

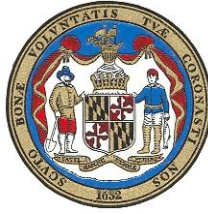


**REPORT OF THE
CAPITAL DEBT AFFORDABILITY COMMITTEE
ON
RECOMMENDED DEBT AUTHORIZATIONS**

FOR FISCAL YEAR 2019

**SUBMITTED TO
THE GOVERNOR AND GENERAL ASSEMBLY
OF MARYLAND**

October 2017



CAPITAL DEBT AFFORDABILITY COMMITTEE
Nancy K. Kopp, Chair

September 29, 2017

The Honorable Larry Hogan
Governor of Maryland
State House
Annapolis, Maryland 21401

The Honorable Thomas V. M. Miller, Jr.
President of the Senate
Maryland General Assembly
State House
Annapolis, Maryland 21401

The Honorable Michael E. Busch
Speaker of the House
Maryland General Assembly
State House
Annapolis, Maryland 21401

Gentlemen:

The Capital Debt Affordability Committee, created pursuant to Section 8-104, *et seq.*, of the State Finance and Procurement Article, is required to submit to the Governor and the General Assembly each year an estimate of the maximum amount of new general obligation debt that prudently may be authorized for the next fiscal year. The Committee is also required to submit an estimate of the amount of new academic facilities bonds that prudently may be authorized.

The Committee met on September 29, 2017 and considered several options for a recommended amount of new general obligation bonds to be authorized by the 2018 General Assembly to support the fiscal year 2019 capital program. After significant discussion, the Committee approved \$995 million as the recommended maximum amount of general obligation bonds to be authorized for fiscal year 2019. The vote was 4-1 with the Treasurer voting against the proposed amounts. The Committee noted that should the economic and fiscal information underlying its recommendation change significantly, the Committee could reconvene and make necessary modifications.

In addition to recommending a prudent authorization for the coming year, the Committee sets out planning assumptions for the Department of Budget and Management to use in its capital program planning process. After reviewing several options, the Committee voted to maintain the authorization at \$995 million in future fiscal years. The vote was 4-1 with the Treasurer voting against the proposed amounts and advocating for maintaining the 3% growth level instituted by the Committee in 1992 and would remain within the CDAC affordability benchmarks.

Based on its review of the size and condition of the debt of State institutions of higher education in light of the debt affordability guidelines, the Committee unanimously voted to recommend a limit of \$24 million for new academic facilities bonds for the University System of Maryland for fiscal year 2019.

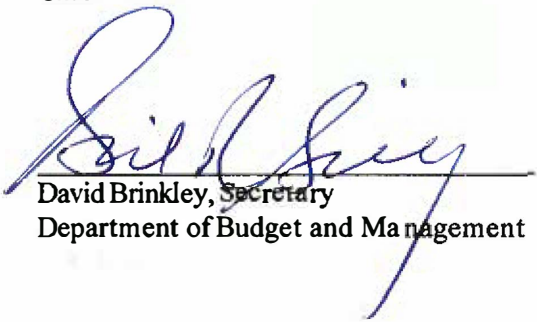
We are pleased to submit to you the Committee's Annual Report with the recommendations relating to the fiscal year 2019 capital program.



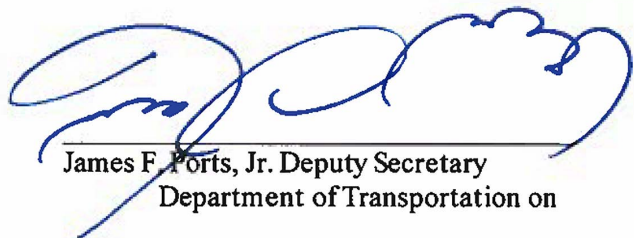
Nancy K. Kopp
State Treasurer
Chair



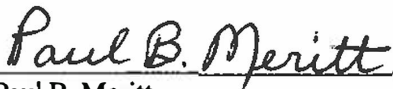
Peter Franchot
Comptroller



David Brinkley, Secretary
Department of Budget and Management



James F. Ports, Jr. Deputy Secretary
Department of Transportation on
behalf of Pete Rahn, Secretary
Department of Transportation



Paul B. Meritt
Public Member

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EXECUTIVE SUMMARY

The Capital Debt Affordability Committee (“CDAC” or “the Committee”), established under Section 8-104 *et seq.* of the State Finance and Procurement Article (SF&P), is charged with reviewing:

1. The size and condition of State tax-supported debt on a continuing basis, and advising the Governor and General Assembly each year regarding the maximum amount of new general obligation debt that prudently may be authorized for the next fiscal year;
2. Higher education debt and annual estimates concerning the prudent maximum authorization of academic facilities bonds to be issued by the University System of Maryland, Morgan State University, St. Mary’s College of Maryland and Baltimore City Community College;

To develop its recommendations, the Committee held three meetings in September. At its first meeting, the Committee reviewed actions taken by the 2017 General Assembly as well as the size, condition and projected issuances of tax-supported debt. The Committee conducted a similar annual review of the debt of higher education institutions at its second meeting and reviewed the State of Maryland Capital Program and school construction needs at that time.

At its final meeting on September 29, 2017, the Committee reviewed its assumptions on revenues, personal income, interest rates, debt issuance, debt service, and bond authorizations. The Committee believes that these variables have been estimated prudently. The personal income and revenue estimates reflect the most recent forecast by the Board of Revenue Estimates in September 2017. At this meeting, the Secretary of the Department of Budget and Management made a motion to recommend an authorization of \$995 million.

The Committee thus approved a total of \$995 million for new general obligation authorizations by the 2018 General Assembly to support the fiscal year 2019 capital program. The vote was 4-1, with the Treasurer voting against the proposed amount.

In addition to determining and recommending a prudent affordable authorization level for the coming year, the Committee also sets out planning assumptions for the State to use in its capital program planning process. The Committee reviewed several options that were projected to maintain debt affordability ratios within the CDAC benchmarks of 4% debt outstanding to personal income and 8% debt service to revenues. The Secretary of Budget and Management then made a motion to maintain the authorization at \$995 million in future fiscal years. The vote was 4-1, with the Treasurer voting against the proposal.

The Committee recognizes that there are multiple annual authorization levels and patterns that would result in adherence to the benchmarks, depending on future levels of personal income and State revenue. The Committee's planning assumptions for future authorizations will be reviewed in preparation for the 2018 report in light of updated revenue and personal income projections and authorization levels may be adjusted to adhere to these affordability benchmarks.

Based on its review of the condition of State debt in light of the debt affordability guidelines, the Committee recommended a limit of \$24.0 million for new academic facilities

bonds for the University System of Maryland for fiscal year 2019. The Committee did not receive any requests for new issuances for Morgan State University, St. Mary's College of Maryland, and Baltimore City Community College and therefore made no recommendations for these institutions.

The 2017 Capital Debt Affordability Report and the 2017 meeting materials are available on the State Treasurer's website at <http://www.treasurer.state.md.us/debtmanagement/cdac-reports.aspx>

I. INTRODUCTION

A. Membership

The members of the Capital Debt Affordability Committee (“CDAC” or “Committee”) are the State Treasurer (Chair), the Comptroller, the Secretaries of Budget and Management and Transportation, one public member appointed by the Governor, and as non-voting members, the Chairs of the Capital Budget Subcommittees of the Senate Budget and Taxation Committee and the House Appropriations Committee.

B. Duties

The Committee is required to review the size and condition of State debt on a continuing basis and to submit to the Governor and to the General Assembly by October 1 of each year,¹ an estimate of the total amount of new State debt that prudently may be authorized for the next fiscal year. Although the Committee's estimates are advisory only, the Governor is required to give due consideration to the Committee's findings in determining the total authorizations of new State debt and in preparing a preliminary allocation for the next fiscal year. The Committee is required to consider:

- The amount of State tax-supported debt ² that will be:
 - Outstanding, and
 - Authorized but unissued during the next fiscal year;
- The capital program prepared by the Department of Budget and Management and the capital improvement and school construction needs during the next five fiscal years, as projected by the Interagency Committee on School Construction;
- Projected debt service requirements for the next ten years;
- Criteria used by recognized bond rating agencies to judge the quality of State bond issues;
- The aggregate impact of public-private partnership agreements on the total amount of new State debt that prudently may be authorized for the next fiscal year;
- Other factors relevant to the ability of the State to meet its projected debt service requirements for the next five years or relevant to the marketability of State bonds; and
- The effect of new authorizations on each of the factors enumerated above.

The Committee also reviews on a continuing basis the size and condition of any debt of the University System of Maryland, Morgan State University, St. Mary's College of Maryland, and Baltimore City Community College; takes any debt issued for academic facilities into account as part of the Committee's affordability analysis with respect to the estimate of new authorizations of general obligation debt; and, finally, submits to the Governor and the General Assembly a recommendation of the amount of new bonds for academic facilities that prudently may be authorized in the aggregate for the next fiscal year by these institutions of higher education.

¹ Chapter 695, Laws of Maryland 2010 changed the date from September 10 to October 1 of each year to allow the Committee to consider updated projections from the Board of Revenue Estimates made in September of each year.

² See Appendix A for the Committee's definition of tax-supported debt.

A history of the Committee's membership, duties, debt affordability criteria, definition of tax-supported debt, and authorization increases can be found in Appendix A.

C. 2016 Recommendations and Subsequent Events

The recommendations of the Committee to the Governor and the General Assembly for the fiscal year 2018 capital program and the subsequent events related to those recommendations are summarized below.

2016

The Committee made a recommendation of \$995 million in new debt for fiscal year 2018 in its 2016 report. In its letter dated September 28, 2016 to the Governor, President of the Senate and the Speaker of the House, the Committee noted that the motion to recommend \$995 million specifically recognized that authorization levels proposed in the Governor's 2018 capital budget could be adjusted to reflect up-to-date economic and fiscal information.

Based on its review of the condition of State debt in light of the debt affordability guidelines, the Committee recommended a limit of \$32.0 million for new academic facilities for the University System of Maryland for fiscal year 2018.

Authorizations by the 2017 General Assembly

The net general obligation debt authorized for the fiscal year 2018 capital program (effective June 1, 2017) totaled \$1.065 billion.

The 2017 General Assembly authorized the University System of Maryland to issue \$32.0 million in new academic facility bonds including \$17.0 million to finance specific capital projects.

II. TAX-SUPPORTED DEBT - TRENDS AND OUTLOOK

The State of Maryland has issued six types of tax-supported debt in recent years including: General Obligation Bonds, Consolidated Transportation Bonds, GARVEE Bonds, Lease and Conditional Purchase Financings, Maryland Stadium Authority revenue bonds and Bay Restoration Bonds. Although the State has the authority to make short-term borrowings in anticipation of taxes and other receipts up to a maximum of \$100.0 million, the State has not issued short-term tax anticipation notes or made any other similar short-term borrowings for cash flow purposes. A detailed discussion of each component of tax-supported debt is included in the following pages.

A. General Obligation (“G.O.”) Bonds

Purpose

General Obligation Bonds, which are limited to a maximum maturity of 15 years per the State constitution, are authorized and issued to:

- Provide funds for State-owned capital improvements, including institutions of higher education, and the construction of locally owned public schools;
- Fund local government improvements, including grants and loans for water quality improvement projects and correctional facilities; and
- Provide funds for repayable loans or outright grants to private, nonprofit, cultural, or educational institutions.

Security

The State has pledged its full faith and credit as security for its General Obligation Bonds.

Current Status:

Debt Outstanding as of June 30, 2017: \$9,334,205,457

Amount Authorized but Unissued at June 30, 2017: \$2,401,470,653*

*Includes the \$4,823,000 authorization for Qualified Zone Academy Bonds (QZABs) in the 2017 legislative session which was unissued as of June 30, 2017.

Ratings

Fitch Ratings, Moody’s Investors Service and Standard and Poor’s (S&P) have rated Maryland’s General Obligation Bonds AAA since S&P’s first rating in 1961, Moody’s in 1973 and Fitch’s in 1993. On July 25, 2017, in conjunction with the sale of Maryland’s General Obligation Bonds State and Local Facilities Loan of 2017, Second Series A and B, Moody’s Investors Service, S&P and Fitch Ratings all affirmed their AAA ratings for Maryland’s General Obligation debt.

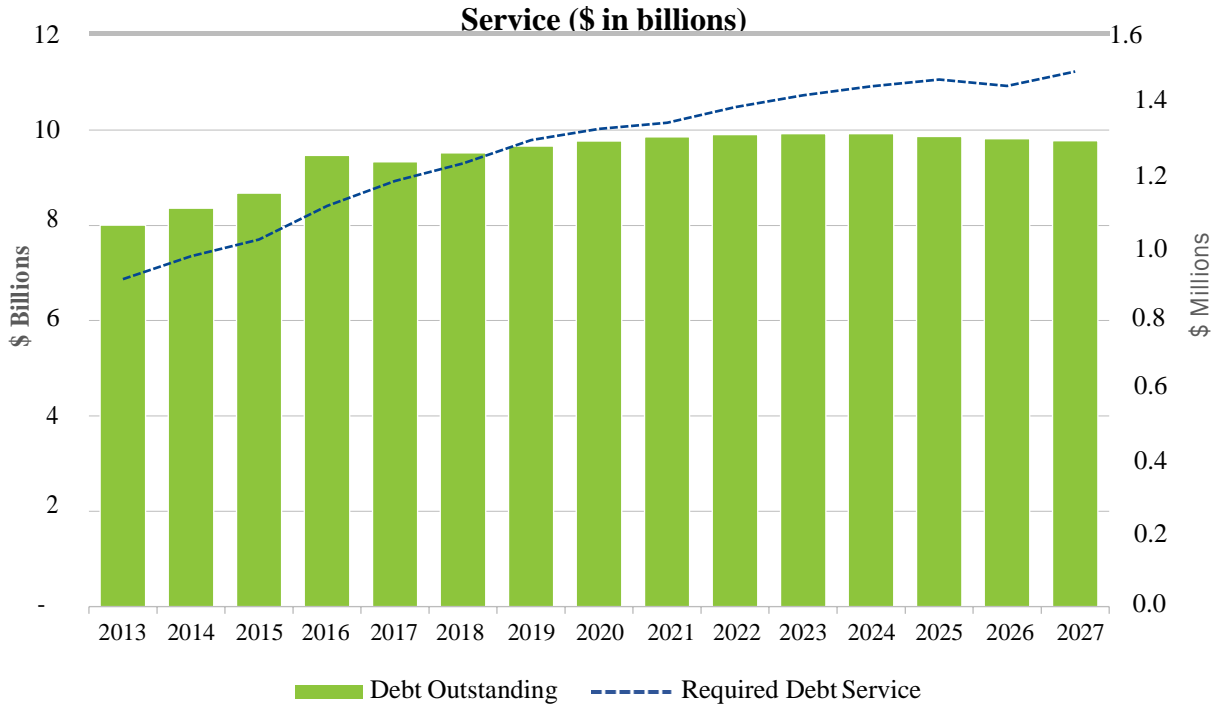
Use of Variable Rate Debt, Bond Insurance, Interest Rate Exchange Agreements and Guaranteed Investment Contracts

The State is authorized to issue variable interest rate bonds in an amount that does not exceed 15% of the outstanding general obligation indebtedness. The State has not issued any variable rate debt and has not executed any interest rate exchange agreements. Because the State is a “natural” AAA credit, there has been no need for bond insurance. To invest the sinking funds paid on certain Qualified Zone Academy Bonds (“QZABs”), the State has entered into master repurchase agreements.

Trends in Outstanding General Obligation Debt

General Obligation Bond debt outstanding, including authorized but unissued amounts, for the past five fiscal years and projections for the next 10 fiscal years are shown in **Graph 1**. A detailed historical summary of General Obligation debt activity may be found in **Appendices B-1 through B-4**.

Graph 1: General Obligation Debt Outstanding and Required Debt

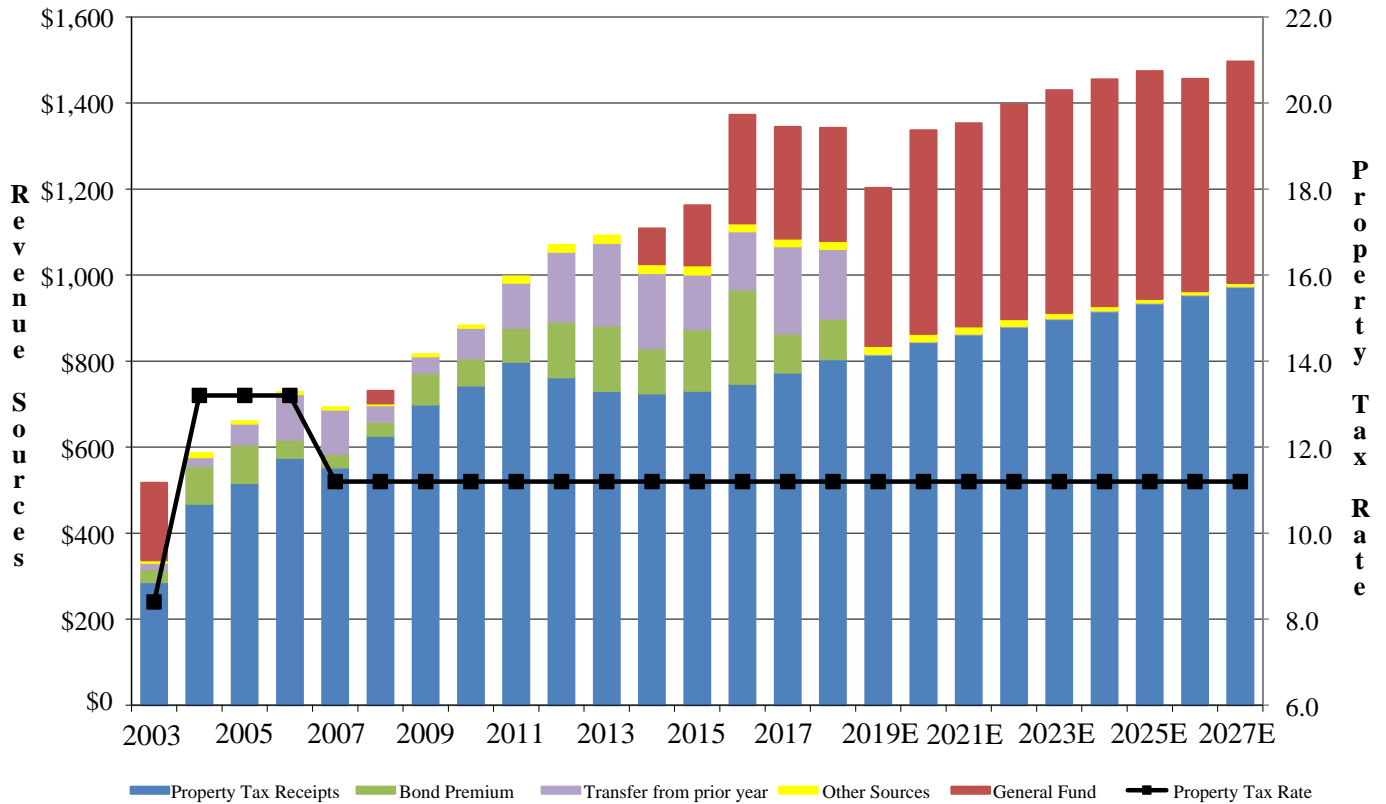


Future authorizations are projected to be issued over a five year period. The bonds are sold over an extended period of time as the projects are developed and cash is required to pay property owners, consultants, contractors, equipment manufacturers, etc. The following table provides a detailed summary of projected General Obligation debt activity.

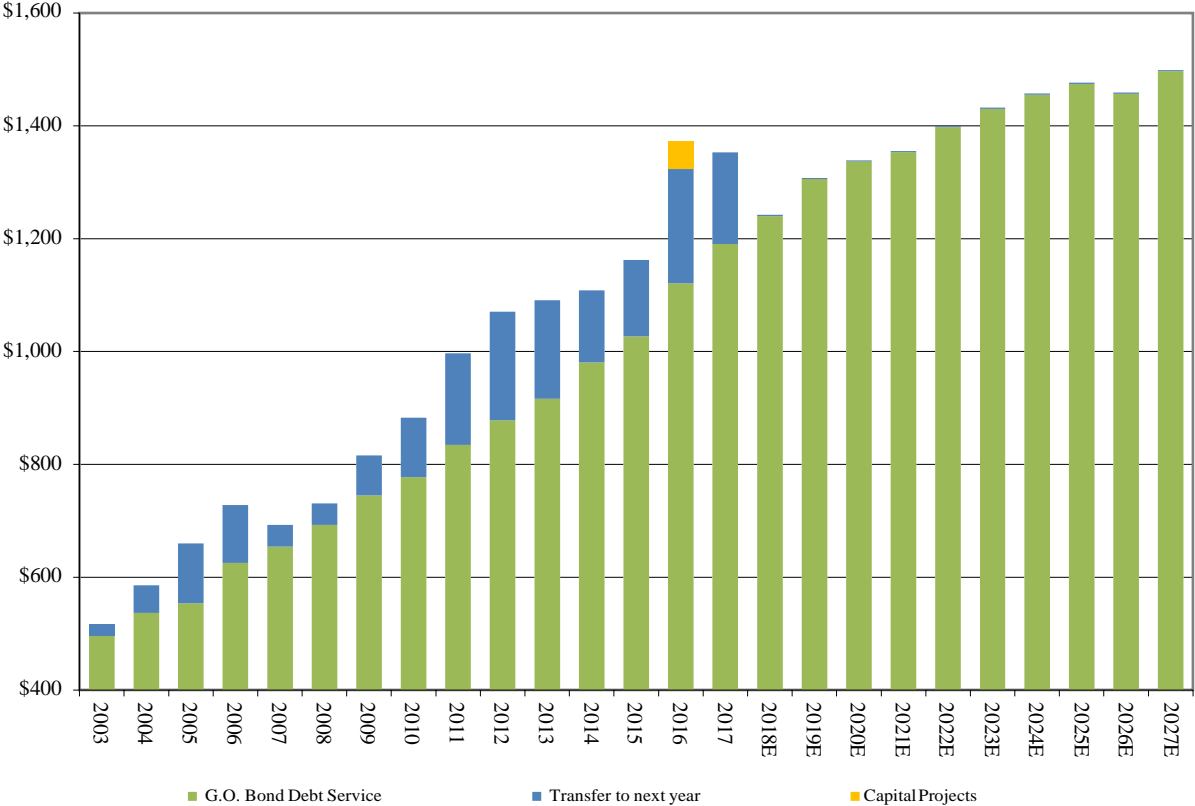
Summary of Projected Debt Activity					
General Obligation Bonds					
(\$ in millions)					
Fiscal Year	Debt Outstanding at Beginning of Year	New Issues	Redeemed	Debt Outstanding at End of Year	Required Debt Service
2018	2,247	1,075	836	9,486	1,250
2019	9,486	1,050	883	9,653	1,311
2020	9,653	1,025	912	9,766	1,350
2021	9,766	1,005	915	9,857	1,362
2022	9,857	995	953	9,899	1,406
2023	9,899	993	990	9,904	1,448
2024	9,904	986	1,008	9,891	1,469
2025	9,891	993	1,071	9,815	1,539
2026	9,815	995	1,045	9,765	1,512
2027	9,765	995	1,034	9,726	1,505

Debt service for General Obligation Bonds is paid from the Annuity Bond Fund (“ABF”). The State constitution requires the collection of an annual tax to pay debt service and State statute requires that, after considering the balance in the ABF and other revenue sources, the Board of Public Works set an annual property tax rate sufficient to pay debt service in the following fiscal year. *Graphs 2 and 3* depict the sources and uses, respectively, for the ABF for the past 15 fiscal years and projections for the next 10 fiscal years.

Figure 3: Annuity Bond Fund Revenue Sources Fiscal Years 2003 - 2027



Graph 3
Annuity Bond Fund Uses
(\$ in Millions)



B: Transportation Debt (Consolidated Transportation Bonds)

Purpose

Consolidated Transportation Bonds (“CTB”), like State General Obligation Bonds are 15-year obligations, issued by the Maryland Department of Transportation (“MDOT”) for highway and other transportation projects.

Security

Debt service on CTBs is payable from MDOT's shares of the motor vehicle fuel tax, the motor vehicle titling tax, sales tax on rental vehicles, and a portion of the corporate income tax. The 2011 Budget Reconciliation and Financing Act (House Bill 72/Chapter 397) made the following changes to MDOT’s pledged revenues effective July 1, 2011:

- (1) MDOT will no longer receive a distribution of the State’s general sales and use tax revenues, and
- (2) MDOT will receive a reduced distribution of the State’s corporate income tax revenues.

The bill also made provision for these revenues to remain available, if needed, to pay debt service on CTBs issued prior to July 1, 2011 while they remain outstanding and unpaid.

The Transportation Infrastructure Investment Act of 2013 (House Bill 1515/Chapter 429) increased MDOT’s pledged revenue effective July 1, 2013 as follows:

- (1) MDOT will receive an annual adjustment to the motor fuel tax indexed to the Consumer Price Index, compounding with each adjustment. The annual increase may not be greater than 8% of the previous rate.
- (2) MDOT will receive a sales and use tax equivalent rate applied to motor fuel based upon the product of the 12-month average retail price of motor fuel, less State and federal taxes, multiplied by specified percentage rates. As of July 1, 2016, the rate is 5.0%.

In addition, other receipts of MDOT (including motor vehicle licensing and registration fees and operating revenue of MDOT) are available to meet debt service if these tax proceeds should become insufficient. The holders of CTBs are not entitled to look to other sources for payment, including the federal highway capital grants that are pledged to GARVEE Bonds.

Limitations to Debt Outstanding

The gross outstanding aggregate principal amount of CTBs is limited by statute to \$4.5 billion, which was increased from \$2.6 billion effective June 1, 2013. The General Assembly may set a lower limit each year, and for fiscal year 2017 the limit is \$2.8 billion. In addition, MDOT has covenanted with the holders of outstanding CTBs not to issue additional bonds unless:

- (1) the excess of Transportation Trust Fund revenues over MDOT operational

expenses in the preceding fiscal year is equal to at least twice the maximum amount of debt service for any future fiscal year, including debt service on the additional bonds to be issued; and

- (2) total proceeds from taxes pledged to debt service for the past fiscal year equal at least twice such maximum debt service or, conversely, total debt service cannot exceed 50% of total proceeds from taxes pledged using the debt service divided by revenues convention.

Current Status:

Debt Outstanding as of June 30, 2017: \$2,578,385,000

Amount Authorized but Unissued at June 30, 2017: \$195,515,000

Ratings

CTBs are currently rated AAA by Standard and Poor's, Aa1 by Moody's Investors Service and AA+ by Fitch Ratings.

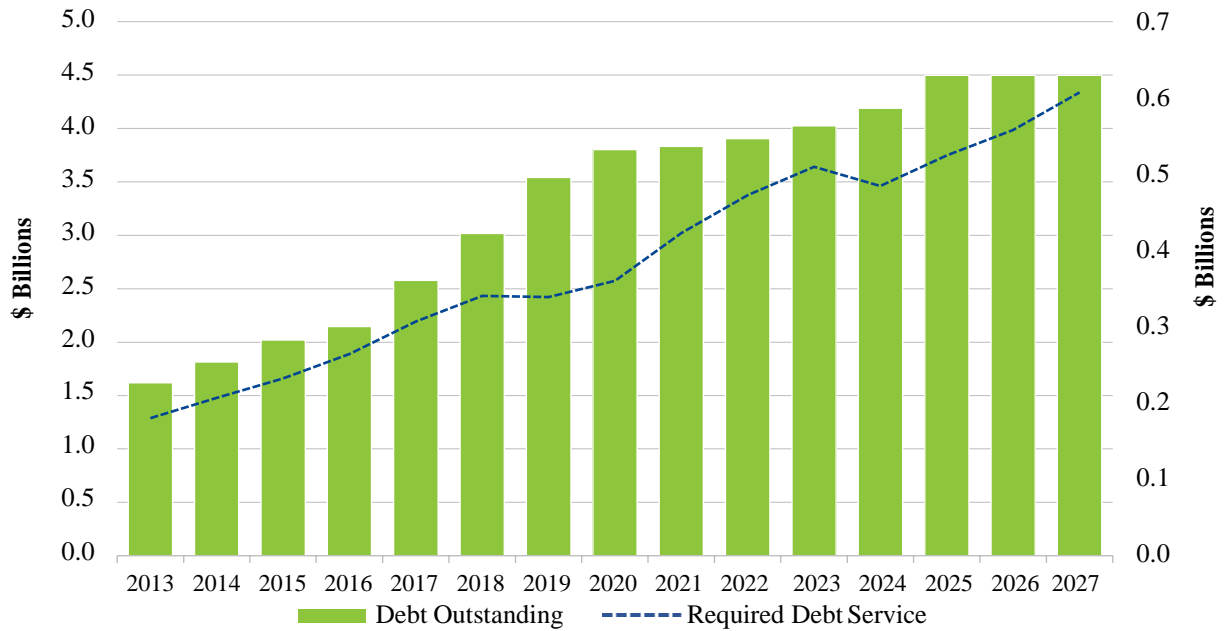
Use of Variable Rate Debt, Bond Insurance, Interest Rate Exchange Agreements and Guaranteed Investment Contracts

MDOT does not have variable rate debt or bond insurance on CTBs nor does MDOT use interest rate exchange agreements or guaranteed investment contracts.

Trends in Transportation Debt

Historically, MDOT has used a combination of current revenues and bond financing to fund its capital program. Reliance on debt to support capital projects has often varied with revenue performance and cash flow requirements. For example, in 2008 and 2009 revenues were affected by the slowing economy and consequently MDOT increased its reliance on debt to support capital projects. The growth in debt outstanding slowed substantially in 2010 and in 2011, revenues were slightly higher than target levels at the same time capital funds were not expended as quickly as anticipated, therefore the issuance of debt was delayed. Transportation debt outstanding and required debt service currently projected for the next 10 fiscal years are shown in ***Graph 4***. A detailed historical summary of MDOT debt activity may be found in ***Schedule C-3***.

Graph 4: Transportation Debt Outstanding and Required Debt Service



Projected bond issuances are based on MDOT’s revenue projections, the draft six-year capital budget for transportation projects, and adhere to statutory debt outstanding limitations and bondholder covenants. The following table provides a detailed summary of projected MDOT debt activity.

Summary of Projected Debt Activity MDOT Consolidated Transportation Bonds (millions)					
Fiscal Year	Debt Outstanding at Beginning of Year	New Issues	Redeemed	Debt Outstanding at End of	Required Debt Service
2018	\$2,578	\$660	\$221	\$3,017	\$341
2019	\$3,017	\$725	\$200	\$3,542	\$339
2020	\$3,542	\$465	\$205	\$3,802	\$360
2021	\$3,802	\$295	\$263	\$3,834	\$423
2022	\$3,834	\$380	\$311	\$3,903	\$473
2023	\$3,903	\$465	\$344	\$4,024	\$510
2024	\$4,024	\$475	\$312	\$4,187	\$485
2025	\$4,187	\$645	\$336	\$4,496	\$525
2026	\$4,496	\$360	\$357	\$4,499	\$558
2027	\$4,499	\$400	\$403	\$4,496	\$607

C. Grant Anticipation Revenue Vehicles (“GARVEE”) Bonds

Purpose

Grant Anticipation Revenue Vehicles (“GARVEE”) Bonds are authorized by State statute to leverage federal aid to finance the cost of transportation facilities. GARVEEs were used as a part of the funding plan for the Intercounty Connector (“ICC”) project, in addition to various other debt instruments and cash. The use of GARVEEs for the ICC allowed the project to be constructed sooner than otherwise would have been possible and with less reliance on the State’s available funds.

Security

GARVEE bonds are secured by a pledge of federal transportation funds received by the State which approximate \$548.64 million annually. In addition, there is a subordinate pledge of certain State Transportation Trust Fund (“TTF”) tax sources. The GARVEEs were also structured to include debt service reserve funds for additional security.

Limitations to Debt Issuance

Statute limits the total amount that can be issued for GARVEEs to an aggregate principal amount of \$750.0 million, with a maximum maturity of 12 years. Under state law, the proceeds could only be used for the ICC. Legislation enacted by the 2005 General Assembly specified that GARVEE bonds be considered tax-supported debt in the CDAC affordability analysis.

Current Status:

Debt Outstanding as of June 30, 2017: \$206,590,000

Ratings

GARVEEs are currently rated AAA by Standard and Poor’s, Aa2 by Moody’s Investors Service and AA+ by Fitch Ratings.

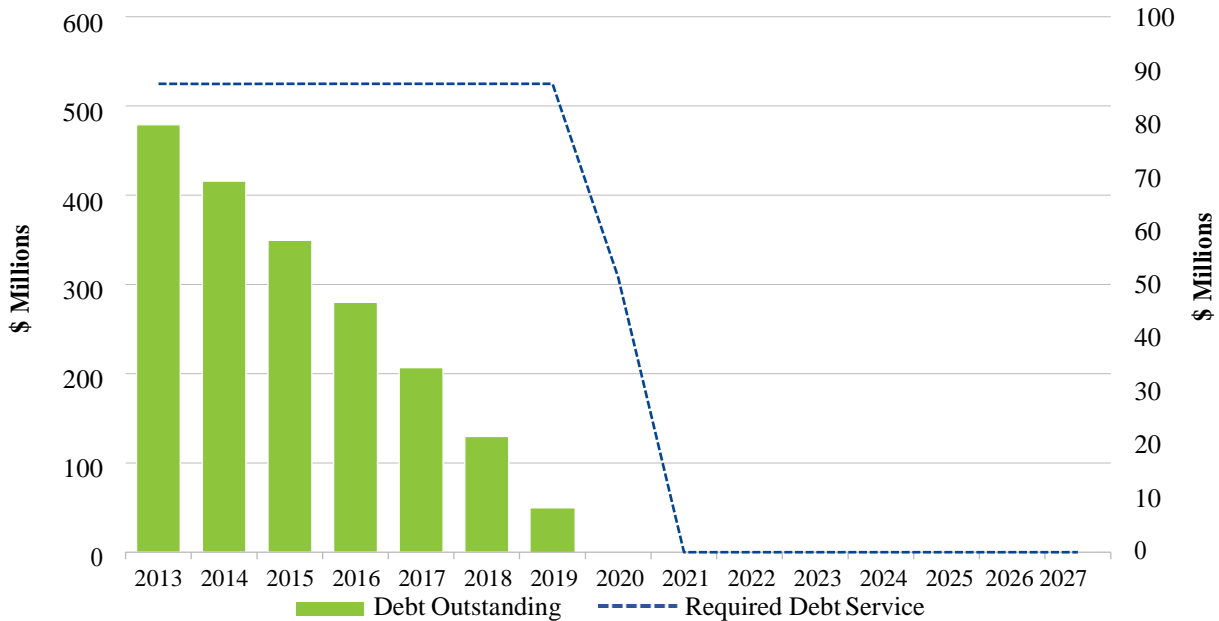
Use of Variable Rate Debt, Bond Insurance, Derivatives and Guaranteed Investment Contracts

The GARVEE bonds are fixed rate bonds, and were issued without bond insurance due to the subordinate pledge of the TTF and the availability of debt service reserve funds. The Authority has not used derivatives or guaranteed investment contracts.

Trends in GARVEE Debt

A total of \$750.0 million in GARVEE bonds have been issued by the Maryland Transportation Authority. The first issuance occurred in May 2007 and totaled \$325.0 million with a true interest cost of 3.99%. In December 2008, the Authority sold the remaining \$425.0 million of GARVEE bonds with a true interest cost of 4.31%. GARVEE debt outstanding and required debt service for the past five fiscal years and projections until the debt is repaid are shown in **Graph 5**. On August 9, 2017 the Series 2007 GARVEE Bonds were refunded and redeemed through the issuance of a Series 2017 GARVEE Refunding Bond. The final GARVEE bond matures on March 1, 2020 and no further issuances are projected, except in the event of another refunding opportunity.

Graph 5: Garvee Bonds Debt Outstanding and Required Debt Service



D. Lease and Conditional Purchase Financings

Purpose

The State has financed assets using capital leases, energy leases and conditional purchase financings through Certificates of Participation (“COPs”). In a capital lease financing the State builds an equity interest in the leased property over time and gains title to such property at the end of the leasing period. Leases have been used for the acquisition of both real property and equipment. Under current practice, capital leases for equipment (primarily computers and telecommunications equipment) are generally for periods of five years or less. Real property capital leases have a longer term (in the range of 20 to 30 years) and have been used to acquire a wide variety of facilities. In all leases, the term of the lease does not exceed the economic life of the property. The State also uses lease-purchase agreements with a maximum term of 15 years to provide financing for energy conservation projects at State facilities.

The CDAC considers capital leases in accordance with current Generally Accepted Accounting Principles (“GAAP”). Therefore if a lease meets one or more of the following four criteria it is classified as a capital lease and thereby included as tax-supported debt as long as the lease is supported directly or indirectly by State tax revenues:

- The lease transfers ownership of the property to the lessee (user) by the end of the lease term.
- The lease allows the lessee (user) to purchase the property at a bargain price at fixed points in the term of the lease and for fixed amounts.
- The term of the lease is 75% or more of the estimated useful economic life of the property.
- The present value of the lease payments is 90% or more of the fair value of the property.

A discussion of potential changes to the GAAP capital lease classifications is included in Section V of this report.

State Agencies have also made significant use of COPs, another form of conditional lease purchase debt financing. Some COPs are supported by facility revenues and therefore are not considered to be tax supported and are not included in the capital lease component of the affordability analysis. The following lease activity for equipment and energy performance contracts does not include leases for the Maryland Stadium Authority (“MSA”) which are reported as MSA debt.

Security

Lease payments by the State are subject to appropriation. The State has represented to the lessors that it will do all things lawfully within its power to obtain, maintain, and pursue funds to make the lease payments. In the event of non-appropriation, the State will surrender the secured property to the lessor. Energy lease payments are made from the agencies' annual utility appropriations utilizing savings achieved through the implementation of energy performance contracts.

Limitations to Debt Issuance

Financings described in this section may be subject to statutory limitations such as transportation leases or to various approval processes including but not limited to legislative review and approval by the Board of Public Works.

Current Status:

The following table summarizes the current tax-supported leases and tax-supported conditional purchase financings with debt outstanding totaling \$216,653,046 as of June 30, 2017.

State Agency	Facilities Financed	Debt Outstanding	Debt Service
Treasurer’s Office	Capital Equipment Leases	\$15.1	\$5.4
	Energy Performance Projects	12.5	1.9
Transportation	Headquarters Office Building	12.4	2.8
	MAA Shuttle Buses - BWI	0	1.2
General Services	Hilton Street Facility	0.2	0.2
	Prince George’s County Justice Center	14.2	1.5
Transportation Authority	State office parking facility	18.0	0.7
Health	Public Health Lab	144.2	14.0
Total		\$216.7	\$27.7

Ratings

The Treasurer's Office equipment and energy leases are not rated. However, the MAA Shuttle Bus COPs are rated AA+ by S&P, Aa2 by Moody's and AA by Fitch. The lease revenue bonds issued by MEDCO for the MDOT headquarters building are rated AA+ by S&P and Aa2 by Moody's, while those for the MDH Public Health Lab are rated AA+ by S&P and Aa1 by Moody's.

Energy Leases

As directed by statute, tax supported debt does not include capital leases used to finance energy performance contracts if, as determined by the CDAC, energy savings that are guaranteed by the contractor: 1) equal or exceed the capital lease payments on an annual basis; and 2) are monitored in accordance with reporting requirements adopted by the CDAC (see State Finance and Procurement §8-104). The Committee has adopted the following guidelines in regards to its analysis of energy leases:

1. All energy leases that do not have any guarantees should be included as tax supported debt in CDAC's affordability analysis.
2. Prior to the recommendation of the total amount of new State debt that prudently maybe authorized for the next fiscal year, CDAC should monitor and review the following:

If construction of the energy improvement is complete:

- The Guarantee must be current and not expired
- If the amount of the Guarantee is greater than or equal to the annual debt service on the lease, the lease will not be included as tax supported debt in CDAC's affordability analysis.

If the energy project is in construction:

- If the proposed amount of the surety bond that will be posted is greater than or equal to the future annual debt service on the lease, the lease will not be included as tax supported debt in CDAC's affordability analysis.

Based on these criteria the following leases are not included as tax-supported debt in the affordability analysis.

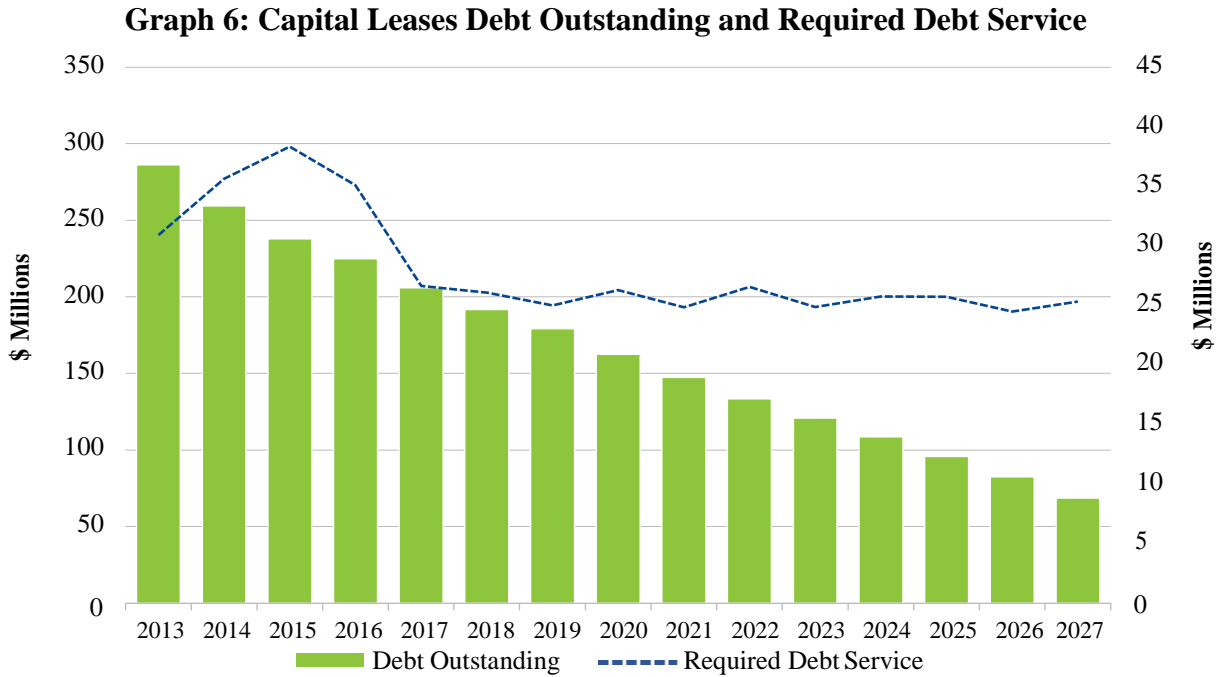
Energy lease project	Debt Service for FY2017	Annual Surety Bond Amount
Maryland School for the Deaf	\$145,629	\$693,955
DPSCS – Hagerstown Prison	488,395	909,321
MDH- Deer’s Head Hospital	255,946	255,946
Spring Grove Hospital	1,896,641	2,423,576
Department of Agriculture	194,960	291,708
DGS - Multi-Service Centers	1,588,714	2,277,986
University of Baltimore	649,125	718,625
UMCP	1,836,990	2,262,212
UMCES (Horn Point Lab)	148,783	219,767
State Police	487,258	1,094,095
Workforce Technology	169,101	206,449
DPSCS – Jessup	1,269,302	1,524,850
Maryland Aviation Administration	1,600,404	2,147,121
State Highway Administration	1,828,852	2,088,927
Maryland Transit Administration	493,823	656,974
Total	\$13,049,923	17,771,512

The following leases are included as tax-supported debt in the affordability analysis on *Tables 1 and 2* because the energy savings were not guaranteed in an amount that was equal to or greater than annual debt service. In some instances surety bonds are less than the debt service, or have been cancelled due to facility closure or cost savings.

Energy lease project	Debt Service for FY 2017	Debt Outstanding as of 6/30/2017
DGS – District Court	\$194,160	\$0
DGS - State Office Complex	454,116	0
MDH - Rosewood Center	191,663	0
MDH - Rosewood Center	156,934	0
St. Mary's College of Maryland	205,295	577,310
Veterans Affairs	56,638	375,447
MDH – Springfield Hospital	138,649	770,893
Stadium Authority (Ravens)	263,232	1,284,813
Stadium Authority (Oriole Park)	716,433	3,304,366
Maryland Port Administration	503,371	6,189,807
Total	\$2,880,491	\$12,502,636

Trends in Lease and Conditional Purchase Financings

Debt outstanding from lease and conditional purchase financings and required debt service for the past five fiscal years and projections for the next 10 fiscal years are shown in **Graph 6**.



Projected financings are based on annual surveys of State agencies. Fiscal year 2018 through 2027 are estimated to include \$7.5 million of capital equipment leases. The Department of General Services (“DGS”) has advised the CDAC that all of the projected energy lease financings will have surety bond guarantees that equal or exceed the debt service payments throughout the term of the lease; therefore, these leases are not included in the CDAC Affordability Analysis.

The following table provides a detailed summary of projected lease and conditional purchase financings.

Summary of Projected Debt Activity					
Lease and Conditional Purchase Financings					
(millions)					
Fiscal Year	Debt Outstanding at Beginning of Year	New Issues	Redeemed	Debt Outstanding at End of Year	Required Debt Service
2018	\$206	\$8	\$22	\$192	\$26
2019	\$192	\$8	\$21	\$179	\$25
2020	\$179	\$8	\$25	\$162	\$26
2021	\$162	\$8	\$23	\$147	\$25
2022	\$147	\$8	\$22	\$133	\$27
2023	\$133	\$8	\$20	\$121	\$25
2024	\$121	\$8	\$20	\$109	\$26
2025	\$109	\$8	\$21	\$ 96	\$26
2026	\$ 96	\$8	\$22	\$ 82	\$24
2027	\$ 82	\$8	\$21	\$ 69	\$25

E. Maryland Stadium Authority (“MSA”)

Purpose

The MSA was created in 1986 as an instrumentality of the State responsible for financing and directing the acquisition and construction of professional sports facilities in Maryland. Since then, the MSA’s responsibility has been extended to include convention centers in Baltimore City, Ocean City and a conference center in Montgomery County, and the Hippodrome Theater in Baltimore, Maryland.

The Baltimore City Public Schools Construction and Revitalization Act of 2013 (Chapter 647 of the Maryland Laws of 2013) assigns responsibility to MSA for the issuance of bonds to finance and manage certain public school construction and improvement projects in Baltimore City. Additional information is available at <http://www.mdstad.com/current-projects/baltimore-city-public-schools-construction>.

Additional information on MSA’s financings is included in Appendix B.

Security

Lease rental payments subject to annual appropriation by the State are pledged to pay debt service on certain MSA bonds. Revenues pledged to pay debt service include lottery revenues from certain select lottery games that are transferred to MSA for operations and the State’s lease rental payments, General Fund appropriations, ticket surcharges and other operating revenues. Lottery revenues have been pledged for other bond issuances including bonds authorized under the Baltimore City Public Schools Construction and Revitalization Act of 2013. These bonds are not considered tax-supported debt and are not included in the CDAC affordability analysis and the debt data that is presented in this report.

Ratings

MSA bonds currently have a long-term rating of AA+ by Standard and Poor’s, Aa2 by Moody’s Investors Service and AA by Fitch Ratings. Short-term bonds are currently rated A-1+ by Standard and Poor’s, VMIG1 by Moody’s Investors Service and F1+ by FitchRatings.

Use of Variable Rate Debt, Bond Insurance, Interest Rate Exchange Agreements and Guaranteed Investment Contracts

MSA has one outstanding issue of approximately \$44.2 million of outstanding variable rate debt that has been swapped to fixed rate. Barclay’s is the counterparty on the swap.

Current Status:

Debt Outstanding as of June 30, 2017: \$124,300,903

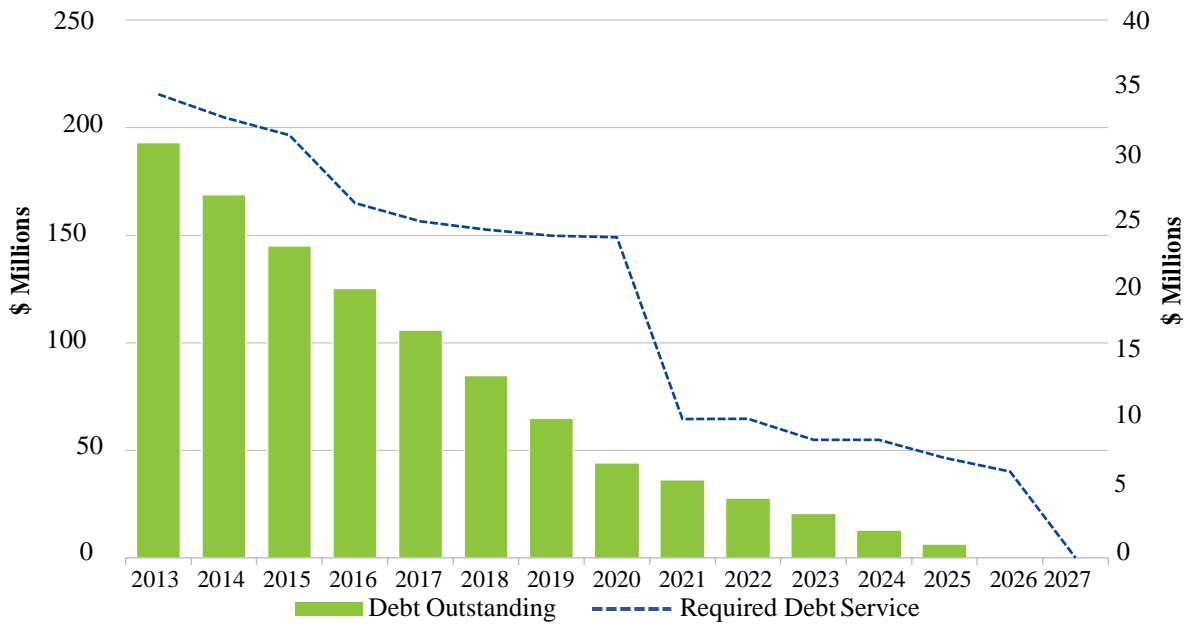
<i>FY 2017 Debt Outstanding and Debt Service by Project</i>		
<i>(\$ in millions)</i>		
	Debt	
	<u>Outstanding</u>	<u>Debt Service</u>
Oriole Park at Camden Yards	\$38.6	\$14.1
Ravens Stadium	44.2	6.4
Montgomery County Conference Center	9.0	1.6
Hippodrome Theater	7.4	1.6
Camden Station Renovation	<u>5.1</u>	<u>0.7</u>
Total Tax Supported Debt:	\$104.3	\$25.4
Oriole Park at Camden Yards	\$3.3	\$0.7
Ravens Stadium	<u>1.3</u>	<u>0.3</u>
Total Energy Leases:	\$4.6	\$1.0

(a) Leases are debt of the MSA and are not included as part of tax-supported debt because guaranteed utility savings exceeds the annual debt service.

Trends in MSA Debt

Debt outstanding and required debt service for MSA tax-supported debt for the past five fiscal years and projections for the next 10 fiscal years are shown in **Graph 7** on the next page. In fiscal year 2018 MSA expects to sell \$520.0 million in Baltimore City Public School Construction and Revitalization Revenue bonds with the proceeds being used for the balance of plan year 1 renovation and replacement of Baltimore City Public Schools.

Graph 7: Stadium Authority Debt Outstanding and Required Debt Service



F. Bay Restoration Fund Revenue Bonds (Bay Restoration Bonds)

Purpose

Bay Restoration Bonds are authorized by statute as up to 15-year obligations to finance grants to waste water treatment plants (“WWTP”) for upgrades to remove nutrients thereby reducing nitrogen and phosphorus loads in the Chesapeake Bay and its tributaries.

Security

Bay Restoration Bonds are secured by a pledge of revenues deposited in the Bay Restoration Fund from a monthly charge of \$5 for most Maryland households served by a WWTP. The Bay Restoration Fund is administered by the Water Quality Financing Administration of the Maryland Department of the Environment.

Current Status:

Debt Outstanding as of June 30, 2016: \$292,880,000

Ratings

Bay Restoration Bonds are currently rated Aa2 by Moody’s Investor Service and AA by Standard & Poor’s.

Use of variable rate debt, bond insurance, derivatives and Guaranteed Investment Contracts (GIC)

The indenture permits the issuance of variable rate debt although none has been issued to date. The structure for the Series 2008, Series 2014 and Series 2015 issues were fixed rate only, with no debt service reserve that may have required guaranteed investment contracts and no bond insurance.

Trends in Bay Restoration Bond Debt

The Water Quality Financing Administration has issued a total of \$320.0 million over three sales in FY 2008, 2014, and 2016. The most recent sale occurred in December 2015 and totaled \$180.0 million. The bonds received a 2.59% TIC. Another \$100.0 million issuance is anticipated in FY 2020. Bay Restoration Bond debt outstanding and required debt service for the past five fiscal years and projections for the next 10 fiscal years are shown in **Graph 8** below.

The timing and amount of future bond issuances will depend on the fee revenue attained and project cash flow funding requirements as upgrades of WWTP proceed. The following table provides a detailed summary of projected Bay Restoration Bond debt activity.

Summary of Projected Debt Activity
Bay Restoration Bonds
(millions)

Fiscal Year	Debt Outstanding at Beginning of Year	New Issues	Redeemed	Debt Outstanding at End of Year	Required Debt Service
2013	39	0	3	36	5
2014	36	100	3	133	5
2015	133	0	3	130	8
2016	130	180	8	302	14
2017	302	0	9	293	23
2018	293	0	19	274	32
2019	274	0	20	253	32
2020	253	100	21	332	32
2021	332	0	22	310	38
2022	310	0	33	277	46
2023	277	0	34	243	46
2024	243	0	31	211	41
2025	211	0	33	178	41
2026	178	0	34	144	41
2027	144	0	36	108	41

III. CAPITAL PROGRAMS

A. State of Maryland Capital Program

Capital Program Structure

The State's annual capital program includes projects funded from General Obligation Bonds, general tax revenues, dedicated tax or fee revenues, federal grants, and auxiliary revenue bonds issued by State agencies.

The General Obligation Bond-financed portion of the capital program consists of an annual Maryland Consolidated Capital Bond Loan ("MCCBL"). The MCCBL is a consolidation of projects authorized as general construction projects and various Administration-sponsored capital programs, capital grants for non-State-owned projects, and separate individual legislative initiatives.

General Obligation Bond funds are occasionally supplemented with State general fund capital appropriations ("PAYGO") authorized in the annual operating budget. The amount of funds available to fund capital projects with operating funds varies from year to year. Within the past decade PAYGO appropriations have been as high as \$147.7 million in fiscal year 2007 and as low as \$60,000 in fiscal year 2010. The most recent PAYGO appropriation totaled \$122.0 million in fiscal 2017.

The operating budget also traditionally includes PAYGO capital programs funded with: (i) a broad range of dedicated taxes, loan repayments, and federal grants such as the State's Drinking Water Revolving Loan Program and the Water Quality Revolving Loan Program; (ii) individual dedicated revenue sources such as the property transfer tax which supports the State's land preservation programs; and (iii) specific federal grants which provide funds for armory construction projects, veteran cemetery expansion projects, and housing programs.

State-Owned Facilities

Requests for improvements to State-owned facilities are expected to exceed \$3.4 billion over the next five years. Higher education, judiciary facilities, and correctional facilities comprise the bulk of these requests.

State Capital Grants and Loans

State capital grants and loans are allocated to local governments and non-profit organizations. These grants and loans are primarily used to improve existing, and construct new public schools and community college buildings. Grants and loans are also used to restore the Chesapeake Bay, improve and expand access to quality health care, and revitalize existing communities.

Authorizations for capital grants and loans have increased in recent years to accommodate the need to improve the State's public elementary and secondary schools. Future requests for funding are expected to remain high for public schools, community colleges, and environmental programs. The need for funding environmental programs reflects the State's efforts to restore the Chesapeake Bay.

Requests for State capital grant and loan programs to be funded with General Obligation Bonds are expected to exceed \$5.2 billion over the next five years.

Legislative Initiatives

Funding requests are also submitted each year by members of the General Assembly to provide financial support for local programs or projects of statewide interest. These bond requests include capital grants to local governments and private non-profit sponsors to support construction of local public and private facilities. These requests are estimated to total \$175.0 million over the next five years based on the past five-year average of \$35.0 million per year.

Summary of Capital Program: FY 2019 – 2023

The total capital requests are estimated at \$8.5 billion for the next five years. By contrast, the Department of Budget and Management anticipates recommending a five-year capital improvement program of approximately \$4.975 billion in General Obligation Bonds (based on the authorization levels recommended by the Committee on September 28, 2016). The total capital program will depend on the amount of general funds and other non-General Obligation Bond sources available for capital funding.

FY 2019 – FY 2023 Requests versus Anticipated Funding (millions)

Current and Anticipated Requests	
State-Owned Facilities	\$3,108
Capital Grant Programs	\$5,257
Legislative Initiatives	\$175
Total Requests	\$8,540
CDAC Recommendation	\$4,975
Difference Between Anticipated Requests and Funding Level	\$3,565

B. Capital Improvement and School Construction Needs

The Public School Facilities Act of 2004 established a State goal to provide \$2.0 billion in State funding over eight years to address deficiencies, or \$250 million per year through fiscal 2013. Since fiscal year 2006, the State has invested a total of \$4.20 billion in public school construction, for an average of \$296 million annually.

In fiscal year 2018, public school construction received \$280 million in general obligation bond funding. The Governor's fiscal year 2018 Capital Improvement Program proposed to continue the \$280.0 million annual funding commitment for public school construction through fiscal year 2022. It is important to recognize that escalation in building costs since 2004 has significantly raised the actual cost of the basic goal of the Public School Facilities Act - to bring all public schools up to minimum standards by fiscal year 2013. Funding requests from local jurisdictions and school construction needs continue to exceed the anticipated level of State funding.

The Baltimore City Public Schools Construction and Revitalization Act of 2013 (chapter 647 of the Maryland Laws of 2013) allocates \$20 million in annual State lottery proceeds, \$20 million in annual Baltimore City Public Schools revenues and \$20 million in annual Baltimore City revenues to support a multiyear, \$1.1 billion public school construction and renovation initiative in Baltimore City. The Maryland Stadium Authority is authorized to issue up to \$1.1 billion in bonds to fund the initiative and the dedicated State and local funds are pledged to pay debt service for the life of the bonds. Additional information is available at <http://www.mdstad.com/current-projects/baltimore-city-public-schools-construction>.

The enacted MCCBL included an additional \$20.0 million for local school systems with significant enrollment growth or relocatable classrooms. The 2015 General Assembly passed legislation (senate Bill 490/Chapter 355), which establishes a mandated appropriation in the capital budget of \$20.0 million annually beginning in fiscal 2017 for local school systems impacted by significant enrollment growth and reliance on relocatable classrooms. Currently, six counties are eligible for a share of these funds. The fiscal year 2018 budget includes \$40.0 million for this initiative, \$20.0 million more than the mandated appropriation.

IV. CREDIT RATING AGENCY REPORTS

A. Rating Discussion

On July 25, 2017, in conjunction with the sale of Maryland's General Obligation Bonds State and Local Facilities Loan of 2017, Second Series, Moody's Investors Service, Standard & Poor's (S&P) and Fitch Ratings all affirmed their AAA ratings for Maryland's General Obligation debt.

Maryland is one of only 11 states to hold the coveted AAA rating, the highest possible rating, from all three major rating agencies. Standard & Poor's has rated the bonds AAA since 1961. Moody's has assigned the bonds a rating of Aaa since 1973, and Fitch Ratings has rated the bonds AAA since 1993. The other ten states that hold AAA ratings from all three rating agencies are Delaware, Georgia, Iowa, Missouri, North Carolina, South Dakota, Tennessee, Texas, Utah and Virginia.

B. Excerpts from Rating Agency Reports

Generally there is consensus among the rating agencies in evaluating the State's credit strengths and weaknesses. All three major rating agencies cite Maryland's debt policies, fiscal management and economy as credit positives and the state's debt burden and pension funding as concerns. The complete reports are available on the Treasurer's website at www.treasurer.state.md.us and may be summarized as follows:

Financial Management

All three rating agencies point to the State's history of strong, sound financial management as a credit strength, with Moody's saying the State has a "history of proactive financial management." All three commend the Board of Revenue Estimates' binding, consensus-based revenue forecast and the Board of Public Works' ability to adjust spending mid-year when necessary, with S&P Global Ratings mentioning the State has a "long history of... frequent and timely budget adjustments to align revenues and expenditures and long-term financial planning." Fitch Ratings notes that its rating reflects Maryland's "exceptionally strong" financial resilience and its unlimited ability to increase revenues, as well as its strong reserve levels. Moody's likewise highlights the State's liquidity, which it states is "bolstered by unfettered access to the State's short-term investment pool," which totaled \$6.5 billion at the end of fiscal year 2017.

Debt Policies and Debt Burden

In the case of all three rating agencies, the State's Capital Debt Affordability Committee process and constitutionally imposed fifteen-year amortization of debt are considered credit strengths and help to offset concerns the rating agencies have regarding the State's debt burden, which S&P Global Ratings calls "moderate." Fitch notes that "centralized debt planning and issuance" managed by the State Treasurer's Office is an additional credit strength. Moody's states that the 15-year amortization requirement "quickly replenishes the State's debt capacity and helps restrain growth in outstanding balance." S&P echoes this assessment, noting our "well-developed debt management practices with a moderate debt burden for most measures and rapid amortization."

Economy

In assigning its ‘AAA’ long-term rating and stable outlook, S&P Global Ratings said: “The rating reflects what we view as the state’s “broad and diverse economy,” and “continued strong wealth and income levels.” S&P’s further states: “The stable outlook reflects Maryland’s continued focus on structural budget alignment and maintenance of minimum state reserve levels.” Fitch observed that Maryland’s economy “has long benefited from proximity to the nation’s capital” and notes that the State’s dominant sector is services, including “professional and business services, education, health, and government”, with Baltimore’s trade and port activity also factoring in as a significant part of its economic base. Fitch also mentions a recent uptick in economic growth in the State which has brought Maryland’s personal income and employment growth to a level “matching or exceeding national levels in recent months.”

Each rating agency cites ties to the federal government as both benefits and risks to Maryland’s economy, with Moody’s calling the large federal presence in Maryland a “mixed blessing.” S&P Global Ratings notes the State’s economy “continues to recover slowly after weakness in recent years due to federal budget uncertainty and sequestration” while also stating that the government sector and federal agencies are economic strengths. Fitch writes that despite the “drag posed by federal sequestration,” the federal government continues to be an “important anchor... supporting the State’s solid economic performance.”

Pension and other liabilities

Fitch Ratings calls pensions a “significant burden,” but notes that the state has taken multiple steps to reduce their burden and improve sustainability over time. Moody’s indicated it considers the State’s retirement system its “most significant credit challenge,” but goes on to recognize that “the state has taken a number of steps to manage its pension burden,” which demonstrates its “proactive management approach.” S&P’s indicates “failure to demonstrate a consistent commitment to fully funding its pensions could also pressure [Maryland’s] rating.”

C. Moody’s 2017 State Debt Medians

In May 2017 Moody’s released its 2017 State Debt Medians report. This annual report uses various debt measures to compare state debt burdens, which is one of many factors that Moody’s uses to determine state credit quality. Selected measures from the report are summarized in the table below. The Moody’s calculation of debt outstanding as a percent of personal income will differ from the CDAC calculations due to timing variances. For example, the Moody’s reported ratio for 2017 measures net state tax-supported debt as of calendar year-end 2016 compared to personal income as of 2015.

	<u>Maryland</u>	<u>Mean</u>	<u>Median</u>	<u>Ranking</u>
Measure	\$2,122	\$1,473	\$1,006	11
Net Tax-Supported Debt per Capita	3.8%	3.0%	2.5%	15
Net Tax-Supported Debt as % of Personal Income	3.3%	2.8%	2.3%	15
Net Tax-Supported Debt as % of GDP	6.5%	4.4%	4.1%	9
Debt Service Ratio				

V. AFFORDABILITY ANALYSIS

The objective of this affordability analysis is to draw a proper balance between two basic interests: the State's capital needs and the State's ability, as measured by the Committee's self-imposed affordability criteria, to repay the debt issued to finance those capital needs.

A. The Concept of Affordability

The ultimate test of debt affordability is the willingness and ability of the State to pay the debt service when due. Apart from revenue sources which are dedicated by law, the allocation of future resources between debt repayment and other program needs is a matter of judgment. A careful and comprehensive determination of affordability should take into consideration the demand for capital projects, the relationship between debt authorization and debt issuance, available and potential funding mechanisms, overall budgetary priorities, and revenues.

The Committee believes that the crux of the concept of affordability is not merely whether or not the State can pay the debt service; rather, affordability implies the ability to manage debt over time to achieve certain goals. Maryland has a long tradition of effectively managing its finances and debt. The challenge of debt management is to provide sufficient funds to meet growing capital needs within the framework of the State's debt capacity, thereby maintaining the AAA credit rating.

B. Affordability Criteria

The Committee has self-imposed affordability criteria which are: State tax-supported debt outstanding should be no more than 4.0% of State personal income; and debt service on State tax-supported debt should require no more than 8.0% of revenues.

C. 2017 Affordability Recommendation

At its September 29, 2017 meeting, the Committee approved a total of \$995 million for new general obligation authorizations by the 2018 General Assembly to support the fiscal year 2019 capital program. The vote was 4-1, with the Treasurer voting against the proposed amount.

In addition to determining and recommending a prudent affordable authorization level for the coming year, the Committee also sets out planning assumptions for the State to use in its capital program planning process. The Committee reviewed several options that were projected to maintain debt affordability ratios within the CDAC benchmarks of 4% debt outstanding to personal income and 8% debt service to revenues. The Secretary of Budget and Management then made a motion to maintain the authorization at \$995 million in future fiscal years. The vote was 4-1, with the Treasurer voting against the proposal commenting that the role of the Committee was to recommend an affordable authorization level while the role of the General Assembly was to balance the needs of the State. The Treasurer also noted that maintaining the 3% growth level instituted by the Committee in 1992 and would remain within the CDAC affordability benchmarks

The Committee recognizes that there are multiple annual authorization levels and patterns that would result in adherence to the benchmarks, depending on future levels of personal income and State revenue. The Committee's planning assumptions for future authorizations will be reviewed in preparation for the 2018 report in light of updated revenue and personal income

projections and authorization levels may be adjusted to adhere to these affordability benchmarks.

Current estimates for personal income and revenues were updated in September 2017 to reflect the Board of Revenue Estimates September forecast and both support the recommended authorization while adhering to the affordability criteria. Schedules of Personal Income and Revenues are in *Schedule A-1 and Schedule A-2*, respectively. The Committee reviewed these estimates as well as assumptions for interest rates, authorizations, and issuances at its meeting on September 28. The Committee believes that revenues, personal income and interest rates have been prudently estimated. Because the affordability ratio for debt service to revenues is near the 8.0% benchmark, any variation to the assumptions for revenues, interest rates, and projected activity in tax-supported debt issuance would impact directly the amount of future tax-supported authorizations and issuances.

The virtue of the annual CDAC process is the ability, if needed, to adjust authorizations in future years should forecasts of personal income and revenues decline or if projections for debt service rise because of increases in interest rates. However, these reductions to authorizations can be significant. For example, primarily as a result of declining revenues, the projected legislative authorizations of general obligation bonds in the five year period of 2012 -2016 declined from \$5.6 billion in the 2008 CDAC Report to \$4.7 billion in the 2011 CDAC Report. See the history of projected authorizations on page 50. *Schedule B-4* highlights the effect of the maturity limit of 15 years on the State's General Obligation Bonds and the resulting rapid amortization of current outstanding debt. Debt service on current outstanding debt declines appreciably after about five years.

D. Comparison of Recommendation and Criteria

To analyze the relationship of the Committee's recommendation for general obligation debt to the affordability criteria, each component of tax-supported debt and debt service has been examined.

Debt Outstanding

The rise in total tax-supported debt in *Table 1* reflects the projected level authorizations and issuances of general obligation bonds and the increased authorization of transportation bonds as the department approaches its statutory debt limit of \$4.5 billion. Total general obligation debt outstanding rises steadily from \$9.5 billion in fiscal year 2018 to \$9.8 billion in fiscal year 2027. Debt outstanding on Maryland Stadium Authority bonds are projected to decline with the assumption of no future issuances. GARVEE debt outstanding peaked at \$704 million in fiscal year 2009 and is expected to be retired in fiscal year 2020. Bay Restoration Bond debt will continue to increase with one additional planned issuance in fiscal year 2020. Following that sale, debt outstanding Bay Restoration Bonds will peak at \$332 million and decline thereafter.

Debt Outstanding as a Percent of Personal Income

The ratio of debt outstanding to personal income reflects the State's reliance on revenues (sales tax and income tax) that are primarily based on consumption and income. Debt outstanding is measured as of the fiscal year end and personal income is measured as of the calendar year end. For example, the fiscal year 2017 ratio is calculated using debt outstanding as of June 30, 2017 and personal income is projected as of December 2016.

The ratio of State tax-supported debt outstanding to personal income (*Table 1*) peaked at

3.67% in fiscal year 2016 and will decline to 2.80% by fiscal year 2027. At all times, the ratio remains below the affordability criterion of 4.0%.

**State Tax Supported Debt Outstanding Components
and Relationship to Personal Income**

FY 2013-2017 are final; FY 2018-2027 are projections and subject to change

State Tax Supported Debt Outstanding (in \$ Thousands)

Fiscal Year	General Obligation Bonds ^(a)	Consolidated Transportation Bonds	Capital Leases ^(b,c)	Stadium Authority	Bay Restoration Bonds	Garvee Bonds	Supported Debt Outstanding	Fiscal Year
2013	8,005,802	1,618,000	286,164	193,005	35,995	479,035	10,618,001	2013
2014	8,362,343	1,813,000	259,394	168,863	133,055	415,775	11,152,430	2014
2015	8,677,214	2,020,250	237,781	145,022	129,980	349,440	11,559,687	2015
2016	9,465,285	2,146,085	224,978	125,181	301,615	279,780	12,542,925	2016
2017	9,334,206	2,578,385	205,789	105,883	292,880	206,590	12,723,733	2017
2018	9,522,005	3,016,675	191,765	84,790	273,590	129,680	13,218,505	2018
2019	9,663,074	3,542,265	179,070	64,760	253,375	48,865	13,751,409	2019
2020	9,767,295	3,801,510	162,446	43,910	332,075	-	14,107,236	2020
2021	9,857,873	3,833,615	147,438	35,920	309,715	-	14,184,561	2021
2022	9,906,071	3,902,660	133,350	27,520	276,988	-	14,246,589	2022
2023	9,924,413	4,024,140	120,872	20,275	242,674	-	14,332,375	2023
2024	9,925,433	4,187,450	108,561	12,615	211,320	-	14,445,379	2024
2025	9,861,881	4,496,220	95,707	6,080	178,451	-	14,638,339	2025
2026	9,814,669	4,498,610	82,460	-	144,072	-	14,539,811	2026
2027	9,775,135	4,496,345	68,597	-	108,196	-	14,448,274	2027

State Tax Supported Debt Outstanding as a Percentage of Personal Income

(Affordability criteria standard is 4%)

Fiscal Year	General Obligation Bonds ^(a)	Consolidated Transportation Bonds	Capital Leases ^(b,c)	Stadium Authority	Bay Restoration Bonds	Garvee Bonds	Supported Debt Outstanding	Fiscal Year
2013	2.49%	0.50%	0.09%	0.06%	0.01%	0.15%	3.31%	2013
2014	2.52%	0.55%	0.08%	0.05%	0.04%	0.13%	3.36%	2014
2015	2.52%	0.59%	0.07%	0.04%	0.04%	0.10%	3.35%	2015
2016	2.77%	0.63%	0.07%	0.04%	0.09%	0.08%	3.67%	2016
2017	2.62%	0.72%	0.06%	0.03%	0.08%	0.06%	3.57%	2017
2018	2.57%	0.81%	0.05%	0.02%	0.07%	0.04%	3.57%	2018
2019	2.50%	0.92%	0.05%	0.02%	0.07%	0.01%	3.56%	2019
2020	2.43%	0.95%	0.04%	0.01%	0.08%	0.00%	3.51%	2020
2021	2.36%	0.92%	0.04%	0.01%	0.07%	0.00%	3.40%	2021
2022	2.29%	0.90%	0.03%	0.01%	0.06%	0.00%	3.30%	2022
2023	2.21%	0.90%	0.03%	0.00%	0.05%	0.00%	3.19%	2023
2024	2.13%	0.90%	0.02%	0.00%	0.05%	0.00%	3.11%	2024
2025	2.05%	0.94%	0.02%	0.00%	0.04%	0.00%	3.04%	2025
2026	1.97%	0.90%	0.02%	0.00%	0.03%	0.00%	2.92%	2026
2027	1.89%	0.87%	0.01%	0.00%	0.02%	0.00%	2.80%	2027

^(a)Reflects presumed authorizations as follows:

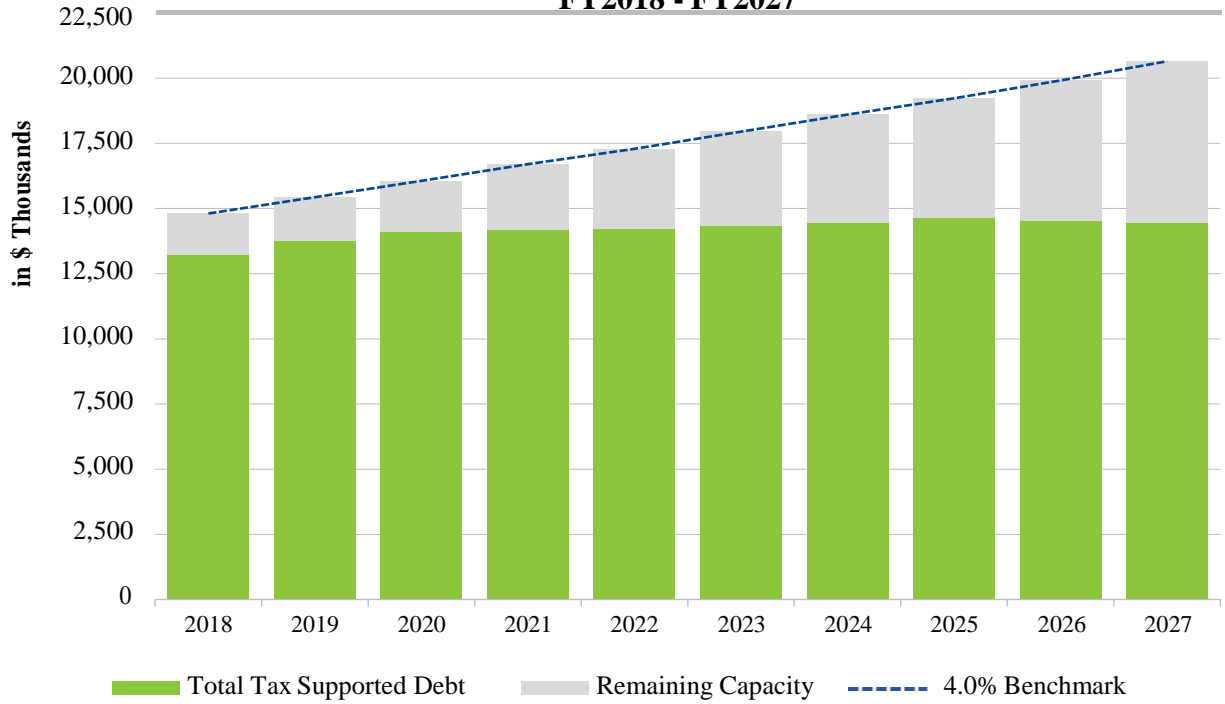
General Assembly Session	2018	2019	2020	2021	2022
Fiscal Year/Capital Budget	2019	2020	2021	2022	2023
(in millions)	\$995	\$995	\$995	\$995	\$995

^(b)Includes financings for a multi-agency office building in St. Mary's County, district court facilities in Prince George's County, a MDOT headquarters building, shuttle buses at BWI airport, the MDH public health lab and parking facilities at the Annapolis Complex and State Center.

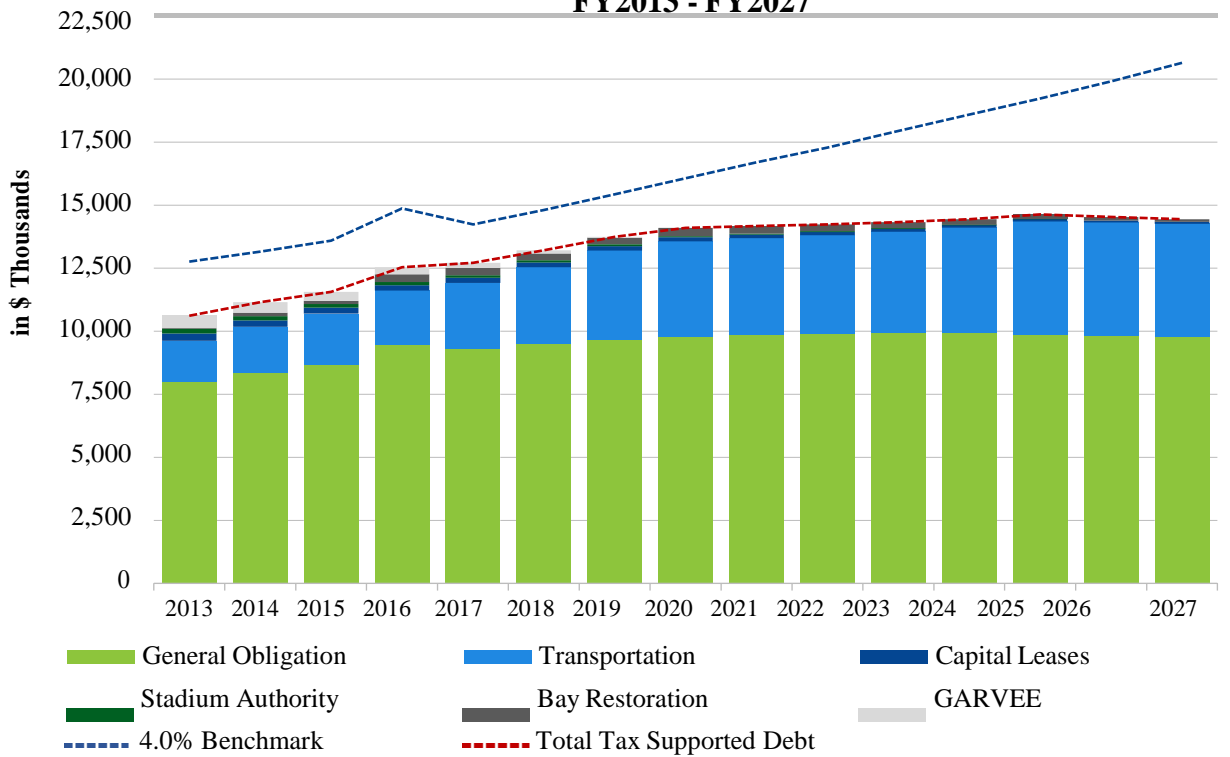
^(c)Leases include equipment, video lottery terminals and energy leases that do not have guaranteed energy savings equal to or greater than the debt service.

Issuance Assumptions; (in millions)	2019	2020	2021	2022	2023
G.O. Issues	\$1,015.0	\$1,010.0	\$995.0	\$995.0	\$995.0
DOT Issues	725.0	465.0	295.0	380.0	465.0
Stadium Authority Issues	0.0	0.0	0.0	0.0	0.0
New Capital Leases – Equip. & EPC	7.5	7.5	7.5	7.5	7.5
GARVEE Bond Issues	0.0	0.0	0.0	0.0	0.0
Bay Bond Issues	0.0	100.0	0.0	0.0	0.0
Total	\$1,747.5	\$1,482.5	\$1,297.5	\$1,382.5	\$1,467.5
Personal Income (billions) (Schedule A-1)	\$385.8	\$401.6	\$417.5	\$432.3	\$448.7

**Tax Supported Debt Outstanding to Personal Income
Available Debt Capacity using the 4.0% Benchmark
FY2018 - FY2027**



**Tax Supported Debt Outstanding to Personal Income
FY2013 - FY2027**



Debt Service

Projected general obligation debt service (*Schedule B-4*) assumes that future interest rates are consistent with current forecasts and also assumes authorizations total \$995 million for the fiscal years 2019 through 2027 as shown in *Schedule B-1*.

Debt Service as a Percent of Revenues

Compared to the prior criterion, debt service as a percent of revenues is a better measure for State financial management purposes, meaning the legislature has control of both variables, revenues through the enactment of taxes and fees and debt service through the authorization of debt. It also more accurately reflects the State's ability to repay its debt.

The ratio of annual debt service to revenues (*Table 2a*) increases to a peak of 7.84% in fiscal year 2023 and decreases to 7.39% in 2027.

State Tax Supported Debt Service TABLE 2A
FY 2013-2017 are final; FY 2018-2027 are projections and subject to change

State Tax Supported Debt Service as a Percent of Revenues (thousands) (Affordability criteria standard = 8%)										
	General	DOT	Bay				Total Tax	Total Tax Supported		
Fiscal Year	Obligation Bonds	Consolidated Bonds ^(b)	Capital Leases ^(c,d)	Stadium Authority	Restoration Bonds	Garvee Bonds	Supported Debt Service	Total Revenues	Debt Service as a % of Revenues	Fiscal Year
2013	\$915,982	\$180,308	\$30,894	\$34,488	\$4,617	\$87,451	\$1,253,741	\$18,996,200	6.60%	2013
2014	\$980,738	\$207,000	\$35,615	\$32,761	\$4,614	\$87,458	\$1,348,185	\$19,661,600	6.86%	2014
2015	\$1,027,003	\$232,404	\$38,317	\$31,447	\$8,248	\$87,454	\$1,424,874	\$20,659,600	6.90%	2015
2016	\$1,120,994	\$264,358	\$35,095	\$26,394	\$14,330	\$87,450	\$1,548,621	\$21,298,900	7.27%	2016
2017	\$1,190,728	\$307,215	\$26,641	\$25,034	\$23,431	\$87,452	\$1,660,501	\$21,975,501	7.56%	2017
2018	\$1,240,301	\$340,845	\$26,074	\$24,414	\$31,756	\$87,457	\$1,750,846	\$22,593,291	7.75%	2018
2019	\$1,305,664	\$339,138	\$24,983	\$23,954	\$31,717	\$87,452	\$1,812,907	\$23,157,818	7.83%	2019
2020	\$1,336,956	\$360,278	\$26,269	\$23,854	\$31,827	\$51,365	\$1,830,548	\$23,865,062	7.67%	2020
2021	\$1,353,369	\$422,906	\$24,822	\$10,329	\$38,329	\$0	\$1,849,754	\$24,115,957	7.67%	2021
2022	\$1,397,755	\$472,742	\$26,557	\$10,342	\$45,580	\$0	\$1,952,975	\$24,949,787	7.83%	2022
2023	\$1,430,208	\$509,880	\$24,870	\$8,766	\$45,581	\$0	\$2,019,306	\$25,740,076	7.84%	2023
2024	\$1,455,270	\$484,519	\$25,737	\$8,775	\$40,973	\$0	\$2,015,274	\$26,577,524	7.58%	2024
2025	\$1,474,398	\$524,839	\$25,705	\$7,434	\$40,971	\$0	\$2,073,348	\$27,480,575	7.54%	2025
2026	\$1,456,847	\$557,826	\$24,481	\$6,432	\$40,891	\$0	\$2,086,477	\$28,400,489	7.35%	2026
2027	\$1,497,020	\$607,220	\$25,324	\$0	\$41,054	\$0	\$2,170,618	\$29,357,773	7.39%	2027

(a) Includes payments for Qualified Zone Academy Bonds (QZABs)

(b) Does not include debt service on county transportation bonds. Highway user revenues from counties exceed debt service requirements.

(c) Includes financings for a multi-agency office building in St. Mary's County, district court facilities in Prince George's County, a MDOT headquarters building, shuttle buses at BWI airport, the MDH public health lab and parking facilities at the Annapolis Complex and State Center.

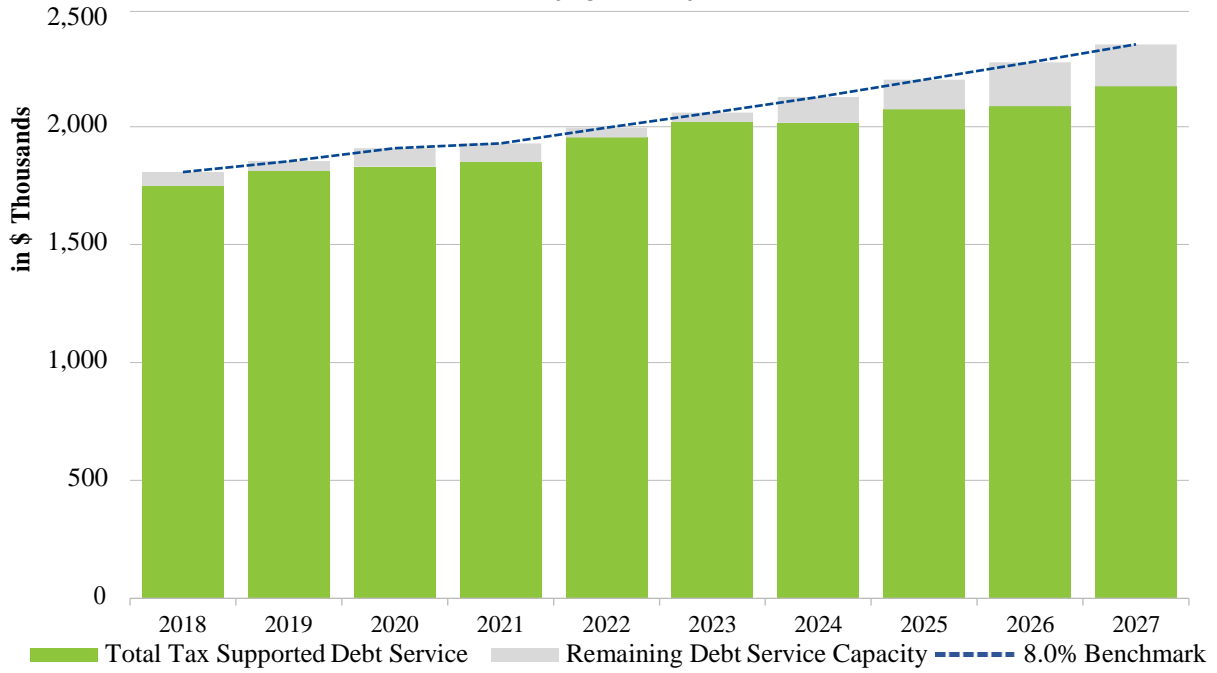
(d) Debt service on leases include equipment, video lottery terminals and energy leases that do not have guaranteed energy savings equal to or greater than the debt service.

State Tax Supported Debt Service as a Percent of Dedicated Revenues

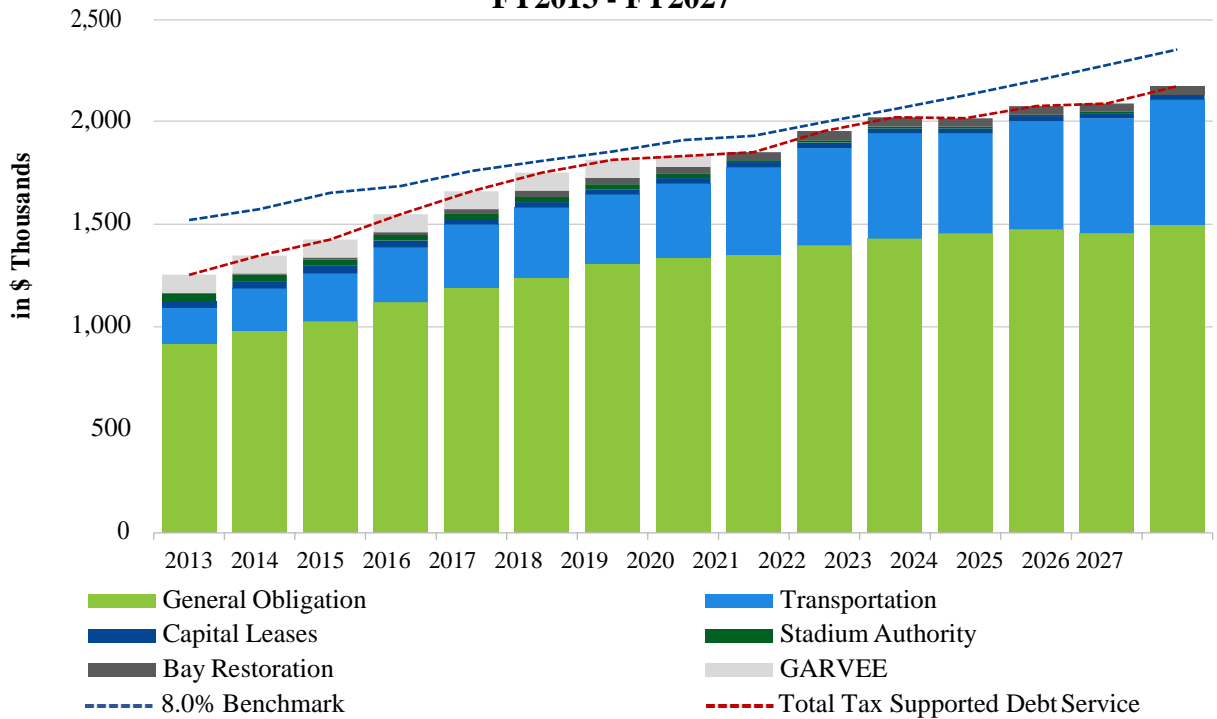
Fiscal Year	General Obligation Bonds	DOT Consolidated Bonds ^(b)	Capital Leases ^(c,d)	Stadium Authority	Bay Restoration Bonds	Garvee Bonds
2013	5.7%	7.4%	0.2%	140.2%	5.0%	18.7%
2014	6.0%	7.6%	0.2%	140.0%	4.3%	18.7%
2015	6.0%	8.1%	0.2%	143.6%	7.4%	18.8%
2016	6.4%	8.4%	0.2%	121.1%	12.7%	18.8%
2017	6.6%	9.7%	0.1%	114.3%	20.8%	15.9%
2018	6.6%	10.6%	0.1%	111.9%	27.9%	15.9%
2019	6.8%	10.3%	0.1%	112.1%	27.6%	15.9%
2020	6.7%	10.8%	0.1%	112.2%	27.4%	9.4%
2021	6.6%	12.2%	0.1%	143.6%	32.7%	0.0%
2022	6.6%	13.2%	0.1%	143.6%	38.5%	0.0%
2023	6.5%	13.9%	0.1%	121.6%	38.1%	0.0%
2024	6.4%	13.0%	0.1%	121.6%	33.9%	0.0%
2025	6.3%	13.8%	0.1%	100.0%	33.6%	0.0%
2026	6.0%	14.3%	0.1%	86.5%	33.2%	0.0%
2027	5.9%	15.2%	0.1%	0.0%	33.0%	0.0%

Note: Unlike Table 2A, Table 2B ratios are serviced by separate and specific revenue sources and have different denominators; therefore, ratios cannot be added across to provide a sum on combined ratio totals. Refer to "Schedule A-2, Revenue Projections."

**Tax Supported Debt Service to Revenues
Available Capacity using the 8.0% Benchmark
FY2018 - FY2027**



**Tax Supported Debt Service to Revenues
FY2013 - FY2027**



As indicated by **Table 3**, Tax-Supported Debt Outstanding and Debt Service Stress Test, if the projections for debt service are held constant, limited declines in revenues can still be absorbed and the affordability ratios maintained. Similarly, there is limited capacity for increases in debt service if the revenue projections are held constant and the affordability criteria is 8.0%. Based on the estimates and assumptions in September 2017, the Committee's recommendation is expected to result in a pattern of debt issuances and debt service payments that remain within this 8.0% affordability benchmark.

Tax Supported Debt Outstanding and Debt Service Stress Test

Table 3

(thousands)

Projections as of October 2017

State Tax Supported Debt Outstanding as a Percentage of Personal Income Under "Stress" Scenarios

Fiscal Year	Debt Outstanding	Personal Income	Current Ratios	Fiscal Year	Maximum Ratio	Minimum Personal Income	Difference ^(a)	Additional Affordable Debt Outstanding ^(c)
2017	\$12,723,733	\$356,022,188	3.57%	2017	4.00%	\$318,093,314.22	\$37,928,873.64	\$1,517,154.95
2018	\$13,218,505	\$370,189,353	3.57%	2018	4.00%	\$330,462,621.86	\$39,726,730.97	\$1,589,069.24
2019	\$13,751,409	\$385,812,758	3.56%	2019	4.00%	\$343,785,233.32	\$42,027,524.38	\$1,681,100.98
2020	\$14,107,236	\$401,638,292	3.51%	2020	4.00%	\$352,680,911.34	\$48,957,380.35	\$1,958,295.21
2021	\$14,184,561	\$417,459,100	3.40%	2021	4.00%	\$354,614,032.55	\$62,845,067.76	\$2,513,802.71
2022	\$14,246,589	\$432,257,732	3.30%	2022	4.00%	\$356,164,725.71	\$76,093,006.12	\$3,043,720.24
2023	\$14,332,375	\$448,691,586	3.19%	2023	4.00%	\$358,309,366.12	\$90,382,219.86	\$3,615,288.79
2024	\$14,445,379	\$464,905,365	3.11%	2024	4.00%	\$361,134,469.27	\$103,770,896.08	\$4,150,835.84
2025	\$14,638,339	\$480,786,662	3.04%	2025	4.00%	\$365,958,487.18	\$114,828,174.75	\$4,593,126.99
2026	\$14,539,811	\$497,954,547	2.92%	2026	4.00%	\$363,495,279.26	\$134,459,267.46	\$5,378,370.70
2027	\$14,448,274	\$516,212,372	2.80%	2027	4.00%	\$361,206,847.48	\$155,005,524.57	\$6,200,220.98

State Tax Supported Debt Service as a Percentage of Revenues Under "Stress" Scenarios

Fiscal Year	Debt Service	Revenues	Current Ratios	Fiscal Year	Maximum Ratio	Minimum Revenues	Difference ^(b)	Additional Affordable Debt Outstanding ^(c)
2017	\$1,660,501	\$21,975,501	7.56%	2017	8.00%	\$20,756,262	\$1,219,239	\$97,539
2018	\$1,750,846	\$22,593,291	7.75%	2018	8.00%	\$21,885,577	\$707,713	\$56,617
2019	\$1,812,907	\$23,157,818	7.83%	2019	8.00%	\$22,661,339	\$496,479	\$39,718
2020	\$1,830,548	\$23,865,062	7.67%	2020	8.00%	\$22,881,847	\$983,215	\$78,657
2021	\$1,849,754	\$24,115,957	7.67%	2021	8.00%	\$23,121,930	\$994,027	\$79,522
2022	\$1,952,975	\$24,949,787	7.83%	2022	8.00%	\$24,412,191	\$537,596	\$43,008
2023	\$2,019,306	\$25,740,076	7.84%	2023	8.00%	\$25,241,319	\$498,757	\$39,901
2024	\$2,015,274	\$26,577,524	7.58%	2024	8.00%	\$25,190,930	\$1,386,595	\$110,928
2025	\$2,073,348	\$27,480,575	7.54%	2025	8.00%	\$25,916,844	\$1,563,731	\$125,098
2026	\$2,086,477	\$28,400,489	7.35%	2026	8.00%	\$26,080,967	\$2,319,522	\$185,562
2027	\$2,170,618	\$29,357,773	7.39%	2027	8.00%	\$27,132,730	\$2,225,044	\$178,003

This table demonstrates the minimum levels to which personal income and revenues could fall without violating the 4.0% and 8.0% criteria on projected debt and debt service levels.

^(a)Holding debt outstanding constant, personal income could decline by indicated amounts and affordability ratios would not exceed the 4.0% maximum.

^(b)Holding debt service constant, revenues could decline by indicated amounts and affordability ratios would not exceed the 8.0% maximum.

^(c)Holding personal income and revenues constant, these figures indicate additional debt outstanding and debt service that is affordable without exceeding current maximum affordability ratios.

Source: Tables 1 and 2a
Schedules A-1 and A-2

E. Comparison of Recommendation and Capital Program

The Committee's recommendation of \$995 million in general obligation authorizations provides a commitment for the fiscal year 2018 Capital Improvement Program. However, the program and the recommendations fall short of total funding needs and the Committee recognizes that allocation decisions will have to be made by the Governor and General Assembly.

F. Affordability Risk Analysis

Background

Since 1989, the Committee has included in its Reports an *affordability risk analysis*: the analysis of the risk that a particular five-year General Obligation Bond authorization plan, if followed over time, might lead to a violation of the Committee's affordability criteria, even though the plan was deemed affordable at the time it was proposed. Beginning in its 2007 review, the Committee has examined this risk over a ten-year horizon.

Components of Risk

Economic uncertainty continues as the economic recovery has been slow and potential future federal reductions in employment and procurement could negatively impact Maryland more than most states. In light of this context, the Committee identified and reviewed the following risks in making a judgment about the ultimate affordability of its 2015 recommended authorization and the projected future authorizations as described earlier:

- Changes in personal income;
- Changes in and sources of revenues;
- Interest rate risk;
- Changes in the definition of tax-supported debt;
- Changes in the bond issuance plans of non-general obligation issuers of tax-supported debt;
- Changes within the General Obligation Bond program.

Changes in Personal Income

Significant adjustments to personal income estimates have occurred in the past. These changes result from either after-the-fact measurement changes by federal statisticians or revised projections by the Board of Revenue Estimates, which are used by the Committee. These risks are beyond the Committee's control but it should be noted that material changes are often limited to the first couple of years following the close of the measurement period and subsequent adjustments generally have been small. Projections of future personal income levels require certain economic and demographic assumptions that may not prove accurate.

Table 3 demonstrates that current projections for personal income could decline by no more than \$42.0 billion, or 12.2% of total projected personal income, in 2019 without the affordability ratio exceeding the 4.0% maximum. The personal income projections seem prudent as the projected annual growth rates shown in **Schedule A-1** for 2017 through 2027 average 3.82%, more than the 2.71% average rate for the 10-year period of 2008 through 2017.

Changes in and Sources of Revenues

Sources of Revenues

Schedule A-2 displays the components of and total tax-supported revenues from fiscal year 2013 to fiscal year 2027. Tax-supported revenues are comprised of a variety of sources that are available to make debt service payments on tax-supported debt. The following paragraphs will discuss some of the major revenue sources in more detail. In general, the estimates are based on current law and do not take into account any possible changes in future tax rates or structures.

General fund revenues are shown as projected by the Board of Revenue Estimates in its most recent forecast as of September 2017. Year to year changes during this period are not significant and reflect the slow growth following the recession. Beginning in fiscal year 2024, growth is assumed to hold at 3.7% annually.

Property tax revenue estimates were calculated using assessable base data obtained from the Department of Assessments and Taxation for fiscal years 2017-2019. Property tax revenues are projected to hold around 2.0% annually for fiscal years 2023 through 2027.

Bond premiums and various other Annuity Bond Fund revenues are also included in tax-supported revenues. Bond premiums can be volatile and are not projected on future sales. Although some amount may likely occur, premiums are expected to decrease with the anticipated rise in interest rates. Miscellaneous receipts and US Treasury subsidies on a Build America bonds, Qualified School Construction Bonds, Qualified Zone Academy Bonds and Qualified Energy Conservation Bonds are included but the amounts are relatively insignificant. The amounts received have been reduced by varying amounts due to sequestration since fiscal year 2014.

Revenues from the Education Trust Fund, which is primarily funded by gaming revenues, and the State property transfer tax may be available for debt service on general obligation bonds to the extent that bonds are used to support school construction or Program Open Space respectively.

The remaining revenues shown in **Schedule A-2** represent the revenues available to pay debt service on the other components of tax-supported debt. These revenues are projected by the entity responsible for issuing and oversight of the bonds and are based on the most currently available data.

Changes in Revenues

Table 3 demonstrates that, holding debt service constant, current revenue projections could increase by \$496.5 million, or 2.2% of total projected revenues, in fiscal year 2019 without the affordability ratio exceeding the 8.0% maximum. CDAC meets annually to review the affordability ratios. If the Board of Revenue Estimates were to reduce the projected revenues it is likely that significant revision of debt authorizations and issuance would be considered, as has been past practice.

Interest Rate Risk

Debt service is calculated for future General Obligation Bonds, assuming coupon and market interest rates of 5.0%. Traditionally, municipal bonds are issued at a 5.0% coupon to meet investor demands for tax-free income. Investors then pay more than the face value of the bond or

a premium for receiving the higher interest payment. The premium is placed in the Annuity Bond Fund to cover debt service or to be used as PAYGO funds for capital projects.

Debt service on capital equipment leases is projected using tax-exempt rates of 1.21% and 1.49% for the three and five year capital equipment leases respectively. The most recent actual rates on capital equipment leases were 1.50% for a three year lease, and 1.67% for a five year lease. Recent rates reflect historically low tax-exempt rates that are expected to rise, albeit slowly. Future Bay Restoration Bond debt service is projected using a weighted average interest rate of 4.5%. The Department of Transportation estimates rates of 3.8% for the 2018 sale; 4.2% for the 2019 and 2020 sales; 4.3% for the sales occurring between 2021 and 2023; and 5.3% thereafter.

There is a risk to the federal tax-exemption for all municipal bonds from recent discussions to reduce the federal deficit. If the State and other municipal issuers have to issue taxable debt or if tax-exempt debt is less attractive to taxpayers with high income tax rates, municipal interest rates and debt service will increase. At this time, there is no clear indication of the potential adoption of any proposal to alter the State's ability to issue tax-exempt debt.

Changes in the Definition of Tax-Supported Debt

Changes in the definition of tax-supported debt dictated by an outside authoritative group could have a major impact on the affordability ratios.

The Financial Accounting Standards Board ("FASB") has a current project that proposes to establish a common leasing standard and to change lease accounting so that all lease obligations and the related right-to-use are reported on private sector balance sheets. Consequently, all leases would be considered debt. The proposed changes could increase the amount of tax – supported debt subject to CDAC review by requiring the State's operating leases be classified as capital leases (debt). The State's 2016 Comprehensive Annual Financial Report ("CAFR") indicates that the State's governmental funds pay for various office spaces that are accounted for as operating leases. These rent expenditures for the fiscal year 2016 totaled approximately \$92.4 million.

According to its website, FASB published an exposure draft in May 2013 and conducted outreach to investors and analysts from May 2013 through September 2013. A second exposure draft was released and FASB is re-deliberating based on comments received. The final Standard was expected to be released in the 4th Quarter of 2017. The State's financial statements conform to Governmental Accounting Standards Board ("GASB") which has added a similar lease accounting project to their research agenda but does not expect to complete their research until the FASB's proposed standards become more certain. More information and updates can be found on GASB's website, www.gasb.org.

Since there have been no definitive changes to accounting standards to date, CDAC continues to consider only capital leases in its affordability analysis. CDAC will continue to monitor this accounting issue at future meetings and may review the affordability benchmarks if the accounting standards change.

Changes in Bond Issuance – General Obligation Bonds

Changes within the General Obligation Bond program may arise because of changes in either the types and costs of facilities and other projects financed by General Obligation Bonds or changes in the speed at which authorized bonds are issued.

There do not appear to be any federal regulatory changes that might lead to an acceleration of general obligation debt issuances. Regulatory actions are from time to time announced or proposed and litigation is threatened or commenced which, if implemented or concluded in a particular manner, could adversely affect the market value of the Bonds. It cannot be predicted whether any such regulatory action will be implemented, how any particular litigation or judicial action will be resolved, or whether the Bonds or the market value thereof would be impacted thereby. Therefore, we have not considered this to be a risk to our interest rate assumptions.

Changes in the types and costs of facilities do not necessarily affect total authorizations but may lead to a re-allocation of resources. The Committee's recommendations are made in terms of a total dollar amount of bonds, not in specific capital projects. Changes in construction costs, the availability of PAYGO funding, the need for unanticipated new projects, changes in federal tax laws, and a host of other variables influence both the need for General Obligation Bonds and the share of the total allocation allotted to each use. Such changes affect which assets can be acquired within a specific dollar amount of the program. These changes by themselves, however, affect neither the dollar amount of the Committee's assumed authorizations nor the affordability ratios. Therefore, without General Assembly action to alter the total dollars to be authorized in the plan, there is no affordability risk resulting from such changes within the general obligation plan.

While some currently authorized projects will be abandoned or completed for less than authorized, it is assumed that any such amounts will be reallocated to other approved projects through the legislative process. Although some authorizations may ultimately be cancelled, the amount of such cancellations has historically been immaterial to the analysis.

Changes in the timing of issuance of authorized bonds, however, may affect the affordability criteria. Bonds authorized at a General Assembly session are not immediately issued. In fact, just over half of the bonds authorized each year are typically issued within the ensuing two fiscal years and the remaining issuances occur over the next three years. The bonds are sold over an extended period of time as the projects are developed and cash is required for payment. Consequently, the impact of a change in any year's debt authorizations affects issuances over time and impacts debt outstanding with a substantial lag.

Schedule B-1, Proposed General Obligation Authorizations and Estimated Issuances converts the recommended levels of new General Obligation Bond authorizations into a projected level of annual issuances; it is assumed that all authorized debt will be issued. In addition to projecting issuances at prescribed levels, the State Treasurer's Office monitors the disbursement of bond proceeds and has adjusted issuance amounts as necessary. Any systematic change altering the speed of bond issuance would impact the amounts of debt outstanding and debt service and consequently affect both of the affordability ratios. The Committee reviewed the issuance projections for the 2017 Report in light of the pattern of recent authorizations and issuances. The following chart compares projected issuances, in CDAC Reports from 2010 to 2017, to actual issuances.

Projected Issuances in CDAC Reports (millions)					
CDAC Report	FY 2014	FY 2015	FY2016	FY 2017	FY 2018
2010 Projection	\$ 940	\$ 935	\$ 940	\$ 1,130	\$ 1,020
2011 Projection	\$ 945	\$ 935	\$ 930	\$ 940	\$ 1,020
2012 Projection	\$ 977	\$ 995	\$ 1,014	\$ 1,068	\$ 1,125
2013 Projection	\$ 977	\$ 1,018	\$ 1,056	\$ 1,125	\$ 1,193
2014 Projection		\$ 1,018	\$ 1,056	\$ 1,125	\$ 1,193
2015 Projection			\$ 1,018	\$ 1,036	\$ 1,035
2016 Projection				\$ 568	\$ 1,075
2017 Projection					
Actual Issuance	\$ 980	\$ 1,018	\$ 1,541	\$ 675	-

Project cash flows as well as market conditions can explain some of the differences between projections and issuances in a specific fiscal year; however, authorization increases greater than previously projected are likely to have a greater impact. A history of projected authorizations is depicted in the following chart. The chart also illustrates the decline in projected authorizations in fiscal years 2012 and 2013 due to the recession's impacts.

Projected General Assembly Authorizations

CDAC Report	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
2017								\$ 995
2016							\$ 995	\$ 995
2015						\$ 995	\$ 995	\$ 995
2014					\$ 1,170	\$ 1,180	\$ 1,275	\$ 1,315
2013				\$ 1,160	\$ 1,170	\$ 1,180	\$ 1,275	\$ 1,315
2012			\$ 1,075	\$ 1,085	\$ 1,095	\$ 1,105	\$ 1,200	\$ 1,240
2011		\$ 925	\$ 1,075 ¹	\$ 935	\$ 945	\$ 995	\$ 1,200	\$ 1,240
2010	\$ 925	\$ 925	\$ 925	\$ 935	\$ 945	\$ 955	\$ 1,200	\$ 1,240
2009	\$ 1,020	\$ 1,050	\$ 1,080	\$ 1,110	\$ 1,140	\$ 1,170	\$ 1,200	\$ 1,240

¹The conditional recommendation of \$925 million made in September 2011 was revised to \$1,075 million in December.

There was an acceleration of issuance in calendar year 2010 to provide sufficient proceeds for projects like the ICC which had construction underway, to take advantage of historically low interest rates and to keep the cash flow of bond proceeds positive and minimize liquidity pressures on the State's cash accounts. Future substantial acceleration of the issuances of General Obligation Bonds appears unlikely at this time. The current amount of authorizations that are unissued appears reasonable and the amount of bond issuances appears sufficient to meet projected cash flows.

Changes in the Bond Issuance – Other Components of State Tax-Supported Debt

Changes in the bond issuance plans for other issuers of tax-supported debt may include the expansion of existing programs or the creation of a new debt financing program. In the past, significant new debt has factored into the affordability analysis that had not been accounted for or contemplated in the prior years' report. The impact of previously unplanned debt on the affordability ratios and process resulted in the Committee's recommendation in the 2011 Report that the Administration coordinate the issuance plans for all issuers of tax-supported debt. The Committee has recommended an aggregate total of \$1,727.5 million in new issuances in fiscal year 2019. The changes in the issuance plans of other components of tax-supported debt also appear to pose limited risk at this time.

Planned New Tax-Supported Issues for Fiscal Year 2019	
General Obligation Bonds	\$ 1,015.0
Maryland Department of Transportation	\$ 725.0
Capital Leases	\$ 7.5
GARVEEs	\$ -
Maryland Stadium Authority	\$ -
Bay Restoration Fund	\$ -
Total	\$ 1,747.5

Conclusion

In light of the assumptions and risks noted above, the Committee believes that the variables that factor into the affordability analysis have been estimated prudently and conservatively in many cases. The most noteworthy risk appears to be economic uncertainty and the potential impact on personal income and revenues. Because the affordability ratio for debt service to revenues near the 8.0% benchmark during the forecast period, any variation to the assumptions for revenues, interest rates, and projected activity in tax-supported debt issuance may have a direct impact on future tax-supported authorizations and issuances.

Based on the assumptions outlined in this report, the Committee's recommendation of \$995 million for the 2018 legislative session and fiscal year 2019 capital program remains within the debt affordability criteria. The Committee's adopted planning assumptions project maintaining the authorization amount at \$995 million in future fiscal years. With these authorization levels, the debt affordability ratios remain within the CDAC benchmarks of 4% debt outstanding to personal income and 8% debt service to revenues. The affordability analysis presented in this report indicates that the Committee's projection of General Obligation Bond authorizations will continue to be affordable (within debt guidelines) going into the future.

VI. PUBLIC-PRIVATE PARTNERSHIPS

Chapter 5 of the Laws of 2013 modified the process for establishing public-private partnerships (P3s) and associated reporting requirements. The Board of Public Works (BPW) approval is required at critical project milestones including approval of a P3 solicitation method and a final agreement. The law also provides that the BPW may not approve a P3 that results in the State exceeding its debt affordability guidelines.

The legislation specified that a project's debt affordability impact be assessed at two intervals prior to a P3 agreement being signed. The reporting agency must include a preliminary analysis on debt affordability, done in consultation with the Department of Budget and Management, in the pre-solicitation report for a P3 project. Prior to BPW approval of a P3 agreement, the Treasurer, in coordination with the Comptroller, analyzes the impact of the P3 project on the State's capital debt affordability limits. The annual CDAC report must also include an analysis of the aggregate impact of P3 agreements on the total amount of new State debt that prudently may be authorized for the next fiscal year.

Section 8-104 of the State Finance and Procurement (SF&P) Article defines tax-supported debt as "State debt...and debt of the Department of Transportation, the Maryland Stadium Authority, and other units of State government which, in the opinion of the Committee, are supported directly or indirectly by State tax revenues." In past determinations on questions of whether specific projects might result in tax-supported debt, the CDAC has relied upon a review of financial documents and, when necessary, sought guidance from additional sources, including: (1) the Comptroller's Office, advised by the State's independent auditor, regarding whether an agreement was considered debt from an accounting perspective; and (2) the Office of the Attorney General regarding applicable legal precedent in relation to the direct or indirect use of State tax revenues.

In addition, SF&P §8-112 also directs the CDAC, in making its annual estimate of the total amount of new State debt that prudently may be authorized for the next fiscal year, to consider "the criteria that recognized bond rating agencies use to judge the quality of issues of State bonds." The rating agencies have recently released details on how P3 obligations will be factored into the State's net tax-supported debt calculations.

On March 2, 2016, the Maryland Department of Transportation (MDOT) announced it had selected Purple Line Transit Partners as the concessionaire for the Purple Line Light Rail Transit Project, the State's first P3 to fall under the framework established by Chapter 5 of the 2013 Laws of Maryland. The State Treasurer's Office received an executed version of the P3 Agreement between MDOT and Purple Line Transit Partners LLC on March 4, 2016, which it analyzed in coordination with the Comptroller as required by law. The analysis concluded that none of the payments included in the Agreement should count as State tax-supported debt that would impact the State's capital debt affordability limits. The analysis noted that this conclusion only applied to the State's CDAC process and that the rating agencies would make their own determinations. The full analysis may be found on the Treasurer's website at: http://treasurer.state.md.us/media/87631/purple_line_report_4_3final_report.pdf

VII. HIGHER EDUCATION DEBT

A. Background

Title 19 of The Education Article (the “Statute”), establishes the revenue bonding framework and authority of the University System of Maryland (“USM”), Morgan State University, St. Mary's College of Maryland (“SMCM”) and Baltimore City Community College. The Committee is assigned certain duties relevant to higher education debt, as described below.

The Statute provides a framework for the issuance of higher education debt. Specifically, the Statute distinguishes between auxiliary facilities (which generate fees or income arising from the use of the facility) and academic facilities (which are primarily instructional, but can include any facilities not defined as auxiliary). The statute also authorizes institutions to issue bonds to finance either auxiliary or academic facilities (maximum terms of 33 and 21 years, respectively) with the stipulation that any academic facilities so financed must first be expressly approved by an act of the General Assembly as to both project and amount.

Furthermore, the Statute specifies fund sources that can be pledged as security as well as those that can be used for debt service payments. Specifically available to be pledged as security are auxiliary fees (fees and rents arising from the use of the auxiliary facility) and academic fees (tuition and student fees). The systems specifically cannot pledge: (1) a State appropriation; (2) contracts, grants, or gifts; or (3) any other source not expressly authorized by the General Assembly. Debt service on bonds is payable solely from auxiliary fees, academic fees, a State appropriation expressly authorized for that purpose, or revenues from contracts, gifts, or grants, as appropriate.

B. CDAC Duties

The Committee is directed to:

1. "...review on a continuing basis the size and condition of any debt of the University System of Maryland, Morgan State University, St. Mary's College of Maryland, and Baltimore City Community College;"
2. "In preparing an estimate with respect to the authorization of any new State debt” [i.e., general obligation debt] to "take into account as part of the affordability analysis any debt for academic facilities to be issued by a System;" and
3. “...submit to the Governor and the General Assembly the Committee's estimate of the amount of new bonds for academic facilities that prudently may be authorized in the aggregate for the next fiscal year by the University System of Maryland, Morgan State University, St. Mary's College of Maryland, and the Baltimore City Community College."

To satisfy the Committee’s responsibilities in these area representatives from all four institutions presented debt information to the Committee at its September 18, 2017 meeting. A summary of the information presented and the committee’s consideration of higher education debt is discussed in the sections below.

C. Size and Condition of Higher Education Debt

University System of Maryland (“USM”)

Bond Activity

Since 1989, the General Assembly has authorized bonds totaling \$948.0 million for various academic facilities for USM. Of this amount, \$17.0 million was authorized by the 2017 General Assembly for academic facilities (Chapter 143, Laws of Maryland, 2017).

In fiscal year 2017, USM issued \$115,000,000 in new debt. USM reports its bond debt outstanding at \$1,202,009,680 (at par value) at June 30, 2017. Of this outstanding amount, USM has \$35.0 million of variable rate bonds outstanding with a five year interest reset. The University System has not used interest rate exchange agreements or guaranteed investment contracts. Projected issuances through fiscal year 2023 are shown in *Table 4*.

The bonds are rated as follows: Fitch Ratings, AA+; S&P, AA+; and Moody’s, Aa1. All ratings have a stable outlook. USM credit strengths include strong state operating and capital support, sound financial operations and a large, diverse revenue base. Credit challenges noted by the rating agencies include potential increased nationwide competition for high school graduates and State budget pressure. According to a 2015 report, Moody’s median rating for 211 public universities is A1.

Other Debt and Capital Lease Activity

USM has \$36,494,680 of Other Debt and Capital Lease Obligations outstanding as of June 30, 2017. *Section II D, Lease and Conditional Purchase Financings*, in this 2017 CDAC Report lists the energy leases, including those for the University System, that are not included in the CDAC affordability analysis because the annual guaranteed savings equals or exceeds the annual debt service on the leases.

Debt Management Policy

The USM debt management policy outlines criteria to protect bond ratings, interest rate management strategies, definitions of all types of debt and its impact on debt capacity and a process to assess a project’s impact on debt capacity. While adopted at a time when the USM had a rating of Aa3 (Moody’s, which has been upgraded to Aa1 since adoption) the current Board of Regents policy requires that debt be managed so that:

1. Debt service that does not exceed 4.5% of operating revenues plus State Appropriations, and
2. Available resources must be at least 55% of direct debt

Table 4 shows that debt service is expected to be 3.01% of operating revenues plus State appropriations in fiscal year 2017 and projects compliance with the debt policy standard through 2022. Available resources include net assets of USM and its affiliated foundations with adjustments for certain long term liabilities. An analysis of the ratio of available resources to debt outstanding follows. The table includes actual data for fiscal years 2012 through 2015 and estimates for fiscal years 2016 and 2017.

University System of Maryland
Ratio of Available Resources to Debt Outstanding
(millions)

FY	Available Resources	Debt Outstanding	Ratios of Available Resources to Debt Outstanding
2013	\$1,751	\$1,195	147%
2014	\$1,741	\$1,269	137%
2015	\$1,901	\$1,194	159%
2016	\$1,919	\$1,270	151%
2017	\$2,035	\$1,299	157%
2018E	\$2,075	\$1,317	158%

E=Estimate and preliminary.

St. Mary's College of Maryland

Bond Activity

As of June 30, 2017, SMCM had a total of \$31.4 million in revenue bonds outstanding. Moody's underlying rating for SMCM debt is A2 with a stable outlook as of the most recent update in August 2015. St. Mary's College of Maryland does not have any interest rate exchange agreements or guaranteed investment contracts. SMCM purchased a rate cap on the \$4.0 million variable rate bonds which caps one month LIBOR at 3% resulting in a maximum rate exposure of 3.3% through the May 1, 2020 expiration date. The 2005 Series A and 2006 Series A bonds, more than half the outstanding total, are insured by AMBAC. The 2012 refunding issue is uninsured.

Lease Activity

There is a capital lease through the State Treasurer's Office with a remaining balance of \$0.6 million related to an energy performance contract. ***Section II D, Lease and Conditional Purchase Financings***, in this 2016 CDAC Report lists the St. Mary's College energy lease that is included in the CDAC affordability analysis because the annual guaranteed savings do not equal or exceed the annual debt service on the lease. For this particular project the desired savings were realized however it was later decided to discontinue the guarantee as it was no longer cost-effective.

Morgan State University

Bond Activity

Morgan State University bonds are currently rated A+ by Standard and Poor's and rated A1 with a stable outlook by Moody's Investors Service. Revenue bonds outstanding total \$29.2 million as of June 30, 2017. Morgan State University is in the early planning stages to issue \$20 - \$30 million in bonds to build new student housing and a new public safety facility. Morgan State University does not have any interest rate exchange agreements, variable rate bonds or guaranteed investment contracts nor are any of their bonds insured.

Lease Activity

Morgan State University has capital leases it has entered into utilizing the State Treasurer's Office Capital Equipment Lease-Purchase Program for financing facilities and technology equipment. It has also entered into other capital leases independently. As of June 30, 2017, \$18.7 million in debt outstanding remained for all of its capital leases.

Baltimore City Community College (“BCCC”)

Bond Activity

In 2009 the General Assembly increased the total amount of debt authorized for BCCC from \$15.0 million to \$65.0 million and expanded the authorization to include academic as well as auxiliary facilities. BCCC has no bonds outstanding and has no plans to issue bonds in fiscal year 2018. BCCC is currently re-examining the feasibility of various projects that might be funded by the issuance of academic and/or auxiliary bonds or capital leases in the next 10 years. The college is focusing its efforts on finding solutions which serve the students and community and which align with the mission of the College.

Lease Activity

BCCC had \$0.8 million in capital leases outstanding as of June 30, 2016.

D. Incorporating Higher Education Academic Debt into the Affordability Analysis

The statutory language of the Committee's charge states: "In preparing an estimate with respect to the authorization of any new State debt [i.e., general obligation debt], the Committee shall take into account as part of the affordability analysis any debt for academic facilities to be issued by a system." This language, however, is not explicit regarding the meaning of "take into account."

The statute does not direct, nor has the Committee elected to include higher education debt as a component of State tax-supported debt for purposes of the capacity criteria or affordability analysis. Consequently, the Committee's recommendations relating to new authorizations of general obligation debt and higher education academic debt are made independently for the following reasons:

1. The rating agencies do not consider debt issued by institutions of higher education as State tax-supported debt. The debt of the systems, either currently outstanding or related to future issuances, is not included by the rating agencies in determining the rating of the State's General Obligation Bonds.
2. Both the statutory structure of higher education debt and the current budgetary policies related to higher education debt underscore the separation of higher education debt and tax-supported debt. The Statute provides that higher education debt may not be secured by a pledge of the issuer's general fund appropriation. The Statute further provides that no general funds may be used to pay debt service unless specifically authorized in the budget.
3. The revenue sources that secure the bonds are under the direct control of the systems and not directly subject to the approval of either the Governor or the General Assembly.

The Committee believes that its analysis, discussions, and deliberations of higher education debt levels, capacity, and needs address the legislative intent to take into account higher education academic debt.

E. 2017 Recommended Authorization for Higher Education Academic Debt

The Committee's charge is to submit an "estimate of the amount of new bonds for academic facilities that prudently may be authorized in the aggregate for the next fiscal year by the University System of Maryland, Morgan State University, St. Mary's College of Maryland and the Baltimore City Community College." This charge, therefore, requires the Committee to distinguish between burdens imposed by academic debt and those imposed by auxiliary debt in arriving at a recommendation for academic debt alone. From a credit analyst's point of view, however, the aggregate level of a system's debt is critical.

One approach to determining a prudent amount of new academic debt to be authorized is to start with the aggregate level of debt that each system anticipates issuing. If it is estimated that the level of debt is prudent over time, then it is reasonable for the Committee to accept the aggregate total and also to accept the breakdown between academic and auxiliary as proposed by the System.

The guidelines initially adopted by the Committee to judge debt manageability are those contained in the rating methodology used by one of the major rating agencies. Five of the factors Standard and Poor's uses to rate a public institution's debt (over a time frame of several years) are: (1) the rating of the State; (2) the State's general financial support for higher education as a whole (3)the State's financial support for the particular institution; (4) the institution's demand and financial factors; and (5) the security pledge. The first, second, and fifth factors are the same for all four systems. All systems benefit from the State's AAA rating; all are part of public higher education in Maryland; and all can offer the same types of security.

S&P's third factor looks at the trends in State appropriations to the four systems. The fourth factor, the institution's demand and financial factors, encompasses a host of data dealing with the student body, financial performance, and components of debt.

Table 4 displays information on the debt of each of the four higher education systems, compliance with statutory limitations, and financial performance.

1. Legislation limits the aggregate principal amount of revenue bonds outstanding and the present value of capital lease payments, less the amount of any reserves established therefore, for both academic and auxiliary facilities. The current statutory limits are \$1,400.0 million for the University System of Maryland, \$88.0 million for Morgan State University, \$60.0 million for St. Mary's College of Maryland, and \$65.0 million for Baltimore City Community College. All four higher education systems are within the statutory limits as of June 30, 2017.
2. A key measurement of financial performance frequently used by credit analysts is debt burden; that is, debt service as a percent of operating revenues plus State appropriations. For USM, debt is managed so that the ratio does not exceed 4.5% which is the limit established in the USM debt policy.

For purposes of this analysis and for the CDAC recommendation, the relevant measure is debt burden. As can be seen from the final column in *Table 4*, for USM its debt issuance plan would result in a debt burden level well below the 4.5% maximum mandated by USM's debt management policy.

TABLE 4

HIGHER EDUCATION DEBT

Fiscal Year	Projected Issuances		Debt Outstanding as of June 30		Debt Service for Fiscal Year		Total Debt Service	Ratio of Debt Service to Revenues	
	Auxiliary	Academic	Bonds	Leases	Bonds	Leases		Revenues	(see note)
University System Of Maryland									
2017	\$93,000	\$22,000	\$1,231,321	\$66,500	\$134,402	\$8,173	\$142,575	\$4,810,663	2.96%
2018	\$83,000	\$32,000	\$1,254,140	\$64,145	\$137,733	\$8,850	\$146,583	\$4,906,877	2.99%
2019	\$93,000	\$22,000	\$1,280,061	\$57,681	\$134,018	\$8,238	\$142,256	\$5,005,014	2.84%
2020	\$83,000	\$32,000	\$1,302,082	\$51,910	\$128,964	\$7,427	\$136,391	\$5,105,114	2.67%
2021	\$83,000	\$32,000	\$1,323,329	\$46,377	\$122,702	\$7,064	\$129,766	\$5,207,217	2.49%
2022	\$83,000	\$32,000	\$1,349,886	\$28,602	\$109,899	\$18,800	\$128,699	\$5,311,361	2.42%
2023	\$83,000	\$32,000	\$1,370,131	\$13,305	\$107,843	\$15,786	\$123,629	\$5,417,588	2.28%
Morgan State University									
2017	\$0	\$0	\$28,647	\$17,296	\$5,799	\$2,514	\$8,313	\$191,346	4.34%
2018	\$0	\$0	\$24,979	\$15,280	\$5,818	\$2,514	\$8,332	\$198,346	4.20%
2019	\$0	\$0	\$21,110	\$13,203	\$5,815	\$2,514	\$8,329	\$204,346	4.08%
2020	\$0	\$0	\$17,034	\$11,064	\$5,800	\$2,514	\$8,314	\$210,846	3.94%
2021	\$0	\$0	\$15,835	\$9,038	\$2,691	\$2,336	\$5,027	\$217,846	2.31%
2022	\$0	\$0	\$14,720	\$7,131	\$2,217	\$2,159	\$4,376	\$223,846	1.95%
2023	\$0	\$0	\$10,273	\$5,000	\$1,959	\$2,194	\$4,154	\$226,577	1.83%
St. Mary's College of Maryland									
2017	\$1,820	\$0	\$31,735	\$756	\$3,477	\$205	\$3,682	\$68,414	5.38%
2018	\$0	\$0	\$31,390	\$577	\$3,311	\$205	\$3,516	\$70,124	5.01%
2019	\$0	\$0	\$29,254	\$392	\$3,201	\$205	\$3,406	\$71,877	4.74%
2020	\$0	\$0	\$27,158	\$199	\$3,186	\$205	\$3,391	\$73,674	4.60%
2021	\$0	\$0	\$25,008	\$0	\$3,179	\$0	\$3,179	\$75,516	4.21%
2022	\$0	\$0	\$22,787	\$0	\$3,175	\$0	\$3,175	\$77,404	4.10%
2023	\$0	\$0	\$20,487	\$0	\$3,172	\$0	\$3,172	\$79,339	4.00%
Baltimore City Community College									
2017	\$0	\$0	\$0	\$827	\$0	\$99	\$99	\$91,043	0.11%
2018	\$0	\$0	\$0	\$781	\$0	\$99	\$99	\$85,959	0.12%
2019	\$0	\$0	\$0	\$731	\$0	\$99	\$99	\$82,294	0.12%
2020	\$0	\$0	\$0	\$678	\$0	\$99	\$99	\$83,763	0.12%
2021	\$0	\$0	\$0	\$622	\$0	\$99	\$99	\$85,438	0.12%
2022	\$0	\$0	\$0	\$561	\$0	\$99	\$99	\$87,147	0.11%
2023	\$0	\$0	\$0	\$514	\$0	\$99	\$99	\$93,910	0.11%

Note: Revenues include operating Revenues plus State appropriations.

CDAC has concluded that the overall level of debt is prudent over time and therefore recommends a limit of \$24.0 million for new academic facilities bonds for the University System of Maryland for fiscal year 2019. Morgan State University, St. Mary's College of Maryland and Baltimore City Community College do not propose to issue bonds for academic facilities in fiscal year 2019.

VIII. APPENDICES

Appendix A: History of the Capital Debt Affordability Committee

Duties

The creation of the Capital Debt Affordability Committee was an outgrowth of two events: the dramatic increase in outstanding debt during the mid-1970's due to the creation of the State's school construction program and the release in June 1974 of the Department of Legislative Services' two year study on the State's debt picture, titled "An Analysis and Evaluation of the State of Maryland's Long-Term Debt: 1958 - 1988." In response to this study and the rising level of State debt, the 1978 General Assembly enacted the current State Finance and Procurement Article, Section 8-104, *et seq.*, which created the Committee and Capital Debt Affordability process.

The 1989 General Assembly further expanded the Committee's charge as part of legislation relating to higher education debt (Chapter 93, Laws of Maryland, 1989). The statute requires the Committee to review on a continuing basis the size and condition of any debt of the University System of Maryland, Morgan State University, and St. Mary's College of Maryland; take any debt issued for academic facilities into account as part of the Committee's affordability analysis with respect to the estimate of new authorizations of general obligation debt; and, finally, to submit to the Governor and the General Assembly an estimate of the amount of new bonds for academic facilities that prudently may be authorized in the aggregate for the next fiscal year by the University System of Maryland, Morgan State University, and St. Mary's College of Maryland. The 1994 General Assembly added Baltimore City Community College to the list of higher education institutions that the Committee reviews and the 2009 General Assembly expanded the debt authorization for Baltimore City Community College to academic as well as auxiliary facilities.

The 2004 General Assembly added to the duties of the Committee in Public School Facilities Act of 2004 (Chapters 306, 307, Laws of Maryland, 2004, uncodified Section 11), in which it directed the Committee to annually "review the additional school construction funding needs as identified in the 2004 Task Force to Study Public School Facilities report and ... make a specific recommendation regarding additional funding for school construction when recommending the State's annual debt limit." The statute also directed that the Committee "include a multiyear funding recommendation that will provide stability in the annual funding for school construction." The 2009 General Assembly repealed this requirement that the Committee annually review the school construction needs and make a specific recommendation regarding additional funding (Chapter 485, Laws of Maryland 2009).

Chapter 641 of the Laws of 2010 requires the Capital Debt Affordability Committee to analyze and report on the aggregate impact of Public-Private Partnership agreements on the total amount of new State debt that prudently may be authorized for the next fiscal year.

Membership

Since 1979, the members have been the State Treasurer (Chair), the Comptroller, the Secretaries of Budget and Management and Transportation, and one public member appointed by the Governor. Chapter 445, Laws of Maryland, 2005 expanded the membership of the Committee with the addition of 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 non-voting *ex officio* members.

Definition of Tax-Supported Debt

In addition to the duties previously noted, the Committee has generally reviewed other types of public debt issued by State or State-created authorities or agencies. In keeping with a narrow interpretation of its statutory charge, the Committee's efforts through 1986 focused mainly on bringing the State's general obligation debt in line with certain parameters. In 1987, however, the Committee began to adopt a more comprehensive view of State debt that included all tax-supported debt in addition to general obligation debt.

This broader view was adopted in recognition of the fact that the rating agencies and investment community take a more comprehensive view of a state's debt when analyzing that state obligations. Discussions with rating analysts over several years indicated that analysts were interested in all tax-supported debt. Summaries of rating agency reports indicated that the measure of debt used was "net tax-supported debt" - the sum of general obligation debt, consolidated and county transportation debt (net of sinking funds), capital lease commitments, and tax or bond anticipation notes.

The more comprehensive view of debt also recognized that other forms of long-term commitments were becoming more common. Capital leases, particularly lease purchase obligations, were more visible, if not more widely used. The bonds issued by the Maryland Stadium Authority for the Baltimore stadiums are supported by lease arrangements; the State had consolidated a significant amount of equipment lease obligations; and the Motor Vehicle Administration was using the capital lease method for expanding or relocating its service center network. Although these leases do not represent debt in the constitutional sense, any default on these leases would be viewed by the market as similar to a default on State bonds. This broader view was ultimately codified and included in the Committee's statutory charge by Chapter 241, Laws of Maryland, 1989.

The Committee considered in 2004 the question of whether Bay Restoration Bonds constitute a new component of State tax-supported debt for purposes of debt affordability calculations. The Bay restoration fee is applied broadly across the State and is not directly tied to the use of a specific WWTP. There is a consensus among counsel that the maturity of the bonds must be limited to 15 years, the maximum for "State debt." As a result, the Committee concluded that the Bay Restoration Bonds are State tax-supported debt.

Most recently, the 2005 General Assembly expanded the scope of what the Committee considers in Chapters 471, 472, Laws of Maryland, 2005, by explicitly recognizing debt issued by the Maryland Department of Transportation ("MDOT") under Title 4, Subtitle 6 of the Transportation Article, or by the Maryland Transportation Authority ("MdTA") under Title 4, Subtitle 3 of that Article, when "secured by a pledge of future federal aid from any source" (e.g., GARVEE Bonds) as "tax-supported debt." Thus, this type of debt must be taken into account both in the annual authorization recommendation and in consideration of the amount of tax-supported

debt outstanding.

It is useful to note that the bond rating agencies are not uniform in their treatment of the federal-revenue backed debt when assessing the State's situation. Two of the agencies do include GARVEEs as tax-supported debt outstanding; the remaining agency considers it a "gray area" and would not include them as long as the bonds are "stand alone," that is, not backed by the State's full faith and credit. All three agencies also noted that to the extent the State includes GARVEEs as tax supported, it would be appropriate to include the supporting federal revenue stream that backs the bonds when considering the debt service affordability criterion of 8.0% of State revenues. Further, one of the two bond rating agencies that include GARVEEs as tax-supported debt stated that they did so for their own analytic purposes, but would accept and understand if a State did otherwise for affordability determination purposes.

In accordance with SF&P §8-104(c), leases are considered tax-supported debt when the lease or unit of State government is "supported directly or indirectly by State tax revenues". However, SF&P §8-104 was amended in the 2011 Session by Chapter 163 of the 2011 Laws of Maryland. Effective June 1, 2011, tax supported debt does not include capital leases used to finance energy performance contracts if, as determined by the committee, energy savings that are guaranteed by the contractor:

- (i) equal or exceed the capital lease payments on an annual basis; and
- (ii) are monitored in accordance with reporting requirements adopted by the committee.

History of Debt Affordability Criteria

Based upon an analysis of available material and consultation with a number of financial experts, the following affordability criteria were developed by the Committee in 1979:

- Outstanding debt should be no more than 3.2% of State personal income;
- Adjusted debt service should be no more than 8.0% of State revenues; and
- New authorizations should be kept in the range of redemptions of existing debt over the near term.

These criteria were adopted by the Committee solely for the analysis of general obligation debt.

Criteria 1 and 2 represented traditional measures and criterion 3 reflected a discretionary policy position that the State should "get out of debt." The Committee at that time declared that, given the high debt level of the mid-late 1970's, the first two criteria were goals to be achieved over time, and the final criterion became controlling over the short term.

In 1987, while retaining the first and second criteria for evaluating the expanded definition of debt and debt service, the Committee concluded that the third criterion was no longer an applicable guideline. The basis for its conclusion was threefold. First, the high ratings of the State's General Obligation and Transportation Bonds indicated that the existing level of debt and the planned increases were acceptable to the rating agencies. Second, pressing legislative and executive commitments required an increase in the level of bonded debt to finance needed transportation and other projects. Third, adherence to the criterion tied yearly authorizations to events of 15 years before, thereby producing highly variable bond authorizations inconsistent with either good debt management or a stable capital program.

In 1988, a detailed survey of credit analysts was undertaken to obtain their views on the Committee's comprehensive approach to reviewing debt and to the criteria the Committee had been using for 10 years. The survey affirmed the Committee's decision to take an expanded view of debt. In addition, criteria 1 and 2 were almost universally approved. This position was reinforced in discussion with investment banks and bond rating agencies in July 2005. Indeed, the rating agencies have repeatedly cited the Capital Debt Affordability process and criteria as major reasons for awarding Maryland AAA status.

The 2007 Capital Debt Affordability Committee Report (Section VII) documented the Committee's review of its affordability criteria, initiated at the request of the General Assembly. The Committee concluded the 2007 Report with a recommendation for the continued study and evaluation of the criteria in 2008. That recommendation was followed and, after thorough analysis by the Committee and staff, and following consultation with the rating agencies and the State's financial advisor, the Committee voted to retain the 8.0% debt service to revenues criterion and to change the debt outstanding to personal income criterion from 3.2% to 4.0%. A complete report of the process undertaken by the Committee to change the criterion is in Section V of the Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations for Fiscal Year 2009.

In 2008, as part of the 2007 and 2008 review of variables incorporated in the affordability criteria, the Committee standardized the calculation of revenues for all components of tax-supported debt. Beginning in the 2008 analysis, revenues for GARVEE Bonds and Bay Restoration Bonds are no longer limited to their respective debt service as had been the prior practice. Revenues for GARVEE Bonds and Bay Restoration Bonds include all federal capital highway revenues and bay restoration fees respectively. This adjustment matches the convention that has been used by CDAC for all other tax-supported debt. For instance, debt service on General Obligation Bonds is measured using all available revenues from the general fund, bond premiums and real property taxes and revenues were not restricted solely to debt service on G.O. Bonds.

Actual affordability ratios for 1960 through 2015 are in *Schedule C-2*.

History of Authorizations

In its 1992 report, while reaffirming its belief in the theories underlying its prior recommendations, the Committee recommended that the six-year program originally recommended in 1988 be reduced, due principally to the severe national and state economic downturn. The 1992 recommendation acknowledged that the persistent recession had depressed the levels of personal income and that the structural changes in Maryland's economy would deter near term resumption of the State's rapid growth in personal income. The 1992 program also recognized that, while there had been no abatement in the population growth and need for services, cost inflation and, therefore, total need had been lower than originally projected in the years between 1988 and 1991. Considering all of these factors, the Committee recommended limiting authorization increases to 3% based at that time on the prevailing inflation rate plus 1%. In earlier years, the recommended out-year increases had varied between 3-5%, usually incorporating some estimate of inflation plus need.

In the years between 1993 and 2002, the State's economy and personal income recovered significantly but, due to the availability of general PAYGO funds, the guideline increase of 3% was generally observed and incorporated in future year projections. As debt authorizations grew at a slower rate than personal income, the level of "unused" debt capacity increased. Between 2002

and 2008, the inclusion of Bay Restoration Bonds and GARVEEs as State tax-supported debt and the increases in the authorizations of General Obligation Bonds absorbed virtually all of the previously unused debt capacity. The recommendations for General Obligation Bond authorizations in 2006, 2007, 2008 and 2009 were over the amount that would have been recommended had the 3.0% growth rate been maintained. In 2006 and 2007, the \$100 million increases extended to future years. In 2008 and 2009, \$150 million was projected as a one-time increase for each year.

In 2010, CDAC recommended an authorization of \$925.0 million which was \$215.0 million below the 2009 CDAC recommendation. The 2010 Committee also adjusted future authorization levels to remain within the CDAC self-imposed affordability benchmarks. These future levels were essentially unchanged in the 2011 CDAC Report. In December 2011, the CDAC increased its original recommendation by \$150 million. In October 2014, at the request of the Secretary of the Department of Budget and Management, the CDAC increased the authorization recommendation by \$75 million to address the growing project backlog. The out-year assumptions were also increased by \$75 million through fiscal year 2020. In October 2015, at the request of the Secretary of the Department of Budget and Management, the Committee reduced the authorization from the 2014 CDAC planned amount of \$1,180 million to \$995 million, a reduction of \$185 million. The \$995 million authorization was carried forward to fiscal year 2019 at the Secretary of the Department of Budget and Management's request.

For a history of recent authorizations and issuances, see Section V of the 2017 CDAC Report, "***Changes in Bond Issuance – General Obligation Bonds***" for further discussion.

Appendix B: History of Maryland Stadium Authority Financings

Oriole Park at Camden Yards - Bonds. Currently the Maryland Stadium Authority (“Authority”) operates Oriole Park at Camden Yards, which opened in 1992. In connection with the construction of that facility, the Authority issued \$155.0 million in notes and bonds. In October 1993, the Authority entered into an agreement to implement a synthetic fixed rate refinancing of the sports facility bonds using a combination of variable rate refunding obligations and forward interest rate exchange agreements. As provided under the agreements, savings of \$15.5 million was paid to the Authority on April 1, 1996. In accordance with this agreement and in consideration for the prior payment of the savings, the Authority issued its \$17.9 million Sports Facilities Lease Revenue Refunding Bonds in Series 1998 A in December 1998 to refund its outstanding Sports Facility Lease Revenue Bonds Series 1989C, and issued its \$121.0 million Sports Facilities Lease Revenue Refunding Bonds Series 1999 in December 1999 to refund its Sports Facilities Lease Revenue Bonds Series 1989D.

In December 2011, the Authority terminated the 1998 synthetic fixed rate refinancing with AIG Financial Products (“AIG-FP”), which required payment of a termination fee in the amount of \$19.7 million. The variable rate debt associated with the synthetic fixed rate refinancing was called and replaced with the Sports Facilities Lease Revenue Refunding Bonds Series 2011A Bonds in the amount of \$31.4 million. The federally taxable proceeds of the Series 2011A Bonds were used to defease the Series 1998A Bonds, and to pay the termination fee due to AIG-FP, underwriter’s costs and issuance costs. The Authority also issued the Sports Facilities Lease Revenue Refunding Bonds Series 2011B in the amount of \$62.9 million, whose tax-exempt proceeds and premium of \$7.7 million were used to defease the Series 1999 Bonds. The amounts outstanding as of June 30, 2017, are \$12.4 million for the Series 2011A Bonds and \$25.9 million for the Series 2011B Bonds.

The Authority’s notes and bonds are lease-backed revenue obligations, the payment of which is secured by, among other things, an assignment of revenues received under a lease of Oriole Park at Camden Yards from the Authority to the State. The rental payments due from the State under that lease are subject to annual appropriation by the General Assembly. Revenues to fund the lease payments are generated from a variety of sources, including in each year lottery revenues, the net operating revenues of the Authority, and \$1.0 million from the City of Baltimore.

In August 2011, the Maryland Stadium Authority issued the Sports Facilities Taxable Revenue Bonds, Series 2011 Bonds, in the amount of \$11.1 million. The proceeds were used for capital repairs to the warehouse located at the Camden Yards Complex. The Series 2011 Bonds matured on December 15, 2014. In December 2014, the Maryland Stadium Authority issued the Sports Facilities Taxable Revenue Bonds, Series 2014, in the amount of \$9.6 million. The proceeds were used to refinance the Sports Facilities Taxable Revenue Bonds, Series 2011. The Series 2014 bonds will mature on December 15, 2024. The amount outstanding as of June 30, 2017, totaled \$6.3 million. The Authority’s share of lottery revenues are pledged for these bonds; therefore they are not considered tax-supported debt and not included in the CDAC affordability analysis.

In December 2013, the Maryland Stadium Authority issued the Sports Facilities Taxable Revenue Bonds, Series 2013, in the amount of \$8.6 million. The proceeds were used to refinance the Sports Facilities Taxable Revenue Bonds, Series 2010. The Series 2013 bonds will mature on December 15, 2023. The amount outstanding as of June 30, 2016, totaled \$6.3 million. The

Authority's share of lottery revenues are pledged for these bonds; therefore they are not considered tax-supported debt and not included in the CDAC affordability analysis.

Oriole Park at Camden Yards - Leases. In early 2007, the Baltimore Orioles filed for arbitration over the selection and installation of a new video board at Oriole Park at Camden Yards. In September 2007 the Authority and the Baltimore Orioles reached a settlement, agreeing to purchase and install \$9.0 million of new audio and video equipment funded by \$5.5 million from the "Supplemental Improvements Fund" and \$3.5 million from the Authority. The Authority's share was financed under the State's Master Equipment Lease-Purchase Program and amortized over 10 years. The outstanding balance of the lease as of June 30, 2017, was \$0.4 million.

In November 2009, the Maryland Stadium Authority entered into a contract with Pepco Energy Services to provide \$6.0 million of energy upgrades and enhancements to Oriole Park at Camden Yards and the adjoining warehouse. The Authority is financing the upgrades and enhancements under the State's Energy Performance Contract Lease-Purchase Program over 12 years. Some of the upgrades and enhancements include the replacement of a chiller and cooling tower, replacement of light fixtures and upgrades to the generator plant. The outstanding balance as of June 30, 2016, was \$3.3 million. This lease is included in the CDAC affordability analysis because the guaranteed annual savings was terminated.

The amount outstanding of the Authority's bonds and leases, included in the CDAC analysis related to the Oriole Park at Camden Yards project totaled \$42.0 million as of June 30, 2017.

Ocean City Convention Center. The Authority also constructed an expansion of the Ocean City Convention Center. The expansion cost \$33.2 million and was financed through a matching grant from the State to Ocean City and a combination of funding from Ocean City and the Authority. In October 1995, the Authority issued \$17.3 million in revenue bonds to provide State funding; as required, Ocean City sold \$15.0 million of its special tax and general obligation bonds before the sale by the Authority.

In March 2011, the Authority refinanced the outstanding balance of \$6.5 million. A new fixed rate series was issued in the amount of \$6.6 million with \$6.5 million being used to call the Series 1995 Bonds and the balance used for transactional costs. The annual debt service on the Series 2011 Bonds is approximately \$1.4 million annually. These bonds matured December 15, 2015.

The Authority will also continue to pay one-half of any annual operating deficits of the facility through December 15, 2035, after which time Ocean City will be solely responsible for operating deficits. The 2017 contribution to operating deficits and the project's capital improvements fund was approximately \$1.4 million. The project has generated direct and indirect benefits to the State that offset its costs (debt service, operating deficit contributions, deposits to the capital improvements fund, and that portion of the Authority's budget that is allocable to the Ocean City Convention Center project) since 2007.

Ravens Stadium. The Authority currently operates Ravens Stadium, which opened in 1998. In connection with the construction of that facility, the Authority sold \$87.6 million in lease-backed revenue bonds on May 1, 1996 for Ravens Stadium. The proceeds from the Authority's

bonds, along with cash available from State lottery proceeds, investment earnings, contributions from the Ravens and other sources were used to pay project design and construction expenses of approximately \$229.0 million. The bonds are solely secured by an assignment of revenues received under a lease of the project from the Authority to the State. In June 1998, the Authority entered into an agreement to implement a synthetic fixed rate refinancing of the football lease-backed revenue bonds using a combination of variable rate refunding obligations and forward interest rate exchange agreements. As provided under the agreements, the savings of \$2.6 million were paid to the Authority on June 10, 1998. The Authority issued Maryland Stadium Authority Sports Facilities Lease Revenue Refunding Bonds Football Stadium Issue Series 2007 in the amount of \$73.5 million of which \$73.1 million was used to call the outstanding principal balance on the 1996 Series Bonds on March 1, 2007. The balance of the proceeds, \$375,000, was used for closing costs. The 1996 Series Bonds were called on March 1, 2007 in accordance with the swap agreement.

The Authority's combined debt service on the remaining outstanding revenue bonds is \$6.5 million annually. The bonds outstanding as of June 30, 2017, totaled \$44.2 million.

In November 2009, the Maryland Stadium Authority entered into a contract with Pepco Energy Services to provide energy upgrades and enhancements to Ravens Stadium. The energy upgrades and enhancements will cost approximately \$2.5 million. The Authority is financing the upgrades and enhancements under the State's Energy Performance Contract Lease-Purchase Program over 12 years. The outstanding balance as of June 30, 2017, was \$1.3 million. This lease is included in the CDAC affordability analysis because the guaranteed annual savings was terminated.

In the spring of 2010, the Maryland Stadium Authority entered into several contracts for the replacement of the video boards and control room at Ravens Stadium. The budget for the project was estimated at \$10.0 million. The Baltimore Ravens funded approximately \$6.0 million and the Maryland Stadium Authority funded \$4.0 million. The Maryland Stadium Authority's share was financed under the State's Equipment Lease-Purchase Program and amortized over 10 years. The equipment lease balance of \$1.5 million was paid off in January 2017.

The amount outstanding of the Authority's bonds and leases, included in the CDAC affordability analysis, related to the Ravens Stadium project totaled \$45.5 million as of June 30, 2017.

Montgomery County Conference Center. In January 2003, the Authority issued \$23.2 million in lease-backed revenue bonds in connection with the construction of a conference center in Montgomery County. The conference center is adjacent and physically connected to a Marriott Hotel, which has been privately financed. The center cost \$33.5 million and was financed through a combination of funding from Montgomery County and the Authority. The Authority does not have any operating risk. The average annual debt service for these bonds is \$1.6 million.

In November 2012, the Authority refinanced the outstanding balance of \$16.0 million. A new fixed rate series was issued in the amount of \$13.6 million with \$13.3 million plus \$2.3 million in premium being used to call the Series 2003 Bonds and the balance used for interest and transactional costs. The annual debt service on the Series 2012 Bonds is approximately \$1.6 million. The bonds outstanding as of June 30, 2017, totaled \$9.0 million.

Hippodrome Theater. In July 2002, the Authority issued \$20.3 million in taxable lease-backed revenue bonds in connection with the renovation and construction of the Hippodrome Theater as part of Baltimore City's West Side Development. The cost of renovating the theater was \$63.0 million and was financed by various public and private sources. The Authority does not have any operating risk for the project which was completed in February 2004. The average annual debt service for these bonds is \$1.6 million.

In July 2012, the Authority refinanced the outstanding balance of \$13.7 million. A new fixed rate series was issued in the amount of \$14.1 million with \$13.7 million being used to call the Series 2002 Bonds and the balance used for interest and transactional costs. The annual debt service on the Series 2011 Bonds is approximately \$1.6 million. The bonds outstanding as of June 30, 2017, totaled \$7.4 million.

Camden Station Renovation. In February 2004, the Authority issued \$8.7 million in taxable lease-backed revenue bonds in connection with the renovation of the historic Camden Station located at the Camden Yards Complex in Baltimore, Maryland. The cost of the renovation was \$8.0 million. The Authority has executed lease agreements for the entire building, with the Babe Ruth Museum leasing approximately 22,600 square feet since May 2000 and Geppi's Entertainment Museum leasing the balance of the building since early fall 2006. To date, lease payments have not been sufficient to cover debt service on the bonds and the shortfall has been subsidized by the Authority. The average annual debt service for these bonds is \$0.7 million. Bonds outstanding as of June 30, 2017, totaled \$5.1 million.

Baltimore City Public School Construction. On May 5, 2016, the Authority issued the Series 2016 Maryland Stadium Authority Baltimore City Public Schools (BCPS) Construction and Revitalization Program Revenue Bonds, Series 2016 of \$320.0 million. There was approximately \$66.1 million in bond premium generated from the transaction. The proceeds of \$386.1 million will be used for issuance costs and construction costs for the Baltimore City Public Schools. Interest is payable semiannually at the rate of 5.00% per annum on May 1st and November 1st. This bond will mature May 1, 2046. The annual debt service is secured by the funds received from Baltimore City, Baltimore City Public Schools and Lottery from the State of Maryland; therefore, they are not considered tax-supported debt and not included in the CDAC affordability analysis. The annual debt service is approximately \$20.8 million. Bonds outstanding as of June 30, 2017, totaled \$320.0 million.

IX. SCHEDULES

Schedule A-1

MARYLAND PERSONAL INCOME AND POPULATION

Historical Data through 2016 Projections 2017-2027

<u>Calendar Year</u>	<u>Personal Income</u> <i>(\$ in millions)</i>	<u>% Change</u>	<u>Population</u> <i>(thousands)</i>	<u>% Change</u>
2003	\$215,982		5,496	
2004	\$232,067	7.45%	5,547	0.93%
2005	\$245,063	5.60%	5,592	0.81%
2006	\$261,067	6.53%	5,627	0.63%
2007	\$272,901	4.53%	5,653	0.46%
2008	\$283,053	3.72%	5,685	0.57%
2009	\$282,153	-0.32%	5,730	0.79%
2010	\$289,653	2.66%	5,788	1.01%
2011	\$306,001	5.64%	5,844	0.97%
2012	\$316,682	3.49%	5,892	0.82%
2013	\$321,212	1.43%	5,939	0.80%
2014	\$331,860	3.32%	5,976	0.62%
2015	\$344,999	3.96%	5,995	0.32%
2016	\$341,866	-0.91%	6,016	0.36%
2017	\$356,022	4.14%	6,034	0.29%
2018	\$370,189	3.98%	6,051	0.28%
2019	\$385,813	4.22%	6,067	0.27%
2020	\$401,638	4.10%	6,082	0.25%
2021	\$417,459	3.94%	6,096	0.24%
2022	\$432,258	3.54%	6,113	0.27%
2023	\$448,692	3.80%	6,130	0.27%
2024	\$464,905	3.61%	6,146	0.28%
2025	\$480,787	3.42%	6,163	0.27%
2026	\$497,955	3.57%	6,179	0.26%
2027	\$516,212	3.67%	6,195	0.25%

2.71% Average rate of personal income growth for 10 year period 2008 through 2017

3.40% Median rate of personal income growth for 10 year period 2008 through 2017
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Sources: Personal Income

2003-2016 Bureau of Economic Analysis, U.S. Dept. of Commerce

2017-2027 Forecast: Board of Revenue Estimates September 2015 forecast

Population

2003-2016 Census Bureau, U.S. Dept. of Commerce

2017-2027 Forecast: Economy.com Sept 2015 forecast

Schedule A-2

MARYLAND STATE TAX-SUPPORTED REVENUE PROJECTIONS															
(\$ in millions)															
Fiscal Year	General Fund	% Change	Property Taxes	% Change	Use of Premium and Misc. ABF Receipts	US Treasury Subsidy - Direct Subsidy Bonds	Educational Trust Fund (VLT revenues)	Transfer Taxes	Total	Transportation Revenues	Stadium Related Revenues	Garvee Revenues	Bay Restoration Fund	Total Revenues	% Change
2013	\$14,620.5	2.5%	\$730.4	-4.2%	\$154.9	\$12.1	\$308.3	\$140.4	\$15,966.6	\$2,445.0	\$24.6	\$467.2	\$92.8	\$18,996.2	3.78%
2014	\$15,017.0	2.7%	\$724.8	-0.8%	\$107.9	\$11.4	\$328.4	\$164.0	\$16,353.5	\$2,709.0	\$23.4	\$467.2	\$108.5	\$19,661.6	3.50%
2015	\$15,778.4	5.1%	\$730.7	0.8%	\$128.1	\$11.5	\$387.4	\$161.0	\$17,197.1	\$2,863.0	\$21.9	\$465.8	\$111.8	\$20,659.6	5.08%
2016	\$16,082.6	1.9%	\$747.0	2.2%	\$171.2	\$11.5	\$379.6	\$174.5	\$17,566.4	\$3,132.0	\$21.8	\$465.8	\$112.9	\$21,298.9	3.09%
2017	\$16,588.5	3.1%	\$773.1	3.5%	\$91.2	\$11.5	\$452.9	\$210.1	\$18,127.3	\$3,165.0	\$21.9	\$548.6	\$112.7	\$21,975.5	3.18%
2018	\$17,085.4	3.0%	\$804.5	4.1%	\$93.1	\$11.5	\$487.1	\$213.5	\$18,695.1	\$3,214.0	\$21.8	\$548.6	\$113.8	\$22,593.3	2.81%
2019	\$17,629.7	3.2%	\$814.5	1.2%	\$3.1	\$10.9	\$507.9	\$221.9	\$19,187.9	\$3,285.0	\$21.4	\$548.6	\$114.9	\$23,157.8	2.50%
2020	\$18,238.3	3.5%	\$844.0	3.6%	\$3.1	\$9.9	\$515.5	\$230.4	\$19,841.1	\$3,338.0	\$21.3	\$548.6	\$116.1	\$23,865.1	3.05%
2021	\$18,902.2	3.6%	\$861.7	2.1%	\$3.1	\$9.4	\$507.6	\$238.6	\$20,522.5	\$3,469.0	\$7.2	\$0.0	\$117.3	\$24,116.0	1.05%
2022	\$19,589.4	3.6%	\$879.4	2.1%	\$3.1	\$8.3	\$515.2	\$246.7	\$21,242.2	\$3,582.0	\$7.2	\$0.0	\$118.4	\$24,949.8	3.46%
2023	\$20,258.8	3.4%	\$897.4	2.0%	\$3.1	\$5.1	\$522.9	\$252.9	\$21,940.3	\$3,673.0	\$7.2	\$0.0	\$119.6	\$25,740.1	3.17%
2024	\$21,008.4	3.7%	\$915.7	2.0%	\$3.1	\$2.4	\$530.7	\$262.2	\$22,722.5	\$3,727.0	\$7.2	\$0.0	\$120.8	\$26,577.5	3.25%
2025	\$21,785.7	3.7%	\$934.2	2.0%	\$3.1	\$0.5	\$538.7	\$271.9	\$23,534.1	\$3,817.0	\$7.4	\$0.0	\$122.0	\$27,480.6	3.40%
2026	\$22,591.7	3.7%	\$953.0	2.0%	\$3.1	\$0.2	\$546.8	\$282.0	\$24,376.8	\$3,893.0	\$7.4	\$0.0	\$123.2	\$28,400.5	3.35%
2027	\$23,427.6	3.7%	\$972.1	2.0%	\$3.1	\$0.0	\$555.0	\$292.4	\$25,250.3	\$3,983.0	\$0.0	\$0.0	\$124.5	\$29,357.8	3.37%

Sources:
 General Fund: Board of Revenue Estimates
 Property Tax and Use of Premium Revenues: 2010 - 2017; State Budget Books; 2018 - 2027 Dept. of Budget and Management, STO, Department of Assessments and Taxation
 US Treasury Subsidy - Direct Subsidy Bonds including Build America, Qualified School Construction, Qualified Zone Academy, and Qualified Energy Conservation Bonds
 Educational Trust Fund (Video Lottery Terminal revenues): 2010 - 2017 - State Budget Books; 2018 through 2027 - Board of Revenue Estimates
 Transfer Taxes: 2011 - 2017: Dept. of Budget and Management; 2018 - 2027: Board of Revenue Estimates - September 2017
 Transportation Revenues: Department of Transportation; Includes Taxes and Fees, Operating Revenue (including federal funds), Other Revenue (including investment revenue); MdTA transfers are deducted.
 Garvee Revenues: MdTA, Federal highway capital revenues; No debt service or revenues to be included after 2020
 Stadium Revenues: Stadium's Lottery revenues net of debt service on the 2010 & 2011 Sports Facilities Revenue Bonds, Camden Yards revenues, and Hippodrome ticket surcharge revenues
 Bay Restoration Fund Revenues: Department of Environment - MWQFA; Includes total program revenues

Schedule B-1

Proposed G.O. Authorization and Projected Issuance

Proposed Authorization (in \$ Millions)

FY	Legislative Session	Proposed Authorization	Rate of Increase
2019	2018	995	
2020	2019	995	0%
2021	2020	995	0%
2022	2021	995	0%
2023	2022	995	0%
2024	2023	995	0%
2025	2024	995	0%
2026	2025	995	0%
2027	2026	995	0%

Projected Issuance of New Authorization (in \$ Millions)

Auth. Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
2019	-	308	249	199	149	90	-	-	-	-	995
2020	-	-	308	249	199	149	90	-	-	-	995
2021	-	-	-	308	249	199	149	90	-	-	995
2022	-	-	-	-	308	249	199	149	90	-	995
2023	-	-	-	-	-	308	249	199	149	90	995
2024	-	-	-	-	-	-	308	249	199	149	905
2025	-	-	-	-	-	-	-	308	249	199	756
2026	-	-	-	-	-	-	-	-	308	249	557
2027	-	-	-	-	-	-	-	-	-	308	308
Total	-	308	557	756	905	995	995	995	995	995	7,502
Prior Authorization	1,025	707	453	239	90	-	-	-	-	-	
Total Projected Issuance	1,025	1,015	1,010	995	995	995	995	995	995	995	10,015

Projected Bond Sales by Fiscal Year (in \$ Millions)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
1st Sale	550.0	510.0	505.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	5,065
2nd Sale	475.0	505.0	505.0	495.0	495.0	495.0	495.0	495.0	495.0	495.0	4,950
Total	1,025.0	1,015.0	1,010.0	995.0	995.0	995.0	995.0	995.0	995.0	995.0	10,015

Issuance Assumptions for New Authorizations

Fiscal year following year of authorization:	1st	2nd	3rd	4th	5th
Percent of authorization issued:	31%	25%	20%	15%	9%

Schedule B-2

Projected General Obligation Authorized but Unissued Debt
(\$ in thousands)

Fiscal Year	Authorized But Unissued Debt at Beginning of FY	New Debt Authorizations^(a)	Bond Issues(b)	Authorized but Unissued Debt at end of FY
2018	2,401,471	995,000	(1,025,000)	2,371,471
2019	2,371,471	995,000	(1,015,000)	2,351,471
2020	2,351,471	995,000	(1,010,000)	2,336,471
2021	2,336,471	995,000	(995,000)	2,336,471
2022	2,336,471	995,000	(995,000)	2,336,471
2023	2,336,471	995,000	(995,000)	2,336,471
2024	2,336,471	995,000	(995,000)	2,336,471
2025	2,336,471	995,000	(995,000)	2,336,471
2026	2,336,471	995,000	(995,000)	2,336,471
2027	2,336,471	995,000	(995,000)	2,336,471
		<u>9,950,000</u>	<u>(10,015,000)</u>	

Summary

Authorized but Unissued at 7/1/2017	2,401,471
Total Authorizations	9,950,000
Total Issuances	<u>(10,015,000)</u>
Total Authorized but Unissued at 6/30/27	<u>2,336,471</u>

^(a) Authorizations are shown in the fiscal year of the legislative session to support the capital program of the following year.

^(b) As projected in Appendix B-1

Schedule B-3

Projected General Obligation Debt Outstanding
(\$ in thousands)

Fiscal Year	Outstanding at Beginning of FY	New GO Debt Issues^(a)	Redemptions	Outstanding at End of FY
2018	9,334,206	1,025,000	837,201	9,522,005
2019	9,522,005	1,015,000	873,931	9,663,074
2020	9,663,074	1,010,000	905,779	9,767,295
2021	9,767,295	995,000	904,422	9,857,873
2022	9,857,873	995,000	946,803	9,906,071
2023	9,906,071	995,000	976,657	9,924,413
2024	9,924,413	995,000	993,981	9,925,433
2025	9,925,433	995,000	1,058,551	9,861,881
2026	9,861,881	995,000	1,042,212	9,814,669
2027	9,814,669	995,000	1,034,534	9,775,135
		<u>10,015,000</u>	<u>9,574,070</u>	

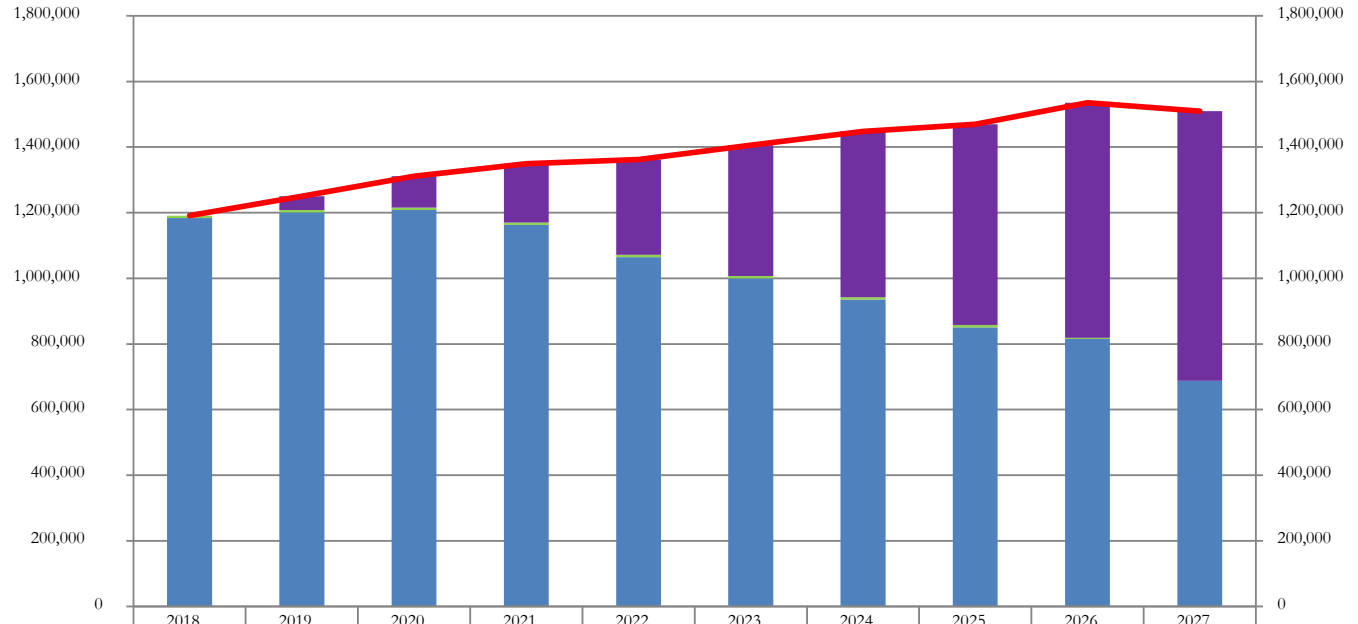
Summary

Outstanding at 7/1/2017	9,334,206
Total GO Issued	10,015,000
Total GO Redeemed	<u>(9,574,070)</u>
Outstanding at 6/30/27	<u>9,775,135</u>

^(a)As projected in Appendix B-1

Schedule B-4

Projected General Obligation Debt Service and Sinking Fund Payments
Fiscal Years 2018 - 2027
 (\$ in thousands)



	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Debt Service: Expected New Issues	0	42,150	95,275	179,842	290,381	399,129	505,928	611,591	716,649	821,664
QZAB/QSCB Sinking Fund Payments	7,674	7,674	7,674	7,183	7,183	6,943	6,670	6,628	3,076	-
Debt Service: Existing Issues	1,183,472	1,200,588	1,207,868	1,162,531	1,064,833	1,000,153	935,493	850,850	815,360	687,694
TOTAL	1,191,146	1,250,411	1,310,817	1,349,556	1,362,397	1,406,225	1,448,091	1,469,069	1,535,086	1,509,357

Schedule C-1

Historical Data - General Obligation Debt
(\$ in thousands)

Fiscal Year	Summary of Authorizations				Summary of Debt Activity					Summary of Debt Service Adjustment (b)				
	Authorized (a)	Cancelled	New Issuances	Authorized but Unissued	New Issuances	Refunding	Redeemed	Refunded	Outstanding at Fiscal Year End	Gross Total	Repayable	Assumed	Net	Adjusted Debt Service
1981	\$182,418	\$16,335	\$271,065	\$824,706	\$271,065	-	\$176,140	-	\$2,204,055	\$286,003	(\$15,946)	\$35,841	\$19,895	\$305,898
1982	\$184,998	\$22,391	\$188,180	\$799,133	\$188,180	-	\$184,575	-	\$2,207,660	\$311,372	(\$16,253)	\$33,947	\$17,694	\$329,066
1983	\$190,250	\$8,851	\$392,230	\$588,301	\$392,230	-	\$190,000	-	\$2,409,890	\$330,491	(\$14,062)	\$28,328	\$14,266	\$344,757
1984	\$203,150	\$24,467	\$116,700	\$650,284	\$116,700	-	\$212,275	-	\$2,314,315	\$361,279	(\$12,750)	\$27,209	\$14,459	\$375,738
1985 (c)	\$331,387	\$11,187	\$138,990	\$831,495	\$138,990	-	\$222,010	-	\$2,231,295	\$380,089	(\$11,809)	\$24,146	\$12,337	\$392,426
1986	\$219,034	\$49,892	\$124,585	\$876,052	\$124,585	-	\$245,805	-	\$2,110,075	\$396,768	(\$9,204)	\$20,227	\$11,023	\$407,791
1987	\$230,950	\$7,575	\$164,645	\$934,782	\$164,645	-	\$244,305	-	\$2,030,415	\$394,568	(\$5,104)	\$16,441	\$11,337	\$405,905
1988	\$254,228	\$13,601	\$304,860	\$870,549	\$304,860	-	\$244,455	-	\$2,090,820	\$389,993	(\$4,649)	\$13,635	\$8,986	\$398,979
1989	\$294,997	\$3,545	\$160,000	\$1,002,000	\$160,000	-	\$245,460	-	\$2,005,360	\$393,388	(\$4,240)	\$10,293	\$6,053	\$399,441
1990 (c)	\$328,219	\$103,063	\$234,227	\$992,930	\$234,227	-	\$252,681	-	\$1,986,906	\$395,118	(\$4,260)	\$8,317	\$4,057	\$399,175
1991	\$329,200	\$2,570	\$296,787	\$1,022,773	\$296,787	-	\$245,256	-	\$2,038,437	\$388,400	(\$1,349)	\$6,547	\$5,198	\$393,598
1992	\$349,979	\$1,000	\$340,000	\$1,031,752	\$340,000	-	\$200,238	-	\$2,178,199	\$345,897	(\$1,353)	\$5,648	\$4,295	\$350,192
1993	\$369,995	\$2,320	\$260,410	\$1,139,018	\$260,410	\$147,740	\$176,479	\$130,475	\$2,279,395	\$322,251	(\$1,358)	\$3,156	\$1,798	\$324,049
1994	\$379,889	\$1,417	\$380,365	\$1,137,125	\$380,365	\$207,390	\$183,106	\$180,040	\$2,504,004	\$323,618	(\$654)	\$2,146	\$1,492	\$325,110
1995	\$389,960	\$1,111	\$335,000	\$1,190,958	\$335,000	-	\$219,936	-	\$2,619,069	\$373,485	(\$653)	\$1,357	\$704	\$374,189
1996	\$412,088	\$12,425	\$470,000	\$1,119,919	\$470,000	-	\$229,134	-	\$2,859,935	\$382,125	(\$652)	\$1,360	\$708	\$382,833
1997	\$416,133	\$2,114	\$410,000	\$1,124,656	\$410,000	-	\$244,541	-	\$3,025,394	\$401,799	(\$647)	\$347	(\$300)	\$401,499
1998	\$442,999	\$15,142	\$500,000	\$1,052,513	\$500,000	-	\$254,869	-	\$3,270,525	\$417,900	(\$642)	\$64	(\$578)	\$417,322
1999	\$448,745	\$5,764	\$475,000	\$1,020,898	\$475,000	-	\$245,297	-	\$3,500,238	\$417,646	(\$124)	\$0	(\$124)	\$417,522
2000	\$471,786	\$3,659	\$125,000	\$1,363,620	\$125,000	-	\$276,362	-	\$3,348,872	\$459,156	-	-	-	\$459,156
2001	\$513,250	\$3,612	\$400,000	\$1,473,258	\$400,000	-	\$297,966	-	\$3,450,900	\$470,868	-	-	-	\$470,869
2002	\$731,058	\$12,614	\$418,098	\$1,773,604	\$418,098	\$109,935	\$322,320	\$112,435	\$3,544,178	\$495,217	-	-	-	\$495,217
2003	\$756,513	\$11,634	\$725,000	\$1,793,483	\$725,000	\$376,950	\$326,695	\$386,940	\$3,932,493	\$496,870	-	-	-	\$496,870
2004	\$663,663	\$10,692	\$500,000	\$1,946,454	\$500,000	-	\$330,215	-	\$4,102,278	\$536,819	-	-	-	\$536,819
2005	\$679,807	\$6,730	\$784,043	\$1,835,488	\$784,043	\$855,840	\$348,180	\$882,155	\$4,511,826	\$553,783	-	-	-	\$553,783
2006	\$690,000	\$1,004	\$750,000	\$1,774,484	\$750,000	-	\$393,355	-	\$4,868,471	\$625,208	-	-	-	\$625,208
2007	\$821,126	\$4,645	\$679,378	\$1,911,587	\$679,378	-	\$405,695	-	\$5,142,154	\$654,055	-	-	-	\$654,055
2008	\$935,000	\$2,749	\$779,986	\$2,063,852	\$779,986	-	\$428,310	-	\$5,493,830	\$692,539	-	-	-	\$692,539
2009	\$1,112,000	\$1,939	\$845,563	\$2,328,350	\$845,563	\$65,800	\$464,725	\$66,825	\$5,873,643	\$744,799	-	-	-	\$744,799
2010	\$1,214,543	\$7,026	\$1,140,883	\$2,394,984	\$1,140,883	\$798,080	\$482,754	\$806,630	\$6,523,222	\$777,523	-	-	-	\$777,523
2011	\$940,902	\$4,127	\$974,718	\$2,357,041	\$974,718	-	\$515,094	-	\$6,982,846	\$834,833	-	-	-	\$834,833
2012	\$1,090,324	\$4,525	\$1,112,400	\$2,330,440	\$1,112,400	\$393,295	\$542,179	\$405,260	\$7,541,102	\$878,208	-	-	-	\$878,208
2013	\$1,079,549	\$6,116	\$1,043,230	\$2,360,643	\$1,043,230	\$348,930	\$564,299	\$363,160	\$8,005,803	\$915,982	-	-	-	\$915,982
2014	\$1,164,625	\$7,305	\$979,549	\$2,538,414	\$979,549	\$236,855	\$613,979	\$245,880	\$8,362,347	\$980,738	-	-	-	\$980,738
2015	\$1,028,505	\$9,574	\$1,022,625	\$2,534,720	\$1,022,625	\$1,015,075	\$658,368	\$1,064,465	\$8,677,214	\$1,027,003	-	-	-	\$1,027,003
2016	\$999,625	\$2,838	\$1,540,625	\$1,990,882	\$1,540,625	-	\$734,456	-	\$9,483,383	\$1,120,994	-	-	-	\$1,120,994
2017	\$1,089,383	\$1,317	\$1,145,365	\$2,401,471	\$1,145,365	\$465,685	\$786,139	\$490,305	\$9,817,989	\$1,183,054	-	-	-	\$1,183,054

- (a) Authorizations for a fiscal year represent those authorizations effective for that fiscal year; therefore, authorizations for FY 1988 exclude \$15 million for the Salisbury Multi-Service Center which authorization is effective 7/1/88.
- (b) Adjustment to debt service: "repayable" represents debt service on loans the repayment of which is received by the State, from non-State entities, concurrently with, or prior to, debt service payment dates. "Assumed" debt represents payments made by the State for debt service on non-State debt.
- (c) Includes \$100 million authorized in the Special Session of 1985 for the savings and loan crisis; no bonds were issued and the authorization was cancelled in 1990.

Schedule C-2

History of CDAC Affordability Ratios

	Debt as a % of Personal Income (1)		Debt Service as a % of Revenues (2)	
	GO Debt Only	Tax Supported Debt (3) (4)	GO Debt Only (5) (6)	Tax Supported Debt (3) (4)
1981	4.48%		10.63%	
1982	4.24%		10.60%	
1983	4.43%		10.32%	
(7) 1984		4.15%		10.16%
(7) 1985		3.63%		9.61%
(7) 1986		3.12%		8.80%
1987		2.87%		7.77%
1988		2.71%		6.99%
1989		2.51%		6.78%
1990		2.64%		6.85%
1991		2.90%		6.74%
1992		3.01%		6.25%
1993		2.97%		6.13%
1994		3.00%		5.50%
1995		3.04%		6.09%
1996		3.01%		6.46%
1997		2.93%		6.45%
1998		2.85%		6.45%
1999		2.78%		5.84%
2000		2.50%		5.73%
2001		2.36%		5.45%
2002		2.34%		5.86%
2003		2.58%		6.15%
2004		2.59%		5.93%
2005		2.56%		5.54%
2006		2.56%		5.55%
(3) 2007		2.68%		5.40%
(4) 2008		2.75%		5.55%
2009		3.21%		6.21%
2010		3.34%		6.85%
2011		3.14%		6.57%
2012		3.23%		6.64%
2013		3.33%		6.60%
2014		3.39%		6.86%
2015		3.40%		6.90%
2016		3.49%		7.27%
2017		3.54%		7.58%

(1) The criterion for debt outstanding to personal income was 3.2% from 1979-2007 and increased to 4.0% in 2008.

(2) The criterion for debt service to revenues has been 8.0% since 1979.

(3) GARVEE Bonds were first issued in 2007 and included in tax-supported debt beginning in that year.

(4) Bay Restoration Bonds were first issued in 2008 and included in tax-supported debt in that year.

(5) Gross GO debt service plus debt service on assumed local school debt minus debt service on loans repayable by local governments, State agencies and others.

(6) Revenues included general fund revenues plus property tax revenues.

(7) Various components of tax-supported debt first appear in the 1988 report which recalculated the ratios beginning in 1984.

Schedule C-3

Historical Data - Department of Transportation Debt Consolidated Transportation Bonds (\$ in thousands)

Fiscal Year	Summary of Debt Activity					Summary of Debt Service (d)						
	Gross Debt Outstanding Beginning of Year	Issued	Defeased	Redeemed	Gross Debt Outstanding End of Year	Sinking Fund(s) Balance (c)	Net Debt Outstanding End of Year	Deposits to Refunding Sinking Fund	Principal Redeemed	Interest	Total	
1981	\$ 399,865	\$ 120,000 (a)	-	\$ -	\$ 519,865	-	-	-	-	-	-	
1982	\$ 519,865	\$ 60,000	-	\$ 60,000	\$ 519,865	-	-	-	-	-	-	
1983	\$ 519,865	\$ 40,000	-	\$ 60,000	\$ 499,865	\$ 240,601	\$ 259,264	\$ 20,924	\$ 60,000	\$ 32,884	\$ 113,808	
1984	\$ 499,865	-	-	-	\$ 499,865	\$ 283,617	\$ 216,248	\$ 20,924	-	\$ 29,219	\$ 50,143	
1985	\$ 499,865	-	-	-	\$ 499,865	\$ 335,241	\$ 164,624	\$ 20,924	-	\$ 29,219	\$ 50,143	
1986	\$ 499,865	-	\$ 354,865 (b)	\$ 3,000	\$ 142,000	\$ 29,299	\$ 112,701	\$ 10,462	\$ 3,000	\$ 19,547	\$ 33,009	
1987	\$ 142,000	\$ 100,000	-	\$ 7,000	\$ 235,000	\$ 48,317	\$ 186,683	-	\$ 7,000	\$ 12,919	\$ 19,919	
1988	\$ 235,000	-	-	\$ 8,000	\$ 227,000	\$ 58,953	\$ 168,047	-	\$ 8,000	\$ 15,685	\$ 23,685	
1989	\$ 227,000	\$ 100,000	-	\$ 17,000	\$ 310,000	\$ 68,162	\$ 241,838	-	\$ 17,000	\$ 18,195	\$ 35,195	
1990	\$ 310,000	\$ 260,000	-	\$ 20,000	\$ 550,000	\$ 67,309	\$ 482,691	-	\$ 20,000	\$ 28,842	\$ 48,842	
1991	\$ 550,000	\$ 310,000	-	\$ 18,000	\$ 842,000	\$ 68,329	\$ 773,671	-	\$ 18,000	\$ 46,261	\$ 64,261	
1992	\$ 842,000	\$ 120,000	-	\$ 21,000	\$ 941,000	\$ 66,230	\$ 874,770	-	\$ 21,000	\$ 59,211	\$ 80,211	
1993	\$ 941,000	\$ 75,000	-	\$ 56,200	\$ 959,800	\$ 39,901	\$ 919,899	-	\$ 56,200 (e)	\$ 61,445	\$ 117,645	
1994	\$ 959,800	\$ 543,745 (f)	\$ 457,800	\$ 25,455	\$ 1,020,290	\$ 27,570	\$ 992,720	-	\$ 25,455	\$ 56,423	\$ 81,878	
1995	\$ 1,020,290	\$ 75,000	-	\$ 47,785	\$ 1,047,505	\$ 32,338	\$ 1,015,167	-	\$ 47,785	\$ 52,841	\$ 100,626	
1996	\$ 1,047,505	-	-	\$ 69,880	\$ 977,625	\$ 30,940	\$ 946,685	-	\$ 69,880	\$ 51,526	\$ 121,406	
1997	\$ 977,625	\$ 50,000	-	\$ 88,245	\$ 939,380	\$ 15,495	\$ 923,885	-	\$ 88,245	\$ 47,448	\$ 135,693	
1998	\$ 939,380	\$ 93,645 (g)	\$ 91,200	\$ 97,810	\$ 844,015	-	\$ 844,015	-	\$ 97,810	\$ 44,959	\$ 142,769	
1999	\$ 844,015	-	-	\$ 94,885	\$ 749,130	-	\$ 749,013	-	\$ 94,885	\$ 38,025	\$ 132,910	
2000	\$ 749,130	\$ 75,000	-	\$ 99,360	\$ 724,770	-	\$ 724,770	-	\$ 99,360	\$ 35,873	\$ 135,233	
2001	\$ 724,770	-	-	\$ 76,720	\$ 648,050	-	\$ 648,050	-	\$ 76,720	\$ 32,954	\$ 109,674	
2002	\$ 648,050	\$ 150,000	-	\$ 83,900	\$ 714,150	-	\$ 714,150	-	\$ 83,900	\$ 29,278	\$ 113,178	
2003	\$ 714,150	\$ 607,405 (h)	\$ 46,500	\$ 313,810	\$ 961,245	-	\$ 961,245	-	\$ 313,810	\$ 34,204	\$ 348,014	
2004	\$ 961,245	\$ 395,900 (i)	\$ 77,500	\$ 93,995	\$ 1,185,650	-	\$ 1,185,650	-	\$ 93,995	\$ 40,915	\$ 134,910	
2005	\$ 1,185,650	-	-	\$ 115,705	\$ 1,069,945	-	\$ 1,069,945	-	\$ 115,705	\$ 53,950	\$ 169,655	
2006	\$ 1,069,945	\$ 100,000	-	\$ 91,470	\$ 1,078,475	-	\$ 1,078,475	-	\$ 91,470	\$ 49,702	\$ 141,172	
2007	\$ 1,078,475	\$ 100,000	-	\$ 67,425	\$ 1,111,050	-	\$ 1,111,050	-	\$ 67,425	\$ 50,999	\$ 118,424	
2008	\$ 1,111,050	\$ 226,755	-	\$ 68,990	\$ 1,268,815	-	\$ 1,268,815	-	\$ 68,990	\$ 52,400	\$ 121,390	
2009	\$ 1,268,815	\$ 390,000	-	\$ 76,210	\$ 1,582,605	-	\$ 1,582,605	-	\$ 76,210	\$ 66,145	\$ 142,355	
2010	\$ 1,582,605	\$ 140,000	-	\$ 77,595	\$ 1,645,010	-	\$ 1,645,010	-	\$ 77,595	\$ 73,358	\$ 150,953	
2011	\$ 1,645,010	-	-	\$ 83,170	\$ 1,561,840	-	\$ 1,561,840	-	\$ 83,170	\$ 75,492	\$ 158,662	
2012	\$ 1,561,840	\$ 276,435 (j)	172,800	\$ 102,845	\$ 1,562,630	-	\$ 1,562,630	-	\$ 102,845	\$ 71,370	\$ 174,215	
2013	\$ 1,562,630	\$ 165,000	-	\$ 109,340	\$ 1,618,290	-	\$ 1,618,290	-	\$ 109,340	\$ 70,968	\$ 180,308	
2014	\$ 1,618,290	\$ 325,000	-	\$ 130,620	\$ 1,812,670	-	\$ 1,812,670	-	\$ 130,620	\$ 76,614	\$ 207,234	
2015	\$ 1,812,670	\$ 661,250 (k)	301,255	\$ 152,415	\$ 2,020,250	-	\$ 2,020,250	-	\$ 152,415	\$ 79,989	\$ 232,404	
2016	\$ 2,020,250	\$ 300,000	-	\$ 174,165	\$ 2,146,085	-	\$ 2,146,085	-	\$ 174,165	\$ 90,193	\$ 264,358	
2017	\$ 2,146,085	\$ 892,525 (l)	253,040	\$ 207,185	\$ 2,578,385	-	\$ 2,578,385	-	\$ 207,185	\$ 90,193	\$ 297,378	

(a) Includes \$60 million Consolidated Transportation Bonds plus a one-year Bond Anticipation Note for \$60 million. The one-year BAN was re-issued the following year.

(b) Represents a defeasance of the balance remaining of the series 1978 refunding bonds.

(c) For bonds issued prior to 7/1/89, sinking fund balances reflect the net effect of: deposits into the fund, one calendar year in advance, of debt service; fund earnings; and payments, from the sinking fund, to bondholders. Bonds issued after 7/1/89 do not require such a sinking fund.

(d) Amounts may differ from budgetary amounts.

(e) Includes early redemptions of \$30 million.

(f) MDOT sold two issues of refunding bonds in FY 94: \$211,985 million to refund \$204.0 million and \$291,760 million to refund \$253.8 million.

(g) MDOT issued \$93,645 million refunding bonds.

(h) MDOT issued \$262,405 million refunding bonds.

(i) MDOT issued \$75.9 million refunding bonds.

(j) MDOT issued \$161.435 million refunding bonds.

(k) MDOT issued \$259.715 million refunding bonds.

(l) MDOT issued \$342.525 million refunding bonds.