the 2006 Capital Debt Affordability Report's recommended authorizations.
(3) The analysis ends in 2016, the final year that the CDAC report provides a recommended authorization.

The growth of the debt can be traced to six separate actions taken since 2001. **Exhibit 7.2** quantifies the following actions:

- ***2001 Session – Low Debt Ratios and a Good Economy:*** In 2001, the debt authorization limit was increased in additional $30 million annually. This increased the debt authorized from $475 million to $505 million that year. The CDAC did not reduce the amount the following year, which results in permanently increasing all authorizations by $30 million. In sum, this increases authorizations by $480 million over the period.

- ***2002 and 2003 Sessions – Poor Economy Dries Up General Fund PAYGO Capital Funds:*** In the 2001 session, over $600 million in general funds were appropriated to support PAYGO capital projects. At the time, the Administration assumed that the general funds would be sufficient to provide significant levels of appropriations for the capital program. When the economy slowed, the general funds were no longer available for the capital program. Instead of withdrawing planned support for projects, the CDAC provided $200 million in additional authorizations in the 2002 and 2003 sessions. The planned authorizations were reduced correspondingly in the 2004 session. This added $400 million to GO authorizations.

Exhibit 7.2
GO Bond Growth
Effect of CDAC Actions Taken to Increase GO Authorizations
($ in Millions)

Session Year	2001 – Low CDAC Ratios & Good Economy	2002 & 2003 – Poor Economy so Replace PAYGO	2002 – Exclude Tobacco Buyout	2004 – $100 Million Annually for Five Years	2006 – Capital Demand	2007 – Capital Demand	Total Increase
2001	$30	$0	$0	$0	$0	$0	$30
2002	30	200	0	0	0	0	230
2003	30	200	5	0	0	0	235
2004	30	0	5	100	0	0	135
2005	30	0	5	100	0	0	135
2006	30	0	5	100	5	0	140
2007	30	0	5	100	10	100	245
2008	30	0	5	100	15	105	255
2009	30	0	5	0	115	115	265
2010	30	0	5	0	125	120	280
2011	30	0	5	0	135	125	295
2012	30	0	5	0	145	130	310
2013	30	0	5	0	155	135	325
2014	30	0	5	0	165	140	340
2015	30	0	5	0	175	145	355
2016	30	0	5	0	185	150	370
Total	**$480**	**$400**	**$70**	**$500**	**$1,230**	**$1,265**	**$3,945**

Note: Dates denote legislative session year. In some cases the action stems from the CDAC report recommendation from the previous fall.

Source: Department of Legislative Services

- ***2002 Session – Financing for the Tobacco Buyout:*** Chapter 103 of 2002 authorized $30 million ($5 million annually from fiscal 2004 to 2009) to finance tobacco buyout for farmers. Current CDAC projections do not reduce authorizations after the program is done. Instead, the increased authorizations can be used to support other capital projects. This $5 million annual increase adds $70 million over the period.

- ***2004 – Move PAYGO to GO:*** In the 2004 session, the CDAC provided an additional $100 million annually for five years. At the time it was noted that former PAYGO projects had migrated into the GO program and that either additional GO bonds would need to be

authorized or capital projects would need to be reduced or deleted. In sum, this authorized an additional $500 million over the period.

- ***2006 Session – High Capital Demand:*** The 2006 session brought a subtle change in methodology. Prior to 2006, the annual increase was $15 million per year. This was about 3 percent when the policy was adopted. As the authorizations increased, $15 million shrank below 3 percent. To ensure at least a 3 percent increase each year, the policy was changed from increasing $15 million to increase 3 percent. Consequently, the slope of the trend line is now steeper and authorizations will grow faster. The CDAC also ended the authorization drop-off proposed in the 2009 session. The justification for these changes was high demand for capital projects. Taken together, these changes provide an additional $1.2 billion in authorizations.

- ***2007 Session – High Capital Demand:*** In response to continued high capital demand, the committee proposed a permanent $100 million increase in the base for the 2007 session. Since the annual increase is 3 percent (instead of the flat $15 million prior to 2006), this results in higher annual increases also. The total effect is to increase authorizations by approximately $1.3 billion.

New State Debt Programs Were Also Authorized

The State has also authorized new kinds of State debt. Chapter 428 of 2004 authorized the issuance of bay restoration bonds by the Maryland Department of the Environment (see Chapter 3 for details about these bonds) and Chapter 472 of 2005 authorized the issuance of Grant Anticipation Revenue Vehicles (GARVEEs) by the Maryland Transportation Authority (see Chapter 3 for details about these bonds).

Bay bonds are supported by the Bay Restoration Fund. The fund was created to support waste water treatment plant improvements. After consulting with the Attorney General's Office and bond rating agencies, it was determined that the revenues generated by the fund are State revenues and that bonds supported by these State revenues should be considered State debt. The current CDAC report assumes that $530 million in bay bonds will be authorized through fiscal 2011. The amount of bay bond debt issued is related to the revenues generated by the fund. Should revenues increase, additional debt capacity would be realized.

GARVEEs are supported by federal transportation grants. An authorization to issue GARVEEs was given to support the InterCounty Connector. After consulting with bond rating agencies, it was determined that these bonds should be considered State debt. Moody's Investors Service noted that states have more flexibility in how federal transportation revenues are used, thus leading to the conclusion that bonds leveraged by federal transportation dollars have the same impact on a State's fixed costs and fiscal flexibility as bonds that leverage the State's own gas tax. The legislation limits the amount issued to $750 million. The CDAC assumes that the full amount will be issued.

Unused State Debt Capacity Was Reduced

As in recent years, the State still has unused debt capacity; however, this unused capacity is continuing to shrink. In January 2005, Department of Budget and Management data suggested that the State had sufficient capacity to issue almost $1.5 billion in State debt. This declined to approximately $900 million in January 2006. **Exhibit 7.3** shows that unused debt capacity is now projected to be just over $700 million. (The comparison is made in fiscal 2009 since that is the year in which the State is closest to the debt limit.) The decline in unused capacity is primarily attributable to increased transportation bond issuances necessary to maintain the transportation capital program. Increased issuances were offset somewhat by higher personal income estimates, which increased by over $6 billion.

The Department of Legislative Services (DLS) estimate of unused capacity is higher than the CDAC estimate. As **Exhibit 7.4** shows that the CDAC estimate provides $272 million less in unused capacity than the DLS estimate. This is due to higher estimates of personal income used by DLS. As the State approaches the limit, changes in personal income estimates have a more significant affect on unused capacity. This is because it is not unusual for personal income projections to change and either increase or reduce unused capacity by hundreds of millions of dollars.

Exhibit 7.5 provides a breakdown of the factors influencing unused capacity. Insofar as the CDAC's estimate of debt outstanding is $189 million less than the DLS estimate, the CDAC estimate increases unused capacity by $189 million. However, overall unused capacity is less. This is due to the CDAC's lower personal income estimate, which provides for $461 million less in capacity.

When the State had billions of dollars of unused capacity, a half-billion dollar decline in unused capacity was essentially irrelevant. However, the State no longer has billions of dollars of unused capacity. Given that the amount of unused capacity is now much smaller than in previous years, changes in personal income can be quite meaningful. The State should be paying close attention to the effect of personal income on unused capacity.

Exhibit 7.3
GO Bond Growth
Comparison of January 2006 and Current DLS Unused Capacity Estimates
($ in Millions)

Debt Outstanding June 30, 2009	January 2006 Estimate	November 2006 Estimate	Difference
GO Bond	$5,673	$5,705	$32
Capital Leases	180	207	28
Transportation Bonds	1,551	1,746	195
Grant Anticipation Revenue Vehicles (GARVEEs)	606	701	95
Stadium Authority Bonds	252	284	32
Bay Restoration Bonds	178	178	0
Total Debt Outstanding	**$8,440**	**$8,821**	**$381**
Estimated Personal Income in 2009	**$291,643**	**$297,806**	**$6,163**
Unused Capacity	**$893**	**$709**	**-$183**
Fiscal 2009 Debt Outstanding as Percent of Maryland Personal Income	**2.89%**	**2.96%**	**0.07%**

Note: Numbers may not sum due to rounding.

Source for January 2006 data: Department of Budget and Management
Source for November 2006 data: Department of Legislative Services

Exhibit 7.4
GO Bond Growth
CDAC Estimate of Unused Capacity Compared to DLS Estimate
($ in Millions)

	CDAC Estimate	DLS Estimate	Difference
Total Debt Outstanding as of June 30, 2009	$8,632	$8,821	-$189
Estimated Personal Income in 2009	283,391	297,806	-14,415
Unused Capacity	**$437**	**$709**	**-$272**
Fiscal 2009 Debt Outstanding as Percent of Personal Income	3.05%	2.96%	0.09%

Source: CDAC Estimate: *Capital Debt Affordability Committee Report,* October 2006

Exhibit 7.5
GO Bond Growth
Factors Influencing Unused Capacity
($ in Millions)

Unused Capacity Change Attributable Change in Debt Outstanding	-$189
Unused Capacity Change Attributable Change in Personal Income	461
Total Unused Capacity Change	**$272**

Source: Department of Legislative Services

Demand for Non-GO State Debt Is More Likely to Rise Than to Fall

While GO bonds may be the largest form of State debt, they are not the only form of State debt. At the end of fiscal 2006, non-GO bonds represented 25 percent of total State debt. (Other State debt includes transportation, bay and stadium authority bonds, as well as capital leases and GARVEEs.) By fiscal 2009, non-GO debt is projected to rise to 35 percent and then decline slightly thereafter. As the State's unused capacity dwindles, increases in one kind of debt limits the amount of other debt that can be issued. A concern is that the non-GO debt estimates currently used are more likely to be revised upward than downward over the forecast period. Specific issues include:

- ***Transportation Capital Program Decline:*** By all accounts, the transportation's current revenue structure cannot maintain the capital program at fiscal 2007 levels. This is not unusual. Major transportation revenues, such as the gas tax and registration fees, are not inflation sensitive while capital spending is inflation sensitive. Most transportation plans include declining capital spending in the out-years. To slow or halt the decline, the Maryland Department of Transportation (MDOT) must periodically request additional funds, which forces the department to justify its program. **Exhibit 7.6** shows that DLS estimates that State capital spending is expected to be halved by fiscal 2010 and that debt issuances decline from $430 million fiscal 2008 to $30 million by the end of the forecast. It is unlikely that there will be such a significant decline in the transportation program. Either revenue receipts will exceed estimates or the State will provide additional revenues for the transportation capital program. Additional revenues will provide additional transportation debt capacity, which the department is likely to use. There are also a number of large projects being contemplated. Transit projects include the Red and Green Line in Baltimore City, the Bi-County Transitway, the Corridor Cities Transitway, and a proposed extension of the Green Line in the Washington suburbs to Baltimore/Washington International Thurgood Marshall Airport. Highway projects include projects addressing capacity issues attributable to demand generated by federal Base Realignment and Closure transfers. Undertaking these projects would increase capital spending, which could lead to higher transportation bond

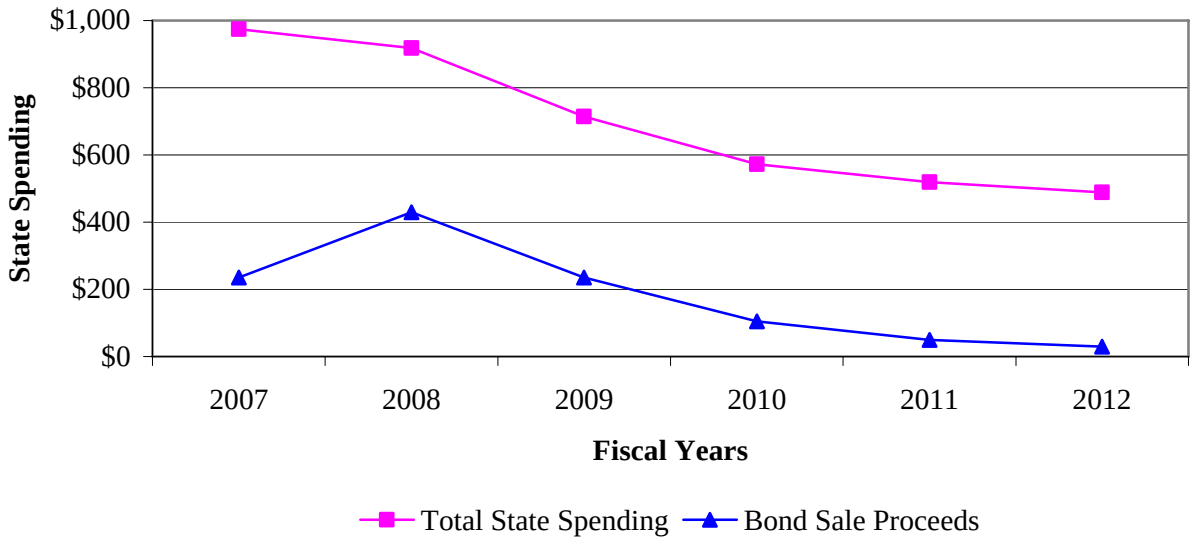
issuances. Although the current estimates are reasonable based on current conditions, it appears as though transportation debt outstanding is more likely to increase than decrease. It would serve the State well to leave some additional unused debt capacity to accommodate increases in the transportation capital program beyond current forecasts.

- ***Potentially Underfunded Bay Restoration Fund:*** The State is also planning to issue bay bonds to make improvements to waste water treatment plants. To date, the construction bids have been higher than expected (which has also been an issue with a number of other capital projects) and revenues have been lower (primarily due to collections from federal facilities). Unofficial estimates are that the program may need $250 million more than is available in the Bay Restoration Fund. Providing adequate funding to meet the program's goals may result in the issuance of additional debt. It would serve the State well to leave some additional debt capacity in case the additional debt is needed to meet the Bay Restoration Fund's goals.

- ***Unexpected Capital Leases:*** As mentioned in Chapter 3, the State occasionally uses capital leases to move quickly on capital projects. Because of the unexpected nature of these projects, they are not anticipated and are not included in the CDAC debt estimates. Since these projects do happen, however irregularly, actual lease debt outstanding tends to exceed projections. **Exhibit 7.7** compares the 2000 CDAC report estimates with the most recent actual leases outstanding. In all but one year, the actual leases were larger then the estimate. The CDAC may want to reconsider its approach to estimating capital leases and examine approaches that recognize the likelihood that the State will approve some unforeseen capital leases. It would serve the State well to leave some additional debt capacity to recognize that the State is likely to approve some unforeseen capital leases.

- ***Maryland Stadium Authority Projects:*** The Maryland Stadium Authority has a planning process and periodically prepares feasibility studies to examine capital needs. Examples of such studies include a horse park in Anne Arundel County, a sports facility in Montgomery County, a sailing hall of fame in Annapolis, and a motor sports park in Allegany County. If any of these projects were to be developed, it would add to the State's debt level. Furthermore, the stadium authority is slow to recognize anticipated debt. For instance, the authority plans to go to BPW in fiscal 2007 to approve a new bond sale to renovate and maintain Oriole Park at Camden Yards. The stadium authority's debt outstanding and debt service projections will increase next year if the bond sale occurs, but the projections are not developed enough for the CDAC to include them in its calculations. It would serve the State well to leave some additional debt capacity to recognize that the State may approve new stadium authority debt.

Exhibit 7.6
State Debt Capacity
Decline in State Transportation Capital Spending
($ in Millions)



Source: Department of Legislative Services

Exhibit 7.7
State Debt Capacity
Projected Lease Debt Outstanding Compared to Actual Lease Debt
($ in Millions)

Fiscal Year	2000 Estimated Leases Outstanding	Actual Leases Outstanding	Difference
2002	181.0	186.2	5.3
2003	182.4	193.1	10.7
2004	179.9	198.6	18.7
2005	177.8	175.1	-2.7
2006	176.0	226.9	50.9

Source: Capital Debt Affordability Committee: *Capital Debt Affordability Committee Report*, 2000 and 2006 reports

Growth in State Debt Forces the State to Rethink How Capital Projects Are Funded

In 2000, State debt outstanding was 77 percent of total debt capacity. Now total debt outstanding is 93 percent of capacity. This increase is attributable to:

- aggressive increases in actual and proposed GO bond authorizations since 2001; and
- authorizations of two new kinds of debt (GARVEEs and bay bonds).

A review of specific bond programs suggests that the likelihood that the current estimates of non-GO debt outstanding, such as transportation and bay bonds, are more likely to be revised upward than downward.

As the State gets closer the limit, volatility in personal income estimates can bring the State over the limit and force the State to choose between:

- eliminating previously planned capital projects from the plan; or
- loosening decades-old fiscal standards and jeopardizing the AAA bond rating.

The analysis suggests that debt cannot grow as quickly in subsequent years as it has grown in the last six years without exceeding CDAC limits. **As the State gets closer to the debt limit, the State will be forced to either constrain capital spending growth or find PAYGO revenues to support the capital program.**

State Property Tax Rate Is Reduced and the Structural General Fund Deficit Is Increased

GO bond debt service costs are supported by the ABF. The fund's largest revenue sources include State property tax revenues and proceeds from bond sale premiums. Other revenue sources include interest generated by fund balances 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.

Through fiscal 2003, State property taxes remained unchanged at $0.084 per $100 of assessable base. At this level, State property taxes supported approximately 55 to 60 percent of debt service costs. The State did not appropriate general funds for the ABF in the fiscal 2004 budget. To eliminate the ABF revenue shortfall, the Board of Public Works increased the State property tax rate to $0.132 per $100 of assessable base. With these actions, the State moved from maintaining a constant property tax rate and funding any remaining debt service with general funds to funding over 90 percent of the debt service payments with property taxes and without any general funds. As in

fiscal 2004, the fiscal 2005 and 2006 budgets do not include any general funds for GO bond debt service.

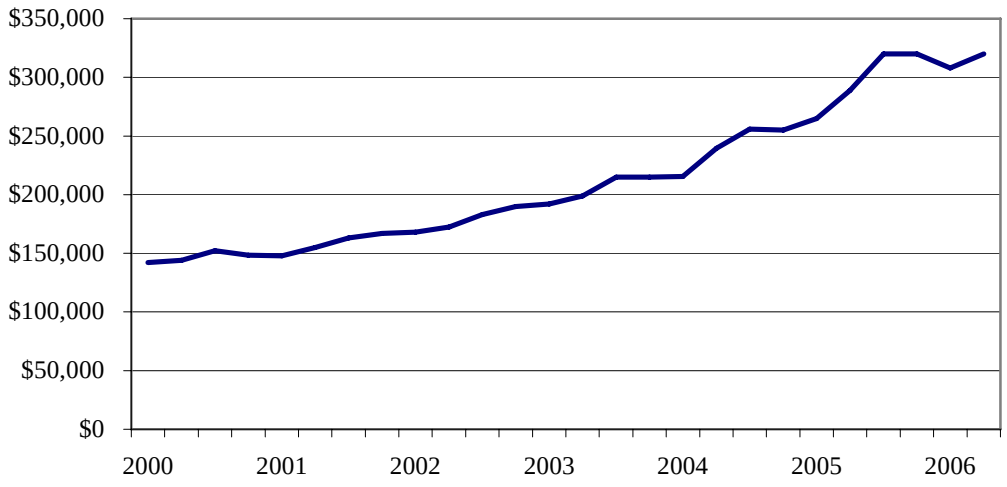
In April 2006, the State property tax rate was reduced 2 cents, to $0.112 per $100 of assessable base. Consequently, the ABF revenues are now insufficient, and a general fund subsidy is needed to make GO bond debt service payments. The following issue examines factors influencing the ABF.

Period of Steep Real Estate Price Appreciation Appears To Be Ending

In recent years, State property taxes have been growing because of increases in real estate property values. **Exhibit 7.8** shows that the median sales price of a home in Maryland has increased from $140,000 in 2000 to $320,000 in 2006. These increased sales prices have driven up the State assessable base, thus increasing property tax collections.

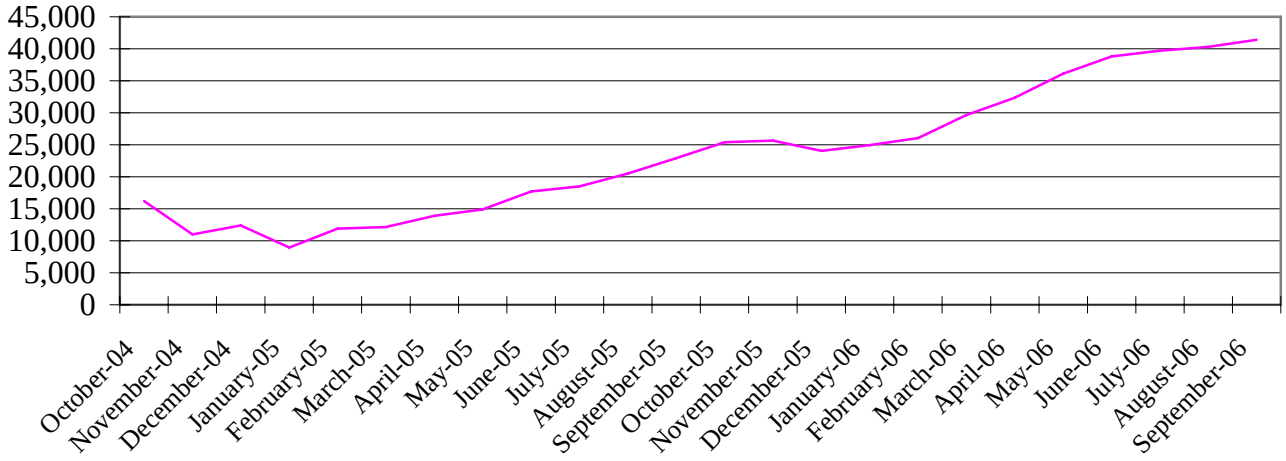
In the near term, it appears unlikely that the growth in assessable base will continue to increase as rapidly as it did in recent years. The slowdown in price appreciation is not entirely unexpected. **Exhibit 7.9** shows that the inventory of housing for sale has increased from under 10,000 in January 2005 to over 40,000 by August 2006. This large supply of housing for sale is expected to keep housing values from appreciating as quickly over the next year as they did in recent years.

Exhibit 7.8
State Property Taxes
Increase in the Median Sales Price of Improved Residential Properties
First Quarter of 2001 to Second Quarter of 2006



Source: State Department of Assessments and Taxation

Exhibit 7.9
State Property Taxes
Active Inventory of Residential Properties
October 2004 to September 2006



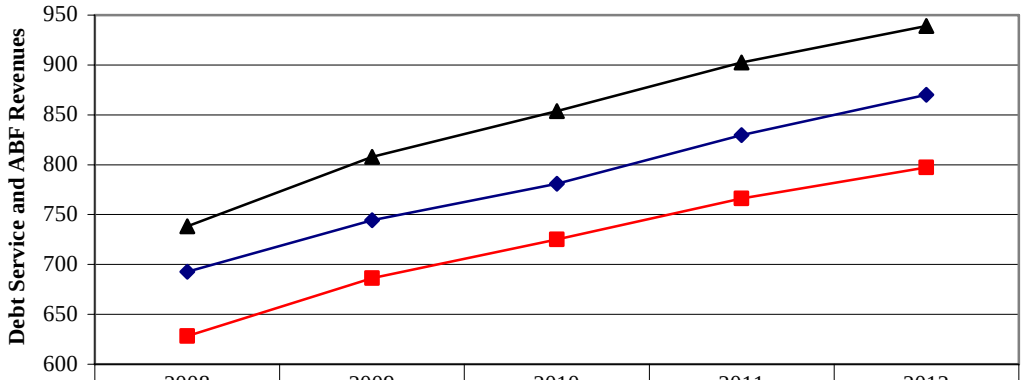
Source: Maryland Association of REALTORS®

In November 2006, the State Department of Assessments and Taxation revised its estimates of the State's property tax assessable base. The new estimates appear to reflect the slowdown in the housing market. Unlike previous years, there has not been a substantial upward revision. The total value of Maryland's projected real property value increased/decreased by $13 billion in fiscal 2008. The estimate increased 2.2 percent as total real property values are expected to exceed $609 billion.

Annuity Bond Fund Revenues Insufficient to Support Debt Service after Fiscal 2007

In April 2006, BPW reduced State property tax rates from $0.132 per $100 of assessable base to $0.112. **Exhibit 7.10** shows that, if State property tax rates are maintained at $0.112 per $100 of assessable base, the State will need to appropriate $64 million in fiscal 2008. From fiscal 2009 to 2012, the general fund will need to provide an additional $250 million to support the ABF.

Exhibit 7.10
Annuity Bond Fund
State Property Tax Receipts after Fiscal 2007 Rate Reduction
($ in Millions)



	2008	2009	2010	2011	2012
Debt Service	693	744	781	830	870
ABF Support at $0.132	738	808	854	902	939
ABF Revenues after Two-cent Reduction	628	686	725	766	797
GF Support at $0.112	64	58	56	63	73

Fiscal Years

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

In addition to the appreciation in real estate values, the ABF has also benefited from bond sale premiums and the fiscal 2004 increase in the State property tax rate. Since the rate was increased in fiscal 2004, bond sale premiums added $177 million to the ABF. In fiscal 2006, the higher tax rate ($0.132 per $100 of assessable base) provided just over $200 million more than the fiscal 2003 rate ($0.084 per $100 of assessable base). Together, these factors provided sufficient resources so that no general fund appropriations were necessary.

While the growth is likely to slow if the growth in real estate slows, as it is expected to do, it is unlikely that collections will decline. To mitigate the effect of substantial growth in real estate values, the State currently has a Homestead Tax Credit Program, which limits property assessment increases to 10 percent each year. Consequently, most increases exceeding 10 percent are taxed as though they only increased 10 percent. (An exception to this is when a house is sold and the new owner does not get a credit the year after the sale.)

The effect of the homestead credit on State revenues is substantial. In fiscal 2008, the credit is expected to reduce assessments by over $60 billion. Because of these substantial credits, even if property tax revenue estimates are revised downward, the State revenue collections are still likely to increase since underattaining revenue collections would probably also result in a corresponding reduction in the Homestead Tax Credit. The net effect would be little or no reduction in revenues generated, since the State is not collecting the assessments affected by the Homestead Tax Credit.

Eliminating the General Fund Subsidy Requires an Increase in State Property Tax Rates

The State can eliminate the general fund's ABF subsidy by increasing the State property tax rate. The rate would need to be increased by $0.012 per $100 of assessable base to eliminate the need for general funds. This would increase the fiscal 2008 taxes paid by the median homeowner (based on the State Department of Assessment and Taxation (SDAT) data provided in Exhibit 7.8) by $38.

Changes in General Obligation Bond Issuance Policies, Real Estate Market Conditions, and State Property Tax Rates Suggest That a New Approach to Property Tax Policies Is in Order

From fiscal 2004 to 2006, the Annuity Bond Fund was able to generate sufficient revenues to support GO bond debt service without any general fund subsidy. This was a period in which State property tax revenues generally increased at a greater percentage in two out of the three years, substantial bond sale premiums were realized, real estate revenues were rising rapidly, and there were sizeable end-of-year fund balances.

These conditions are not likely to persist. Instead, the fiscal 2007 tax reduction eliminated the fund balance. The premium is likely to dwindle (if not disappear). While the Homestead Tax Credit virtually assures a steady growth in revenues, it could also result in substantial political pressure to reduce rates if homeowners' tax bills rise while their real estate values decline.

How this will play out is difficult to predict. The real estate market is changing and it is unclear if prices will decline, remain flat, or begin to increase slowly. If prices decline or stay flat, it is also unclear how long it will be before they rebound. It is quite possible that declining real estate values create very different pressures than rising real estate values and that these differing pressures could result in very different State property tax policies.

The State also continues to have a long-term structural deficit in the general fund. This will require the State to balance the State property tax rate against the need for general funds in other programs. Since the situation is quite fluid, it may well be best to evaluate State property tax rates each year and change the rate if necessary. As discussed previously, the CDAC has repeatedly expanded the proposed GO bond authorizations in recent years. Authorizing more GO debt leads to additional issuances and increased debt service payments. **To limit the growth in out-year debt**

service, it is recommended that, in its 2007 report, the CDAC not expand the GO bond program beyond what is currently proposed.

State Should Review Bond Sale Bid Process to Determine if Open Auctions Yield Savings

Currently, State GO bonds are sold in closed auctions. The State advertises a bond sale, which includes the day and time that all the bids are due. All the bids are opened at the same time, and the bidder with the lowest true interest cost (TIC) is awarded the bond sale.

In her paper "Municipal Bonds, Auctions, and Borrowing Costs: Using Open Auctions in a Competitive Bond Sale," Chris Rocco, a Masters of Public Administration degree candidate at the University of Connecticut, examined different methods of issuing bonds to determine the method of sale that resulted in the lowest TIC. Specific emphasis was paid to two companies that offer electronic bond auctions, namely, the Grant Street Group's "MuniAuction" and the Thomson Corporation's "Parity" bid submission system. The major difference between the two products is that MuniAuction offers an open auction system while Parity is exclusively a closed auction system.

The open auction system from MuniAuction permits underwriters to submit bids during a 15-minute period. Once a bid is submitted, the underwriter is then notified of their rank in the bidding (*e.g.*, they may be the fourth best bid), and they have the opportunity to resubmit lower bids. If a bid is submitted at the end of the time period that is lower than the other bids, an additional two minutes is added to the auction to permit the other bidders to respond (thus discouraging last second bidding). When the auction ends, the underwriter offering the lowest TIC is awarded the bond issue.

Under the closed bidding system from Parity, underwriters submit a bid and wait to be notified if they are the winner. The State currently uses a closed auction system.

Ms. Rocco researched nearly 5,000 bond issuances from calendar 2002, of which 2,612 reported a TIC and where 204 used the open auction system from MuniAuction (largely used in Pennsylvania, where the company is based). The results of this research indicated that nationally, open auction use resulted in average interest rates that were nine basis points lower than bond sales using the closed auction method. When the research was focused exclusively on Pennsylvania (where 90 percent of bond issuances used open auctions) and California (where 10 percent of bond issuances used open auctions), the paper found significant savings of 24 basis points on average. The higher savings appear to be related to the more prevalent use of open auctions in those states.

Based on the forecast of proposed GO bond sales in Maryland, DLS prepared an estimate of the level of savings in debt service which could be attained if an open auction of issuance were used for each bond sale over the next 10 years. The savings could be realized one of two ways:

- If there is a premium, debt payments would remain about the same and a larger premium would be realized.

- If no premium would be realized, debt service payments would be lower.

Exhibit 7.11 shows that this could result in total debt service savings ranging from $3 to $8 million if there is no premium. If there was a premium, the premium is projected to be $2 to $5.5 million larger.

Exhibit 7.11
Debt Service Open Auctions Estimated Savings Range for Projected $325 Million Bond Sale in Early 2007
($ in Thousands)

	9 Basis Points Savings (0.09%)	24 Basis Points Savings (0.024%)
If No Bond Sale Premium		
1st Year Debt Service	$293	$780
Total Debt Service	3,024	8,084
If Bond Sale Premium		
Increased Premium	$2,035	$5,468

Source: Department of Legislative Services

Developing a Methodology to Evaluate the Open Auctions Process

The research suggests that significant savings could be achieved through the adoption of an open auctions bond issuance process. However, before the State adopts such a process, it would need to develop a methodology that can evaluate the open auctions process. One methodology could be the sum of least squares regression used in Chapter 5 to determine what factors influence Maryland's TIC. A dummy variable signifying the open auctions bond sale could be added. This approach would allow the State to not just assess what savings the process realized (if any), but also it allows the State to assess how confident we are of the results.

In the regression equation developed in Chapter 5, the dependent variable is the TIC. All the other variables are independent variables. The question that the regression equation attempts to answer is which of the independent variables influence the TIC. The regression equation identifies three statistically significant variables that affect the TIC: they are the Delphis Scale, inclusion of a call provision, and the ratio of Maryland personal income to United States personal income. To this

equation, we would add an independent dummy variable for each bond sale for which the open auctions process was used.

While the approach is a straightforward application of financial and statistical theory, there are some complications that can arise when evaluating the open auctions process. The most significant issue is the equation's limited sample size. Regression equations are quite sensitive to small sample sizes. This equation evaluates data from 33 bond sales, which is not a particularly large sample size. In the equation, an independent variable measuring the size of the bond sale was rejected because it was statistically significant in a 90 percent interval, instead of the standard 95 percent. It is quite likely that as the number of samples is increased, the size of the bond sale will eventually become statistically significant. The same could be true of a variable for the open auctions process. It is possible that the regression shows savings but not with a 95 percent confidence interval. If this is the case, it may take two or three sales before we could determine that the open auctions process is statistically significant.

However, Maryland appears to be a good candidate for open auctions bids. One of the findings is a relationship between the amount of bids and the savings realized. The more bids the greater the savings. This suggests that a much anticipated bond sale would benefit more than a less anticipated bond sale. When discussing how Delphis Hanover Corporation develops their market estimate, their representative noted that there is generally high demand for Maryland bonds and that the markets closely watch the TIC for Maryland bonds. The Treasurer's Office agrees with this assessment. This high demand suggests that Maryland bond sales are more anticipated, are likely to have more bids, and are likely to yield savings with an open auctions process.

It appears as though transportation bonds may also be good candidates. They are regularly bid and have a high bond rating. They also tend to be smaller than GO bonds, which may make them easier for the underwriter to sell, thus increasing their demand.

There is evidence to suggest that open auctions processes can reduce debt service costs. This is especially the case for bonds in high demand, like Maryland bonds. DLS has developed a methodology that can be used to evaluate if the process yields any savings. **It is recommended that the State begin an evaluation of the open auctions process by using this process at the next bond sale. The process could involve either GO or transportation bond sales.**

Appendix 1

Capital Budget Requests for Fiscal 2008 to 2012

Agency requests for fiscal 2008 total $1.25 billion, over $442.8 million more than the amount available under the recommended general obligation (GO) bond debt limit of $810 million. Capital requests for the next five years total over $6.4 billion, while the projected debt limit for the same period totals approximately $4.3 billion. These figures demonstrate that the number of capital projects proposed far exceeds the ability of the State to appropriate bond funds to provide for capital needs. The table below provides a listing of GO bond capital requests over the next five years. This listing reflects agency requests and will differ from the list that will appear in the Governor's fiscal 2008 *Five-year Capital Improvement Program*.

GO Bond Requests: Fiscal 2008-2012

($ in Millions)

	Fiscal Years						Category
	2008	**2009**	**2010**	**2011**	**2012**	**Total**	**Totals**
State Facilities							$712.6
Board of Public Works	$142.3	$194.4	$91.5	$133.1	$126.7	$688.0	
Military	9.5	3.6	0.9	2.6	0.0	16.6	
Dept. Disabilities	1.6	1.6	1.6	1.6	1.6	8.0	
Health and Social Services							$527.7
Health and Mental Hygiene	$67.5	$103.8	$91.7	$17.9	$38.2	$319.1	
University of MD Medical System	12.5	22.5	20.0	15.0	25.0	95.0	
Senior Citizen Activity Center	1.3	1.5	1.5	1.5	1.5	7.3	
Juvenile Justice[1]	6.3	55.0	10.0	5.0	5.0	81.3	
Private Hospital Grant Program	5.0	5.0	5.0	5.0	5.0	25.0	
Environment							$258.7
Natural Resources	$13.0	$13.0	$13.0	$13.0	$13.5	$65.5	
Agriculture[2]	5.1	7.5	7.5	8.0	8.0	36.1	
Environment	27.3	28.0	27.5	26.0	26.0	134.8	
MD Environmental Service	3.8	3.7	4.7	4.8	5.3	22.3	
Education							$1,453.3
Education	$0.0	$0.7	$50.5	$0.0	$0.0	$51.2	
MD School for the Deaf	1.5	4.2	1.6	1.1	0.0	8.4	
Public School Construction[3]	277.9	277.6	277.9	280.0	280.3	1,393.7	
Higher Education							$2,562.9
University System of MD	$281.8	$211.1	$242.0	$281.4	$269.5	$1,285.8	
Baltimore City Comm. College	1.4	23.9	35.9	23.9	1.0	86.1	
St. Mary's College	2.0	7.2	25.5	1.4	45.9	82.0	
Morgan State University	23.8	92.6	81.4	77.1	69.5	344.4	
Community Colleges	125.1	163.5	125.2	101.6	173.8	689.2	
Southern MD Higher Educ. Center	0.0	1.2	13.4	0.8	0.0	15.4	
Private Facilities Grant Program	12.0	12.0	12.0	12.0	12.0	60.0	
Public Safety							$581.1
Public Safety	$79.5	$51.8	$79.6	$97.2	$97.4	405.5	
State Police	21.2	21.4	24.6	11.0	0.0	78.2	
Local Jails	37.3	31.8	14.6	12.3	1.4	97.4	
Housing and Economic Development							$81.5
Economic Development	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	
Housing and Comm. Development	10.5	8.0	8.0	9.0	9.0	44.5	
Canal Place	0.0	0.0	0.0	1.7	0.0	1.7	
Historic St. Mary's City	1.6	1.2	8.0	6.8	1.3	18.9	
Planning	1.4	4.4	1.3	1.4	7.9	16.4	
Legislative Initiatives	15.0	15.0	15.0	15.0	15.0	75.0	$75.0
Miscellaneous	62.6	49.4	29.0	12.0	3.5	156.5	$156.5
Subtotal Request	**$1,249.8**	**$1,416.6**	**$1,320.4**	**$1,179.2**	**$1,243.3**	**$6,409.3**	**$6,409.3**
Tobacco Transition Program	3.0	3.0	5.0	0.0	0.0	11.0	$11.0
Total Request	**$1,252.8**	**$1,419.6**	**$1,325.4**	**$1,179.2**	**$1,243.3**	**$6,420.3**	**$6,420.3**
Debt Affordability Limits	**$810.0**	**$835.0**	**$860.0**	**$890.0**	**$920.0**	**$4,315.0**	

[1]Updated figures for the Department of Juvenile Services capital request are unavailable – the figures above are based on the 2006 *Capital Improvement Program*.

[2]The Department of Agriculture request does not include the Tobacco Transition Program.

[3]The Interagency Committee on School Construction received requests in excess of $470 million for fiscal 2008; however, the amount included in the request to the Department of Budget and Management reflects base funding of $250 million plus 12 percent attributable to construction escalation.

[4]In addition to the GO bond request, the University System of Maryland has requested academic revenue bond funding of $30 million for fiscal 2008 and $25 million annually for fiscal 2009-2012.

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

Source: Department of Budget and Management

Estimated General Obligation Issuances
($ in Thousands)

Legislative Session	Proposed Auth. (a)	Estimated Issuances During Fiscal Year (b) ====>											
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Post 2016	Total Issued
2007	$810,000	$0	$251,100	$202,500	$162,000	$121,500	$72,900						$810,000
2008	835,000		0	258,850	208,750	167,000	125,250	$75,150					835,000
2009	860,000			0	266,600	215,000	172,000	129,000	$77,400				860,000
2010	890,000				0	275,900	222,500	178,000	133,500	$80,100			890,000
2011	920,000					0	285,200	230,000	184,000	138,000	$82,800		920,000
2012	950,000						0	294,500	237,500	190,000	142,500	$85,500	950,000
2013	980,000							0	303,800	245,000	196,000	235,200	980,000
2014	1,010,000								0	313,100	252,500	444,400	1,010,000
2015	1,040,000									0	322,400	717,600	1,040,000
2016	1,070,000										0	1,070,000	1,070,000
Total New Authorization		**$0**	**$251,100**	**$461,350**	**$637,350**	**$779,400**	**$877,850**	**$906,650**	**$936,200**	**$966,200**	**$996,200**	**$2,552,700**	
Previously Authorized GO Bonds (c):	$1,774,484	$675,000	$448,900	$298,650	$172,650	$80,600	$22,150	$33,350	$23,800	$13,800	$3,800	$1,784	$1,774,484
Total Issuances:		**$675,000**	**$700,000**	**$760,000**	**$810,000**	**$860,000**	**$900,000**	**$940,000**	**$960,000**	**$980,000**	**$1,000,000**	**$2,554,484**	

Notes:
(a) It is assumed that authorizations increase 3% annually.
(b) 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

Factors Influencing Maryland's GO Bonds' True Interest Cost

Bond Sale Date	Delphis Rate	MD PI/US PI	Call
03/13/91	6.15	2.261	Yes
07/10/91	6.50	2.240	Yes
10/09/91	5.70	2.230	Yes
05/13/92	5.75	2.220	Yes
01/13/93	5.40	2.221	Yes
05/19/93	5.10	2.212	Yes
10/06/93	4.45	2.206	Yes
02/16/94	4.50	2.208	Yes
05/18/94	5.35	2.199	Yes
10/05/94	5.50	2.191	Yes
03/08/95	5.35	2.184	Yes
10/11/95	4.80	2.163	Yes
02/14/96	4.35	2.159	Yes
06/05/96	5.10	2.144	Yes
10/09/96	4.90	2.144	Yes
02/26/97	4.70	2.136	Yes
07/30/97	4.50	2.135	Yes
02/18/98	4.25	2.119	Yes
07/08/98	4.40	2.128	Yes
02/24/99	4.10	2.134	Yes
07/14/99	4.80	2.146	Yes
07/19/00	4.85	2.157	Yes
02/21/01	4.28	2.178	No
07/11/01	4.39	2.201	No
03/06/02	4.17	2.233	No
07/31/02	3.89	2.241	No
02/19/03	3.77	2.242	No
07/16/03	3.56	2.257	Yes
07/21/04	3.89	2.227	Yes
03/02/05	3.72	2.290	Yes
07/20/05	3.63	2.310	Yes
03/01/06	3.89	2.286	Yes
07/26/06	4.09	2.286	Yes

Source for Delphis Rate: Maryland State Treasurer's Office
Source for Personal Income (PI): Federal Bureau of Economic Analysis
Source for Call: GO Bonds Sales' Official Statements

Appendix 4

True Interest Cost – Regression Equation Statistics

Variables (a)

Model	Variables Entered
1	Delphis Scale, MD PI/US PI
2	Call

a Dependent Variable: TIC

Model Summary(c)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.994(a)	.988	.987	.08423	.988	1,246.704	2	30	.000	
2	.995(b)	.990	.989	.07976	.002	4.456	1	29	.044	2.146

a Predictors: (Constant), Delphis Scale, MD PI/US PI
b Predictors: (Constant), Delphis Scale, MD PI/US PI, Call
c Dependent Variable: TIC

ANOVA(c)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.690	2	8.845	1,246.704	.000(a)
	Residual	.213	30	.007		
	Total	**17.902**	**32**			
2	Regression	17.718	3	5.906	928.376	.000(b)
	Residual	.184	29	.006		
	Total	**17.902**	**32**			

a Predictors: (Constant), Delphis Scale, MD PI/US PI
b Predictors: (Constant), Delphis Scale, MD PI/US PI, Call
c Dependent Variable: TIC

Appendix 4 (continued)

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.804	.649		2.778	.009
	MD PI/US PI	-.751	.285	-.053	-2.638	.013
	Delphis Scale	.985	.020	.984	48.765	.000
2	(Constant)	1.684	.618		2.726	.011
	MD PI/US PI	-.702	.271	-.050	-2.595	.015
	Delphis Scale	.972	.020	.971	48.364	.000
	Call	.087	.041	.042	2.111	.044

a Dependent Variable: TIC

Collinearity Statistics

Tolerance
.890

Appendix 5

Initial Allocation Worksheet for 2006

Major Issuer	***U.S. Census***	***State Ceiling***
	5,600,388	**$448,031,040**
Counties		$224,015,520
CDA		112,007,760
Municipal		11,200,776
Secretary's		100,806,984
Total		**$448,031,040**

County Allocation

MD Population		**% MD Population**	**Housing Alloc.**	**Min. Non-House**	**Grand Total**
Allegany	73,900	1.32%	$2,065,949	$708,325	$2,774,275
Anne Arundel	512,000	9.13	14,313,478	4,907,478	19,220,957
Baltimore City	636,000	11.34	17,780,024	6,096,008	23,876,032
Baltimore Co.	785,600	14.01	21,962,243	7,529,912	29,492,155
Calvert	88,750	1.58	2,481,096	850,662	3,331,758
Caroline	31,300	0.56	875,023	300,008	1,175,031
Carroll	169,000	3.01	4,724,566	8,567,579	13,292,145
Cecil	97,300	1.73	2,720,120	932,613	3,652,733
Charles	138,700	2.47	3,877,499	1,329,428	5,206,927
Dorchester	31,300	0.56	875,023	300,008	1,175,031
Frederick	221,850	3.96	6,202,041	2,126,414	8,328,455
Garrett	30,150	0.54	842,874	288,985	1,131,859
Harford	238,750	4.26	6,674,498	2,288,399	8,962,897
Howard	270,200	4.82	7,553,715	9,083,048	16,636,763
Kent	19,650	0.35	549,336	188,344	737,679
Montgomery	930,500	16.59	26,013,069	8,918,767	34,931,836
Prince George's	850,500	15.16	23,776,588	8,151,973	31,928,562
Queen Anne's	45,950	0.82	1,284,579	440,427	1,725,006
St. Mary's	96,550	1.72	2,699,153	925,424	3,624,577
Somerset	26,000	0.46	726,856	249,208	976,064
Talbot	35,250	0.63	985,449	337,868	1,323,318
Washington	141,050	2.51	3,943,196	1,351,953	5,295,148
Wicomico	89,550	1.60	2,503,461	858,329	3,361,790
Worcester	49,400	0.88	1,381,027	473,495	1,854,522
Total	**5,609,200**	**100.00%**	**$156,810,864**	**$67,204,656**	**$224,015,520**

Note: Numbers may not sum due to rounding.

Debt Outstanding
($ in Millions)

	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 96-06
Agency Debt Subject to Ceiling and Allocation Caps												
MD Environmental Service	$34.8	$33.7	$31.0	$34.0	$29.4	$34.4	$36.5	$33.7	$30.5	$30.5	$24.5	-30%
MD Wholesale Food Ctr. Auth.	7.2	7.1	7.0	6.9	6.8	6.7	0.0	0.0	0.0	0.0	0.0	-100
MD Trans Authority	408.4	391.9	374.9	344.5	318.7	300.6	668.8	575.6	627.2	763.6	765.1	87
MD Water Qual. Finan. Adm.	163.4	157.8	151.3	138.1	131.3	124.3	115.9	105.6	96.6	88.2	73.9	-55
Revenue Cap Total	**$613.8**	**$590.5**	**$564.2**	**$523.5**	**$486.2**	**$466.0**	**$821.2**	**$714.9**	**$754.3**	**$882.2**	**$863.5**	**41%**
% Change/Prior Year	**-8%**	**-4%**	**-4%**	**-7%**	**-7%**	**-4%**	**76%**	**-13%**	**6%**	**17%**	**-2%**	
Agency Debt Not Subject to Ceiling and Allocation Caps												
Balt. City Comm. College	$0.0	$0.0	$0.0	$0.0	$0.0	$1.2	$1.1	$1.0	$0.9	$0.9	$0.8	100%
DHCD (a)	2,340.8	2,304.5	2,387.1	2,473.5	2,627.0	2,692.1	2,705.8	2,672.8	2,415.1	2,194.6	2,248.1	-4
Local Govt. Infra. (CDA)	55.0	62.5	66.1	81.1	85.5	87.7	91.7	105.6	114.6	122.5	117.0	113
MD Energy Finance Admin.	300.9	307.4	306.2	301.1	388.4	379.8	0.0	0.0	0.0	0.0	0.0	-100
MD Industrial Dev. Fin. Authority	n/a	386.3	360.4	346.3	330.0	311.6	581.4	568.4	411.1	395.0	409.6	n/a
MDOT – County Revenue Bonds	n/a	n/a	45.5	34.6	25.6	19.0	12.9	7.9	4.5	31.8	30.0	n/a
MDOT – Non-tax-supported COPs	n/a	n/a	n/a	42.8	42.5	74.3	65.2	57.7	54.0	49.7	72.6	n/a
Morgan State University	29.4	29.9	27.9	27.5	27.1	26.8	33.4	72.2	70.0	68.6	67.7	130
St. Mary's College	8.1	7.8	17.5	17.3	16.9	27.8	27.5	40.6	39.7	40.6	43.8	441
University System of Maryland	505.9	534.5	611.0	670.0	656.1	802.7	797.0	960.0	973.0	1,012.8	934.8	184
Non-cap Total	**$3,240.1**	**$3,632.9**	**$3,821.7**	**$3,994.2**	**$4,199.2**	**$4,422.9**	**$4,316.1**	**$4,486.1**	**$4,082.8**	**$3,916.3**	**$3,924.4**	**21%**
% Change/Prior Year	**0%**	**12%**	**5%**	**5%**	**5%**	**5%**	**-2%**	**4%**	**-9%**	**-4%**	**0%**	

	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 96-06
Tax-supported Debt												
Transportation Debt	977.6	939.4	844.0	749.1	724.8	648.1	714.2	961.2	1,185.7	1,069.9	1,078.5	10%
Capital Leases – BPW	115.8	98.4	90.3	149.2	148.4	197.7	245.7	217.1	191.9	175.1	226.0	95
General Obligation Debt	2,859.9	3.025.4	3,270.5	3,500.2	3,348.9	3,450.9	3,544.2	3,932.5	4,102.3	4,511.8	4,868.5	70
Tax-supported Debt Total	**3,953.3**	**1,037.8**	**4,204.8**	**4,398.5**	**4,222.1**	**4,296.7**	**4,504.1**	**5,110.8**	**5,479.8**	**5,756.8**	**6,173.0**	**56%**
% Change/Prior Year	**4%**	**-74%**	**305%**	**5%**	**-4%**	**2%**	**5%**	**13%**	**7%**	**5%**	**7%**	
Authorities and Corporations Not Subject to Ceiling and Allocation Caps												
Health/Higher Ed. Facilities Authority	2,348.4	2,489.7	2,821.0	3,236.6	3,555.0	3,660.8	4,265.4	4,619.5	5,316.9	5,544.3	6,181.1	163%
MD Economic Development Corp.	141.0	177.0	227.7	321.1	635.4	855.6	1,077.7	1,485.9	1,593.9	1,642.6	1,872.4	1,228
Auth. and Corp. Total	**2,489.4**	**2,666.7**	**3,048.7**	**3,557.7**	**4,190.4**	**4,516.4**	**5,343.1**	**6,105.4**	**6,910.8**	**7,186.9**	**8,053.5**	**223%**
% Change/Prior Year	**4%**	**7%**	**18%**	**17%**	**18%**	**8%**	**18%**	**14%**	**13%**	**4%**	**12%**	

(a) Excludes local government infrastructure.

Source: Department of Budget and Management