



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

FOR FISCAL YEAR 2021

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

October 2019



CAPITAL DEBT AFFORDABILITY COMMITTEE Nancy K. Kopp, Chair

October 18, 2019

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 Adrienne A. Jones
Speaker of the House
Maryland General Assembly
State House
Annapolis, Maryland 21401

Governor Hogan, President Miller, and Speaker Jones:

The Capital Debt Affordability Committee, created pursuant to section 8-108, *et seq.* of the State Finance and Procurement Article, is required to recommend to the Governor and the General Assembly the maximum amount of new general obligation debt that may prudently be authorized for the upcoming fiscal year, as well as determine planning assumptions for general obligation bond authorizations in future fiscal years. The Committee is also required to submit an estimate of the amount of new academic facilities bonds that may prudently be authorized.

The Committee met on October 17, 2019 to determine its recommendations. After discussion, the Committee approved \$1,095 million as the recommended maximum amount of general obligation bonds to be authorized for fiscal year 2021. In future fiscal years, the Committee determined that the State should plan for annual increases of \$10 million (roughly 1% per year). The vote was 3-2 with the Comptroller and Treasurer voting against the proposed amounts. The Comptroller noted that the Committee was increasing its recommendation above what it had recommended in recent fiscal years, while the Treasurer noted that the 1% annual increases were still insufficient to meet demand for capital requests and did not keep pace with inflation. Furthermore, the Committee noted that should the economic and fiscal information underlying its recommendation change significantly, the Committee could reconvene and make necessary modifications.

Finally, the Committee reviews the debt of State institutions of higher education and makes a recommendation of the maximum amount of academic facilities bonds that may be prudently authorized. The Committee unanimously voted to recommend a limit of \$32 million for new academic facilities bonds for the University System of Maryland for fiscal year 2021.

October 17, 2019
Page Two

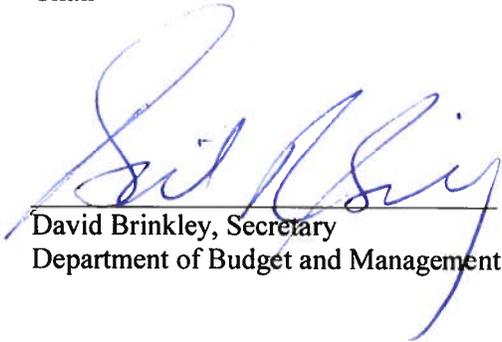
We are pleased to submit to you the Committee's Annual Report with the recommendations relating to the fiscal year 2021 capital program.



Nancy K. Kopp
State Treasurer
Chair



Peter Franchot
Comptroller



David Brinkley, Secretary
Department of Budget and Management



Jaclyn Hartman, Chief Financial Officer
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 Title 8, subtitle 1, *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 may prudently be authorized for the next fiscal year; and
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. SF&P §8-112.

In order to establish its recommendations, the Committee held three meetings in October. At its first meeting, the Committee reviewed the status of the affordability ratios, actions taken by the 2019 General Assembly, general fund estimates, 2019 assessments and taxation based revenue estimates, the State of Maryland Capital Program, and public school construction needs. The Committee conducted a similar annual review of the size and condition of tax-supported debt and higher education institution debt at its second meeting.

At its final meeting on October 17, 2019, 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 2019. At this meeting, the Secretary of the Department of Budget and Management made a motion to recommend an authorization of \$1.095 billion.

The Committee thus approved a total of \$1.095 billion for new general obligation authorizations by the 2020 General Assembly to support the fiscal year 2021 capital program. The vote was 3-2, with the Treasurer and Comptroller voting against the proposed amount.

In addition to determining and recommending a prudent affordable authorization level for the coming year, the Committee also develops 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 increase the authorization by 1% in future fiscal years. The vote was 3-2, with the Treasurer and Comptroller 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 2020 report as updated fiscal data becomes available. In addition, 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 and considering the debt affordability guidelines, the Committee recommended a limit of \$32 million for new academic facilities bonds for the University System of Maryland for fiscal year 2021. The Committee did not receive any requests for new issuances for Morgan State University, St. Mary's College of Maryland, or Baltimore City Community College.

The 2019 Capital Debt Affordability Report and the 2019 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 Committee are the State Treasurer (Chair), the Comptroller, the Secretaries of the Department of Budget and Management and Department of 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 20 of each year¹ an estimate of the total amount of new State debt that may prudently 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 debt² 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 10 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 may prudently 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 continually reviews 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 may prudently be authorized in the aggregate for the next fiscal year by these institutions of higher education.

¹ Chapter 298, Laws of Maryland 2019 changed the date from October 1st to October 20th 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 complete 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. 2018 Recommendations and Subsequent Events

The recommendations of the Committee to the Governor and the General Assembly for the fiscal year 2020 capital program and the subsequent events related to those recommendations are summarized below.

2018 CDAC Report

The Committee made a recommendation of \$995 million in new debt for fiscal year 2020 in the report. In the letter dated September 26, 2018 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 2020 capital budget could be adjusted to reflect up-to-date economic and fiscal information.

Based on its review of the condition of State debt and considering the debt affordability guidelines, the Committee recommended a limit of \$34 million for new academic facilities for the University System of Maryland for fiscal year 2020.

Authorizations by the 2019 General Assembly

The net general obligation debt authorized for the fiscal year 2020 capital program (effective June 1, 2019) totaled \$1.085 billion.

The 2019 General Assembly authorized the University System of Maryland to issue \$34 million in new academic facility bonds including \$15.354 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 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, 2019: \$9,606,909,158

Amount Authorized but Unissued at June 30, 2018: \$2,507,804,838

Ratings

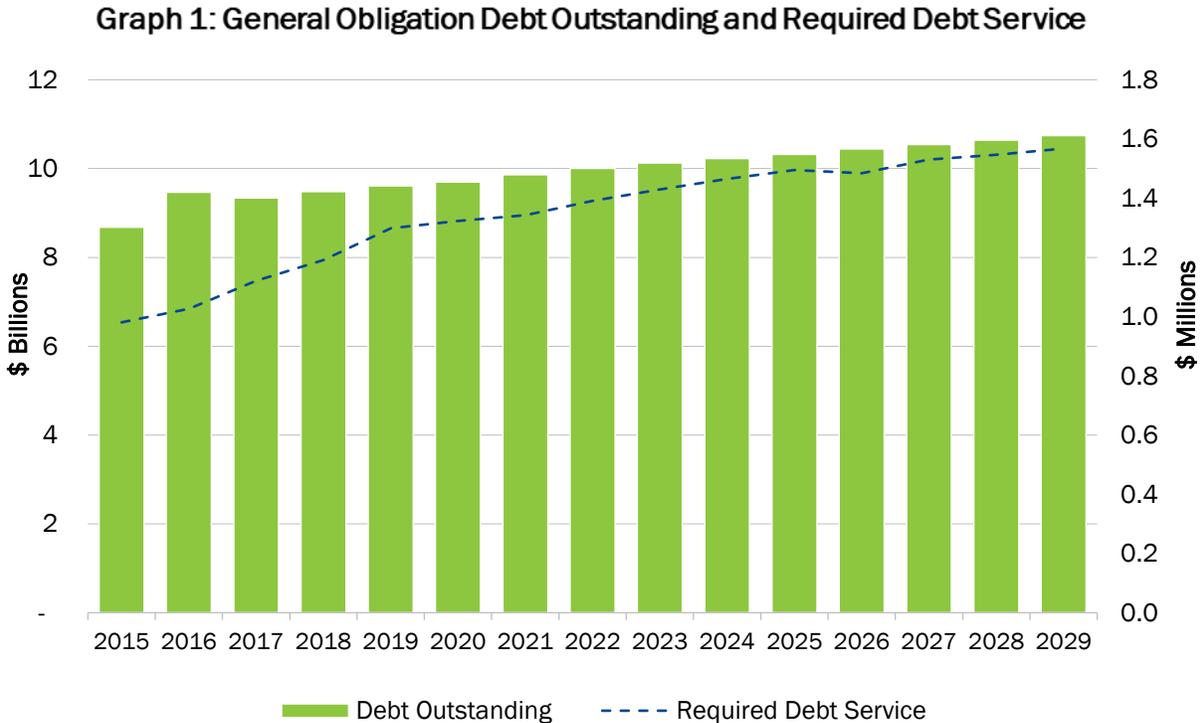
Fitch Ratings (“Fitch”), Moody’s and S&P Global (“S&P”) have rated Maryland’s General Obligation Bonds AAA since S&P’s first rating in 1961, Moody’s in 1973 and Fitch’s in 1993. In July 2019, in conjunction with the sale of Maryland’s General Obligation Bonds State and Local Facilities Loan of 2019, Second Series, Moody’s, S&P and Fitch 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**.



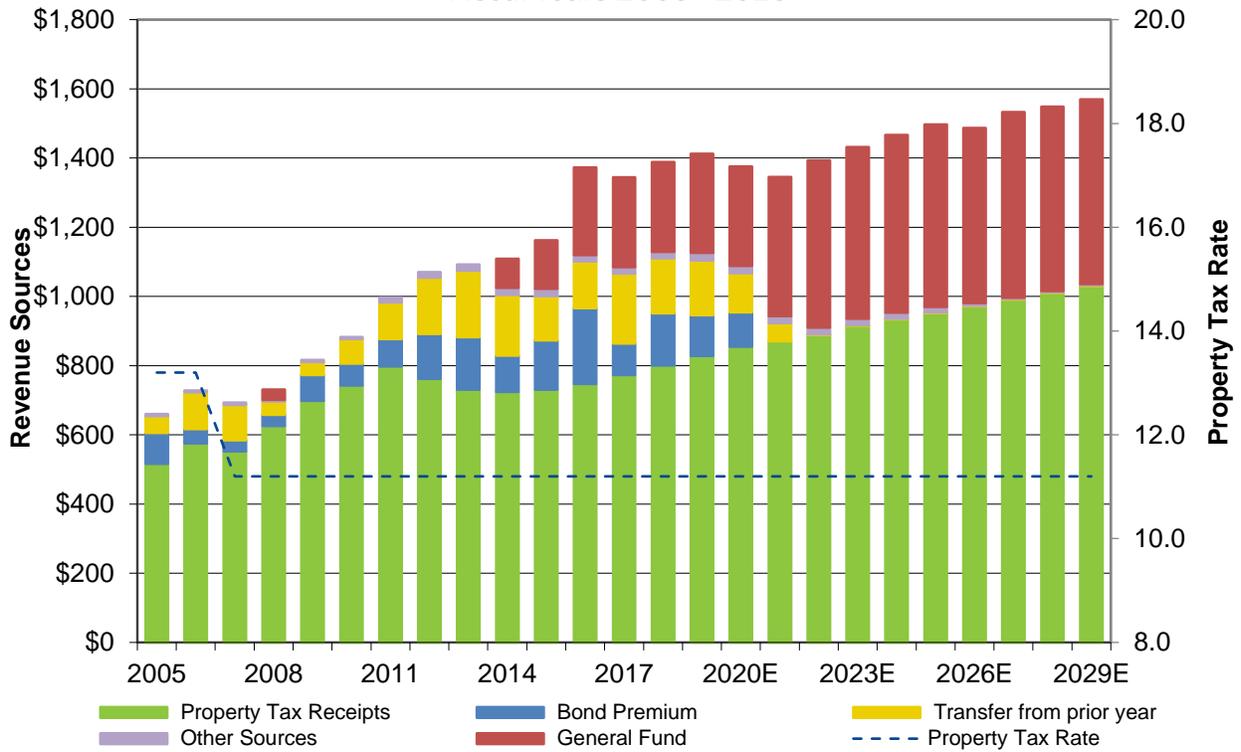
Future authorizations are projected to be issued over a five year period. The bonds are sold over an extended period of time as the projects are developed and cash is required to pay property owners, consultants, contractors, equipment manufacturers, etc. The following table provides a detailed summary 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
2020	9,607	995	903	9,699	1,323
2021	9,699	1,075	914	9,860	1,343
2022	9,860	1,095	951	10,003	1,391
2023	10,003	1,100	980	10,123	1,430
2024	10,123	1,110	1,006	10,227	1,465
2025	10,227	1,120	1,026	10,320	1,495
2026	10,320	1,130	1,007	10,443	1,485
2027	10,443	1,140	1,044	10,539	1,531
2028	10,539	1,150	1,049	10,640	1,546
2029	10,640	1,160	1,060	10,740	1,568

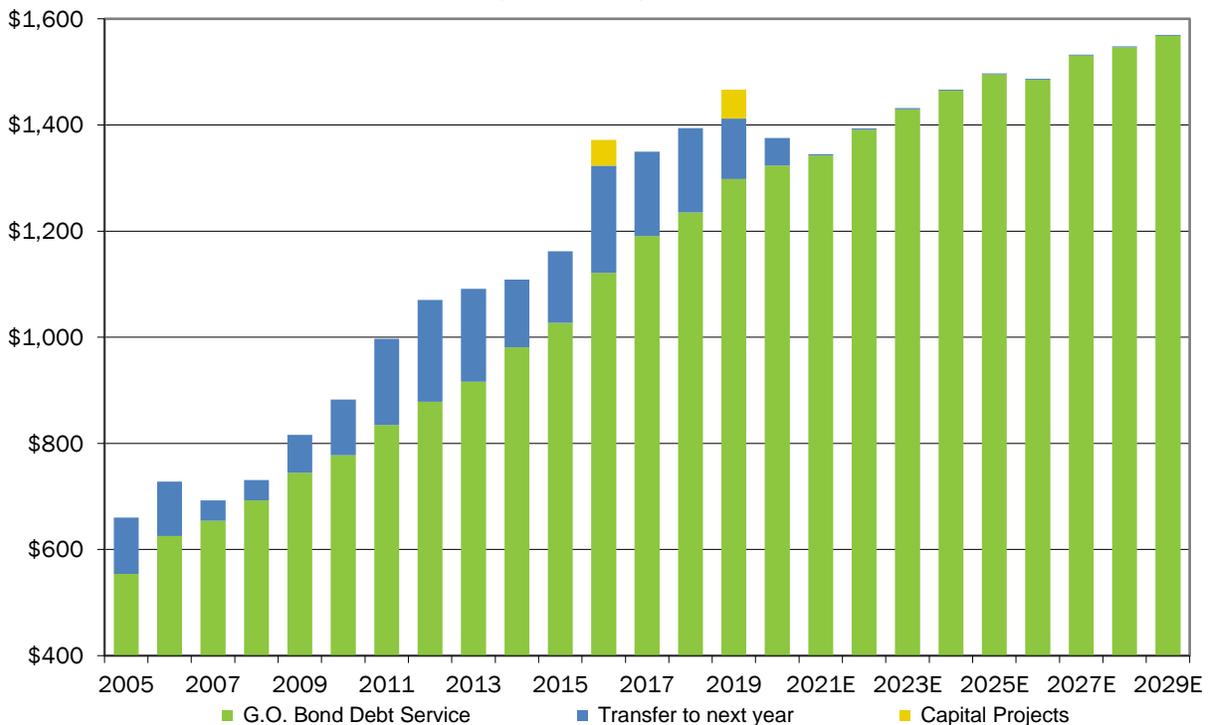
Debt service for General Obligation Bonds is paid from the Annuity Bond Fund (“ABF”). The State Constitution requires the collection of an annual tax to pay debt service and State statute requires that, after considering the balance in the ABF and other revenue sources, the Board of Public Works set 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 fifteen fiscal years and projections for the next 10 fiscal years.

**Graph 2: Annuity Bond Fund Revenue Sources
Fiscal Years 2005 - 2029**



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



B. Transportation Debt (Consolidated Transportation Bonds)

Purpose

Consolidated Transportation Bonds (“CTBs”) 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 share 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 2019 the limit is \$3.4 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, 2019: \$3,342,945,000

Amount Authorized but Unissued at June 30, 2019: \$79,320,000

Ratings

CTBs were rated AAA by S&P, Aa1 by Moody's and AA+ by Fitch.

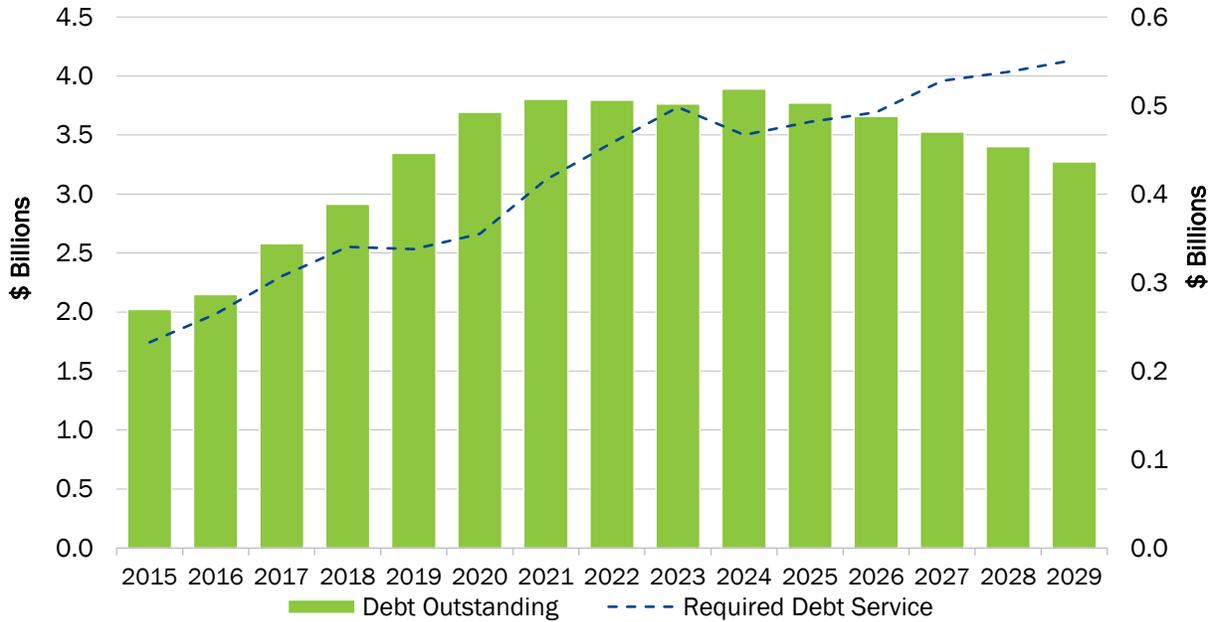
Use of Variable Rate Debt, Bond Insurance, Interest Rate Exchange Agreements and Guaranteed Investment Contracts

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 Transportation 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 Transportation debt activity.

Summary of Projected Debt Activity MDOT Consolidated Transportation Bonds (\$ in millions)					
Fiscal Year	Debt Outstanding at Beginning of Year	New Issues	Redeemed	Debt Outstanding at End of Year	Required Debt Service
2020	3,343	555	206	3,692	355
2021	3,692	365	255	3,802	416
2022	3,802	290	297	3,796	458
2023	3,796	305	338	3,762	498
2024	3,762	435	308	3,890	467
2025	3,890	205	323	3,771	481
2026	3,771	225	340	3,656	492
2027	3,656	250	381	3,526	528
2028	3,526	270	396	3,399	538
2029	3,399	285	414	3,271	551

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

Purpose

Grant Anticipation Revenue Vehicle (“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 Outstanding

Statute limits the total amount that can be issued for GARVEEs to an aggregate principal amount of \$750 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, 2019: \$48,865,000

Ratings

GARVEEs were rated AAA by S&P, Aa1 by Moody’s and AA+ by Fitch.

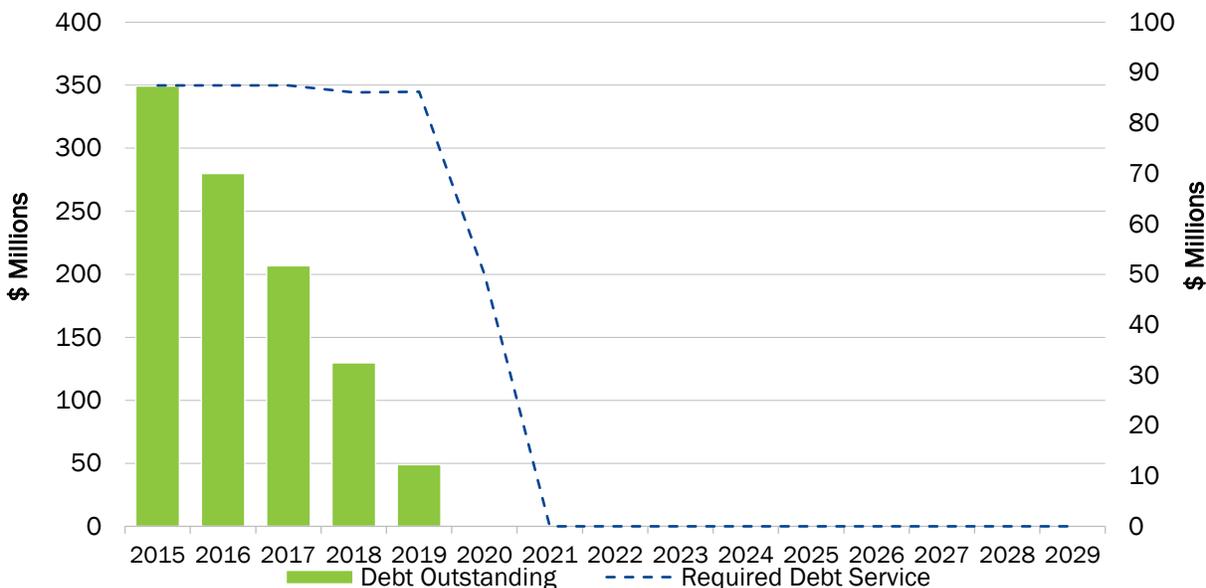
Use of Variable Rate Debt, Bond Insurance, Interest Rate Exchange Agreements and Guaranteed Investment Contracts

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 Maryland Transportation Authority (“MDTA”) has not used derivatives or guaranteed investment contracts.

Trends in GARVEE Debt

A total of \$750 million in GARVEE bonds have been issued by the MDTA. The first issuance occurred in May 2007 and totaled \$325.0 million with a true interest cost of 3.99%. In December 2008, the MDTA 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 2017 GARVEE bonds fully matured on March 1, 2019. The Series 2008 bonds were refinanced with a Series 2019 bank loan on March 1, 2019. The final GARVEE bond matures on March 1, 2020 and no additional new money issuances are permitted.

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 and energy leases. In 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; this financing has been used for the acquisition of both real property and equipment. Under current practice, capital leases for equipment (primarily computers and telecommunications equipment) generally exist for periods of five years or less. Real property capital leases are 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.

State Agencies have also made significant use of Certificates of Participations (“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.

Limitations to Debt Outstanding

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 \$214,559,735 as of June 30, 2019.

Debt Outstanding and Debt Service by Agency			
(\$ in millions)			
State Agency	Facilities Financed	Debt Outstanding	Debt Service
Treasurer’s Office	Capital Equipment Leases	13.4	4.5
	Energy Performance Projects	12.7	2.9
Transportation	Headquarters Office Building	7.7	2.8
	MAA Shuttle Buses	23.5	0.0
General Services	Hilton Street Facility	0.0	0.2
	Prince George’s County Justice Center	13.3	1.5
Transportation Authority	State Office Parking Facility	16.8	1.5
Health	Public Health Lab	128.7	14.0
Total		214.6	27.4

Ratings

The Treasurer’s Office equipment and energy leases are not rated. However, the MAA Shuttle Bus COPs were 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 were rated AA+ by S&P and Aa2 by Moody’s, while those for the MDH Public Health Lab were 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 (SF&P §8-104 & §12-301). 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 may prudently be 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	Annual Surety Bond Amount	Debt Service for FY 2019
DPSCS – Hagerstown Prison	\$936,601	\$488,395
DHMH – Deer's Head Hospital	602,161	255,946
Spring Grove Hospital	2,423,576	2,035,290
Department of Agriculture	309,473	194,960
DGS – Multi-Service Centers	2,416,715	1,588,714
UMCP	2,330,078	1,836,990
UMCES (Horn Point Lab)	219,767	148,783
State Police	1,122,960	483,258
Workforce Technology	206,449	169,101
DPSCS – Jessup	1,530,064	1,265,136
Maryland Aviation Administration	2,147,121	1,600,404
State Highway Administration	2,216,143	1,828,852
Maryland Transit Administration	656,974	493,823
Total	\$17,118,082	\$12,389,651

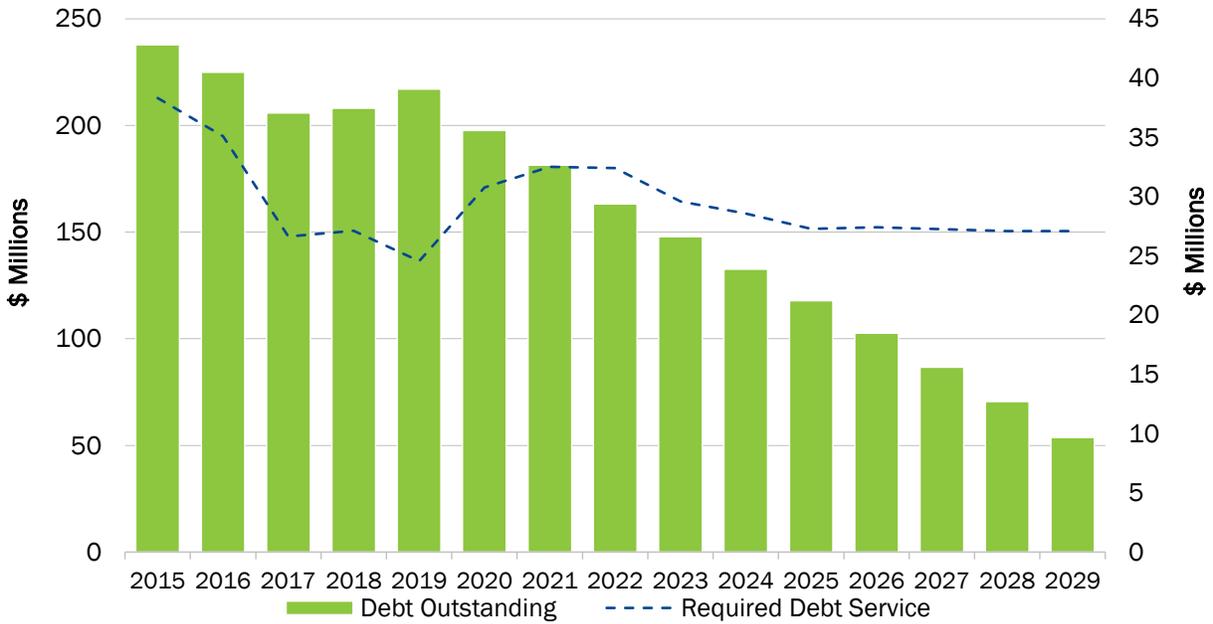
The following leases are included as tax-supported debt in the affordability analysis on **Tables 1 and 2** because the energy savings were not guaranteed in an amount that was equal to or greater than annual debt service. In some instances surety bonds are less than the debt service, or have been cancelled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

Energy Lease Project	Debt Service for FY 2019	Debt Outstanding as of June 30, 2019
St. Mary's College of Maryland	\$205,295	\$199,648
Veterans Affairs	56,638	283,818
University of Baltimore	649,125	3,079,462
Stadium Authority (Ravens)	263,232	850,345
Stadium Authority (Oriole Park)	716,432	2,227,170
Maryland Port Administration	964,413	4,587,519
	\$2,855,135	\$11,227,962

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**.

Graph 6: Capital Leases Debt Outstanding and Required Debt Service



Projected financings are based on annual surveys of State agencies. 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 (\$ in millions)					
Fiscal Year	Debt Outstanding at Beginning of Year	New Issues	Redeemed	Debt Outstanding at End of Year	Required Debt Service
2020	\$217	\$5	\$17	\$198	\$31
2021	\$198	\$8	\$16	\$181	\$33
2022	\$181	\$7	\$18	\$163	\$32
2023	\$163	\$8	\$15	\$148	\$30
2024	\$148	\$8	\$15	\$133	\$29
2025	\$133	\$8	\$15	\$118	\$27
2026	\$118	\$8	\$15	\$103	\$27
2027	\$103	\$8	\$16	\$87	\$27
2028	\$87	\$8	\$16	\$71	\$27
2029	\$71	\$8	\$17	\$54	\$27

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 and Ocean City, 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 those 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 presented in this report.

Current Status

Debt Outstanding as of June 30, 2019: \$133,512,515

Debt Outstanding and Debt Service by Project		
(\$ in millions)		
	<u>Debt Outstanding</u>	<u>Debt Service</u>
Oriole Park at Camden Yards	58.3	14.4
Ravens Stadium	56.8	10.1
Montgomery County Conference Center	6.7	1.6
Hippodrome Theater	4.5	1.6
Ocean City Convention Center	21.5	1.6
Camden Station Renovation	<u>4.1</u>	<u>0.8</u>
Total Tax-supported Debt:	151.9	30.1
Oriole Park at Camden Yards	2.2	0.7
Ravens Stadium	<u>0.8</u>	<u>0.3</u>
Total Energy Leases:	3.0	1.0

Ratings

MSA bonds have a long-term rating of AA+ by S&P, Aa2 by Moody’s and AA by Fitch. Short-term bonds were rated A1+ by S&P, VMIG1 by Moody’s and F1+ by Fitch.

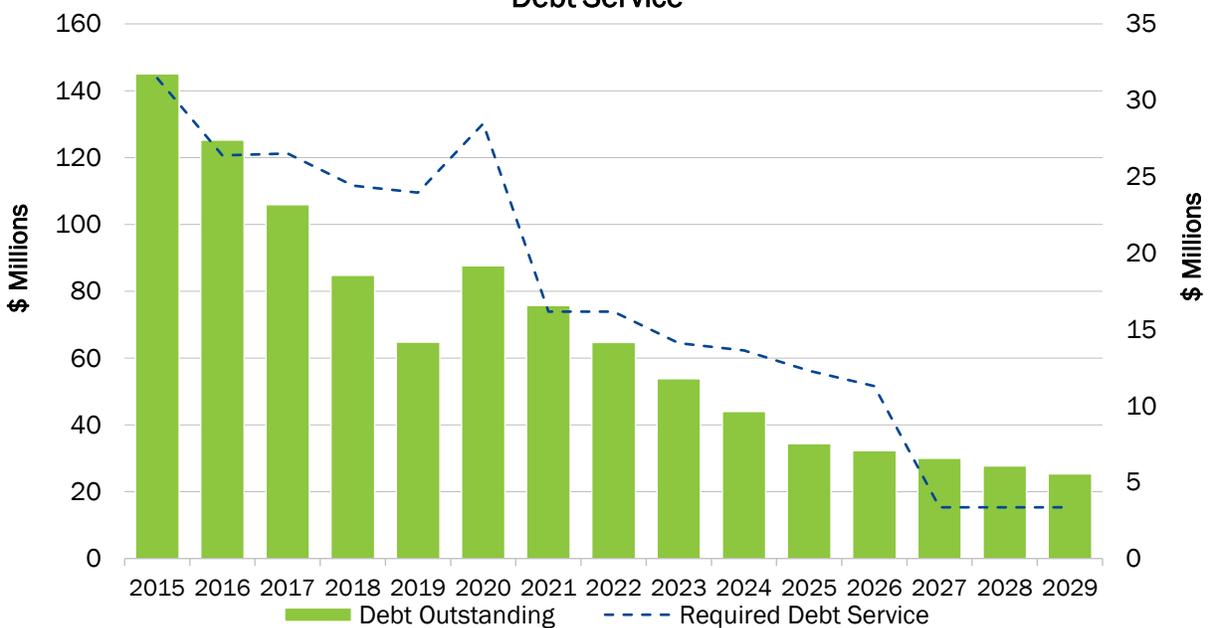
Use of Variable Rate Debt, Bond Insurance, Interest Rate Exchange Agreements and Guaranteed Investment Contracts

MSA has one outstanding issue of approximately \$40.3 million of outstanding variable rate debt that has been swapped to fixed rate. Barclay’s is the counterparty on the swap.

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 2019 MSA sold \$20.6 million of tax-exempt bonds, with the proceeds being used for capital projects at M&T Bank Stadium, and \$34.4 million in taxable bonds, with the proceeds being used for various project related to the warehouse, parking lot controls and improvements to the walkways between Oriole Park at Camden Yards and M & T Bank Stadium.

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 water treatment plants 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 \$5.00 for most Maryland households served by a water treatment plant. 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, 2019: \$253,375,000

Ratings

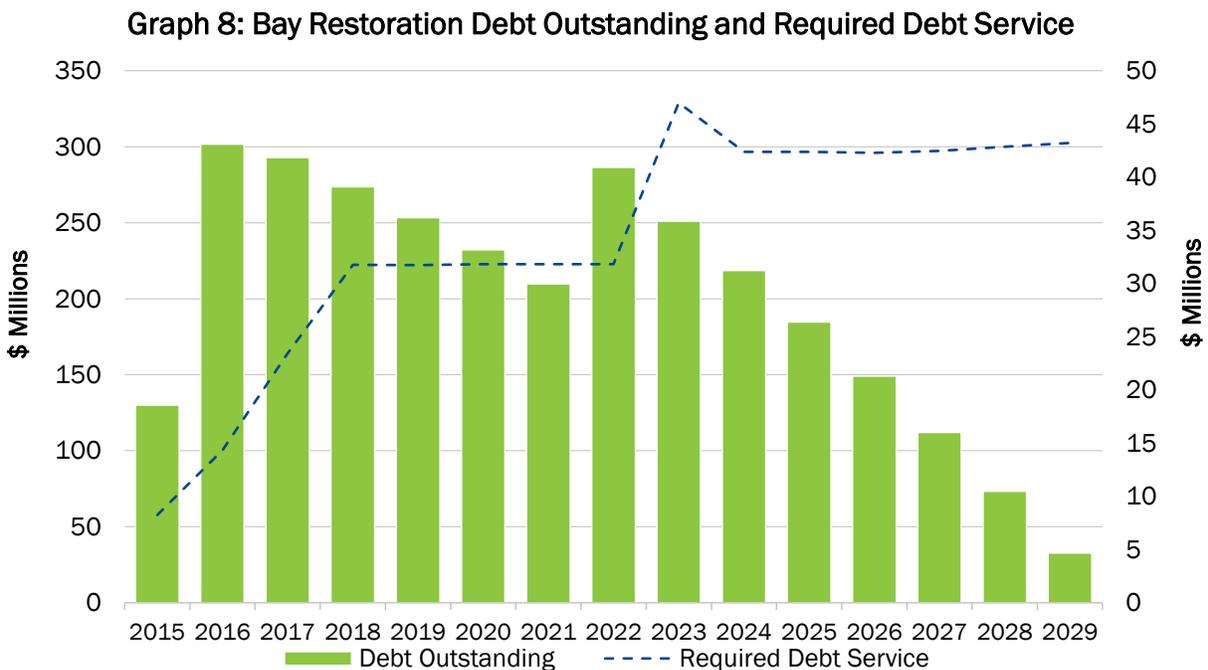
Bay Restoration Bonds were rated Aa2 by Moody's and AA by S&P.

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

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% true interest cost. Another \$100.0 million issuance is anticipated in FY 2022. 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 water treatment plants proceed. The following table provides a detailed summary of projected Bay Restoration Bond debt activity.

Summary of Projected Debt Activity
Bay Restoration Bonds
(\$ in millions)

Fiscal Year	Debt Outstanding at Beginning of Year	New Issues	Redeemed	Debt Outstanding at End of Year	Required Debt Service
2019	253	0	21	232	32
2020	232	0	22	210	32
2021	210	0	23	286	32
2022	286	100	35	251	47
2023	251	0	32	219	42
2024	219	0	34	185	42
2025	185	0	36	149	42
2026	149	0	37	112	42
2027	112	0	39	73	43
2028	73	0	41	33	43

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 low as \$60,000 in fiscal year 2010 or as high as the most recent appropriation of \$332.8 million in fiscal year 2020.

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 \$3.3 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 \$4.2 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 \$207.0 million over the next five years based on the past five-year average of \$41.4 million per year.

Summary of Capital Program: FY 2021 – 2025

The total capital requests are estimated at \$7.7 billion for the next five years. By contrast, the Department of Budget and Management anticipates recommending a five-year capital improvement program of approximately \$5.5 billion in General Obligation Bonds (based on the authorization levels recommended by the Committee on October 17, 2019). The total capital program will depend on the amount of general funds and other non-General Obligation Bond sources available for capital funding.

FY 2021 – FY 2025 Requests versus Anticipated Funding (\$ in millions)	
Current and Anticipated Requests	
State-Owned Facilities	\$3,300
Capital Grant Programs	4,200
Legislative Initiatives	207
Total Requests	\$7,707
CDAC Recommendation	5,586
Difference Between Anticipated Requests and Funding Level	\$2,121

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 \$4.9 billion in public school construction, for an average of \$326 million annually.

In fiscal year 2019, public school construction received \$313.9 million in general obligation bond funding. The Governor’s fiscal year 2020 Capital Improvement Program proposed an annual funding commitment for public school construction of \$280 million, per year, through fiscal year 2024. In addition, \$1.8 billion over five years, via a Building Opportunity Fund, was proposed to supplement the public school construction budget. 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 \$20.0 million each from annual State lottery proceeds, annual Baltimore City Public Schools revenues, and 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 <https://www.mdstad.com/21st-century-schools>.

The enacted MCCBL included an additional \$40.0 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 2020 budget includes \$68.2 million for this initiative, \$28.2 million more than the mandated appropriation.

IV. CREDIT RATING AGENCY REPORTS

A. Rating Agency Update

On July 8, 2019, as part of the sale of Maryland's General Obligation Bonds State and Local Facilities Loan of 2019, Second Series, Fitch, Moody's and S&P all reaffirmed their AAA ratings for Maryland's General Obligation debt.

Maryland is one of only thirteen states to hold the coveted AAA rating, the highest possible rating, from all three major rating agencies. S&P 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 twelve states that hold AAA ratings from all three rating agencies are Delaware, Georgia, Florida, Indiana, Iowa, Missouri, North Carolina, South Dakota, Tennessee, Texas, Utah, and Virginia.

B. Overview of Maryland's Credit

There is broad consensus about the State's credit strengths and challenges. An overview of some of those factors follows, but should not be considered exhaustive. As mentioned above, reports issued in conjunction with the State's bond sales are available on our website. The rating agencies also frequently issue general research reports pertaining to credit issues and challenges which are available upon request.

Credit Strengths

Strong fiscal management institutions: One of Maryland's greatest credit strengths is its fiscal management, which is supported by strong institutionalized tools. These include the CDAC process, which ensures State tax-supported debt remains within affordable levels; the Board of Revenue Estimates process, which produces a consensus revenue forecast agreed upon by the different branches of government; the strong Executive budgeting system; the Board of Public Works' (BPW) ability to make midyear spending adjustments; the lack of a supermajority requirement for tax increases; and rapid 15-year amortization of general obligation debt required by the Constitution, among other things.

Track record of excellent fiscal management: The State also has a proven track record of proactive fiscal management. Operating budgets are balanced and nearly always passed within the 90 day legislative session, the BPW has made numerous spending adjustments in response to new revenue information over the years, and adjustments such as tax increases and reforms to the pension system have been made when necessary. Maryland's "middle temperament" and tradition of proactive cooperation on fiscal matters are subjective but critically important factors in the State's credit rating.

Stable, diversified economy: Maryland has a broad-based, service-oriented economy anchored by the federal government, which has a positive impact on the State's economy overall despite occasional drag caused by dysfunction in the federal government. The State's economy has a long record of resilience and above average performance relative to the nation as a whole. Maryland also tends to have lower unemployment and more high-paying jobs than the national average.

Highly educated population and above average income: The State's population ranks in the top echelon of the U.S. in terms of its educational attainment status and income level,

creating a dynamic and reliable revenue base. Policies that help us maintain our status as a highly educated, wealthy state are critical to the State's ability to retain its AAA bond rating.

Credit Challenges

Pensions, debt, and other long-term liabilities: Long-term liabilities in Maryland are considered to be somewhat high relative to peer triple AAA states. The State's debt burden is considered moderate, and the Constitutional requirement to retire debt within fifteen years, though a credit positive overall, leads to higher annual debt service costs. Maryland also directly funds a large portion of school construction needs for its counties, which is unusual among states. Pensions are still below the ideal levels of funded status, and though the rating agencies credit Maryland for its 2011 reforms, they also warn against any backsliding on the reforms that could jeopardize the progress made. Taking steps to manage these long-term liabilities while still meeting Marylanders' need for State services is crucial.

Aging infrastructure and deferred maintenance: Despite the need to manage liabilities, the State continues to have significant need for capital investments that will keep the State economically competitive in the 21st century. Demand for capital projects such as school renovation and replacement, economic development, housing, etc. have consistently far exceeded actual spending, a trend which has accelerated over the last few years. During the Great Recession and years of slow growth that followed, maintenance on State facilities was deferred due to budgetary restraints, leading to a significant backlog that must be addressed. Though it is important to manage long-term liabilities, the State must continue to make investments in its people and infrastructure, while protecting its existing assets to avoid the need for more expensive repairs or replacements in the future.

Revenue challenges caused by suboptimal demographic trends and taxation system: In the State's long-term forecasts, revenues are not expected to keep up with expenditures. As Maryland's Bureau of Revenue Estimates recently reported, this is in part due to depressed revenue growth resulting from the demographic structure of the State's population, in which a growing portion of Marylanders are above prime working age, while prime-age workers themselves are participating in the labor force at lower rates than they have historically³. Policies that attract new immigrants and prime-age workers, retain the workers we have, or encourage participation by those not currently in the workforce can offset this decline. An additional revenue challenge is that the State's taxation system is designed for a 20th century economy. The State is transitioning to a service-based economy, meaning a growing sector of the economy is not taxed; likewise, the State has not adjusted for technological change, such as taxing digital goods and subscriptions. The *South Dakota vs. Wayfair, Inc.* decision delivered some rare good news on this front, allowing the State to tax online sales of entities with no physical footprint in Maryland. The State is already seeing significantly increased sales tax revenue from this change.

Federal government dysfunction: Brinksmanship at the federal level, such as forcing a government shutdown or threatening a debt ceiling breach in an attempt to coerce unrelated policy concessions, have an outsized impact on Maryland due to its reliance on the federal government. Shutdowns typically lead to decreases in State revenue; an actual debt ceiling breach would directly impact the State's rating, since it is unusual for a subordinate state to

³The Bureau of Revenue Estimates studied this problem at length and its report can be found here: https://finances.marylandtaxes.gov/static_files/revenue/BRE_reports/FY_2018/BRE%20Report%20on%20Age%20Demographics.pdf

be rated higher than its sovereign. Management issues at federal agencies that lead to high vacancy rates and churn also directly impact the State's bottom line.

C. Moody's 2019 State Debt Medians

In April 2019 Moody's released its 2019 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 2019 measures net state tax-supported debt as of calendar year-end 2018 compared to personal income as of 2017.

<u>Measure</u>	<u>Maryland</u>	<u>Mean</u>	<u>Median</u>	<u>Ranking</u>
Net Tax-Supported Debt per Capita	\$2,343	\$1,493	\$1,068	9
Net Tax-Supported Debt as % of Personal Income	3.8%	2.8%	2.2%	13
Net Tax-Supported Debt as % of GDP	3.0%	2.4%	1.9%	13
Debt Service Ratio	7.1%	4.3%	4.1%	8

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. 2019 Affordability Recommendation

At its October 17, 2019 meeting, the Committee approved a total of \$1.095 billion for new general obligation authorizations by the 2020 General Assembly to support the fiscal year 2021 capital program. The vote was 3-2, with the Treasurer and the Comptroller 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 increase the authorization by 1% in future fiscal years. The vote was 3-2, with the Treasurer and Comptroller voting against the proposal. The Comptroller stated that additional revenue sources would be required to cover the increased debt and that fundamental economic reforms are recommended. The Treasurer noted that maintaining the 3% growth level instituted by the Committee in 1992 would remain within the CDAC affordability benchmarks and help to maintain our infrastructure.

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 2020 report considering 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 2019 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 October 17. The Committee believes that revenues, personal income and interest rates have been prudently estimated. Any variation to the assumptions for revenues, interest rates, and projected activity in tax-supported debt issuance could 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. 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 2013 - 2017 declined from \$5.6 billion in the 2009 CDAC Report to \$4.7 billion in the 2012 CDAC Report. See the history of projected authorizations in **Schedule B-4** which 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 from \$9.7 billion in fiscal year 2020 to \$10.7 billion in fiscal year 2029. Debt outstanding on Maryland Stadium Authority bonds are projected to decline after the issuance in September 2019. GARVEE debt outstanding peaked at \$704.0 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 2022. Following that sale, debt outstanding Bay Restoration Bonds will peak at \$286 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 2019 ratio is calculated using debt outstanding as of June 30, 2019 and personal income is projected as of December 2018.

The ratio of State tax-supported debt outstanding to personal income (**Table 1**) peaked at 3.59% in fiscal year 2016 and will decline to 2.44% by fiscal year 2029. At all times, the ratio remains below the affordability criterion of 4.0%.

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

Table 1

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
2015	8,677,214	2,020,250	237,781	145,022	129,980	349,440	11,559,686
2016	9,465,285	2,146,085	224,978	125,181	301,615	279,780	12,542,924
2017	9,334,205	2,578,385	205,789	105,883	292,880	206,590	12,723,732
2018	9,479,407	2,911,675	208,104	84,790	273,590	129,680	13,087,246
2019	9,606,909	3,342,945	214,560	64,760	253,375	48,865	13,531,414
2020	9,698,933	3,692,190	197,639	87,556	232,075	-	13,908,393
2021	9,859,791	3,802,330	181,440	75,676	209,715	-	14,128,952
2022	10,003,379	3,795,580	163,109	64,645	286,245	-	14,312,958
2023	10,122,894	3,762,375	147,743	53,825	250,944	-	14,337,781
2024	10,226,534	3,889,730	132,576	43,970	218,558	-	14,511,368
2025	10,320,289	3,771,340	117,868	34,405	184,611	-	14,428,513
2026	10,442,936	3,656,225	102,565	32,245	149,105	-	14,383,076
2027	10,538,590	3,525,500	86,702	30,020	112,052	-	14,292,864
2028	10,639,992	3,399,455	70,578	27,725	73,296	-	14,211,046
2029	10,740,370	3,270,650	53,699	25,335	32,758	-	14,122,812

State Tax-Supported Debt Outstanding as a Percentage of Personal Income

Fiscal Year	General Obligation Bonds ^(a)	Consolidated Transportation Bonds	Capital Leases ^(b,c)	Stadium Authority	Bay Restoration Bonds	Garvee Bonds	Supported Debt Outstanding
2015	2.57%	0.60%	0.07%	0.04%	0.04%	0.10%	3.43%
2016	2.71%	0.61%	0.06%	0.04%	0.09%	0.08%	3.59%
2017	2.59%	0.72%	0.06%	0.03%	0.08%	0.06%	3.53%
2018	2.54%	0.78%	0.06%	0.02%	0.07%	0.03%	3.51%
2019	2.44%	0.85%	0.05%	0.02%	0.06%	0.01%	3.44%
2020	2.38%	0.90%	0.05%	0.02%	0.06%	0.00%	3.41%
2021	2.33%	0.90%	0.04%	0.02%	0.05%	0.00%	3.34%
2022	2.28%	0.86%	0.04%	0.01%	0.07%	0.00%	3.26%
2023	2.22%	0.82%	0.03%	0.01%	0.05%	0.00%	3.14%
2024	2.16%	0.82%	0.03%	0.01%	0.05%	0.00%	3.07%
2025	2.10%	0.77%	0.02%	0.01%	0.04%	0.00%	2.94%
2026	2.05%	0.72%	0.02%	0.01%	0.03%	0.00%	2.82%
2027	1.99%	0.66%	0.02%	0.01%	0.02%	0.00%	2.69%
2028	1.92%	0.61%	0.01%	0.01%	0.01%	0.00%	2.56%
2029	1.86%	0.57%	0.01%	0.00%	0.01%	0.00%	2.44%

(a) Reflects presumed authorizations as follows:

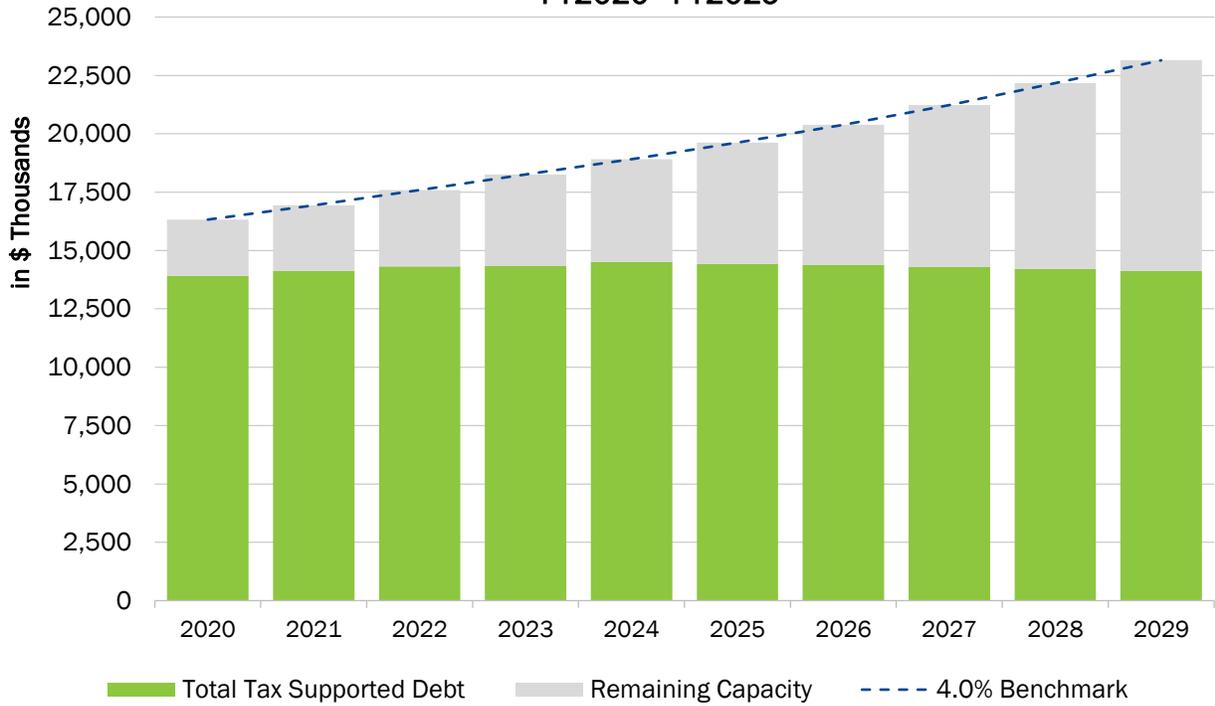
General Assembly Session	2019	2020	2021	2022	2023
Fiscal Year/Capital Budget (\$ in millions)	2020	2021	2022	2023	2024
	\$995	\$1,075	\$1,095	\$1,100	\$1,110

(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.

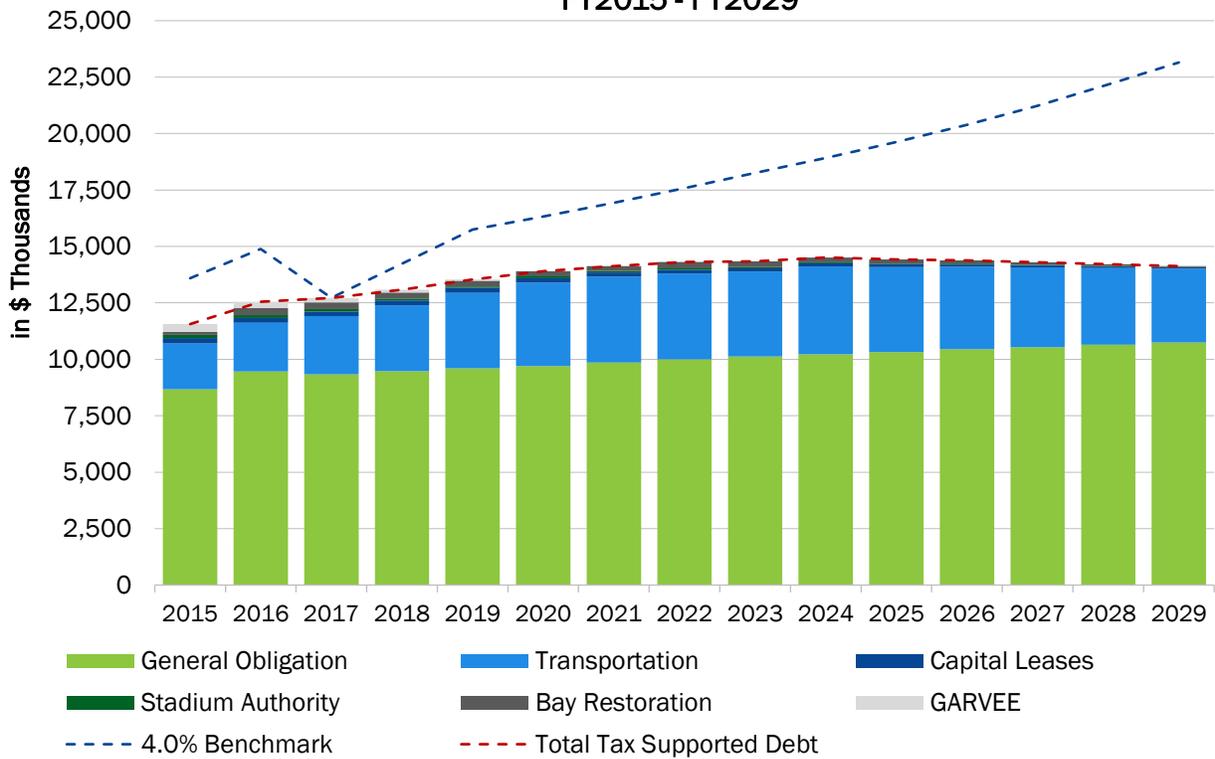
(c) Leases include equipment, video lottery terminals and energy leases that do not have guaranteed energy savings equal to or greater than the debt service.

Issuance Assumptions: (\$ in millions)	2020	2021	2022	2023	2024
G.O. Issues	\$995.0	\$1,075.0	\$1,095.0	\$1,100.0	\$1,110.0
DOT Issues	555.0	365.0	290.0	305.0	435.0
Stadium Authority Issues	21.4	0.0	0.0	0.0	0.0
New Capital Leases	5.0	8.0	6.5	7.5	7.5
GARVEE Bond Issues	0.0	0.0	0.0	0.0	0.0
Bay Bond Issues	0.0	0.0	100.0	0.0	0.0
Total	\$1,576.4	\$1,448.0	\$1,491.5	\$1,412.5	\$1,552.5
Personal Income (\$ in billions) (Schedule A-1)	\$408.1	\$423.3	\$439.7	\$456.5	\$472.9

**Graph 9: Tax Supported Debt Outstanding to Personal Income
Available Debt Capacity using the 4.0% Benchmark
FY2020 - FY2029**



**Graph 10: Tax Supported Debt Outstanding to Personal Income
FY2015 - FY2029**



Debt Service

Projected general obligation debt service (**Schedule B-4**) assumes that future interest rates are consistent with current forecasts and also assumes authorizations increase by 1% through 2029 from the \$1.095 billion recommended for fiscal year 2020 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**) will increase to a peak of 7.77% in fiscal year 2023. The ratio then continues to decrease to 7.27% in 2026, has a slight increase to 7.38% in fiscal year 2027, and then continues to decrease to 7.17% in 2029.

State Tax-Supported Debt Service

Table 2A

State Tax-Supported Debt Service as a Percent of Revenues

Fiscal Year	General Obligation Bonds ^(a)	Consolidated Transportation Bonds ^(b)	Capital Leases ^(c,d)	Stadium Authority	Bay Restoration Bonds	Garvee Bonds	Total Tax-Supported Debt Service	Total Revenues	Total Tax-Supported Debt Service as a % of Revenues
2015	980,738	232,404	38,317	31,447	8,248	87,454	1,378,609	20,702,600	6.66%
2016	1,027,003	264,358	35,095	26,394	14,330	87,450	1,454,630	21,298,900	6.83%
2017	1,120,994	307,215	26,641	26,520	23,431	87,452	1,592,253	22,084,000	7.21%
2018	1,190,728	340,060	27,117	24,414	31,756	86,055	1,700,130	22,902,330	7.42%
2019	1,298,004	337,566	27,412	23,954	31,717	86,179	1,804,832	23,866,975	7.56%
2020	1,323,172	355,119	30,762	28,479	31,827	49,940	1,819,298	24,653,010	7.38%
2021	1,342,729	416,130	32,507	16,160	31,829	-	1,839,355	24,508,070	7.51%
2022	1,391,218	457,845	32,410	16,174	31,823	-	1,929,470	25,159,045	7.67%
2023	1,429,633	497,972	29,592	14,110	46,985	-	2,018,292	25,963,699	7.77%
2024	1,464,583	466,563	28,553	13,628	42,377	-	2,015,704	26,726,334	7.54%
2025	1,495,168	481,485	27,285	12,289	42,375	-	2,058,602	27,510,906	7.48%
2026	1,484,919	492,283	27,415	11,287	42,295	-	2,058,199	28,308,972	7.27%
2027	1,530,518	527,805	27,254	3,355	42,458	-	2,131,390	28,869,633	7.38%
2028	1,546,404	538,021	27,086	3,355	42,858	-	2,157,724	29,706,421	7.26%
2029	1,567,701	551,384	27,078	3,355	43,210	-	2,192,728	30,575,802	7.17%

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

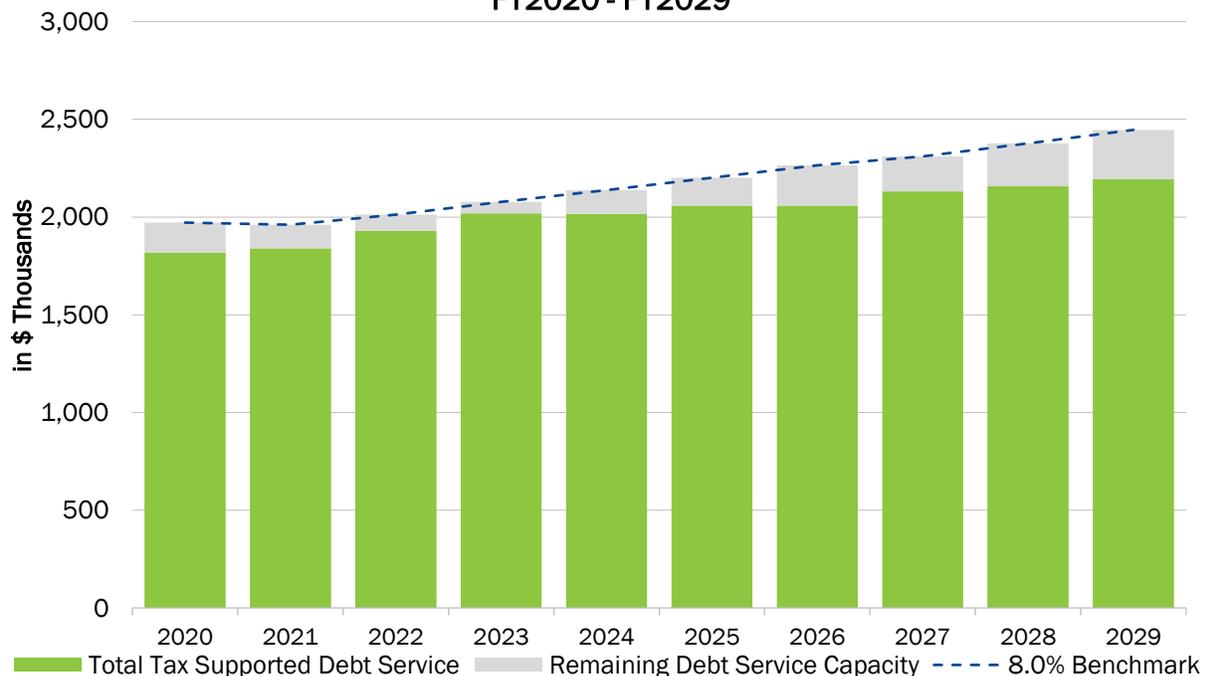
Table 2B

State Tax-Supported Debt Service as a Percent of Dedicated Revenues

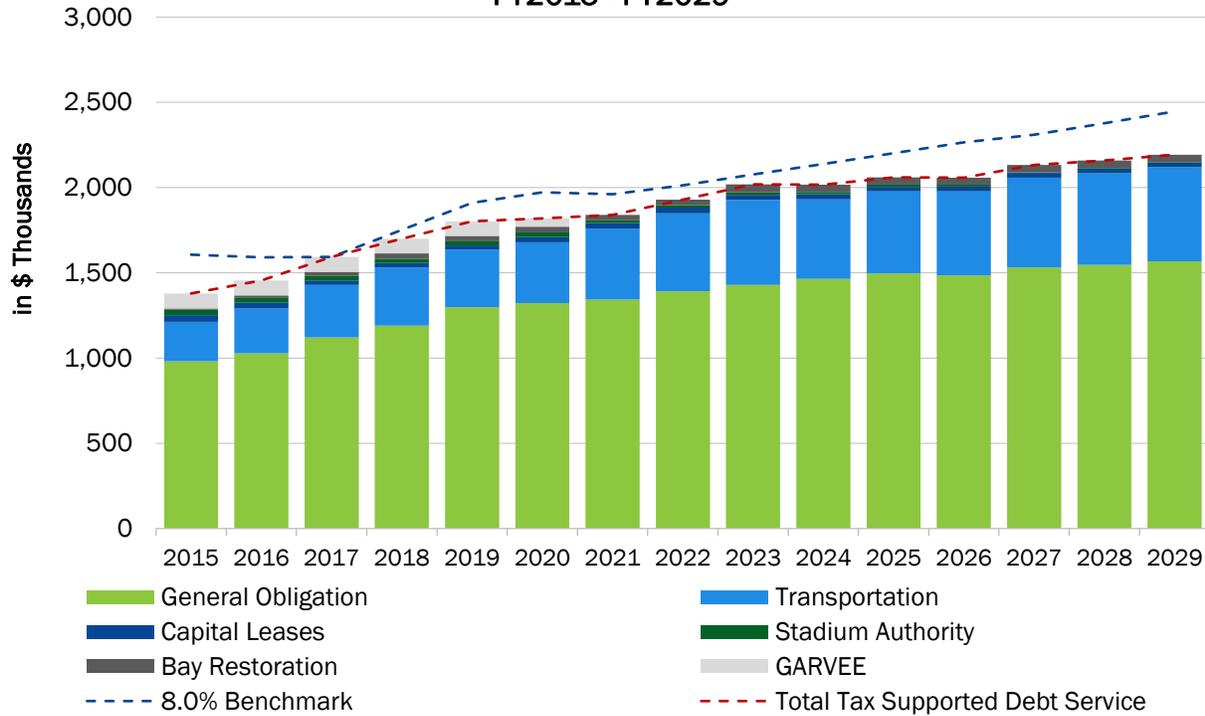
Fiscal Year	General Obligation Bonds	Consolidated Transportation Bonds	Capital Leases	Stadium Authority	Bay Restoration Bonds	Garvee Bonds
2015	5.7%	8.0%	0.2%	143.6%	7.4%	18.8%
2016	5.8%	8.4%	0.2%	121.1%	12.7%	18.8%
2017	6.1%	9.7%	0.1%	121.1%	20.8%	15.9%
2018	6.2%	10.7%	0.1%	112.0%	28.0%	15.7%
2019	6.5%	10.2%	0.1%	2378.7%	27.8%	15.7%
2020	6.5%	10.0%	0.2%	349.7%	27.6%	9.1%
2021	6.5%	11.3%	0.2%	1537.6%	27.3%	0.0%
2022	6.5%	12.1%	0.2%	2604.5%	27.0%	0.0%
2023	6.5%	12.9%	0.1%	0.0%	39.5%	0.0%
2024	6.4%	12.0%	0.1%	0.0%	35.3%	0.0%
2025	6.4%	12.2%	0.1%	0.0%	35.0%	0.0%
2026	6.1%	12.3%	0.1%	0.0%	34.2%	0.0%
2027	6.2%	12.9%	0.1%	0.0%	34.0%	0.0%
2028	6.1%	12.9%	0.1%	0.0%	34.0%	0.0%
2029	6.0%	13.0%	0.1%	0.0%	33.9%	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."

Graph 11: Tax Supported Debt Service to Revenues
Available Capacity using the 8.0% Benchmark
FY2020 - FY2029



**Graph 12: Tax Supported Debt Service to Revenues
FY2015 - FY2029**



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 2019, 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.

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

Fiscal Year	Debt Outstanding (\$000)	Personal Income (\$000)	Current Ratios	Maximum Ratio	Minimum Personal Income (\$000)	Difference ^(a) (\$000)	Additional Affordable Debt Outstanding ^(c)
2019	13,531,414	393,764,592	3.44%	4.00%	338,285,346	55,479,246	2,219,170
2020	13,908,393	408,098,669	3.41%	4.00%	347,709,815	60,388,854	2,415,554
2021	14,128,952	423,258,028	3.34%	4.00%	353,223,812	70,034,216	2,801,369
2022	14,312,958	439,662,033	3.26%	4.00%	357,823,949	81,838,084	3,273,523
2023	14,337,781	456,506,835	3.14%	4.00%	358,444,529	98,062,306	3,922,492
2024	14,511,368	472,871,751	3.07%	4.00%	362,784,192	110,087,560	4,403,502
2025	14,428,513	490,547,930	2.94%	4.00%	360,712,820	129,835,110	5,193,404
2026	14,383,076	509,474,745	2.82%	4.00%	359,576,903	149,897,843	5,995,914
2027	14,292,864	530,846,645	2.69%	4.00%	357,321,594	173,525,051	6,941,002
2028	14,211,046	554,342,569	2.56%	4.00%	355,276,156	199,066,413	7,962,657
2029	14,122,812	578,715,586	2.44%	4.00%	353,070,299	225,645,287	9,025,811

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

Fiscal Year	Debt Service (\$000)	Revenues (\$000)	Current Ratios	Maximum Ratio	Minimum Revenues (\$000)	Difference ^(b) (\$000)	Additional Affordable Debt Service ^(c)
2019	1,804,832	23,866,975	7.56%	8.00%	22,560,399	1,306,576	104,526
2020	1,819,298	24,653,010	7.38%	8.00%	22,741,229	1,911,781	152,942
2021	1,839,355	24,508,070	7.51%	8.00%	22,991,937	1,516,133	121,291
2022	1,929,470	25,159,045	7.67%	8.00%	24,118,370	1,040,675	83,254
2023	2,018,292	25,963,699	7.77%	8.00%	25,228,651	735,048	58,804
2024	2,015,704	26,726,334	7.54%	8.00%	25,196,295	1,530,039	122,403
2025	2,058,602	27,510,906	7.48%	8.00%	25,732,531	1,778,375	142,270
2026	2,058,199	28,308,972	7.27%	8.00%	25,727,491	2,581,481	206,518
2027	2,131,390	28,869,633	7.38%	8.00%	26,642,378	2,227,255	178,180
2028	2,157,724	29,706,421	7.26%	8.00%	26,971,551	2,734,871	218,790
2029	2,192,728	30,575,802	7.17%	8.00%	27,409,097	3,166,705	253,336

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: Table 1 and 2a

Schedules A-1 and A-2

E. Comparison of Recommendation and Capital Program

The Committee's recommendation of \$1.095 billion in general obligation authorizations provides a commitment for the fiscal year 2021 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 10-year horizon.

Components of Risk

Economic uncertainty continues as the economic outlook is uncertain and unstable 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 2019 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; and
- 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 \$70.0 billion, or 19.8% of total projected personal income, in fiscal year 2021 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 fiscal year 2019 through fiscal year 2029 average 4.07%, more than the 3.48% average rate for the 10-year period of 2010 through 2019.

Changes in and Sources of Revenues

Sources of Revenues

Schedule A-2 displays the components of and total tax-supported revenues from fiscal year 2014 to fiscal year 2029. 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 2019. Year to year changes during this period are not significant. Beginning in fiscal year 2026, growth is assumed to hold at 3.2% annually.

Property tax revenue estimates were calculated using assessable base data obtained from the Department of Assessments and Taxation for fiscal years 2020-2021. Property tax revenues are projected to hold around 2.0% annually for fiscal years 2021 through 2029.

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. Miscellaneous receipts and US Treasury subsidies on 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 decrease by \$1.52 billion, or 6.2% of total projected revenues, in fiscal year 2021 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 2.6% for fiscal years 2020 and 2021, and gradually increasing to 2.9% in fiscal 2029. The most recent actual rates on capital equipment leases were 2.25% for a three-year lease, and 2.33% for a five-year lease. Recent rates are still historically low tax-exempt rates that are expected to rise 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 4.0% for the fiscal years 2020 through 2022 sales, 4.2% for the 2023 through 2027 sales and 4.5% thereafter.

From time to time, there is discussion of eliminating the federal tax exemption on municipal bonds. Were the State and other municipal issuers to have to issue taxable debt or if tax-exempt debt became less attractive to taxpayers with high income tax rates, municipal interest rates and debt service would likely increase. However, at this time, there is no immediate 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 capital leases dictated by an outside authoritative group could have an impact on the affordability ratios. The Government Accounting Standards Board (GASB) announced new guidance on lease accounting on June 28, 2017, effective December 15, 2019. The new guidance establishes a single model for lease accounting based on the foundational principle that leases constitute the purchase of a right to use an underlying asset. Under this statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources, thereby enhancing the relevance and consistency of information about governments' leasing activities. The effect of this guidance is to make all leases, other than short-term leases, appear on financial statements in the same way as capital leases currently do. This effectively removes the distinction between operating and capital leases for accounting purposes. However, GASB does not provide advice regarding the treatment of leases for debt affordability purposes, and the Committee is under no obligation to change its current practice.

Changes in Bond Issuance – General Obligation Bonds

Changes within the General Obligation Bond program may arise because of changes in either the types or 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. 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 2019 Report in light of the pattern of recent authorizations and issuances. The following chart compares projected issuances, in CDAC Reports from 2012 to 2019, to actual issuances.

Projected Issuances in CDAC Reports (\$ millions)					
CDAC Report	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
2012 Projection	1,014	1,068	1,125	1,164	1,211
2013 Projection	1,056	1,125	1,193	1,239	1,262
2014 Projection	1,056	1,125	1,193	1,239	1,285
2015 Projection	1,018	1,036	1,035	1,014	998
2016 Projection		568	1,075	1,050	1,025
2017 Projection			1,025	1,015	1,010
2018 Projection				1,000	995
2019 Projection					995
Actual Issuance	1,541	675	1,075	1,085	-

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.

Projected General Assembly Authorizations (\$ millions)								
CDAC Report	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
2019								1,095
2018							1,075	995
2017						995	995	995
2016					995	995	995	995
2015				995	995	995	995	995
2014			1,170	1,180	1,275	1,315	1,355	1,320
2013		1,160	1,170	1,180	1,275	1,315	1,280	1,320
2012	1,085	1,095	1,105	1,200	1,240	1,280	1,320	1,360

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 \$1.448 billion in new issuances in fiscal year 2021. 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 2021	
(\$ in millions)	
General Obligation Bonds	\$1,075.0
Maryland Department of Transportation	365.0
Capital Leases	8.0
GARVEEs	0.0
Maryland Stadium Authority	0.0
Bay Restoration Fund	0.0
Total	\$1,448.0

Conclusion

Considering the assumptions and risks noted above, the Committee believes that the variables that factor into the affordability analysis have been estimated prudently and, in many cases, conservatively. 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 \$1.095 billion for the 2020 legislative session and fiscal year 2021 capital program remains within the debt affordability criteria. The Committee’s adopted planning assumptions project increasing the authorization amount by 1% 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 approval of BPW 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 may prudently 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 may prudently 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, 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 (“MSU”), St. Mary's College of Maryland (“SMCM”) and Baltimore City Community College (“BCCC”). 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 may prudently 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 this area, representatives from all four institutions presented debt information to the Committee at its October 10, 2019 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 \$999.0 million for various academic facilities for USM. Of this amount, \$34.0 million was authorized by the 2019 General Assembly for academic facilities (Chapter 148, Laws of Maryland, 2019).

In fiscal year 2019, USM issued \$115,000,000 in new debt. USM reports its bond debt outstanding at \$1,173,000,000 (at par value) at June 30, 2019. USM has no revolving loan program bonds and has not used interest rate exchange agreements or guaranteed investment contracts. Projected issuances through fiscal year 2025 are shown in **Table 4**.

The bonds are rated as follows: Fitch, 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 \$23,899,222 of Other Debt and Capital Lease Obligations outstanding as of June 30, 2019. **Section II.D, Lease and Conditional Purchase Financings**, in this 2019 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. The policy was revised in April 2018 to reflect the current planning metrics used by USM. The policy requires debt be managed so that:

1. Debt service does not exceed 4.0% of operating revenues plus State Appropriations; and
2. Available resources must be at least 90% of direct debt, adjusted for outstanding commitments, both cash and debt-funded.

Table 4 shows that debt service is expected to be 3.13% of operating revenues plus State appropriations in fiscal year 2019 and projects compliance with the debt policy standard through 2024. 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 2015 through 2018 and estimates for fiscal years 2019 and 2020.

University System Maryland Ratio of Available Resources to Debt Outstanding (\$ in millions)			
Fiscal Year	Available Resources adjusted for claims*	Debt Outstanding plus commitments*	Ratios of Available Resources to Debt Outstanding*
2015	\$1,439	\$1,470	98%
2016	\$1,639	\$1,464	112%
2017	\$1,738	\$1,466	119%
2018	\$1,838	\$1,454	126%
2019(Proj.)	\$1,947	\$1,471	132%
2020(Est.)	\$1,945	\$1,365	143%

*Reflects audited financial statement amounts for unrestricted fund balances and debt outstanding, adjusted for unspent commitments.

St. Mary's College of Maryland ("SMCM")

Bond Activity

As of June 30, 2019, SMCM had a total of \$25.9 million in revenue bonds outstanding. Moody's underlying rating for SMCM debt is A2 with a negative outlook as of the most recent update in August 2019. SMCM does not have any interest rate exchange agreements or guaranteed investment contracts. SMCM has 1 interest rate cap agreement outstanding related to a previous loan which has now been paid off. The agreement expires in 2020, termination was deemed uneconomic at the time the previous loan was extinguished.

Lease Activity

There is a capital lease through the State Treasurer's Office with a remaining balance of \$0.2 million related to an energy performance contract. **Section II D, Lease and Conditional Purchase Financings**, in this 2019 CDAC Report lists the SMCM 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 ("MSU")

Bond Activity

As of June 30, 2019, MSU bonds are currently rated A+ by S&P and rated A1 with Moody's, both with a stable outlook. Revenue bonds outstanding total \$27.0 million as of June 30, 2019. MSU does not have any interest rate exchange agreements, variable rate bonds or guaranteed investment contracts nor are any of their bonds insured.

During fiscal year 2019, MSU initiated the \$25 million Future Advance Project Funding Bonds, Series A 2018-5 HBCU Loan for University Projects. When the Trustee disburses funds from this loan to MSU, the Trustee is reimbursing MSU for incurred expenses paid by MSU for construction or renovation projects. Interest is only incurred after disbursement funds are sent to MSU by the Trustee with each installment disbursement having its own debt service repayment schedule. Debt outstanding from the issuance of \$4.8 million at June 30, 2019 is not included in Revenue bonds outstanding.

Lease Activity

MSU has capital leases utilizing the State Treasurer's Office Capital Equipment Lease-Purchase Program for financing facilities and technology equipment and has also entered

into other capital leases independently. As of June 30, 2019, \$13.2 million in debt outstanding remained for all its capital leases.

Baltimore City Community College ("BCCC")

Bond Activity

Since 2009, BCCC was authorized to issue \$65.0 million for academic and auxiliary facilities. BCCC has no bonds outstanding and has no plans to issue bonds in fiscal year 2019. 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 ten 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 \$0.7 million in capital leases outstanding as of June 30, 2019.

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 the Committee, nor has it 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. 2019 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 may prudently be authorized in the aggregate for the next fiscal year by University System 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 debt 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 S&P 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 USM, \$88.0 million for MSU, \$60.0 million for SMCM, and \$65.0 million for BCCC. All four higher education systems are within the statutory limits as of June 30, 2019.
2. A key measurement of financial performance frequently used by credit analysts is debt burden; that is, debt service as a percentage of operating revenues plus State appropriations. For USM, debt is managed so that the ratio does not exceed 4.5%, 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

(\$ in thousands)

Fiscal Year	Projected Issuances		Debt Outstanding as of June 30		Debt Service for Fiscal Year		Total Debt Service	Revenues	Ratio of Debt Service to Revenues
	Auxiliary	Academic	Bonds	Leases	Bonds	Leases			
University System Of Maryland									
2019	\$93,000	\$22,000	\$1,173,000	\$23,899	\$147,241	\$7,121	\$154,362	\$4,929,238	3.13%
2020	\$0	\$0	\$1,156,305	\$17,832	\$149,435	\$6,498	\$155,933	\$5,027,823	3.10%
2021	\$83,000	\$32,000	\$1,174,810	\$12,004	\$145,179	\$6,134	\$151,313	\$5,128,380	2.95%
2022	\$83,000	\$32,000	\$1,194,820	\$6,434	\$126,465	\$5,772	\$132,237	\$5,230,948	2.53%
2023	\$83,000	\$32,000	\$1,225,150	\$3,342	\$132,160	\$3,194	\$135,354	\$5,335,567	2.54%
2024	\$83,000	\$32,000	\$1,249,316	\$464	\$131,958	\$2,921	\$134,879	\$5,442,278	2.48%
2025	\$83,000	\$32,000	\$1,273,131	\$214	\$125,914	\$250	\$126,164	\$5,551,124	2.27%
Morgan State University									
2019	\$0	\$0	\$26,985	\$13,203	\$5,815	\$2,514	\$8,329	\$211,507	3.94%
2020	\$0	\$0	\$22,565	\$11,064	\$5,800	\$2,514	\$8,314	\$217,853	3.82%
2021	\$0	\$0	\$17,925	\$9,038	\$2,691	\$2,336	\$5,027	\$224,388	2.24%
2022	\$0	\$0	\$16,130	\$7,131	\$2,217	\$2,159	\$4,376	\$231,120	1.89%
2023	\$0	\$0	\$14,720	\$5,167	\$1,906	\$2,159	\$4,065	\$238,053	1.71%
2024	\$0	\$0	\$13,550	\$3,146	\$1,908	\$2,159	\$4,067	\$245,195	1.66%
2025	\$0	\$0	\$12,320	\$2,112	\$1,906	\$2,159	\$4,065	\$252,551	1.61%
St. Mary's College of Maryland									
2019	\$0	\$0	\$26,985	\$13,203	\$4,044	\$205	\$4,249	\$66,559	6.38%
2020	\$0	\$0	\$22,565	\$11,064	\$2,503	\$205	\$2,708	\$69,139	3.92%
2021	\$0	\$0	\$17,925	\$9,038	\$3,034	\$205	\$3,239	\$70,522	4.59%
2022	\$0	\$0	\$16,130	\$7,131	\$3,024	\$0	\$3,024	\$71,932	4.20%
2023	\$0	\$0	\$14,720	\$5,167	\$2,999	\$0	\$2,999	\$73,371	4.09%
2024	\$0	\$0	\$13,550	\$3,146	\$2,994	\$0	\$2,994	\$74,838	4.00%
2025	\$0	\$0	\$12,320	\$2,112	\$2,637	\$0	\$2,637	\$76,335	3.45%
Baltimore City Community College									
2019	\$0	\$0	\$0	\$731	\$0	\$99	\$99	\$79,885	0.12%
2020	\$0	\$0	\$0	\$678	\$0	\$99	\$99	\$84,860	0.12%
2021	\$0	\$0	\$0	\$622	\$0	\$99	\$99	\$83,283	0.12%
2022	\$0	\$0	\$0	\$562	\$0	\$99	\$99	\$85,781	0.12%
2023	\$0	\$0	\$0	\$498	\$0	\$99	\$99	\$88,355	0.11%
2024	\$0	\$0	\$0	\$429	\$0	\$99	\$99	\$91,006	0.11%
2025	\$0	\$0	\$0	\$0	\$0	\$1,002	\$1,002	\$93,736	1.07%

(see note)

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 \$32.0 million for new academic facilities bonds for the University System of Maryland for fiscal year 2021. 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 2021.

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 SF&P §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 may prudently 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 the 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 the 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 CDAC to analyze and report on the aggregate impact of Public-Private Partnership agreements on the total amount of new State debt that may prudently 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 its obligations. 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 water treatment plants. 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.

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 MDOT under Title 4, Subtitle 6 of the Transportation Article, or by the Maryland Transportation Authority ("MTA") 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.

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 for the analysis of general obligation debt 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.

Criteria 1 and 2 represented traditional measures and criterion 3 reflected a discretionary policy position that the State should reduce 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 CDAC 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 General Obligation Bonds.

Actual affordability ratios for 1981 through 2019 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 in future fiscal years until 2019 when the authorization was increased to \$1.095 billion with annual increases of about 1%.

For a history of recent authorizations and issuances, see Section V of the 2019 CDAC Report, "*Changes in Bond Issuance – General Obligation Bonds.*"

Appendix B: History of Maryland Stadium Authority ("MSA") Financings

Oriole Park at Camden Yards - Bonds. Currently the MSA operates Oriole Park at Camden Yards, which opened in 1992. In connection with the construction of that facility, MSA issued \$155.0 million in notes and bonds. In October 1993, MSA 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 MSA in 1996. In accordance with this agreement and in consideration for the prior payment of the savings, MSA issued its \$17.9 million Sports Facilities Lease Revenue Refunding Bonds in Series 1998A 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, MSA 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. MSA 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, 2019, are \$4.2 million for the Series 2011A Bonds and \$9.0 million for the Series 2011B Bonds.

MSA'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 MSA 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 MSA, and \$1.0 million from the City of Baltimore.

In April 2010, MSA issued the Sports Facilities Taxable Revenue Bonds, Series 2010 Bonds, in the amount of \$10.0 million; the proceeds of which were used for capital repairs to Oriole Park. The Series 2010 Bonds matured in December 2013. Also in December 2013, MSA issued the Sports Facilities Taxable Revenue Bonds, Series 2013, in the amount of \$8.7 million. The proceeds were used to refinance the Sports Facilities Taxable Revenue Bonds, Series 2010. The Series 2013 bonds will mature in December 2023. The amount outstanding as of June 30, 2019 totaled \$4.6 million. MSA'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 August 2011, MSA 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 in 2014 and subsequently, MSA 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 in 2024. The amount outstanding as of June 30, 2019, totaled \$6.1 million. MSA'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. In November 2009, MSA 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. MSA 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, 2019, was \$2.2 million. This lease is included in the CDAC affordability analysis because the guaranteed annual savings was terminated.

In May 2019, MSA issued \$34.4 million in Sports Facilities Taxable Lease Revenue Bonds (Warehouse Issue), Series 2019B. The proceeds will be used for various projects related to the warehouse, parking lot controls and improvements to the walkways between Oriole Park at Camden Yards and M & T Bank Stadium along with issuance costs. The bonds are structured with interest only payments until March 2027 and will mature in 2047. The bonds are solely secured by an assignment of revenues received under a lease of the project from MSA to the State. The amount outstanding as of June 30, 2019 totaled \$34.4 million.

The amount outstanding of MSA's bonds and leases included in the CDAC analysis related to the Oriole Park at Camden Yards project totaled \$60.5 million as of June 30, 2019.

Ocean City Convention Center. In October 2019, MSA issued approximately \$21.4 million in Ocean City Facility Expansion Lease Revenue Bonds, Series 2019C. Proceeds from the sale, including premium, will be used to fund 60% of the cost to expand the Ocean City Convention Center, two years of capitalized interest and cost of issuance. The amount expected to be deposited into the project fund is approximately \$22.5 million, along with a \$500,000 State grant to the Town of Ocean City and the issuance of debt by the Town of Ocean City resulting in \$15.0 million for construction, for a project budget of \$38.0 million. The annual debt service is projected at \$1.6 million. The bonds will mature in 2038.

MSA will continue to pay one-half of the annual operating deficits of the facility through December 2059. The 2019 contribution to the operating deficit and capital improvements funds is approximately \$1.4 million. The project is expected to generate direct and indirect tax benefits to the State that offset the costs (debt service, operating deficit, and the deposit to the capital improvements fund).

Ravens Stadium. MSA currently operates M&T Bank Stadium, which opened in 1998. In connection with the construction of that facility, MSA sold \$87.6 million in lease-backed revenue bonds in 1996. The proceeds from MSA'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 MSA to the State. In June 1998, MSA 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 MSA. MSA 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 and the balance of the proceeds was used for closing costs. The 1996 Series Bonds were called in 2007 in accordance with the swap agreement. The bonds outstanding as of June 30, 2019 totaled \$36.2 million.

In May 2019, MSA issued \$20.6 million in Sports Facilities Tax-Exempt Lease Revenue Bonds (Football Stadium Issue), Series 2019A. The proceeds will be used for various projects at M&T Bank Stadium. The bonds are structured to mature in 2026, the same time as the Series 2007, and are solely secured by an assignment of revenues received under a lease of the project from MSA to the State. The amount outstanding as of June 30, 2019 totaled \$20.6 million.

In November 2009 MSA entered into a contract with Pepco Energy Services to provide energy upgrades and enhancements to the stadium at a cost of approximately \$2.5 million. MSA 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, 2019 was \$0.9 million. This lease is included in the CDAC affordability analysis because the guaranteed annual savings was terminated.

The amount outstanding of MSA's bonds and leases included in the CDAC affordability analysis, related to the stadium projects totaled \$57.7 million as of June 30, 2019.

Montgomery County Conference Center. In January 2003, MSA 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 was privately financed. The center cost \$33.5 million and was financed through a combination of funding from Montgomery County and MSA. MSA does not have any operating risk.

In November 2012, MSA 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, 2019 totaled \$6.7 million.

Hippodrome Theater. In July 2002, MSA 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. MSA does not have any operating risk for the project, which was completed in February 2004.

In July 2012, MSA 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, 2019 totaled \$4.5 million.

Camden Station Renovation. In February 2004, MSA 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. MSA 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 MSA. The average annual debt service for these bonds is \$0.8 million. Bonds outstanding as of June 30, 2019 totaled \$4.1 million.

Baltimore City Public School Construction. In April 2016, MSA issued \$320.0 million, Series 2016 Maryland Stadium Authority Baltimore City Public Schools ("BCPS") Construction and Revitalization Program Revenue Bonds. There was approximately \$66.1 million in bond premium generated from the transaction. The proceeds of \$386.1 million were used for issuance costs and construction costs for BCPS. 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, BCPS 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, 2019 totaled \$304.7 million.

In January 2018, MSA issued \$426.4 million, Series 2018A Maryland Stadium Authority BCPS Construction and Revitalization Program Revenue Bonds. There was approximately \$70.0 million in bond premium generated from the transaction. The proceeds of \$496.4 million will be used for issuance costs and construction costs for the BCPS. Interest is payable semiannually at the rate of 5.00% per annum on May 1st and November 1st. This bond will mature May 1, 2047. The annual debt service is secured by the funds received from Baltimore City, BCPS 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 \$27.3 million. Bonds outstanding as of June 30, 2019 totaled \$412.5 million.

IX. SCHEDULES

Schedule A-1: Maryland Personal Income and Population

Calendar Year	Personal Income	% Change	Population	% Change
2005	242,159	5.07%	5,592,000	0.81%
2006	257,913	6.51%	5,627,000	0.63%
2007	267,774	3.82%	5,653,000	0.46%
2008	280,995	4.94%	5,685,000	0.57%
2009	279,901	-0.39%	5,730,000	0.79%
2010	288,737	3.16%	5,773,552	0.76%
2011	304,388	5.42%	5,849,337	1.31%
2012	314,160	3.21%	5,896,817	0.81%
2013	312,370	-0.57%	5,937,480	0.69%
2014	322,609	3.28%	5,974,162	0.62%
2015	337,212	4.53%	6,003,541	0.49%
2016	349,267	3.57%	6,027,958	0.41%
2017	360,251	3.14%	6,055,807	0.46%
2018	373,146	3.58%	6,083,338	0.45%
2019	393,765	5.53%	6,055,803	-0.45%
2020	408,099	3.64%	6,065,440	0.16%
2021	423,258	3.71%	6,075,335	0.16%
2022	439,662	3.88%	6,094,225	0.31%
2023	456,507	3.83%	6,114,665	0.34%
2024	472,872	3.58%	6,135,316	0.34%
2025	490,548	3.74%	6,155,078	0.32%
2026	509,475	3.86%	6,172,848	0.29%
2027	530,847	4.19%	6,188,198	0.25%
2028	554,343	4.34%	6,201,578	0.22%
2029	578,716	4.40%	3,213,721	0.20%

2.89%	Average Rate of personal income growth for 10-year period 2009 through 2018
3.24%	Median rate of personal income growth for 10-year period 2009 through 2018

Sources: Personal income
2000-2018 Bureau of Economic Analysis, U.S. Dept. of Commerce
2019-2029 Forecast: BRE September 2015 forecast
Population
1999-2018 Census Bureau, U.S. Dept. of Commerce
2019-2029 Forecast: Economy.com September 2015 forecast

Schedule A-2: Maryland State Tax-Supported Revenue Projections

Maryland State Tax-Supported Revenue Projections (\$ in millions)

Fiscal Year	General Fund	% Change	Property Taxes	% Change	Premium and Misc. ABF Receipts	Federal Interest Subsidy	Educational Trust Fund (VLT revenues)	Transfer Taxes	Total	Transportation Revenues	Stadium Related Revenues	Garvee Revenues	Bay Restoration Fund	Total Revenues	% Change
2014	15,017.0		724.8		107.9	11.4	328.4	164.0	16,353.5	2,709.0	23.4	467.2	108.5	19,661.6	
2015	15,778.4	5.1%	730.7	0.8%	128.1	11.5	387.4	161.0	17,197.1	2,906.0	21.9	465.8	111.8	20,702.6	5.29%
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	2.88%
2017	16,698.7	3.8%	773.1	3.5%	91.2	11.5	451.2	210.1	18,235.8	3,165.0	21.9	548.6	112.7	22,084.0	3.69%
2018	17,372.5	4.0%	800.8	3.6%	153.0	11.5	496.7	217.9	19,052.4	3,166.0	21.8	548.6	113.5	22,902.3	3.71%
2019	18,199.0	4.8%	828.5	3.5%	119.6	11.6	542.7	207.6	19,909.2	3,294.0	1.0	548.6	114.2	23,867.0	4.21%
2020	18,695.4	2.7%	854.9	3.2%	101.8	11.7	551.4	213.7	20,428.9	3,552.0	8.1	548.6	115.3	24,653.0	3.29%
2021	19,058.3	1.9%	870.3	1.8%	2.7	10.9	541.9	219.4	20,703.5	3,687.0	1.1	-	116.5	24,508.1	-0.59%
2022	19,590.5	2.8%	888.6	2.1%	2.8	10.1	548.4	228.4	21,268.8	3,772.0	0.6	-	117.7	25,159.0	2.66%
2023	20,258.9	3.4%	915.3	3.0%	2.8	8.9	555.9	236.0	21,977.9	3,867.0	-	-	118.8	25,963.7	3.20%
2024	20,967.3	3.5%	933.6	2.0%	2.9	7.5	563.6	245.4	22,720.3	3,886.0	-	-	120.0	26,726.3	2.94%
2025	21,657.4	3.3%	952.2	2.0%	3.0	5.5	571.3	255.3	23,444.7	3,945.0	-	-	121.2	27,510.9	2.94%
2026	22,350.4	3.2%	971.3	2.0%	3.0	2.6	579.3	264.7	24,171.3	4,014.0	-	-	123.7	28,309.0	2.90%
2027	23,065.7	3.2%	990.7	2.0%	3.1	0.9	587.4	-	24,647.7	4,097.0	-	-	124.9	28,869.6	1.98%
2028	23,803.8	3.2%	1,010.5	2.0%	3.1	0.2	595.6	-	25,413.3	4,167.0	-	-	126.1	29,706.4	2.90%
2029	24,565.5	3.2%	1,030.7	2.0%	3.2	-	604.0	-	26,203.4	4,245.0	-	-	127.4	30,575.8	2.93%

Schedule B-1: Proposed General Obligation Authorizations and Estimated Issuances

Proposed Authorization (\$ in millions)

FY	Legislative Session	Proposed Authorization	Rate of Increase
2020	2019	1,085	
2021	2020	1,095	1%
2022	2021	1,105	1%
2023	2022	1,115	1%
2024	2023	1,125	1%
2025	2024	1,135	1%
2026	2025	1,145	1%
2027	2026	1,155	1%
2028	2027	1,165	1%
2029	2028	1,175	1%

Projected Issuance of New Authorization (\$ in millions)

Auth. Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
2020	336	271	217	163	98	-	-	-	-	-	1,085
2021	-	339	274	219	164	99	-	-	-	-	1,095
2022	-	-	343	276	221	166	99	-	-	-	1,105
2023	-	-	-	346	279	223	167	100	-	-	1,115
2024	-	-	-	-	349	281	225	169	101	-	1,125
2025	-	-	-	-	-	352	284	227	170	102	1,135
2026	-	-	-	-	-	-	355	286	229	172	1,042
2027	-	-	-	-	-	-	-	358	289	231	878
2028	-	-	-	-	-	-	-	-	361	291	652
2029	-	-	-	-	-	-	-	-	-	364	364
Total	336	611	833	1,004	1,110	1,120	1,130	1,140	1,150	1,160	9,594
Prior Authorization	659	464	257	97	-	-	-	-	-	-	1,477
Total Projected Issuance	995	1,075	1,090	1,100	1,110	1,120	1,130	1,140	1,150	1,160	11,070

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

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
1st Sale	550	540	550	555	560	565	570	575	580	585	5,010
2nd Sale	495	535	545	545	550	555	560	565	570	575	4,945
Total	995	1075	1,095	1,100	1,110	1,120	1,130	1,140	1,150	1,160	9,955

Schedule B-2: Projected General Obligation Authorized But Unissued Debt

(\$ in millions)

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Beginning Balance	2,483	2,573	2,593	2,603	2,618	2,633	2,648	2,663	2,678	2,693	
PLUS: New Authorizations^(a)	1,085	1,095	1,105	1,115	1,125	1,135	1,145	1,155	1,165	1,175	11,300
LESS: Total Bonds Issued^(b)	995	1,075	1,095	1,100	1,110	1,120	1,130	1,140	1,150	1,160	11,075
Ending Balance	2,573	2,593	2,603	2,618	2,633	2,648	2,663	2,678	2,693	2,708	

Summary

Authorized but Unissued at 7/1/2019	2,507,805
Total Authorizations	11,075,000
Total Issuances	<u>-11,300,000</u>
Total Authorized but Unissued at 6/30/29	<u>2,282,805</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

General Obligation Debt Outstanding

(\$ in thousands)

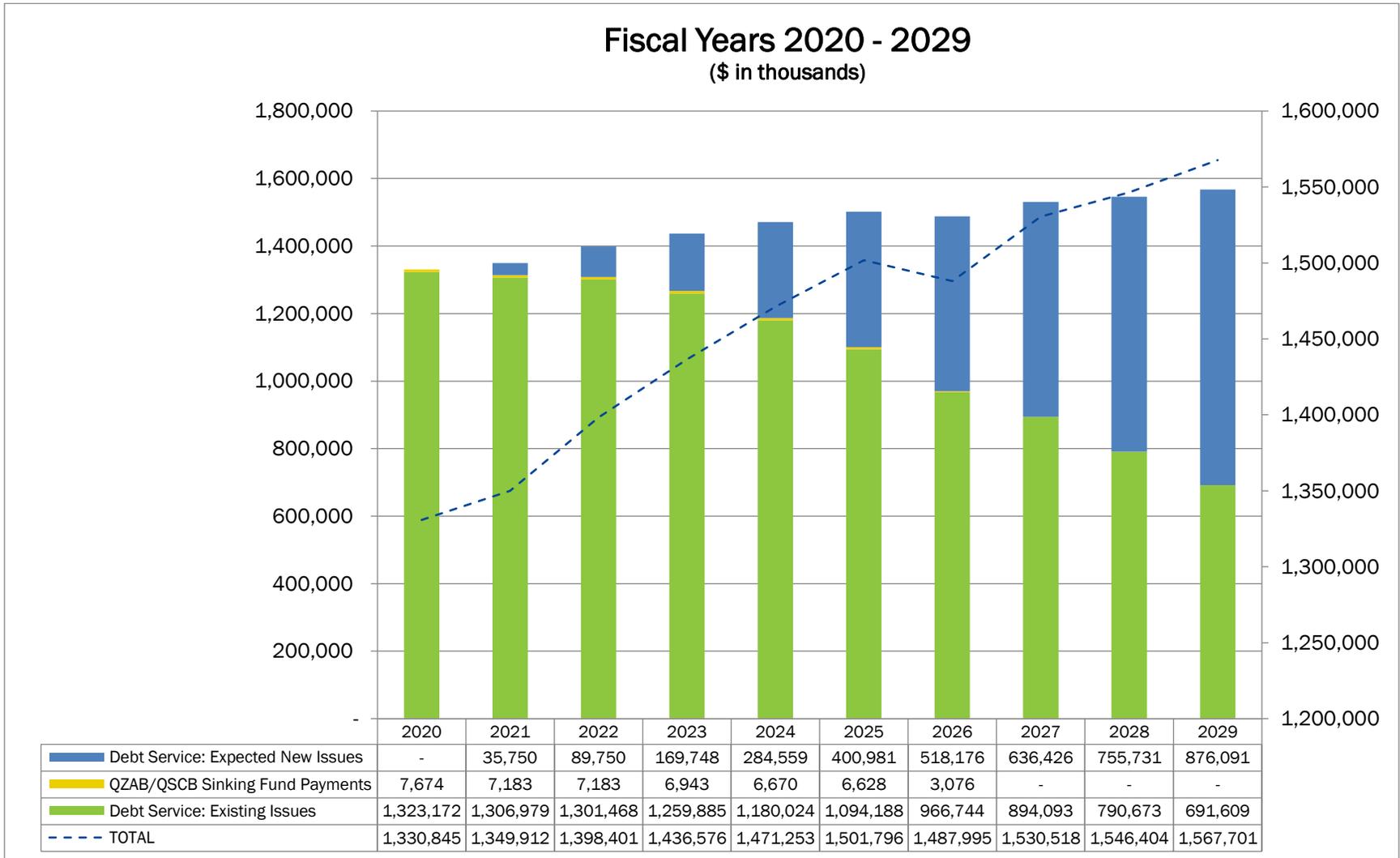
Fiscal Year	Outstanding at Beginning of FY	PLUS: New GO Debt Issues	LESS: Redemptions	LESS: Refundings	Outstanding at End of FY
2020	9,606,909	995,000	902,976	-	9,698,933
2021	9,698,933	1,075,000	914,141	-	9,859,791
2022	9,859,791	1,095,000	951,413	-	10,003,379
2023	10,003,379	1,100,000	980,485	-	10,122,894
2024	10,122,894	1,110,000	1,006,360	-	10,226,534
2025	10,226,534	1,120,000	1,026,245	-	10,320,289
2026	10,320,289	1,130,000	1,007,353	-	10,442,936
2027	10,442,936	1,140,000	1,044,346	-	10,538,590
2028	10,538,590	1,150,000	1,048,598	-	10,639,992
2029	10,639,992	1,160,000	1,059,622	-	10,740,370
		11,075,000	9,941,539	-	

Summary

Outstanding at 7/1/2019	9,606,909
Total GO Issued	11,075,000
Total GO Redeemed	<u>-9,941,539</u>
Outstanding at 6/30/29	<u>10,740,370</u>

(a) As projected in Appendix B-1

Schedule B-4: Projected General Obligation Debt Service and Sinking Fund Payments



Schedule C-1: Historical Data – General Obligation Debt

Fiscal Year	Summary of Authorizations				Summary of Debt Activity					Total Debt Service
	Authorized ^(a)	Cancelled	New Issuances	Authorized but Unissued	New Issuances	Refunding	Redeemed	Refunded	Outstanding at Fiscal Year End	
2003	756,513	11,634	725,000	1,793,483	725,000	376,950	326,695	386,940	3,932,493	496,870
2004	663,663	10,692	500,000	1,946,454	500,000	-	330,215	-	4,102,278	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
2006	690,000	1,004	750,000	1,774,484	750,000	-	393,355	-	4,868,471	625,208
2007	821,126	4,645	679,378	1,911,587	679,378	-	405,695	-	5,142,154	654,055
2008	935,000	2,749	779,986	2,063,852	779,986	-	428,310	-	5,493,830	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
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
2011	940,902	4,127	974,718	2,357,041	974,718	-	515,094	-	6,982,846	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
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
2014	1,164,625	7,305	979,549	2,538,413	979,549	236,855	613,979	245,880	8,362,348	980,738
2015	1,047,625	3,694	1,022,625	2,559,720	1,022,625	1,015,074	658,368	1,064,465	8,677,214	1,027,003
2016	1,001,680	3,307	1,540,625	2,017,467	1,540,625	-	752,554	-	9,465,285	1,120,994
2017	1,069,823	1,345	679,680	2,406,265	679,680	465,685	786,139	490,305	9,334,205	1,183,054
2018	1,075,000	2,300	1,079,823	2,399,142	1,079,823	785,340	835,446	884,515	9,479,407	1,234,921

(a) Authorizations for a fiscal year represent those authorizations effective for that fiscal year.

Schedule C-2: History of Affordability Ratios

Tax-Supported Debt		
Calendar Year	Debt as a % of Personal Income ⁽¹⁾	Debt Service as % of Revenues ⁽²⁾
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%
2018	3.51%	7.42%

(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.

Schedule C-3: Historical Data – Department of Transportation Debt

Consolidated Transportation Bonds

(\$ in thousands)

Summary of Debt Activity

Summary of Debt Service (d)

Fiscal Year	Gross Debt Outstanding				Gross Debt Outstanding			Net Debt Outstanding	Deposits to			Interest	Total
	Beginning of Year	Issued	Deceased	Redeemed	End of Year	Sinking Fund(s) Balance (c)	End of Year	Refunding Sinking Fund	Principal Redeemed				
1981	\$399,865.00	\$120,000.00	(a)	\$0	\$0	\$519,865							
1982	519,865	60,000			60,000	519,865							
1983	519,865	40,000	0		60,000	499,865	240,601	259,264	20,924	60,000	32,884	113,808	
1984	499,865	0	0		0	499,865	283,617	216,248	20,924	0	29,219	50,143	
1985	499,865	0	0		0	499,865	335,241	164,624	20,924	0	29,219	50,143	
1986	499,865	0	354,865	(b)	3,000	142,000	29,299	112,701	10,462	3,000	19,547	33,009	
1987	142,000	100,000	0		7,000	235,000	48,317	186,683	0	7,000	12,919	19,919	
1988	235,000	0	0		8,000	227,000	58,953	168,047	0	8,000	15,685	23,685	
1989	227,000	100,000	0		17,000	310,000	68,162	241,838	0	17,000	18,195	35,195	
1990	310,000	260,000	0		20,000	550,000	67,309	482,691	0	20,000	28,842	48,842	
1991	550,000	310,000	0		18,000	842,000	68,329	773,671	0	18,000	46,261	64,261	
1992	842,000	120,000	0		21,000	941,000	66,230	874,770	0	21,000	59,211	80,211	
1993	941,000	75,000	0		56,200	959,800	39,901	919,899	0	56,200	(e)	61,445	117,645
1994	959,800	543,745	(f)	457,800	25,455	1,020,290	27,570	992,720	0	25,455	56,423	81,878	
1995	1,020,290	75,000	0		47,785	1,047,505	32,338	1,015,167	0	47,785	52,841	100,626	
1996	1,047,505	0	0		69,880	977,625	30,940	946,685	0	69,880	51,526	121,406	
1997	977,625	50,000	0		88,245	939,380	15,495	923,885	0	88,245	47,448	135,693	
1998	939,380	93,645	(g)	91,200	97,810	844,015	0	844,015	0	97,810	44,959	142,769	
1999	844,015	0	0		94,885	749,130	0	749,013	0	94,885	38,025	132,910	
2000	749,130	75,000	0		99,360	724,770	0	724,770	0	99,360	35,873	135,233	
2001	724,770	0	0		76,720	648,050	0	648,050	0	76,720	32,954	109,674	
2002	648,050	150,000	0		83,900	714,150	0	714,150	0	83,900	29,278	113,178	
2003	714,150	607,405	(h)	46,500	313,810	961,245	0	961,245	0	313,810	34,204	348,014	
2004	961,245	395,900	(i)	77,500	93,995	1,185,650	0	1,185,650	0	93,995	40,915	134,910	
2005	1,185,650	0	0		115,705	1,069,945	0	1,069,945	0	115,705	53,950	169,655	
2006	1,069,945	100,000	0		91,470	1,078,475	0	1,078,475	0	91,470	49,702	141,172	
2007	1,078,475	100,000	0		67,425	1,111,050	0	1,111,050	0	67,425	50,999	118,424	
2008	1,111,050	226,755	0		68,990	1,268,815	0	1,268,815	0	68,990	52,400	121,390	
2009	1,268,815	390,000	0		76,210	1,582,605	0	1,582,605	0	76,210	66,145	142,355	
2010	1,582,605	140,000	0		77,595	1,645,010	0	1,645,010	0	77,595	73,358	150,953	
2011	1,645,010	0	0		83,170	1,561,840	0	1,561,840	0	83,170	75,492	158,662	
2012	1,561,840	276,435	(j)	172,800	102,845	1,562,630	0	1,562,630	0	102,845	71,370	174,215	
2013	1,562,630	165,000	0		109,340	1,618,290	0	1,618,290	0	109,340	70,968	180,308	
2014	1,618,290	325,000	0		130,620	1,812,670	0	1,812,670	0	130,620	76,614	207,234	
2015	1,812,670	661,250	(k)	301,255	152,415	2,020,250	0	2,020,250	0	152,415	79,989	232,404	
2016	2,020,250	300,000	0		174,165	2,146,085	0	2,146,085	0	174,165	90,193	264,358	
2017	2,146,085	892,525	(l)	253,040	207,185	2,578,385	0	2,578,385	0	207,185	100,030	307,215	
2018	2,578,385	555,000	0		221,710	2,911,675	0	2,911,675	0	221,710	118,350	340,060	
2019	2,911,675	630,680	253,040		199,410	3,342,945	0	3,342,945	0	199,410	138,156	337,566	

(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
 \$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 \$242.525 million refunding bonds