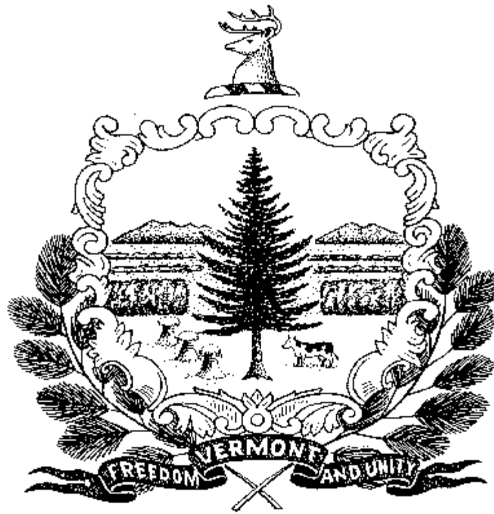
CAPITAL DEBT AFFORDABILITY
ADVISORY COMMITTEE

State of



Vermont

RECOMMENDED ANNUAL NET TAX-SUPPORTED
DEBT AUTHORIZATION

September 2017

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TO: Governor Phil Scott
Susanne Young, Secretary of Administration
Mitzi Johnson, Speaker of the House of Representatives
Tim Ashe, Senate President Pro Tempore
Alice Emmons, Chair, House Committee on Corrections and Institutions
Peg Flory, Chair, Senate Committee on Institutions
Stephen Klein and Members, Joint Fiscal Committee

FROM: Beth Pearce, State Treasurer

DATE: September 29, 2017

RE: Capital Debt Affordability Advisory Committee Report for 2017

Pursuant to 32 V.S.A. §1001, I am pleased to deliver on behalf of the Capital Debt Affordability Advisory Committee ("Committee" or "CDAAC") its "Recommended Annual Net Tax-Supported Debt Authorization" Report for 2017 ("Report").

This is the second year of the FY 2018-2019 biennium and the Committee is reaffirming its 2-year debt recommendation of $132,460,000, as proposed by the Administration and adopted by the General Assembly in the 2017 Capital Bill.

As noted in the Report, more limited debt issuance by other states, including our peer Triple-A rated states, has resulted in a weakening of Vermont's debt ratio comparative rankings. The Committee notes that Vermont's projected debt issuance of $66.23 million per year exceeds scheduled debt retirements, meaning that the State's overall debt outstanding continues to rise. This issuance amount may also cause the State to be out of compliance with its debt ratio guidelines, specifically debt per capita. As we are in the second year of a biennium we did not make an adjustment to the current recommended authorization. We may however, see pressure to consider reduction in bond-issuance recommendations in the next biennium, depending on trends over the next year. Data to date however, indicates less issuance by our peers. Some may be attributed to deferred maintenance while a portion may be attributed to the use of non-debt resources.

Although the amount of outstanding debt at fiscal-year end appears lower than it was a year ago, this is more of a timing issue. Vermont did not issue general obligation bonds in fiscal year 2017, but instead delayed issuance until September of this year.

The State's general obligation bond ratings were affirmed in August by Moody's Investors Service (Aaa, highest rating), Fitch Ratings (AAA, highest rating), and S&P Global Ratings (AA+, second highest rating), all with stable outlooks. These bond ratings, the highest in the Northeast, are critical to Vermont's financial future and allows us access to capital at low rates. This not only supports the State's infrastructure needs but also lowers the cost of financing for various authorities that rely, at least in part, on our bond rating. A good bond rating reduces the cost for affordable housing (through the Vermont Housing Finance Agency), economic development (Vermont Economic Development Authority), higher education (Vermont Student Assistance Corporation), and the bricks and mortar projects in our communities (Vermont Municipal Bond Bank).

Our pension liabilities are significant and our past history of not paying the actuarially determined contributions has contributed to today's budgetary pressures. I am pleased that since FY 2007 the State has made its requisite contributions. I would urge you to continue to fully fund the actuarially determined contributions as any failure to do so will further compound the issue. There are no quick fixes and we must remain disciplined in our practices so as to provide retirement security and value to the taxpayer.

Although General Fund receipts have increased faster than the general U.S. inflation rate during the current business cycle, our economist notes that they have lagged the average annual rate of increase for nominal U.S. GDP for the last ten years.[1] This revenue trend may cause additional pressures on our metrics. I would also note that some states have recently seen a decline in their ratings or ratings outlook based on their depletion of stabilization or rainy-day reserves. Maintaining and even growing our reserves is critical to both our ratings and sound fiscal management.

Our nation's tax, budgeting and fiscal policies have tremendous challenges and/or stresses going forward that will impact the State. While I am confident that Vermont will advocate for policies that will address the needs of all of our citizens, budgetary and fiscal impacts will result. Vermont, therefore needs to continue its policies of fiscal prudence, conservative debt management, maintaining our reserves, and proactive budget management. We look forward to working with you as we address these challenges.

Please feel free to contact me with any questions.

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[1] State revenues (adjusted for tax changes replicating the Fitch Ratings approach for state and local governments which makes adjustments to annual tax receipts in prior years based on current tax law) during the current business cycle have increased faster than the general U.S. inflation rate (as measured by the CPI-U or the Consumer Price Index for all Urban Consumers—as published by the U.S. Department of Labor-Bureau of Labor Statistics) but have increased at a more moderate pace versus overall U.S. economic growth. Current dollar General Fund receipts rose at a 2.4% per year rate over the fiscal year 2007 through 2017 period, while Transportation Fund receipts increased at a more moderate 2.1% annual rate. This compares favorably to the 1.7% average annual increase in the general U.S. inflation rate over the same period, but lags behind the 2.9% average annual rate of growth for nominal dollar U.S. Gross Domestic Product experienced between fiscal year 2007 and fiscal year 2017. This performance is characteristic of a somewhat below AAA revenue growth performance for the state.

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1. OVERVIEW

Purpose

In accordance with 32 V.S.A., Chapter 13, Subchapter 8 "Management of State Debt," the Capital Debt Affordability Advisory Committee (the "Committee" or "CDAAC") is required to present to the Governor and the General Assembly each year, no later than September 30, an estimate of the maximum amount of new long-term net State tax-supported debt that Vermont may prudently authorize for the next fiscal year. In Sec. 1 of Act No. 104 of 2012, the General Assembly expressed its intent to move to a biennial capital budgeting cycle "to accelerate the construction dates of larger projects and thus create jobs for Vermonters sooner than would be possible under a one-year capital budgeting cycle." In response, starting with its 2012 Report, the Committee has formally presented a two-year debt recommendation.

Formal Recommendation

The Committee recommends that the State of Vermont maintain its current authorization of long-term net tax-supported debt for fiscal years 2018 and 2019 in an amount not to exceed $132,460,000, reflecting a reduction of 8.01% from the previous biennium recommendation of $144,000,000. CDAAC's formal recommended debt authorization complies with the State's triple-A debt affordability guidelines, is consistent with the current expectations of the rating agencies, and demonstrates that the State continues to manage its debt issuance program in a prudent and restrained manner.

From 2004 through 2011, the State was able to increase the amount of capital funding authorized, while at the same time improving or maintaining its position with regard to its debt guidelines. However, over the last few years, the State's relative debt position has slipped compared to other states. This was exacerbated the last three years because total net-tax supported debt for US states declined in 2014 and remained static in 2015 and 2016. Moody's 2015 State Debt Medians report, which summarizes state debt issuance in 2014, stated the drop was the first in 28 years since Moody's began compiling such data. Furthermore, the Moody's 2016 and 2017 State Debt Medians reports revealed that the net tax-supported debt remained essentially flat in 2015 and 2016 compared to 2014, with a growth of only 0.6% and 0.8%, respectfully. See Section 6, "State Debt Guidelines and Recent Events" for additional information.

Although the State's annual cost of debt service as a percentage of revenues is perhaps the single most important affordability metric, the Committee reviews other debt ratios such as debt as a percentage of gross state product, debt as a percentage of personal income and debt per capita. Similar to years past, debt service as a percentage of revenues and debt per capita are the main factors constraining this year's recommendation. See Section 6, "State Debt Guidelines and Recent Events" for a detailed discussion of CDAAC's analytical process.

The more limited debt issuance among the State's peer triple-A rated states over the past three years has weakened the State's relative position compared to its peers. In turn, the projected debt issuance of $108,835,000 in FY 2019 and $66,230,000 per year thereafter will exceed scheduled debt retirements, meaning the State's overall debt outstanding and debt service will continue to rise. CDAAC has reviewed various scenarios related to future State debt issuance amounts which indicate that the State would be out of compliance under its current framework if the 2018 CDAAC recommendation was the same as the 2016 CDAAC biennium

recommendation. Furthermore, a separate scenario indicates that compliance could be achieved, assuming an 8.7% reduction in the 2018 CDAAC recommendation. These analyses are forward looking, based on assumptions and the affordability measures will be recalculated in as part of the 2018 report. Please see Appendix A for a debt issuance scenario in which results in the State achieving compliance with its affordability targets through a reduction in its FY 2018 recommendation.

Definition of Vermont's "Long-Term Net Tax-Supported Debt"

As a matter of practice, while the CDAAC legislation refers to an authorization of "net tax-supported debt," the amount of net tax-supported debt for the State means only general obligation (or "G.O.") debt, and this report assumes only G.O. debt for authorization purposes and in calculating its projected debt ratios. As indicated in Section 6, "State Debt Guidelines and Recent Events," the rating agencies generally include the State's special obligation transportation infrastructure bonds ("TIBs"), issued by Vermont in 2010, 2012, and 2013, as part of net tax-supported debt, whereas the State treats this debt as self-supporting debt in its debt statement. While the CDAAC report includes "Dashboard Indicators" debt metrics calculated both with and without TIBs, it does not assume that such indebtedness is part of net tax-supported debt. See Section 3, "State Guidelines" for further information.

Debt Authorizations and Issuance Amounts

The following chart presents the amounts of G.O. debt that have been authorized and issued by the State since fiscal year 2004 on a biennial basis. As shown below, the State has experienced a significant increase in debt authorizations and issuances over the last fourteen years. For the period from 2004-2017, the biennial issuance has approximately doubled, and the compound annual growth rate in debt authorizations during this period has been 4.3%. Including the 2018-2019 recommended authorization amount, the compound annual growth rate in debt authorizations is 3.2%.

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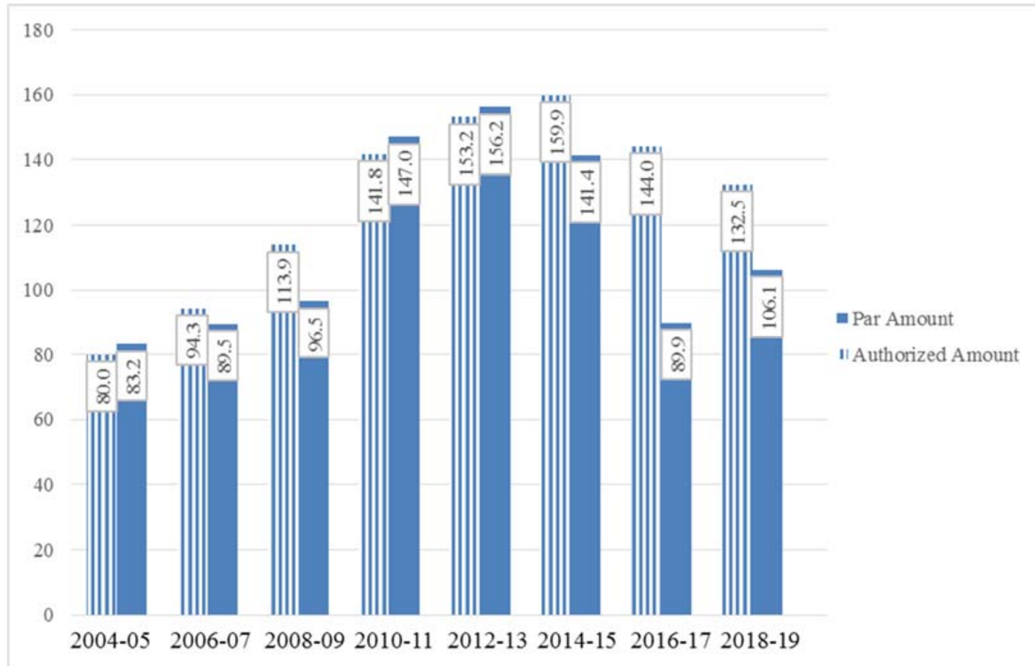
STATE OF VERMONT
HISTORICAL GENERAL OBLIGATION. BOND AUTHORIZATIONS AND ISSUANCE BY BIENNIUM[(1)(2)(3)(4)]
(IN MILLIONS OF DOLLARS)



Notes:

[(1)]Annual issuances do not include refunding bonds. Authorized but unissued debt has been carried forward and employed in subsequent years' bond issuances.

[(2)]Pursuant to Section 34 of Act 104 of 2011, commencing in fiscal year 2013, premium received from the sale of bonds may be applied towards the purposes for which such bonds were authorized.

[(3)]For fiscal years 2018-19, the "Authorized" amount reflects the two-year authorized amount of the General Assembly in the 2017 Capital Bill (Act 84). This amount excludes any amounts authorized that relate to (i) the principal amount of bonds authorized in prior biennial capital bills but not issued due to the use of original issue bond premium to fund capital projects and (ii) transfers and reallocations from prior years.
[(4)]Includes the 2017 Bonds in the aggregate amount of $106,095,000 issued on September 13, 2017.

For fiscal years 2018-2019 the General Assembly has authorized $132,460,000 in new general obligation bonds. In addition, there is $82,640,068.76 outstanding from prior year authorizations. In September 2017, the State issued $106,095,000 Series 2017A and 2017B bonds ("2017 Bonds") that produced $117,031,961.10 in proceeds available for capital projects within the State. The 2017 Bonds were issued at a net premium in the amount of $10,771,446.71. The 10-year projection of State debt assumes that the State issues in FY 2019 the remaining authorization of $108,835,000 ($108,839,554.37, rounded down to the nearest $5,000 denomination), representing the balance of the previous biennium authorization of $82,640,068.76, plus current biennium authorization of $132,460,000, plus unissued bond premium of $10,771,446.71 and less the amount funded with proceeds from the issuance of the 2017 Bonds in the amount of $117,031,961.10.

Capital Funding and Capital Plan

For fiscal years 2018-2019, the General Assembly in the 2017 Capital Bill (Act 84), authorized $147,282,287 in total capital project spending consisting of: $132,460,000 in new general obligation debt and $14,822,286.78 in transfers and reallocations. No more than $73,900,141 shall be appropriated in FY 2018 with the remaining $73,382,145 to be appropriated in FY 2019.

The General Assembly created a formal review process by amending 32 V.S.A. § 701a to require Vermont's Department of Building and General Services to prepare a report on or before each January 15th to provide information on encumbrances, spending and project progress for authorized capital projects based on reporting received by the agencies that have received capital appropriations. CDAAC believes that this will result in a more efficient funding process for State capital projects.

With the passage of 32 V.S.A. § 310, the Administration will need to prepare and revise a ten-year State capital program plan on an annual basis, submitting it for approval by the general assembly. The plan will include a list of all recommended projects in the current fiscal year, as well as the five fiscal years thereafter. These recommendations will include an assessment, projection of capital need, and a comprehensive financial assessment. The Committee expects to annually review and consider future capital improvement program plans. Currently, the Agency of Transportation provides a capital improvement plan, which includes the current year appropriations and three years of projections. The web address is http://vtrans.vermont.gov/about/capital-programs.

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2. STATE DEBT

In general, the State has borrowed money by issuing G.O. bonds, the payment of which the full faith and credit of the State are pledged. The State has also borrowed money to finance qualifying transportation capital projects by issuing TIBs, the payment of which is not secured by the full faith and credit of the State. The State also has established certain statewide authorities that have the power to issue revenue bonds and to incur, under certain circumstances, indebtedness for which the State has contingent or limited liability.

General Obligation Bonds

As stated above, the Committee includes only the State's G.O. debt as State net tax supported debt for purposes of its recommendation.

Purpose

The State has no constitutional or other limit on its power to issue G.O. bonds besides borrowing only for public purposes. Pursuant to various appropriation acts, the State has authorized and issued G.O. bonds for a variety of projects or purposes. Each appropriation act usually specifies projects or purposes and the amount of General Fund, Transportation Fund or Special Fund bonds to be issued, and provides that payment thereof is to be paid from the General, Transportation or Special Fund.

Structure

The State Treasurer, with the approval of the Governor, is authorized to issue and sell bonds that mature not later than twenty (20) years after the date of such bonds and such bonds must be payable in substantially equal or diminishing amounts annually. Under the General Obligation Bond Law, except with respect to refunding bonds, the first of such annual payments is to be made not later than five years after the date of the bonds. All terms of the bonds shall be determined by the State Treasurer with the approval of the Governor as he or she may deem for the best interests of the State.

Capital Leases

The State must include capital leases in its total of net tax-supported debt. A capital lease is considered to have the economic characteristics of asset ownership, and is considered to be a purchased asset for accounting purposes. By comparison, an operating lease is treated as a rental for accounting purposes. A lease is considered to be a capital lease if any one of the following four criteria are met:

1. The life of the lease is 75% or longer than the asset's useful life;
2. The lease contains a purchase agreement for less than market value;
3. The lessee gains ownership at the end of the lease period; or
4. The present value of lease payments is greater than 90% of the asset's market value.

Historically the State has avoided capital leases, however, during the fiscal year 2015 audit, the lease for the State's office building at 27 Federal Street in St. Albans was deemed to be a capital lease, having met criteria #4 above. This capital lease, with a fair market value of $9.845 million, is included as net tax-supported debt.

Current Status
G.O. Debt and Capital Leases outstanding as of June 30, 2017 was $586,904,736. G.O. Debt and Capital Leases outstanding as of September 30, 2017 was $647,981,414.

Ratings
The State of Vermont's general obligation ratings were affirmed by S&P Global Ratings ("S&P"), Moody's Investors Service ("Moody's") and Fitch Ratings ("Fitch") in August 2017. The State enjoys triple-A ratings from both Fitch and Moody's. Fitch raised the State's rating in conjunction with a recalibration (generally meaning increased ratings) conducted in 2010. Moody's raised the State's rating to triple-A in February 2007. S&P rates Vermont's G.O. bonds AA+ with a "stable" outlook. Approximately four years ago, S&P raised its rating outlook from "stable" to "positive." In 2015, S&P revised its outlook back to "stable."

"The outlook is revised to stable from positive reflecting Vermont's slower than average economic recovery which continues to pressure the budget in our view. In addition, pension and OPEB liabilities continue to be high relative to state peers. We believe that the state has a very strong budget management framework and should this lead to improved reserve levels in the future, a higher rating could be warranted. In addition, we believe that there has been progress in increasing pension contributions and certain actions have been taken to begin to address OPEB liability. Improved liability position could also translate to a higher rating level. While not envisioned at this time given the state's history of pro-actively managing its budget and recent actions to address post-retirement liabilities, substantial deterioration of budget reserves or a deteriorating liability position could pressure the current rating."

Net Tax-Supported Debt Outstanding

The State's aggregate net tax-supported principal amount of debt decreased from $637.1 million, as of June 30, 2016, to $586.9 million, as of June 30, 2017, a decrease of 7.88%, due to the State not issuing bonds in fiscal year 2017. The table below sets forth the sources of the change in net tax-supported debt outstanding from fiscal year 2016 to fiscal year 2017 (in thousands). The table does not include the 2017 Bonds.

Net Tax-Supported Debt as of 6/30/16	$637,050
G.O. New Money Bonds Issued	0
G.O. Refunding Bonds Issued	0
Less: Retired G.O. Bonds	(49,975)
Less: Refunded G.O. Bonds	0
Less: Retired Capital Lease	(170)
Net Tax-Supported Debt as of 6/30/17	$586,905

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STATE OF VERMONT
Debt Statement
As of June 30, 2017 (In Thousands)

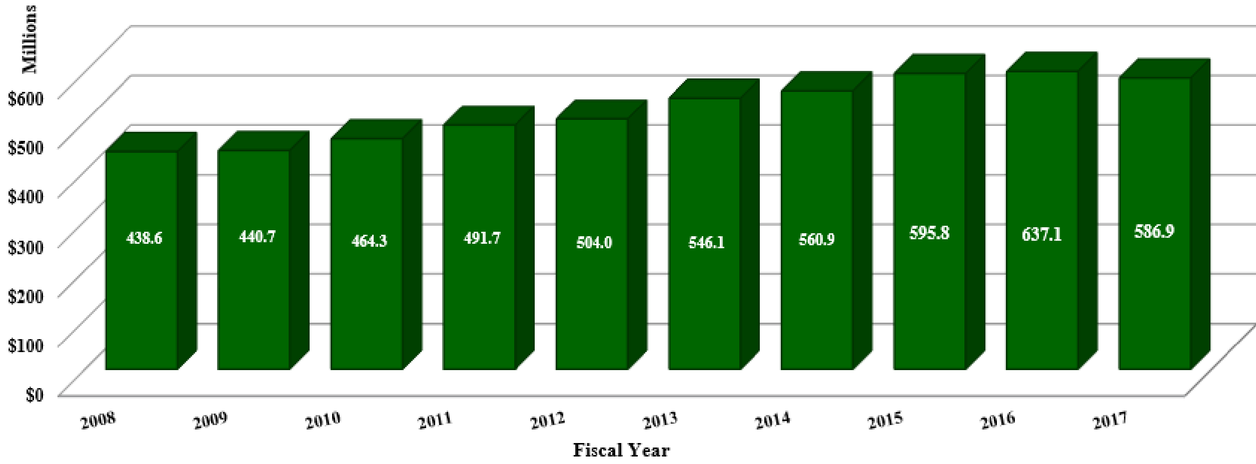
General Obligation Bonds:	
General Fund	$570,959
Transportation Fund	6,101
Special Fund	0
Capital Leases:	
27 Federal Street, St. Albans	$9,845
Self-Supporting Debt:	
Special Obligation Transportation Infrastructure Bonds (TIBs)	$28,340
Reserve Fund Commitments[1]:	
Vermont Municipal Bond Bank	$592,145
Vermont Housing Finance Agency	155,000
VEDA Indebtedness	155,000
Vermont Student Assistance Corporation	50,000
Vermont Telecommunications Authority[2]	40,000
Univ. of Vermont/State Colleges	100,000
Gross Direct and Contingent Debt	$1,707,390
Less:	
Self-Supporting Debt	(28,340)
Reserve Fund Commitments	(1,092,145)
Net Tax-Supported Debt[3]	**$586,905**

[1]Figures reflect the maximum amount permitted by statute. However, many of the issuers have not issued debt or have not issued the maximum amount of debt permitted by their respective statute. See “Moral Obligation Indebtedness” herein for additional information.

[2]The General Assembly dissolved the VTA in 2014, however, this amount remains available to the VTA by statute should it ever be reconstituted.

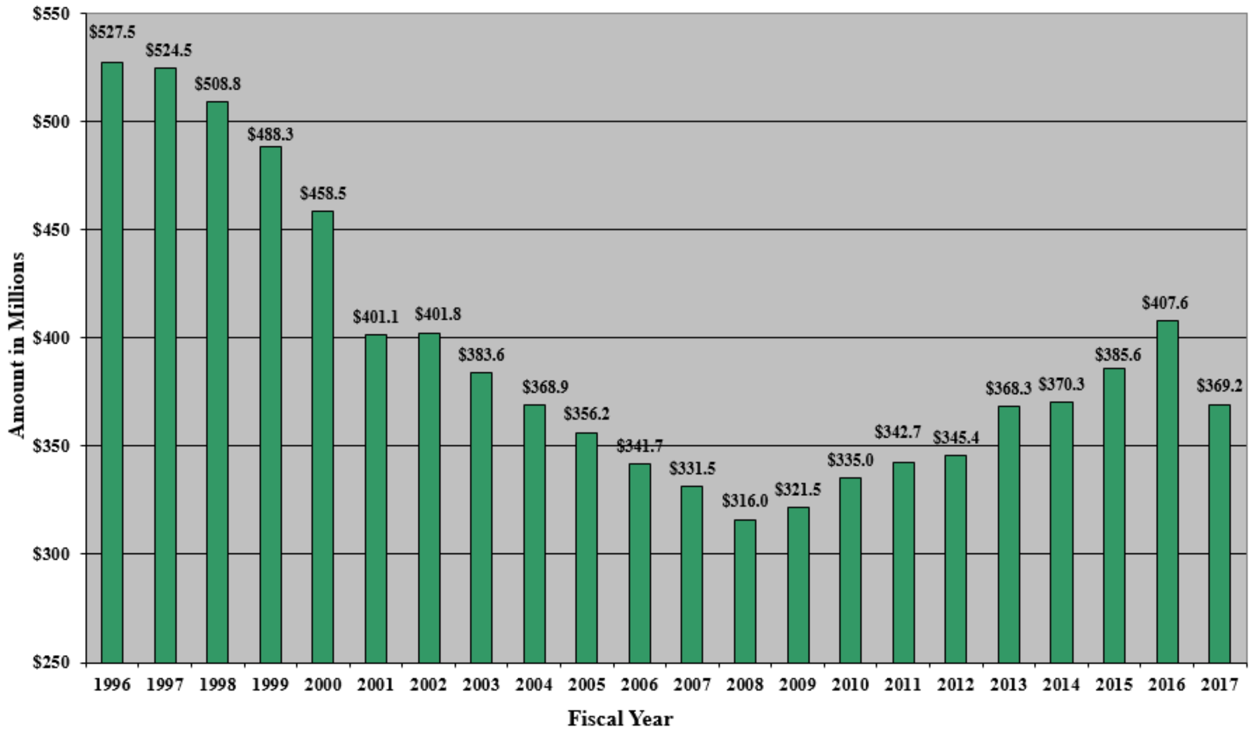
[3]Does not include (i) the 2017 Bonds outstanding in the aggregate amount of $106,095,000 issued on September 13, 2017, (ii) general obligation bonds that have been refunded and (iii) the present value of certain outstanding capitalized leases in the amount of $655,873.

STATE [TH1]OF VERMONT
GENERAL OBLIGATION BONDS OUTSTANDING FY 2008-2017[(1)]
(in millions of dollars)



[(1)] Does not include the 2017 Bonds outstanding in the aggregate amount of $106,095,000 issued in September 2017.

STATE OF VERMONT
GENERAL OBLIGATION DEBT OUTSTANDING, FY 1996-2017
ADJUSTED [TH2]FOR INFLATION[(1)]
(in millions of dollars)



[(1)] Does not include the 2017 Bonds outstanding in the aggregate amount of $106,095,000 issued on September 13, 2017.

The table below sets forth the State's existing principal amounts outstanding and annual debt service requirements, as of September 30, 2017, without the issuance of any additional G.O. debt. Rating agencies consider Vermont's rapid debt amortization, with almost 69.6% of current principal retired by 2028, as of September 30, 2017, to be a positive credit factor.

OUTSTANDING GENERAL OBLIGATION NET TAX-SUPPORTED DEBT (in thousands of dollars) [1]

	GENERAL OBLIGATION BONDS (STATE DIRECT DEBT)									
	General Fund		Transportation Fund		Special Fund		Capital Leases		Total	
Fiscal Year	Principal Outstanding	Debt Service*	Principal Outstanding	Debt Service	Principal Outstanding	Debt Service	Principal Outstanding	Debt Service	Principal Outstanding	Total Debt Service*
2017	570,959	71,120	6,101	1,884	-	336	9,845	790	586,905	74,130
2018	631,161	67,734	4,649	1,709	-	-	9,646	809	645,456	70,252
2019	580,819	78,088	3,231	1,630	-	-	9,418	829	593,468	80,546
2020	531,192	75,442	2,813	560	-	-	9,157	849	543,162	76,851
2021	481,499	73,539	2,396	541	-	-	8,862	870	492,757	74,950
2022	434,577	68,875	1,978	522	-	-	8,529	891	445,084	70,287
2023	389,490	65,313	1,560	502	-	-	8,157	913	399,207	66,729
2024	346,775	61,289	1,300	327	-	-	7,741	936	355,816	62,552
2025	304,110	59,597	1,040	317	-	-	7,280	959	312,430	60,872
2026	263,450	55,981	780	306	-	-	6,770	982	271,000	57,269
2027	224,755	52,555	520	295	-	-	6,207	1,007	231,482	53,857
2028	188,395	48,882	260	283	-	-	5,588	1,032	194,243	50,197

* Debt service has been calculated using the net coupon rates on all Build America Bonds, taking into account the interest subsidy from the federal government. The entire amount of the Build America Bonds is allocated to the General Fund. Totals may not agree due to rounding.

[1] Includes the 2017 Bonds outstanding in the aggregate amount of $106,095,000 issued on September 13, 2017 and assumed to be General Fund obligations.

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General Obligation and General Fund Supported Bond Debt Service Projections

The State's projected annual general obligation ("G.O.") debt service and debt outstanding are presented on the following pages and summarized below. The projected debt service (at estimated interest rates ranging from 5% to 6.5%) assumes the issuance $108,835,000 in FY 2019 and $66,230,000 each fiscal year from 2020-2028.

PROJECTED GENERAL OBLIGATION DEBT SERVICE AND DEBT OUTSTANDING*
(in thousands of dollars)

Fiscal Year Ending	G.O. Debt Service	% Change	G.O. Bonds Outstanding	% Change
6/30/2017	74,130	5.27%	586,905	-7.87%
6/30/2018	70,252	-5.23%	645,456	9.98%
6/30/2019	80,546	14.65%	702,303	8.81%
6/30/2020	88,277	9.60%	712,787	1.49%
6/30/2021	93,361	5.76%	719,862	0.99%
6/30/2022	95,815	2.63%	726,359	0.90%
6/30/2023	99,158	3.49%	731,342	0.69%
6/30/2024	101,668	2.53%	735,501	0.57%
6/30/2025	106,460	4.71%	736,355	0.12%
6/30/2026	109,114	2.49%	735,855	-0.07%
6/30/2027	111,743	2.41%	733,957	-0.26%
6/30/2028	113,910	1.94%	731,028	-0.40%

* Please see table titled "Historic and Projected Debt Ratios" on page 26 for projected debt relative to projected Vermont revenues.

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EXISTING AND PROJECTED NET TAX-SUPPORTED G.O. DEBT SERVICE ($000)													
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
	Current	Issue[2]	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Est.
FY	D/S[1]	$0.000M	108.835M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	D/S
2018	70,252	0	0	0	0	0	0	0	0	0	0	0	70,252
2019	80,546	0	0	0	0	0	0	0	0	0	0	0	80,546
2020	76,851	0	11,426	0	0	0	0	0	0	0	0	0	88,277
2021	74,950	0	11,127	7,284	0	0	0	0	0	0	0	0	93,361
2022	70,287	0	10,828	7,085	7,615	0	0	0	0	0	0	0	95,815
2023	66,729	0	10,528	6,887	7,400	7,615	0	0	0	0	0	0	99,158
2024	62,552	0	10,229	6,688	7,185	7,400	7,615	0	0	0	0	0	101,668
2025	60,872	0	9,930	6,489	6,970	7,185	7,400	7,615	0	0	0	0	106,460
2026	57,269	0	9,631	6,291	6,754	6,970	7,185	7,400	7,615	0	0	0	109,114
2027	53,857	0	9,332	6,092	6,539	6,754	6,970	7,185	7,400	7,615	0	0	111,743
2028	50,197	0	9,032	5,894	6,324	6,539	6,754	6,970	7,185	7,400	7,615	0	113,910

EXISTING AND PROJECTED NET TAX-SUPPORTED G.O. BOND PRINCIPAL PAYMENTS ($000)													
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
	Current	Issue[2]	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Est.
FY	Principal[1]	$0.000M	108.835M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	Principal
2018	47,543	0	0	0	0	0	0	0	0	0	0	0	47,543
2019	51,988	0	0	0	0	0	0	0	0	0	0	0	51,988
2020	50,306	0	5,440	0	0	0	0	0	0	0	0	0	55,746
2021	50,405	0	5,440	3,310	0	0	0	0	0	0	0	0	59,155
2022	47,673	0	5,440	3,310	3,310	0	0	0	0	0	0	0	59,733
2023	45,878	0	5,440	3,310	3,310	3,310	0	0	0	0	0	0	61,248
2024	43,390	0	5,440	3,310	3,310	3,310	3,310	0	0	0	0	0	62,070
2025	43,386	0	5,440	3,310	3,310	3,310	3,310	3,310	0	0	0	0	65,376
2026	41,430	0	5,440	3,310	3,310	3,310	3,310	3,310	3,310	0	0	0	66,730
2027	39,518	0	5,440	3,310	3,310	3,310	3,310	3,310	3,310	3,310	0	0	68,128
2028	37,239	0	5,440	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310	0	69,159

EXISTING AND PROJECTED NET TAX-SUPPORTED G.O. BONDS OUTSTANDING ($000)													
		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
	Current	Issue[2]	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Est.
FY	Debt[1]	$0.000M	108.835M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	66.230M	Debt
2017[3]	647,981	0	0	0	0	0	0	0	0	0	0	0	647,981
2018	645,456	0	0	0	0	0	0	0	0	0	0	0	645,456
2019	593,468	0	108,835	0	0	0	0	0	0	0	0	0	702,303
2020	543,162	0	103,395	66,230	0	0	0	0	0	0	0	0	712,787
2021	492,757	0	97,955	62,920	66,230	0	0	0	0	0	0	0	719,862
2022	445,084	0	92,515	59,610	62,920	66,230	0	0	0	0	0	0	726,359
2023	399,207	0	87,075	56,300	59,610	62,920	66,230	0	0	0	0	0	731,342
2024	355,816	0	81,635	52,990	56,300	59,610	62,920	66,230	0	0	0	0	735,501
2025	312,430	0	76,195	49,680	52,990	56,300	59,610	62,920	66,230	0	0	0	736,355
2026	271,000	0	70,755	46,370	49,680	52,990	56,300	59,610	62,920	66,230	0	0	735,855
2027	231,482	0	65,315	43,060	46,370	49,680	52,990	56,300	59,610	62,920	66,230	0	733,957
2028	194,243	0	59,875	39,750	43,060	46,370	49,680	52,990	56,300	59,610	62,920	66,230	731,028

[1]Numbers reflect the issuance of the 2017A and 2017B general obligation bonds ("2017 Bonds") in the aggregate amount of $106,095,00 issued on September 13, 2017.

[2]The State issued the 2017 Bonds in FY 2018, however, current debt service and outstanding debt figures include the principal and interest on the 2017 Bonds. The State does not intend to issue any future general obligation bonds in FY 2018.

[3]As of September 30, 2017.

Net Tax-Supported Debt Service by Fiscal Year

The State's scheduled G.O. net debt service requirement ("D/S") for fiscal year 2018 is $70.3 million, 5.12% less than the $74.1 million paid in fiscal year 2017.

(in $ thousands)	
Net Tax-Supported D/S Paid in FY 2017[(1)]	$74,130
Decrease in D/S Requirement FY 2017	(5,594)
D/S Decrease Due to G.O. Refunding in FY 2017	(0)
D/S Increase Due to G.O. Debt Issued in FY 2017/2018[(1)]	1,716
Net Tax-Supported D/S Due in FY 2018[(2)]	$ 70,252

[(1)] Includes the 2017 Bonds in the aggregate amount of $106,095,000 issued on September 13, 2017.

[(2)] The debt service amount shown takes into account the interest subsidy from the federal government (calculated to be $1,149,908.66 during FY 2017), payable on the $87,050,000 Build America Bonds as part of the 2010 Series A-2 and D-2 bond issues. See "Sequestration and Potential Impact on Build America Bonds Subsidy" herein for a discussion of the impact of sequestration on the State's subsidy.

STATE OF VERMONT
HISTORICAL NET TAX-SUPPORTED DEBT SERVICE[(1)(2)(3)]
($'s in millions)

[(1)]Consists of G.O. Bonds. Fiscal Year 2014 debt service includes an additional principal amortization of $3,150,000 that was structured to expend bond funded original issuance premium within 12 months of the issue date to satisfy Internal Revenue Service requirements. Going forward this has not be necessary due to the 2012 amendment to 32 V.S.A. § 954 to permit the use of bond premium for capital projects.

[(2)]Please see table titled "Historic and Projected Debt Ratios" on page 26 for debt ratios relative to historic Vermont revenues.

[(3)]Includes the 2017 Bonds in the aggregate amount of $106,095,000 issued on September 13, 2017.

Authorized, But Unissued Debt

CDAAC believes the State's historical practice to annually extinguish all or a large portion of the authorized amount of debt to avoid a rising residual amount of authorized but unissued debt has enhanced the State's credit position, as it is viewed favorably by the rating agencies.

As discussed in Section 6, "State Guidelines and Recent Events, Statutory Change Relating to Use of Bond Premium and Effect on Affordability" effective in fiscal year 2013, 32 V.S.A. § 954 was amended to permit the use of bond premium received from issuance of debt for capital purposes. The effect of this legislative change is that if future bonds are issued with a net original issuance premium, the par amount of bonds will be less than the authorized amount and the difference will become available for additional authorization as "unissued principal." CDAAC believes that the advantage of additional funding capacity associated with this legislative change far outweighs the additional unissued amounts that may result, and that the annual amount of unissued bonds will continue to be manageable.

Special Obligation Transportation Infrastructure Bonds (TIBs)

The State has historically sold only G.O. bonds for its capital infrastructure purposes. Beginning in 2010, however, the State began issuing Special Obligation Transportation Infrastructure Bonds ("TIBs"). The bonds are payable from new assessments on motor vehicle gasoline and motor vehicle diesel fuel, and the State is not obligated to use any other funds to cover debt service on TIBs.

In 2012, S&P upgraded the State's Special Obligation Transportation Infrastructure Bonds from "AA" to "AA+" with a stable outlook. S&P indicated that the upgrade reflected strengthened debt service coverage, and further intention by the State to maintain coverage at no less than 3x, which is viewed as a strong level.

Moral Obligation Indebtedness

Provided below is a summary of the State's moral obligation commitments as of June 30, 2017:

Reserve Fund Commitments (all figures as of June 30, 2017):

1. Vermont Municipal Bond Bank (VMBB): The VMBB was established by the State in 1970 for the purpose of aiding governmental units in the financing of their public improvements by making available a voluntary, alternate method of marketing their obligations in addition to the ordinary competitive bidding channels. By using the VMBB, small individual issues of governmental units can be combined into one larger issue that would attract more investors. The VMBB is authorized to issue bonds in order to make loans to municipalities in the State through the purchase of either general obligation or revenue bonds of the municipalities. Municipal loan repayments to the VMBB are used to make the VMBB's bond payments. On April 19, 2016, the State amended provisions with respect to the State Treasurer's ability to intercept State funding to governmental units that are in default on their payment obligations acquired or held by the VMBB all further payment to the governmental unit, until the default is cured. During the default period, the State Treasurer will make direct payment of all, or as much as necessary, of the withheld amounts to the VMBB, or at the VMBB's direction, to the trustee or paying agent for the bonds, so as to cure, or cure insofar as possible, the default as to the bond or the interest on

the bond. The VMBB consists of five directors: the State Treasurer, who is a director ex-officio, and four directors appointed by the Governor with the advice and consent of the Senate for terms of two years. As of June 30, 2017, the VMBB has issued 83 series of bonds (including refundings) under its general bond resolution adopted on May 3, 1988 (the "1988 Resolution). The principal amount of bonds outstanding as of June 30, 2017 was $592,145,000, and the principal amount of loans outstanding to municipal borrowers as of June 30, 2017 was $571,241,775. For bonds issued under the 1988 Resolution, the VMBB is required to maintain a reserve fund equal to the lesser of: the maximum annual debt service requirement, 125% of average annual debt service, or 10% of the proceeds of any series of bonds. If the reserve funds have less than the required amount, the chair shall notify the Governor or Governor-elect of the deficiency. The General Assembly is legally authorized, but not legally obligated, to appropriate money to maintain the reserve funds at their required levels. Since the participating municipalities have always met their obligations on their bonds the State has never needed to appropriate any money to the reserve fund, and it is not anticipated that it will need to make an appropriation in the future. Based on the long history of the VMBB program, the rating agencies credit assessment of the underlying loans of the portfolio, the G.O. pledge of the underlying borrowers for a high percentage of the loan amounts and the State intercept provision for the payment of debt, it is not anticipated that it will be necessary for the State to appropriate money for the reserve fund. As of June 30, 2017, the VMBB has also issued one series of bonds under a new general bond resolution adopted on March 30, 2017 (the "2017 Resolution") for the Vermont State Colleges System ("VSCS") Program. The 2017 Resolution is for VSCS financings only. As of June 30, 2017, the principal amount of bonds outstanding under the 2017 Resolution was $67,660,000 with a loan outstanding amount of $78,217,129. The 2017 Resolution bonds are not supported by a reserve fund. The State Treasurer, the VMBB and the Commissioner of the Vermont Department of Finance and Management entered into a State Intercept Memorandum of Agreement to establish procedures with respect to the intercept of State funds described above in regards to the VSCS outstanding bonds. The VMBB has expressed its intention to rely less on securing its future bond issues with the moral obligation pledge and put more reliance on using the State intercept funding security provisions. For additional information about the VMBB, see its most recent disclosure document, which can be found on the Electronic Municipal Market Access ("EMMA") system at http://emma.msrb.org.

2. Vermont Housing Finance Agency (VHFA): The VHFA was created by the State in 1974 for the purpose of promoting the expansion of the supply of funds available for mortgages on residential housing and to encourage an adequate supply of safe and decent housing at reasonable costs. The VHFA Board consists of nine commissioners, including ex-officio the Commissioner of the Department of Financial Regulation, the State Treasurer, the Secretary of Commerce and Community Development, the Executive Director of the Vermont Housing and Conservation Board, or their designees, and five commissioners to be appointed by the Governor with the advice and consent of the Senate for terms of four years. The VHFA is empowered to issue notes and bonds to fulfill its corporate purposes. As of June 30, 2017, the VHFA's total outstanding indebtedness was $420,460,819. The VHFA's act requires the creation of debt service reserve funds for each issue of bonds or notes based on the VHFA's resolutions and in an amount not to exceed the "maximum debt service." Of the debt that the VHFA may issue, up to $155,000,000 of principal outstanding may be backed by the moral obligation of the State, which means that the General

Assembly is legally authorized, but not legally obligated, to appropriate money for any shortfalls in the debt service reserve funds for that debt. If the reserve fund requirement for this debt has less than the required amount, under the act, the chairman of the VHFA will notify the Governor or the Governor-elect, the president of the senate and the speaker of the house of the deficiency. As of June 30, 2017, the principal amount of outstanding debt covered by this moral obligation was $41,015,000. As of June 30, 2017, the debt service reserve fund requirement for this debt was $3,059,485, and the value of the debt service reserve fund was $3,166,829. Since the VHFA's creation, it has not been necessary for the State to appropriate money to maintain this debt service reserve fund requirement. For additional information about the VHFA, see its most recent disclosure document, which can be found on the EMMA system at http://emma.msrb.org.

3. Vermont Economic Development Authority (VEDA): VEDA has established credit facilities with two banks to fund loans to local and regional development corporations and to businesses under certain programs. VEDA's debt is a combination of commercial paper and variable and fixed-rate notes payable. The commercial paper is supported by a direct-pay letter of credit from one of the banks. The direct-pay letter of credit is collateralized from various repayment sources, including a $15 million collateral reserve fund held by a trustee and a debt service reserve fund pledge from the State in an amount of $80 million. A variable-rate note payable to a second bank in the amount of $55 million is collateralized from various repayment sources, including a $5.5 million collateral reserve fund held by a trustee and a debt service reserve fund pledge from the State in an amount of $50 million. VEDA also has a fixed-rate note payable to the second bank in the amount of $25 million that is collateralized from various repayment sources, including a $1.765 million debt service reserve fund held by a trustee and a debt service reserve fund pledge from the State in an amount of $25 million. The three debt service reserve pledges totaling $155 million are based on a similar structure utilized by both the Vermont Municipal Bond Bank and the Vermont Housing Finance Agency as discussed above. The amount of commercial paper outstanding under this program at June 30, 2017 was $92.8 million and the variable and fixed-rate note balances outstanding as of June 30, 2017 were $55 million and $25 million, respectively. For additional information about VEDA, see its most recent disclosure document, which can be found on the EMMA system at http://emma.msrb.org.

4. Vermont Telecommunications Authority (VTA): VTA was created in 2007 to facilitate broadband and related access to Vermonters, and received authorization for $40 million of debt with the State's moral obligation pledge. The passage of Act No. 190 of 2014 created the Division for Connectivity as the successor entity to the VTA. The VTA did not issue any debt prior to ceasing operations on July 1, 2015.

5. University of Vermont and the Vermont State Colleges: Legislation was passed in 2008 to provide a moral obligation pledge from the State to the University of Vermont in the amount of $66 million and to the Vermont State Colleges in the amount of $34 million. No bonds have been issued to date. Currently, if bonds are issued, it is not expected that the State will need to appropriate money to the respective reserve funds for these purposes.

6. Vermont Student Assistance Corporation (VSAC): The State has provided $50 million of moral obligation commitment by the State to VSAC. Like VHFA, in 2009, the State authorized increased flexibility for VSAC's use of the moral obligation commitment specifically allowing for "pledged equity" contributions from the State's operating funds

and increased flexibility in the use of the traditional debt service reserve structure. In 2011, VSAC issued $15 million of moral obligation supported bonds, of which $8.0 million is outstanding. It is not expected that the State will need to appropriate money to the respective reserve funds for VSAC.

Importantly, there has been a notable increase in the State's moral obligation commitments over the past seven (7) years. For the period ended June 30, 2010, the total amount of moral obligation commitment was approximately $976.5 million. Currently, the moral obligation commitment stands at a total of $1,092.1 million, with the VMBB and VEDA granted most of the difference. However, the actual amount of moral obligation debt outstanding in the amount of $796.2 million is less than the amount authorized and the total commitment as of fiscal year 2010 ($976.5 million). See the table below for a summary of the total reserve fund commitments and the outstanding bond amounts:

Reserve Fund Commitments:

State of Vermont
Moral Obligation Commitments and Debt Outstanding
As of June 30, 2017

Issuer Name	Amount Provided In Statute	Actual Par Amount Outstanding
Vermont Municipal Bond Bank	$592,145,000	$592,145,000
Vermont Economic Development Authority	155,000,000	155,000,000
Vermont Housing Finance Agency	155,000,000	41,015,000
Vermont Student Assistance Corporation	50,000,000	8,000,000
University of Vermont	66,000,000	0
Vermont State Colleges	34,000,000	0
Vermont Telecommunications Authority	40,000,000	0
	$1,092,145,000	$796,160,000

As the State's rating has improved, the value of its moral obligation has also grown. It is therefore apparent that there has been greater pressure on the State to raise the size of its existing moral obligation commitments and/or to assign the moral obligation pledges to State borrowers. However, without some form of containment, it is possible that an ever-increasing moral obligation debt load could erode the State's credit position.

In accordance with the appropriate provisions from the enabling statute that created CDAAC, the Committee has already been authorized to consider "any other long-term debt of instrumentalities of the state not secured by the full faith and credit of the state, or for which the state legislature is permitted to replenish reserve funds." Therefore, it is appropriate for CDAAC to develop guidelines for Vermont regarding the size and use of the State's moral obligation debt.

In recent years, CDAAC has adjusted its debt load guidelines to take into account the comparative debt load statistics for triple-A rated states throughout the country. Unfortunately, none of the rating agencies prepare comparative data on the respective triple-A rated states on moral obligation or contingent debt. Moreover, there is little consistency among the triple-A rated states regarding the size, nature and role of such debt. The types of contingent debt are quite varied among the states, including state guarantees of local school debt, back-up support for revenue obligations, etc. Because of the mixture of contingent debt applied by triple-A states, it would not be possible to employ guidelines that are similar to the G.O. guidelines that have been utilized by CDAAC in connection with its annual recommendation of long-term G.O. debt to be authorized by the legislature.

There had been, for several years, discussions within CDAAC regarding the establishment of guidelines for limiting the amount of moral obligation debt that the State should authorize. In an accompanying chart, the State's net tax-supported debt statement, consisting entirely of the State's G.O. outstanding indebtedness, is presented, as of June 30, 2017, at $586,904,736. Using 225% of G.O. debt for establishing a limit of moral obligation debt, the State would have had $228,390,656 in additional moral obligation capacity. Using 200% of G.O. debt for establishing a limit of moral obligation debt, the State would have had $81,664,472 in additional capacity. Using a more conservative 195%, the State still has $52,319,235 in additional capacity. These figures are low in comparison to previous years. However, the State's net tax-supported debt, consisting entirely of the State's G.O. outstanding indebtedness as of September 30, 2017, is $647,981,414 due to the issuance of the 2017 Bonds. In turn, if calculating the moral obligation limit as of September 30, 2017 by utilizing 225% of G.O. debt for establishing a limit of moral obligation debt, the State would have had $365,813,182 in additional moral obligation capacity. Using 200% of G.O. debt for establishing a limit of moral obligation debt, the State would have had $203,817,828 in additional capacity. Using a more conservative 195%, the State still has $171,418,757 in additional capacity.

At this point, CDAAC believes that a range of 200-225% is appropriate in determining the amount of moral obligation commitments that should be outstanding in comparison to the State's G.O. debt. Since CDAAC has not recommended legislative action to codify any statutory limits on the incurrence of moral obligation debt, CDAAC will continuously monitor the developing size of moral obligation commitments and report the results.

At some point, should a major infrastructure requirement or other critical financing need arise that would be appropriately funded through a financing agency, the State may, as appropriate, consider rescinding the existing but unused moral obligation authority and have it transferred – taking into account the limited availability for the State to provide additional moral obligation capability as a result of the 200-225% administrative limits.

Ultimately, the effect of contingent liabilities and reserve fund commitments on the State's debt affordability is a function of the level of dependency for the repayment of this particular debt on the State's general operating revenues. With respect to this matter, the principle that

the rating agencies follow give us relevant guidance: Until such time that the State's guarantee or contingent obligation becomes actual (through a payment or a replenishment obligation being made), then such debt or guarantee is not included in the State's net tax-supported indebtedness. To the extent that the State has not been called upon to pay for the debt components, as envisioned in Subparagraph (5) of the CDAAC legislation, then those items should not become quantifiable factors included in the affordability analysis.

Information on the principal amount and the debt service associated with the moral obligation commitments is found in the comprehensive annual financial statements for each of the entities:

Vermont Municipal Bond Bank*:
http://www.vmbb.org/about/annual-reports-audits/

Vermont Economic Development Authority:
http://www.veda.org/about-veda/annual-reports/

Vermont Housing Finance Authority:
http://www.vhfa.org/about/financial/annual_statements.php

Vermont Student Assistance Corporation
http://services.vsac.org/wps/wcm/connect/VSAC/VSAC/Investor+Relations/Audited+Financial+Statements/

*Financials are based on a December 31 year end.

Municipal Debt

In conformance with the standards followed by the rating agencies, this evaluation does not set forth or incorporate any debt obligations of Vermont municipalities. Should any such obligations be required to be payable by the State (e.g., through assumption or support of local debt as part of a financial emergency), a corresponding and appropriate amount related to the State's contribution would then be required to be included in the analysis. At present, no such liability has occurred, and, therefore, none has been included in this review.

Analysis of Types of Debt and Structure

CDAAC annually goes through an extensive analysis to determine the "cost-benefit of various levels of debt financing." The cost-benefit is demonstrated by CDAAC's determination of the amount of debt that the State should annually authorize and still achieve compliance with CDAAC's articulated affordability guidelines. This evaluation is fundamental to CDAAC's responsibility in recommending annually the amount of net tax-supported indebtedness (i.e., G.O., at present) that should be authorized by the State.

Second, with respect to the "types of debt," Vermont and its financing agencies have utilized a great variety of debt types. At present, revenue bonds are sold by the State (TIBs), VSAC, VHFA and VEDA, among others. The State Treasurer's office has looked at a series of options for possible revenue bond issuance, but, because of Vermont's special circumstances, revenue bonds have generally not appeared to be a comprehensive answer to the State's direct infrastructure needs. Notwithstanding the fact that there have been no new revenue bond uses recently for funding Vermont infrastructure requirements, with the exception of TIBs, the State will continue to explore possible opportunities in this respect that would not cause debt load or debt management difficulties for Vermont. CDAAC and the State Treasurer's Office are constantly reviewing prospects for funding of required infrastructure through approaches that will not add to the State's net tax-supported indebtedness.

The maturity schedules employed for State indebtedness are directly tied to State statute. Moreover, as indicated elsewhere herein, Vermont's current debt repayment for its G.O. bonds allows the State to recapture debt capacity at an attractive pace. Shortening the debt service payments would have the effect of placing more fixed costs in the State's annual operating budget, leaving less funds available for discretionary spending. Lengthening debt payments would increase the aggregate amount of the State's outstanding indebtedness, which would cause Vermont's debt per capita and debt as a percentage of personal income to rise, reducing the State's ability to comply with its affordability guidelines. Notwithstanding these limitations, there may be opportunities for the State in the future to adjust the maturity of its indebtedness to achieve various debt management goals over time.

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3. DEBT GUIDELINES

For a number of years Vermont has pursued a strategy to achieve a triple-A rating from all three nationally recognized credit rating agencies. To facilitate this goal, CDAAC and the State have employed conservative debt load guidelines that are consistent with the measures that the rating agencies use to measure debt burden. The most widely-employed guidelines are:

1. Debt Per Capita;
2. Debt as a Percentage of Personal Income;
3. Debt Service as a Percentage of Revenues; and
4. Debt as a Percentage of Gross State Product.

CDAAC notes that Debt as a Percentage of Personal Income and Debt Service as a Percentage of Revenues are generally understood to be the better credit indicators of the State's ability to pay; however, certain rating agencies continue to calculate and monitor the State's Debt Per Capita and Debt as a Percentage of Gross State Product. These guidelines are described in greater detail below. CDAAC has not used Debt as a Percentage of Gross State Product as a specific guideline due to the fact that this measure has a high correlation and tracks the trend of the Debt as a Percentage of Personal Income. Since 2011, CDAAC has tracked this information and included it on the "Dashboard Indicators." This report contains current and historical information on Vermont's Debt as a Percentage of Gross State Product compared to a peer group of other triple-A states.

At present, CDAAC uses a peer group made up of all states that have at least two triple-A ratings from the national rating agencies (the "Peer Group"). The states within the Peer Group differ throughout the years as rating agencies upgrade or downgrade a specific state's rating. In the last year, however, the Peer Group remained unchanged. The Committee over time reviews the composition of the Peer Group. Similar to many of the U.S. States since 2014, the majority of the Peer Group reduced their debt levels, consequently improving the median debt statistics for the Peer Group. The Peer Group's median Debt Per Capita decreased from $687 in 2016 to $650 in 2017, median Debt as a Percentage of Personal Income decreased from 1.8% in 2016 to 1.6% in 2017 and median Debt as a Percentage of Gross State Product decreased from 1.6% in 2016 to 1.5% in 2017. Vermont was in the minority of states that increased debt levels in 2016. As a result of the improvement in the Peer Group's median debt statistics and Vermont's increased debt levels the State's relative rankings deteriorated. If the State continues to increase authorized debt levels in future years it is at risk of further declines in its relative ranking to its triple-A Peer Group. See "State Guidelines and Recent Events" for more information.

In addition, both Moody's and S&P have developed rating scorecards for state issuers which include an assigned specific criteria and weighting for "debt" as one of their factors in the overall rating of a state. The rationale given by the rating agencies for the score card process is to provide more transparency for state ratings. Most recently, Fitch released its new rating criteria with "long-term liabilities" as one of four key rating factors driving state ratings. Please see Section 4, "National Credit Rating Methodologies and Criteria" for additional information.

Debt Per Capita

Since, 2004, the Committee has adopted a guideline for the State to equal or perform better than the 5-year average of the mean and median debt per capita of a peer group of triple-A rated states over the nine year projection period. The 5-year average of the mean of the Peer Group is $967 and the 5-year average of the median of the Peer Group is $811. Based on data from Moody's, Vermont's 5-year average debt per capita figure is $943, which is below the 5-year mean for triple-A rated states. However, Vermont's 5-year average debt per capita is higher than the median for triple-A rated states. Please see the table titled "Debt Per Capita Comparison" for a detailed view of the Peer Group's Debt Per Capita. This guideline of debt per capita relative to its Peer Group has been the State's limiting factor in terms of calculating debt capacity over the past few years.

It should be emphasized that Vermont's debt per capita relative ranking, after improving for a number of years, has slipped recently. According to Moody's most recent information, the State's relative position among states improved during the period 2003 through 2011 with respect to net tax-supported debt per capita, improving from 16th position in 2003 to 37th position in 2011. From 2011 through 2015 the State's position slipped each year and in 2017, the State ranked 24th (rankings are in numerically descending order, with the state having the highest debt per capita ranked 1st and the state having the lowest debt per capita ranked 50th).

Debt as a Percent of Personal Income

The Committee also adopted a guideline for the State to equal or perform better than the 5-year mean and 5-year median of the Peer Group on the basis of debt as a percent of personal income. At present, the targets are 2.0% and 1.6% for the mean and the median respectively (the five-year average of Moody's Mean and Moody's Median for the Peer Group is 2.3% and 2.1%, respectively). Based on data from Moody's, Vermont's net tax supported debt as a percent of personal income is 2.2%, which is better than the 5-year mean and worse than the 5-year median for triple-A rated states. Please see the table titled "Debt As % of Personal Income Comparison" for a detailed view of the Peer Group's Debt as a Percent of Personal Income. According to Moody's most recent information, the State's relative position among states improved during the period 2003 through 2010 with respect to net tax-supported debt as a percent of personal income, improving from 17th position in 2003 to 36th position in 2010 where it remained in 2011 and 2012. The State's relative ranking dropped slightly in the years 2013 to 2017 and the State is currently ranked in the 27th position.

Debt Service as a Percentage of Revenues

This guideline does not create a compliance requirement for triple-A rated states. Rather, it is an absolute guideline, not a comparative one. CDAAC's adopted standard is a ratio of no greater than 6% for annual G.O. debt service as a percent of the annual aggregate of General and Transportation Funds revenue. At present, this ratio equals approximately 4.1%, as can be seen within the table titled "Historic and Projected Debt Ratios." Looking back, Vermont's debt service as a percentage of revenues improved from the 2002-2004 period where it was over 6%, to 5.4% in 2005. Since 2005, the State's debt service as a percent of revenue has been less than 5.1% except for the recession years of 2009 and 2010, where the statistic increased to 5.5% and 5.7%. Although CDAAC has maintained a standard of a 6.0% limit for debt service as a percent of revenues, the effect of the recent recession on this ratio has been

taken into account. CDAAC notices the 0.4% to 0.6% increase in the ratio immediately after the start of the recession and believes that a comparable amount of cushion is appropriate for its final recommendation.

In terms of the debt service projections provided in the table titled "Historic and Projected Debt Ratios", the analysis assumes future interest rates (coupons) range on pro forma bond issues from 5.0% in fiscal year 2018, increasing annually by 0.5% to a maximum rate of 6.5% in fiscal years 2021 through 2028.

The CDAAC statute defines operating revenues as General and Transportation Fund revenues based upon the historic general flexibility in their uses of these funds for meeting financial operations of the State. In 2012, Moody's reintroduced a Moody's Median for debt service as a percent of operating revenues ("Debt Service Ratio"), and included the State's Education Fund as part of the State's operating revenue for purposes of this calculation. Because Moody's uses a much larger revenue base in its analysis, Moody's Debt Service Ratio for Vermont, at 2.0%, is substantially lower than the CDAAC guideline, and results in Vermont's comparatively high (favorable) Moody's ranking of 40th out of the 50 states.

Debt as a Percent of Gross State Product

At present the 2017 Moody's mean and median for debt as a percentage of gross state product for the Peer Group is 1.7% and 1.4%, respectively. Please see the table titled "Debt As % of Gross State Domestic Product Comparison" for a detailed view of the Peer Group's Debt as a Percent of Gross State Domestic Product. (Moody's calculates their 2017 statistics based on 2016 net tax supported debt as a percentage of 2015 state gross domestic product.) Based on data from Moody's, Vermont's 2016 net tax supported debt as a percentage of gross state product is 2.2%, which is higher than the median and the mean for the Peer Group states and the five-year average of the mean and the median of 1.9% and 1.8% for the Peer Group, respectively. According to Moody's most recent information, the State's relative position among states was 32nd in 2013, 30th in 2014 and fell to 27th in 2015 and 2016.

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STATE OF VERMONT
2017 STATES RATED TRIPLE-A BY TWO OR MORE RATING AGENCIES
(as of June 30, 2017)

2017 Triple-A Rated States[(1)*]	Moody's	S&P	Fitch
Delaware	Yes	Yes	Yes
Florida	No	Yes	Yes
Georgia	Yes	Yes	Yes
Indiana[(2)]	Yes	Yes	Yes
Iowa[(2)]	Yes	Yes	Yes
Maryland	Yes	Yes	Yes
Missouri	Yes	Yes	Yes
North Carolina	Yes	Yes	Yes
South Carolina	Yes	No	Yes
South Dakota[(3)]	Yes	Yes	Yes
Tennessee	Yes	Yes	Yes
Texas	Yes	Yes [(2)]	Yes
Utah	Yes	Yes	Yes
Virginia	Yes	Yes	Yes
VERMONT	Yes	No	Yes

(1) Fitch raised Florida, Iowa, Vermont, Tennessee and Texas to triple-A in 2010 as part of their Ratings Recalibration effort. Moody's raised Indiana, Iowa, New Mexico, Tennessee and Texas to triple-A in 2010 as part of their Ratings Recalibration effort. Seventeen states were currently rated triple-A by one or more of the nationally recognized rating agencies at the end of Fiscal 2017. Fifteen states are currently rated triple-A by two or more of the nationally recognized rating agencies at the end of Fiscal 2017.

(2) Indicates issuer credit rating since state does not have any G.O. debt or the rating agency does not provide a rating on the state's G.O. debt.

(3) South Dakota was rated by S&P as a triple-A state in 2015. Fitch upgraded South Dakota to triple-A in June 2016 and Moody's gave South Dakota an initial triple-A rating in July 2016.

* Alaska was rated as a triple-a state by all three national credit rating agencies. S&P downgraded Alaska in January 2016 reflected by the "state's credit quality as oil prices have continued to slide, falling below forecasts from earlier this year, causing an already large structural gulf between unrestricted general fund revenues and expenditures to widen further." Moody' downgraded Alaska in February 2016 reflected by the "heightened volatility in Alaska's revenues and the unprecedented imbalance caused by it." Fitch downgraded Alaska in June 2016 reflected by the "substantial operating deficits recorded by the state in recent fiscal years and the modest reform efforts taken to date to realign its stressed, petroleum-based revenue structure with expenditure demands."

STATE OF VERMONT
MEAN DEBT RATIOS

Per Capita	2013	2014	2015	2016	2017
All States	$1,416	$1,436	$1,419	$1,431	$1,473
Triple-A[1]	1,021	1,027	980	904	901
VERMONT	**811**	**878**	**954**	**1,002**	**1,068**

% of Personal Income	2013	2014	2015	2016	2017
All States	3.4%	3.2%	3.1%	3.0%	3.0%
Triple-A[1]	2.6	2.4	2.3	2.1	2.0
VERMONT	1.9	2.0	2.1	2.1	2.2

(1) These calculations exclude all Vermont numbers and include only states rated triple-A by two or more of the three rating agencies during the year shown. See table titled "Debt Per Capita Comparison" for complete listing of triple-A states and respective ratings and triple-A time periods.

STATE OF VERMONT
DEBT PER CAPITA COMPARISON

Peer Group States (All states with at least two triple-A rating)
5-Year Average Mean and 5-Year Average Median Excluding Vermont:
MEAN: $967 MEDIAN: $811
5-Year Average Vermont: $943

Triple-A Rated States[1]	Moody's Ratings[2]	S&P Ratings[2]	Fitch Ratings[2]	Moody's Debt Per Capita 2013	2014	2015	2016	2017
Alaska	Aa2/Negative	AA+/Negative	AA+/Negative	$1,251	$1,573	$1,489	$1,422*	$1,691*
Delaware	Aaa/Stable	AAA/Stable	AAA/Stable	2,536	2,485	2,438	2,385	2,544
Florida	Aa1/Stable	AAA/Stable	AAA/Stable	1,087	1,008	973	1,038	961
Georgia	Aaa/Stable	AAA/Stable	AAA/Stable	1,061	1,064	1,043	1,029	992
Indiana	Aaa/Stable	AAA/Stable	AAA/Stable	424	533	474	463	310
Iowa	Aaa/Stable	AAA/Stable	AAA/Stable	287	275	250	239	228
Maryland	Aaa/Stable	AAA/Stable	AAA/Stable	1,799	1,791	1,889	1,928	2,122
Missouri	Aaa/Stable	AAA/Stable	AAA/Stable	699	668	606	574	579
North Carolina	Aaa/Stable	AAA/Stable	AAA/Stable	853	806	739	721	659
South Carolina	Aaa/Stable	AA+/Stable	AAA/Stable	780	749	672	603	564
South Dakota	Aaa/Stable	AAA/Stable	AAA/Stable	355*	391*	547*	652	641
Tennessee	Aaa/Stable	AAA/Stable	AAA/Stable	343	324	327	298	322
Texas	Aaa/Stable	AAA/Stable[4]	AAA/Stable	580	614	406	383	383
Utah	Aaa/Stable	AAA/Stable	AAA/Stable	1,275	1,187	1,060	921	824
Virginia	Aaa/Stable	AAA/Negative	AAA/Stable	1,315	1,302	1,356	1,418	1,486
MEAN[5]	___________	___________	___________	**1,021**	**1,027**	**980**	**904**	**901**
MEDIAN[5]	___________	___________	___________	**957**	**907**	**856**	**687**	**650**
VERMONT	Aaa/Stable	AA+/Stable	AAA/Stable	811	878	954	1,002	1,068

(1) States that carry at least two triple A ratings.
(2) Ratings as of June 30, 2017.
(3) These calculations exclude all Vermont numbers.
* Indicates that the state was not rated triple-A thereby two or more of this rating agencies during the year shown. Amount not used in calculating the mean or median for the year.

STATE OF VERMONT
DEBT AS % OF PERSONAL INCOME COMPARISON

Peer Group States (All states with at least two triple-A ratings)
5-Year Average Mean and 5-Year Average Median Excluding Vermont:
MEAN: 2.3% MEDIAN: 2.1%
5-Year Average Vermont: 2.1%

Triple-A Rated States	Moody's Debt as % of 2015 Personal Income				
	2013	2014	2015	2016	2017
Alaska	2.8%	3.2%	3.0%	2.7%*	3.0%
Delaware	6.2	5.7	5.5	5.2	5.4
Florida	2.8	2.5	2.4	2.5	2.2
Georgia	3.0	2.9	2.8	2.7	2.5
Indiana	1.2	1.4	1.2	1.2	0.8
Iowa	0.7	0.6	0.6	0.5	0.5
Maryland	3.6	3.4	3.5	3.5	3.8
Missouri	1.8	1.7	1.5	1.4	1.4
North Carolina	2.4	2.1	1.9	1.8	1.6
South Carolina	2.3	2.2	1.9	1.7	1.5
South Dakota	0.9*	0.9*	1.2*	1.4	1.4
Tennessee	0.9	0.8	0.8	0.7	0.8
Texas	1.5	1.5	1.0	0.9	0.8
Utah	3.8	3.4	3.0	2.5	2.1
Virginia	2.9	2.7	2.8	2.9	2.9
MEAN[1]	**2.6**	**2.4**	**2.3**	**2.1**	**2.0**
MEDIAN[1]	**2.6**	**2.4**	**2.2**	**1.8**	**1.6**
VERMONT	1.9	2.0	2.1	2.1	2.2

(1) These calculations exclude all Vermont numbers and include only states rated triple-A by two or more of the rating agencies during the periods shown, year ended June 30th.

* Indicates that the state was not rated triple-A by two or more of the rating agencies during the year shown. Amount not used in calculating the mean or median for the year.

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STATE OF VERMONT
DEBT AS % OF GROSS STATE DOMESTIC PRODUCT COMPARISON

Peer Group States (All states with at least two triple-A ratings)
5-Year Average Mean and 5-Year Average Median Excluding Vermont:
MEAN: 1.9% MEDIAN: 1.8%
5-Year Average Vermont: 2.1%

Moody's Debt as % 2015 Gross State Domestic Product					
Triple-A Rated States	**2013**	**2014**	**2015**	**2016**	**2017**
Alaska	1.8%	2.2%	1.9%	1.9%*	2.4%*
Delaware	3.5	3.5	3.6	3.6	3.5
Florida	2.8	2.5	2.4	2.5	2.2
Georgia	2.5	2.5	2.3	2.2	2.1
Indiana	1.0	1.2	1.0	1.0	0.6
Iowa	0.6	0.6	0.5	0.5	0.4
Maryland	3.5	3.3	3.3	3.3	3.5
Missouri	1.7	1.6	1.3	1.3	1.2
North Carolina	1.9	1.7	1.6	1.5	1.4
South Carolina	2.2	2.0	1.8	1.6	1.4
South Dakota	0.7	0.8	1.0	1.2	1.2
Tennessee	0.8	0.8	0.7	0.7	0.7
Texas	1.2	1.2	0.7	0.6	0.7
Utah	2.9	2.6	2.2	2.0	1.7
Virginia	2.5	2.4	2.5	2.6	2.6
MEAN[1]	**2.1**	**2.0**	**1.8**	**1.8**	**1.7**
MEDIAN[1]	**2.1**	**2.1**	**1.8**	**1.6**	**1.4**
VERMONT	2.0	2.0	2.0	2.1	2.2

(1) These calculations exclude all Vermont numbers and include only states rated triple-A by two or more of the rating agencies during the periods shown, year ended June 30th.

* Indicates that the state was not rated triple-A by two or more of the rating agencies during the year shown. Amount not used in calculating the mean or median for the year.

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STATE OF VERMONT
HISTORIC AND PROJECTED DEBT RATIOS
Assumptions: $108.835 million first year, $66.230 million annually through 2028 (Fixed Inflator - 2.7%)

	Net Tax-Supported Debt Per Capita (in $)			Net Tax-Supported Debt as Percent of Personal Income			Net Tax-Supported Debt Service as Percent of Revenues (5)		
Fiscal Year (ending 6/30)	State of Vermont	Moody's Median	State's Rank (4)	State of Vermont	Moody's Median	State's Rank (4)	State of Vermont (5)	Moody's Median	State's Rank (4)
Actual (1)									
2004	724	701	24	2.5	2.4	25	6.7	n.a.	n.a.
2005	716	703	25	2.3	2.4	27	6.0	n.a.	n.a.
2006	707	754	29	2.2	2.5	28	5.4	n.a.	n.a.
2007	706	787	28	2.1	2.4	30	5.1	n.a.	n.a.
2008	707	889	32	2.0	2.6	33	5.1	n.a.	n.a.
2009	692	865	34	1.8	2.5	35	5.0	n.a.	n.a.
2010	709	936	36	1.8	2.5	36	5.5	n.a.	n.a.
2011	747	1066	37	1.9	2.8	36	5.7	n.a.	n.a.
2012	792	1117	34	2.0	2.8	36	5.1	n.a.	n.a.
2013	811	1074	33	1.9	2.8	35	4.9	n.a.	n.a.
2014	878	1054	30	2.0	2.6	34	4.9	n.a.	n.a.
2015	954	1012	28	2.1	2.5	31	4.2	n.a.	n.a.
2016	1002	1027	27	2.1	2.5	30	4.2	n.a.	n.a.
2017	1068	1006	24	2.2	2.5	27	4.3	n.a.	n.a.
Current (2)	1,036	n.a.	n.a.	2.0	n.a.	n.a.	4.1	n.a.	n.a.
Projected (FYE 6/30) (3)		State Guideline (6)			State Guideline (7)			State Guideline	
2018	1,031	833		2.0	2.3		4.0	6.0	
2019	1,120	855		2.1	2.3		4.4	6.0	
2020	1,134	878		2.1	2.3		4.8	6.0	
2021	1,144	902		2.1	2.3		4.9	6.0	
2022	1,153	927		2.0	2.3		4.9	6.0	
2023	1,160	952		2.0	2.3		4.9	6.0	
2024	1,165	977		2.0	2.3		4.9	6.0	
2025	1,165	1,004		1.9	2.3		5.0	6.0	
2026	1,163	1,031		1.9	2.3		5.0	6.0	
2027	1,159	1,059		1.8	2.3		5.0	6.0	
2028	1,153	1,087		1.8	2.3		4.9	6.0	
5-Year Average of Moody's Mean for Triple-A States		967			2.3			n.a.	
5-Year Average of Moody's Median for Triple-A States		811			2.1			n.a.	

Note[TH3]: Shaded figures in fiscal years 2017-2027 represent the period when Vermont's debt per capita is projected to exceed the projected State Guideline consistent with the current debt per capita guideline calculation methodology and the assumption that the State will issue bonds consistent with the proposed two-year authorization (footnote (3)). See Section 5, "State Guidelines and Recent Events, Debt Per Capita State Guideline – Future Debt Capacity Risk."

(1) Actual data compiled by Moody's Investors Service, reflective of all 50 states. Moody's uses states' prior year figures to calculate the "Actual" year numbers in the table.

(2) Calculated by Public Resources Advisory Group, using outstanding G.O. debt of $647.981 million as of 9/30/17 divided by Vermont's 2017 population of 625.281 as projected by EPR.

(3) Projections assume issuance of $108.835 million of G.O. debt in FY 2019 and $66.230 million in FY 2020 through FY 2028.

(4) Rankings are in numerically descending order (i.e., from high to low debt).

(5) Revenues are adjusted reflecting "current law" revenue forecasts based on a consensus between the State's administration and legislature. Current debt service is net of the federal interest subsidies on the Build America Bond issues, and projected debt service is based on estimated interest rates ranging from 5% to 6.5% over the project period. Calculated by Public Resources Advisory Group.

(6) State Guideline equals the 5-year average of Moody's median for the Peer Group of $811 increasing annually at 2.7%.

(7) The 5-year average of Moody's median for the Peer Group is 2.1%. Since the annual number is quite volatile, ranging from 2.1% to 2.6% over the last five years, the State Guideline is 2.3% for FY 2018 - FY 2028.

"Dashboard" Indicators

	Vermont[a]	Median Triple-A States[d]
Net Tax-Supported Debt:	$586,904,736	$3,162,567,500[c]
Debt As A Percent Of Gross State Product:	1.83%	1.4%[c]
Debt Per Capita:	$939	$650[c]
Debt As A Percent Of Personal Income:	1.82%	1.6%[c]
Debt Service As A Percent Of Operating Revenue[b]:	4.29%	N/A
Rapidity Of Debt Retirement:	38.6% (In 5 Years)	N/A
	70.5% (In 10 Years)	N/A
	92.7% (In 15 Years)	N/A
	100.0% (In 20 Years)	N/A

(a) Debt statistics for Vermont are as of June 30, 2017. Does not include the 2017 Bonds in the aggregate amount of $106,095,000 issued on September 13, 2017. Estimates of FY 2017 Gross State Product, Population, Personal Income and Operating Revenue prepared by EPR.
(b) Aggregate of State's General Fund and Transportation Fund.
(c) Source: Moody's Investors Service, 2017 State Debt Medians Report calculated by Public Resources Advisory Group.
(d) These calculations exclude all Vermont numbers and include only states rated triple-A by two or more of the rating agencies during the periods shown, year ended June 30th.

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Special Obligation Transportation Infrastructure Bonds (TIBs)

As discussed in Section 4, "National Credit Rating Methodologies and Criteria," the rating agencies have effectively indicated the TIB debt, supported by the assessments, should be considered as part of the State's general indebtedness. CDAAC has considered TIBs self-supporting revenue bonds, and not net tax-supported indebtedness of the State. For purposes of illustration, however, it is relevant to quantify the impact of TIBs inclusion in the more critical debt ratios, as shown below:

STATE OF VERMONT
DEBT RATIOS WITH AND WITHOUT CONSIDERING TIBS
As of June 30, 2017

	With TIBs(1)(2)	Without TIBs(2)
Net Tax-Supported Debt:	$615,244,736	$586,904,736
Debt As A Percent of Gross State Product:	1.92%	1.83%
Debt Per Capita:	$984	$939
Debt As A Percent of Personal Income:	1.91%	1.82%
Debt Service as a Percent of Operating Revenue(3):	4.43%	4.29%

(1)As of June 30, 2017, the outstanding principal amount of the State's Special Obligation Transportation Infrastructure Bonds, 2010 Series A, 2012 Series A and 2013 Series A, was $10,205,000, $8,555,000 and $9,580,000, respectively.
(2)Debt statistics for Vermont are as of June 30, 2017. Does not include the 2017 Bonds in the aggregate amount of $106,095,000 issued on September 13, 2017. Estimates of FY 2018 Gross State Product, Population, Personal Income and Operating Revenue were prepared by EPR.
(3)Aggregate of State's General Fund and Transportation Fund.

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4. NATIONAL CREDIT RATING METHODOLOGIES AND CRITERIA

Standard & Poor's Methodology for U.S. State Ratings

On October 17, 2016, Standard & Poor's updated the final version of its "U.S. State Ratings Methodology." This updated methodology still provides a comprehensive presentation that sets forth, in a systematic way, a quantification approach to rating states. By assigning numerical values to its various rating criteria, the agency has moved closer to the establishment of state ratings through a quantification approach. The methodology includes the important categories of review, referred to as "factors," by Standard & Poor's:

(i) Government Framework,
(ii) Financial Management,
(iii) Economy,
(iv) Budgetary Performance and Flexibility, and
(v) Debt and Liability Profile.

In addition, the sub-categories, or "metrics" within each factor are weighed. Specifically, S&P assigns a score of 1 (strongest) to 4 (weakest) for twenty-eight metrics, grouped into the five factors listed above. Each of the metrics is given equal weight within the category, and then each factor is given equal weight in an overall 1 through 4 score. The overall scores correspond to the following indicative credit levels for the highest three ratings categories:

Score	Indicative Credit Level
1.0-1.5	AAA
1.6-1.8	AA+
1.9-2.0	AA
2.1-2.2	AA-
2.3-2.5	A+
2.5-2.6	A
2.7-3.0	A-
3.1-4	BBB category

In 2011, when S&P began to utilize the quantification approach, they reported that Vermont's score was approximately 1.7, corresponding to the State's AA+ rating from S&P. The major metrics where Vermont could improve, that to varying degrees are within the State's control, were consistent with what S&P outlined when they placed the State on positive outlook in 2015 in which Vermont received a composite score of 1.7: (a) increasing formal budget-based reserves to 8%; (b) increasing pension funded ratios; and (c) planning for and accumulating assets to address other post-employment benefits.

In August 2017, S&P's most recent report, Vermont's composite scope was 1.8, a slight drop over the 2015 and 2016 report, reflecting the State's pension liability profile. The scores for each factor are as follows:

1.6	Government Framework
1.0	Financial Management,
2.0	Economy,
1.4	Budgetary Performance and Flexibility, and
2.5	Debt and Liability Profile.

The debt and liability profile is the fifth of the five major factors in S&P's assessment of the indicative credit level. S&P notes that they review debt service expenditures and how debt payments are prioritized versus funding of other long-term liabilities and operating costs for future tax streams and other revenue sources. They evaluate three key metrics which they score individually and weight equally: debt burden, pension liabilities, and other post-employment benefits. For each metric there may be multiple indicators (as they are for the debt metric) that they score separately and then average to develop the overall score for the metric. The new updated, methodology focuses on the revised governmental pension reporting and disclosure standards.

In terms of debt, the CDAAC reports since 2011 have incorporated certain new pieces of information, such as debt as a percent of state domestic product and relative rapidity of debt retirement (See the table "Dash Board Operating Revenues"). Provided below is a table with S&P's most recent debt statistics and scores for Vermont.

S&P' Debt Score Card Metrics

	Low Ranking (Score of 1)	Moderate Ranking (Score of 2)	Vermont's Statistics[1]	Vermont's Score
Debt per Capita	Below $500	$500 - $2,000	1,069	2
Debt as a % of Personal Income	Below 2%	2% - 4%	2.1%	2
Debt Service as a % of Spending	Below 2%	2%- 6%	2.1%	2
Debt as a % of Gross State Product	Below 2%	2% - 4%	2.1%	2
Debt Amortization (10 year)	80% - 100%	60%-80%	68%	2

[1] As calculated and reported by S&P.

Moody's US States Rating Methodology

On April 17, 2013, Moody's Investors Services released the final version of its "US States Rating Methodology."

This methodology provides an updated explanation of how Moody's assigns ratings to US State G.O.s or their equivalents. The report provides market participants with insight into the factors Moody's considers being most important to their state ratings. The report also introduces a new state methodology scorecard. The scorecard's purpose is to provide a reference tool that can be used to approximate credit profiles for US states.

The methodology includes the following "key factors" and "sub-factors" as referred to by Moody's:

Broad Rating Factors	Factor Weighting	Rating Sub-Factors	Sub-Factor Weighting
Economy	20%	Income	10%
		Industrial Diversity	5%
		Employment Volatility	5%
Governance	30%	Financial Best Practices	15%
		Financial Flexibility/Constitutional Constraints	15%
Finances	30%	Revenues	10%
		Balances and Reserves	10%
		Liquidity	10%
Debt	20%	Bonded Debt	10%
		Adjusted Net Pension Liability	10%
Total	**100%**	**Total**	**100%**

Debt is the fourth factor of the four major factors in Moody's scorecard. The debt factor captures both debt and other long-term liabilities, such as unfunded pension liabilities. Moody's treats pension liabilities as a form of debt, and looks at the state's unfunded pension liabilities as a percent of state revenues.

In terms of Moody's scorecard, they look at debt and pension liability compared to revenues to measure the relative affordability of the state's debt obligations based on current revenues sources.

Sub-Factor	Measurement	Aaa	Aa1	Aa2	Aa3	A	Baa and below
Debt Measure	NTSD/Total Governmental Fund Revenues	Less than 15%	15%-30%	30%-50%	50%-90%	90%-130%	Greater than 130%
Pension Measure	3 year Average Adjusted Net Pension Liability/Total Governmental Funds Revenues	Less than 25%	25%-40%	40-80%	80-120%	120-180%	Greater than 180%

For the debt measure, Moody's uses net-tax supported debt (NTSD) divided by total governmental fund revenues. Moody's includes the State's Education Fund as part of the State's operating revenue for purpose of this calculation and its calculation of debt service as a percentage of operating revenues. Also, as discussed in the "Special Obligation Transportation Infrastructure Bonds (TIBs)" section of the report, the credit rating agencies include TIBs in their calculation of NTSD. Based on this assumption, Moody's debt measure for Vermont for FY 2016 is approximately 23%.

Based on the Moody's Median report titled "Low Returns, Weak Contributions Drive Growth of State Pension Liabilities," dated October 6, 2016, Vermont's 3-year Average Adjusted Net Pension Liability (ANPL) was \$3.6 billion. This as a percentage of 2015 governmental revenues was 65%, ranking Vermont 22nd of the 50 states, with 1 being the worst and 50 being the best. See "Moody's Adjustment to Pension Data and Adjusted State Pension Liability

Medians" herein for additional information regarding Vermont's relative standing to other triple-A states regarding pensions.

Moody's fundamental analytical framework also includes the following additional key rating factors and sub-factors that do not fall into the overall rating scorecard, but could shift a rating up or down anywhere from a half a notch to multiple notches from what the scorecard suggests. These factors include:

I. Additional Economic Factors

- A very narrow economy, with little expectation of growth and/or diversification, and/or shrinking
- Population due to outmigration (could bring rating down)
- A poverty rate that is greater than 30% (could bring rating down)
- Expected future status as a growth state (could bring rating up)

II. Additional Governance Factors

- Political polarization that makes budgeting and financial decisions difficult (could bring rating down)
- Lack of congressional representation (in the case of commonwealth or US territories) (could bring rating down)
- Weakness in fiscal best practices, such as late CAFR's, weakness in consensus revenue estimating process, etc. (could bring rating down)
- Heightened risk of lack of appropriation for debt service, or other nonpayment of debt service (could bring rating down)
- Long history of conservative financial management, and/or frequent revenues estimating (at least four times a year) (could bring rating up)

III. Additional Financial Factors

- Large structural imbalance, even in economic upswings (could bring rating down)
- Cash flow notes or other cash management tools used due to severe liquidity strain, may cross fiscal years or be rolled (could bring rating down)
- Lack of market access (could bring rating down)
- Delaying vendor payments due to cash flow strain (could bring rating down)

IV. Additional Debt Factors

- Significantly strong or weak pension characteristics (could bring rating up or down)
- Inflexible or risky debt structure, including high variable-rate and swap exposure relative to liquidity (could bring rating down)
- Extremely high debt ratios (debt/personal income greater than 50%, for example) (could bring rating down)
- Any structural subordination of GO debt (could bring rating down)
- Consolidated borrowing on behalf of local governments (could bring rating up)

V. Additional Other Factors

- Other factors specific to a state or credit that may affect rating
- Operating Environment

Fitch Rating Criteria for US State and Local Governments

On April 18, 2016, Fitch Ratings published an updated "U.S. Tax-Supported Rating Criteria" that outlines criteria applied by Fitch for ratings of U.S. state and local governments.

Notable aspects of the new criteria include published assessments of four key rating factors that drive rating analysis in the context of the economic base. The four key rating factors driving state and local government ratings include:

--Revenues;
--Expenditures;
--Long-term liabilities; and
--Operating performance.

Most recently, on May 31, 2017, Fitch updated their criteria based on analysis of defined benefit pension liabilities. Specifically, Fitch lowered the discount rate adjustment to 6% from 7%, which is used to establish comparable liability figures. The adjustment was refined based on information within GASB 67 and 68 reporting. Please see the guidance table on the following page that outlines general expectations for a given rating category.

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	aaa	aa	a	bbb	bb
Revenue Framework					
Growth Prospects for Revenues Without Revenue-Raising Measures	Strong Growth in line with or above the level of U.S. economic performance	Solid Growth below U.S. economic performance but above the level of inflation	Slow Growth in line with the level of inflation	Stagnant Growth below the level of inflation or flat performance	Negative Declining revenue trajectory
Independent Legal Ability to Raise Operating Revenues Without External Approval (in Relation to Normal Cyclical Revenue Decline)	High Minimum revenue increase at least 300% of the scenario revenue decline	Substantial Maximum revenue increase at least 200% of the scenario revenue decline	Satisfactory Maximum revenue increase at least 100% of the scenario decline	Moderate Maximum revenue increase at least 50% of the scenario revenue decline	Limited Maximum revenue increase less than 50% of the scenario revenue decline
Additional Considerations	In cases where an entity relies heavily on third-party funding (e.g. from a higher level of government) in support of core functions that likely would continue at the same level even without the external support, an evaluation of the associated risk informs the assessment. Third-party support can be a positive consideration in the overall framework assessment in cases where Fitch believes that support can be relied upon, for example state support of school districts. The requirement for periodic re-authorization of existing revenue streams is a negative consideration. In addition, in rare cases, there may be other factors, such as an unusually concentrated or volatile revenue base, that have a negative effect on the assessment.				
Expenditure Framework					
Natural Pace of Spending Growth Relative to Expected Revenue Growth (Based on Current Spending Profile)	Slower to equal	In line with to marginally above	Above	Well above	Very high
Flexibility of Main Expenditure Items (Ability to Cut Spending Throughout the Economic Cycle)	Ample	Solid	Adequate; legal or practical limits to budget management may result in manageable cuts to core services at times of economic downturn	Limited; cuts likely to meaningfully, but not critically, reduce core services at times of economic downturn	Constrained; adequate delivery of core services may be compromised at times of economic downturn
	Carrying cost metric less than 10%	Carrying cost metric less than 20%	Carrying cost metric less than 25%	Carrying cost metric less than 30%	Carrying cost metric 30% or greater
Additional Considerations	The analysis of an issuer's expenditure framework also considers potential funding pressures, including outstanding or pending litigation, internal service fund liabilities and contingent obligations				

Long-Tern Liability Burden	Low	Moderate	Elevated but still in the moderate range	High	Very High
Combined Burden of Debt and Unfunded Pension Liabilities in Relation to Resource Base	Liabilities less than 10% of personal income	Liabilities less than 20% of personal income	Liabilities less than 40% of personal income	Liabilities less than 60% of personal income	Liabilities 60% or more of personal income
Additional Considerations	The liability burden assessment could be negatively affected by high levels of derivatives exposure, short-term debt, variable-rate debt or bullet maturity debt or an exceptionally large OPEB liability without the ability or willingness to make changes to benefits. An exceptionally large accounts payable backlog can also negatively affect the long-term liability burden assessment.				
Operating Performance					
Financial Resilience Through Downturns (Based on Interpretation of Scenario Analysis)	Exceptionally strong gap-closing capacity; expected to manage through economic downturns while maintaining a high level of fundamental financial flexibility.	Very strong gap-closing capacity; expected to manage through economic downturns while maintaining an adequate level of fundamental financial flexibility.	Strong gap-closing capacity; financial operations would be more challenged in a downturn than is the case for higher rating levels but expected to recover financial flexibility.	Adequate gap-closing capacity; financial operations could become stressed in a downturn, but expected to recover financial flexibility	Limited gap-closing capacity; financial operations could become distressed in a downturn and might not recover.
Budget Management at Times of Economic Recovery	Rapid rebuilding of financial flexibility when needed, with no material deferral of required spending/ nonrecurring support of operations.	Consistent efforts in support of financial flexibility, with limited to no material deferral of required spending/nonrecurring support of operations.	Some deferral of required spending/ nonrecurring support of operations.	Significant deferral of required spending/ nonrecurring support of operations.	Deferral of required spending/ nonrecurring support of operations that risks becoming untenable given tools available to the issuer.
Additional Considerations	The operating performance assessment could be negatively affected by liquidity or market access concerns (in general, liquidity becomes a concern if the government-wide days cash on hand metric has or is expected to fall below 60 days); the risk of an outside party (e.g. another level of government) having a negative impact on operations; evidence of an exceptional degree of taxpayer dissatisfaction, particularly in environments with easy access to the voter-initiative process; or management weaknesses not captured above.				

As part of its revised criteria, Fitch can create scenarios that consider how a government's revenues may be affected in a cyclical downturn and the options available to address the resulting budget gap. Also under the revised criteria, Fitch provides more in-depth opinions on reserve adequacy related to individual issuers' inherent budget flexibility and revenue volatility.

In 2017, Vermont was recently rated under the new criteria and there was no change to the State's AAA rating.

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5. ECONOMIC AND FINANCIAL FORECASTS

This section of the report includes excerpts from the "The Fiscal 2018-19 Revenue Outlook for the General Fund, Transportation Fund, and Education Fund" prepared by Economic and Policy Resources, Inc. ("EPR") dated July 21, 2017.

"With the economic expansion now at eight years old and still moving undeniably forward, the staff recommended July 2017 consensus forecast update calls for a modest downgrade to revenue expectations for the G-Fund and the T-Fund over the fiscal year 2018 through 2019 time frame. The G-Fund forecast downgrade is mainly the result of the $16.3 million in extraordinary Corporate Income Tax refunds that are still pending as the State begins fiscal year 2018. That factor, in combination with sluggish receipts in the Sales & Use Tax, are largely responsible for the total $24.7 million downgrade in the consensus forecast for fiscal year 2018. For the T-Fund, the staff recommendation calls for between a $3.0 million and $4.5 million consensus forecast downgrade, primarily reflecting weak Motor Vehicle Fees revenue collections during the 2017 fiscal year, against the backdrop of the significant fee increases enacted by the 2016 Vermont General Assembly that went into effect in July of fiscal year 2017."

"It is notable that the U.S. economic expansion has now attained the ripe old age of 8 years. However, the heightened degree of pro-growth optimism associated with the widely expected bump-up in U.S. economic activity following the Fall 2016 elections has now begun to fade. The reality of the complex nature of health care reform, tax reform, and the nuances of trade policy has begun to throttle back initial expectations regarding the near-term prospects of pro-growth policies of kicking U.S. economic growth up to a higher plane. Aside from the regulatory changes that have been implemented, significant policy changes to aid growth are still forthcoming. As a result, most macro-forecasts are now tempering expectations back somewhat towards a more steady-state expansion with GDP growth and labor market advances moving up and down around a modest but durable trend line."

"In Vermont, the State's economy seems overall to be entering a more sluggish period. The May 2017 job statistics, the most recent available, show that the Vermont nonfarm payroll job count declined by 2,200 jobs—seasonally adjusted—over the four month period since the last month where the number of jobs increased in January 2017. According to the latest seasonally-adjusted payroll job data, it appears that the 3,300 jobs gained in December and January may have been a brief break in the downward trend that has been experienced since August 2016. Consistent with the updated U.S macroeconomic forecast update, the updated consensus short-term economic forecast for Vermont also includes a slightly slower pace of output growth and a somewhat slower pace to personal income growth over the near term forecast horizon."

"Lastly, even though the current economic upcycle is "maturing," it remains significant that there currently are few, if any, signs that a U.S. economic downturn is in the near future. The U.S. and Vermont economies are not yet showing any concrete signs of imbalances or over-heating—although the current upcycle will not go on indefinitely. However, as is reflected in the five year planning forecast, it is more likely than not to enter a more restrained period of growth within the forecast horizon, and may enter a period of cyclical weakness within the next five years."

Provided below are EPR's 2017 economic projections as compared to its 2016 economic projections. As shown, the 2017 projections show a decrease in population in all years of the forecast. Furthermore the forecast for nominal personal income display an increase for the first three years and then a decrease for the remaining years of the forecast period. The 2017 General Fund and Transportation Fund revenue projections are slightly higher for the first four years and then lower throughout the remaining years of the forecast period. Although the population, nominal dollar personal income and government revenue projections are somewhat lower from the previous projection on a year by year basis, the columns that compare revenues as a percentage of nominal personal income suggests that the State's general and transportation fund are expected to collect a slightly greater share of the State's personal income for government operations.

STATE OF VERMONT
POPULATION, PERSONAL INCOME AND REVENUE PROJECTIONS
2017 COMPARED TO 2016 PROJECTIONS

Population (Thousands)

Year	2016	2017	Change	% Change
2017	628.36	625.28	-3.08	-0.49%
2018	630.18	626.16	-4.03	-0.64%
2019	631.95	627.28	-4.66	-0.74%
2020	633.34	628.29	-5.05	-0.80%
2021	634.60	629.17	-5.44	-0.86%
2022	635.81	629.98	-5.83	-0.92%
2023	636.95	630.55	-6.40	-1.01%
2024	638.04	631.25	-6.79	-1.07%
2025	639.12	632.00	-7.12	-1.12%
2026	640.14	632.76	-7.38	-1.16%
2027	641.17	633.52	-7.65	-1.19%
2028		634.28	n.a.	n.a.

Nominal Dollar Personal Income (Millions)

Year	2016	2017	Change	% Change
2017	32,209.42	$ 32,186.6	-22.86	-0.07%
2018	33,561.16	$ 32,861.9	-699.26	-2.17%
2019	34,689.28	$ 33,738.1	-951.16	-2.83%
2020	35,648.79	$ 34,406.2	-1,242.55	-3.58%
2021	36,713.07	$ 35,032.6	-1,680.45	-4.71%
2022	37,860.97	$ 35,856.0	-2,004.98	-5.46%
2023	39,025.01	$ 36,615.7	-2,409.35	-6.36%
2024	40,234.93	$ 37,284.4	-2,950.54	-7.56%
2025	41,533.69	$ 38,069.0	-3,464.71	-8.61%
2026	42,917.46	$ 38,928.1	-3,989.33	-9.61%
2027	44,423.04	$ 39,835.0	-4,588.06	-10.69%
2028		$ 40,782.4	n.a.	n.a.

General Fund and Transportation Fund Revenue (Millions)

Year	2016	2017	Change	% Change
2017	1,758.23	1,728.18	-30.05	-1.79%
2018	1,799.95	1,761.66	-38.28	-2.18%
2019	1,844.27	1,817.34	-26.93	-1.50%
2020	1,892.13	1,855.25	-36.88	-2.00%
2021	1,940.35	1,879.92	-60.43	-3.19%
2022	1,992.80	1,925.72	-67.08	-3.46%
2023	2,047.61	1,975.38	-72.23	-3.62%
2024	2,102.00	2,023.86	-78.14	-3.82%
2025	2,155.97	2,071.73	-84.24	-4.01%
2026	2,210.45	2,119.14	-91.32	-4.24%
2026	2,268.88	2,168.78	-100.10	-4.53%
2027		2,220.71	n.a.	n.a.

General Fund and Transportation Fund Revenue as Percent of Nominal Personal Income

Year	2016	2017	Change
2017	5.5%	5.4%	-0.1%
2018	5.4%	5.4%	0.0%
2019	5.3%	5.4%	0.1%
2020	5.3%	5.4%	0.1%
2021	5.3%	5.4%	0.1%
2022	5.3%	5.4%	0.1%
2023	5.2%	5.4%	0.1%
2024	5.2%	5.4%	0.2%
2025	5.2%	5.4%	0.3%
2026	5.2%	5.4%	0.3%
2026	5.1%	5.4%	0.3%
2027		5.4%	n.a.

The growth reduction in projected personal income from the previous year forecast will impact Vermont's debt guideline of debt as a percentage of personal income. Lower personal income numbers will increase the State's debt as a percentage of personal income at a constant amount of debt. However even with the drop in forecasted personal income figures, the State is still under its guidelines of 2.3%.

Provided below are the forecasts of population, personal income, and nominal gross State product. As shown in the table below, population for fiscal year 2017 and 2018 is 625.3 thousand and 626.2 thousand, respectively, initially an increase of 0.14% and 0.18%, over the previous fiscal years. Personal income for fiscal year 2017 and 2018 is $32.2 billion and $32.9 billion, respectively, an increase of 2.10% and 2.67%, over the previous fiscal year, respectively. Nominal gross State product for fiscal year 2017 and 2018 is $32.0 billion and $33.2 billion, respectively, an increase of 3.74% and 3.44%, over the previous fiscal year, respectively.

STATE OF VERMONT
PRIOR YEAR, CURRENT AND PROJECTED ECONOMIC DATA(1)

Year	Population (in thousands)	Personal Income (in $ billions)	Nominal GSP (in $ billions)
2016	624.6	31.4	31.1
2017	625.3	32.2	32.0
2018	626.2	32.9	33.2
2019	627.3	33.7	34.4
2020	628.3	34.4	35.3
2021	629.2	35.0	36.4
2022	630.0	35.9	37.5
2023	630.6	36.6	38.7
2024	631.2	37.3	39.8
2025	632.0	38.1	41.0
2026	632.8	38.9	42.2
2027	633.5	39.8	43.5
2028	634.3	40.8	44.8

(1) Administration-Legislative Consensus Long-Term Forecast (Calendar Years 2017-2028). These figures were prepared by EPR, as of August 29, 2017.

As shown in the table below, total revenue for fiscal year 2017 is $51.2 million more than in fiscal year 2016, an increase of 3.1%. Fiscal year 2018 total revenue is forecasted to increase by $33.5 million, or 1.9%; the average annual revenue growth rate during the fiscal year period, 2018 through 2028, inclusive, is projected to be 2.57%.

STATE OF VERMONT
PRIOR YEAR, CURRENT AND PROJECTED STATE REVENUE [1]
(in millions of dollars)

Fiscal Year	General Fund	Transportation Fund	Total Revenue [2]
2016	1,412.4	264.6	1,677.0
2017	1,457.1	271.1	1,728.2
2018	1,485.5	276.2	1,761.7
2019	1,538.4	278.9	1,817.3
2020	1,572.6	282.6	1,855.2
2021	1,595.2	284.7	1,879.9
2022	1,637.3	288.4	1,925.7
2023	1,683.7	291.7	1,975.4
2024	1,728.6	295.3	2,023.9
2025	1,773.4	298.3	2,071.7
2026	1,816.8	302.3	2,119.1
2027	1,863.1	305.7	2,168.8
2028	1,911.0	309.7	2,220.7

[1] Administration-Legislative Consensus Long-Term Forecast (Calendar Years 2017-2028). These figures were prepared by EPR. Amounts shown are “current law” revenue forecasts, based on a consensus between the State’s administration and legislature. As of August 29, 2017.

[2] Totals may not agree due to rounding.

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6. STATE GUIDELINES AND RECENT EVENTS

In order to recommend to the Governor and the General Assembly a maximum amount of net tax-supported indebtedness that the State may prudently issue for the ensuing fiscal year, CDAAC has adjusted its State guidelines and the method of calculating its State guidelines over time based on factors such as (i) changes in the rating agencies' criteria, (ii) changes in Vermont's ratings, (iii) changes to Vermont's Peer Group, (iv) substantial increases and decreases in the amount of debt issued due to market disruptions and tax law changes and (v) Vermont's relative debt position.

Examples of changes in rating criteria include Moody's dropping its State medians for "net tax supported debt as a percentage of effective full valuation" and "net tax supported debt service as a percentage of operating revenues" in 1996, reintroducing its "net tax supported debt service as a percentage of operating revenues" in 2012, Moody's and Fitch's recalibration of ratings in 2010, and the 2012 comparative research analysis that has combined State debt and pension liabilities as a method of evaluating states' financial position. The recalibration of ratings by Moody's and Fitch in 2010 and S&P rating changes over the past five years have also affected Vermont's Peer Group. Between 2002 and 2008, the number of states with two triple-A ratings remained fairly constant between eight and eleven states, compared to the current 15 states having at least two triple-A ratings.

While CDAAC has continued to make adjustments to the State guidelines and the way it calculates State guidelines, it has been consistent in its overall approach of projecting future State debt issuances and measuring the effect against prudent State guidelines based on Peer Group analysis. The Committee does not believe that adjustments in the credit markets or other recent events should alter its process; however, the Committee realizes that it and the State will need to keep the changing debt finance environment and other current circumstances in mind as the State develops its capital funding and debt management program.

Debt Per Capita State Guideline – Adjustments to Debt Per Capita State Guideline

The debt per capita statistics, among the various debt guidelines, is used to establish the recommended limitations on the amount of G.O. debt that the State should authorize annually. The debt per capita State guideline calculation is based on a starting point, which since 2006 has consisted of the median of the 5-year Peer Group average of the debt per capita median of peer group (triple-A) states, and an annual inflation factor, in order to achieve a realistic perspective on the future direction of debt per capita median for the Peer Group states. As recently as 2007, CDAAC used an inflator of 2.7% or 90% of an assumed 3% inflation rate. As part of the development of the 2009 report, CDAAC determined that it would be most appropriate to adopt an inflator based upon a percentage of the averaging of the annual increases in the median debt per capita of the triple-A States for the last five years. As the resulting five-year average was 5.35%, it was determined that an inflator of less than 100% of Vermont's triple-A peers was deemed appropriate and an inflation number representing only 60% of the growth factor, or 3.18%, was used in order to be consistent with the expectations of the rating agencies and financial community and consistent with the State's debt management practices and the prior year's report. The 2009 through 2011 CDAAC reports noted that the approach in calculating the inflator should not be considered fixed as there are too many variables that could conceivably alter this

number. First, should the agencies continue to change the number of triple-A rated states, the composition of Vermont's Peer Group could be altered. Second, the amount of relative bond issuance by other triple-A states could affect the per capita median for the State's peer group which could alter the per capita growth rate. Third, Moody's has stated consistently in its credit reports that if the rating agency were to see a deterioration in the State's relative rankings with respect to debt per capita and debt as a percent of personal income, Vermont's triple-A rating could fall. CDAAC believes that it is imperative to continue to monitor the State's performance in these comparisons annually to determine if the inflation factor should be adjusted from time to time.

In conducting preliminary calculations for the 2012 report, it was determined that two of the factors mentioned above were having a pronounced effect on the calculation of the State guideline. The Committee reviewed analysis of the possible effect on the starting point and the inflator based on the drop in total calendar year 2011 municipal bond issuance and the change in the Peer Group as a result of the State of Minnesota losing its two triple-A ratings. The analysis indicated that each of these factors significantly affected the State guideline calculation and modifications were necessary in order to maintain a stable and reliable recommendation.

With the goal of limiting volatility in the State guideline calculation, it was determined to adjust the starting point calculation to be the five-year average of the medians of the triple-A Peer Group (instead of the median of the five-year Peer Group medians) and increase the time horizon from five years to ten years for the inflator, without adjustment. The Committee also reviewed other scenarios for adjusting the Peer Group, such as excluding states with the two highest and two lowest statistics and excluding states with a single triple-A rating. These scenarios resulted in State guidelines that were substantially the same as the recommended approach, indicating possible improvement in the reliability and stability of the methodology.

For the 2013 report, the methodology used was consistent with the one used in 2012. In the 2014 report, the group of triple-A states that make up the Peer Group was adjusted. After again reviewing the states with only one triple-A a determination was made that these states should not be part of the comparison, mainly due to differences in their capital funding mechanisms and the natural resource dependent nature of their revenue and debt funding mix. Thus for the 2014 and 2015, all the states with <u>two</u> triple-A ratings are included as Peer Group states.

In 2016, Alaska was downgraded by Moody's, S&P and Fitch; and by definition, dropping it from the Peer Group. While South Dakota was upgraded by all three rating agencies to triple A and qualifying it as a Peer Group state. In 2016, Alaska had debt per capita of $1,422, while South Dakota had debt per capita of $652. Therefore, the Peer Group lost a high debt per capita state and gained a low debt per capita state, driving down the median 2016 Peer Group debt per capita to $856 from its 2015 level of $687, which is a 20% decrease. This had a significant impact on the starting point of the State's debt per capita guideline, which continues to be the five-year average of the medians of the triple-A Peer Group debt per capita. For 2016 and 2017, the starting points were $847 and $811 respectively, compared to $904 for 2015.

Since 2012, the State has used the ten-year average of the growth rates of the median debt per capita of the Peer Group to calculate the inflator by which the starting point guideline

is increased each year (i.e. the rate by which the $81 increases annually to calculate the State's annual guideline from 2018-2028). However, as previously mentioned, in 2016 we lost a high debt per capita state from the Peer Group and gained a low debt per capita state to the peer group which significantly decreased the median debt per capita figures and drove the 10-year average of the growth rates to a negative growth rate.

Back in 2012, CDAAC moved to using an inflator based on the 10-year average of the growth in the peer growth median in order to best predict the future growth of Peer Group debt issuances per capita. However, the addition and removal of certain states in the Peer Group created some noise in this calculation and the annual growth is more a result of the Peer Group states changing rather than an indicator of the change in debt issuance levels of the Peer Group.

As discussed earlier in this section of the report, the 2007 CDAAC used an inflator of 2.7% (or 90% of an assumed 3% inflation rate). In 2009, this approach was changed and the decision was made to adopt an inflator based on a percentage of the averaging of the annual increases in the median debt per capita of the Peer States in an attempt to best predict increases in future Peer State debt levels. At the time this changed occurred, it was noted that this approach should not be considered fixed because of possible changes to the Peer Group, among others, over time and that CDAAC should continue to monitor the best approach to calculating the inflator. With the recent changes to the Peer Group states and significant decrease in the Peer Group debt per capita resulting in an overall negative growth, or inflator, we have evidenced a deficiency in this approach and CDAAC has decided to revert back to its previous approach to calculating the inflator based on the 2.7% (90% of 3% assumed inflation). CDAAC will continue to monitor this approach as well as the approach to determining the starting point for its debt per capita guideline.

Statutory Change Relating to Use of Bond Premium and Effect on Affordability

Effective in fiscal year 2013, 32 V.S.A. § 954 was amended to permit the use of bond premium received from issuance of debt for capital purposes. Previously bond premium was used to pay debt service. In fiscal year 2013, the net bond premium became available to pay capital appropriations, effectively reducing the par amount of bonds issued such that the par amount of bond plus the net original issue premium equals the capital appropriations amount.

The effect of this legislative change on the CDAAC numbers is as follows: if future bonds are issued with a net original issuance premium, the par amount of bonds will be less than estimated by the CDAAC report; however, the higher the original issue premium, the higher the average interest rate on the lower amount of debt. Due to the lower nominal interest rates in the market and the institutional investors' preference for higher coupon debt, the State expects to sell bonds with some original issue premium and reduce the size of its bond sales. To the extent that occurs, the State could authorize future additional capital appropriations in an amount equal to or less than the premium generated and still be in compliance with the CDAAC bond issuance recommendation.

Recent Decreasing State Debt Levels, Future State Infrastructure Spending Increasing

According to the Moody's State Debt Medians 2015 report published June 24, 2015, total net tax-supported debt for US States declined in 2014. This was the first drop in state debt

levels in the 28 years Moody's has been compiling the data. According to the 2015 report "The decrease comes as states continue to be reluctant to take on new debt with tight operating budgets, a slow economic recovery, and uncertainty over federal fiscal policy and health care funding." The Moody's State Debt Medians 2016 and 2017 reports, which reports debt issuance from 2015 and 2016 respectfully, indicated the net tax-supported debt for US States remained virtually unchanged in 2015 from 2014 levels and 2016 from 2015 with a minimal year-over-year growth of 0.6% and 0.8%, respectfully.

Despite three recent years with decreased and static state debt levels, debt levels are anticipated to rise in 2017. It was reported in February 2016 via the Center on Budget and Policy Priorities that state and local spending on infrastructure hit a 30-year low. Roads and bridges have continued to deteriorate due to federal investments dropping in half and the states' varying budget commitment to infrastructure. Nevertheless, it seems as if infrastructure spending is finally on the rise due to record low interest rates. Instead of issuing refunding bonds, many municipalities are taking advantage of the interest rates to finance much needed rehabilitation to roads and bridges. Mikhail Foux, head of municipal strategy in New York for underwriter Barclays Plc stated "That's going to be the story of the year – rebuilding infrastructure" and went on to forecasts that issuance may reach $400 billion this year.

Unlike many of its peer states in recent years, Vermont has continued to invest in its infrastructure, such as investing in the Waterbury office complex. The State has recognized the necessity of road and bridge improvements. Furthermore, these issues exemplify the cause in which the State's debt per capita has risen slightly in comparison to those states within the Peer Group. The report of the rise of infrastructure spending is positive news for Vermont, as it will help the State become more in line with the other states within the Peer Group in regard to debt statistics.

The Recent Landscape of Municipal Bonds

Certain federal proposals have been introduced over the past several years that would either completely remove exemption on municipal bonds interest or the limitation of 28% for investors to exempt their taxes during the Obama administration. However, with President Trump now in office, it has been speculated that tax-exemptions on municipal bonds will remain in effect. That said, the municipal bond market could be affected by President Trump's proposed tax reform. Some analysts fear that tax cuts to corporate and individuals would be detrimental to the municipal market as the demand for municipal bonds would dwindle. On the other hand, some analysts believe the tax reform would be beneficial to the market as demand for municipal bonds would be stronger in high-tax states since individuals would no longer be allowed to deduct state and local taxes. Also, the eradicating of the Alternative Minimum Tax could create an advantage to municipal bonds covered under the tax, such as securities with airports, 501(c)(3)'s and housing agencies. In early September 2017, Treasury Secretary, Steven Mnuchin, stated that the current administration is considering backdating tax reform to January 1, 2018 with President Trump urging lawmakers to speed up the tax legislation "ASAP," but face an uphill battle in passing a tax reform this year.

Sequestration and Potential Impact on Build America Bonds Subsidy

On September 14, 2012, the Office of Management and Budget ("OMB") released its Report Pursuant to the Sequestration Transparency Act of 2012, which detailed, among its

$1.2 trillion of enumerated reductions to the federal budget, an ongoing cut of 5.1% (which resulting in an 8.7% cut in federal fiscal 2013 due to the fact that only 7 months remained in that year ending September 30) to the interest payment subsidy associated with the Build America Bonds (BABs) program. In February 2014, Congress voted to extend sequestration of BABs subsidies through 2024. The Internal Revenue Service has annually published guidance reducing subsidy payments as follows: 7.2% for federal fiscal year 2014, 7.3% for federal fiscal year 2015, 6.8% for federal fiscal year 2016 and 6.9% for federal fiscal year 2017. The federal fiscal year 2018 rate is 6.6%.

Through fiscal year 2017, sequestration has reduced the subsidy payments that Vermont received for its 2010 Series A-2 and 2010 Series D-2 taxable G.O. Bonds by a total of $307,941.99. Based on the federal fiscal year 2018 rate of a 6.6% reduction, the subsidy is reduced by $80,117.73 in fiscal year 2018. If the 6.6% reduction continues, the subsidy will be reduced by another $77,905.91 in fiscal 2019 with declining annual amounts through the maturity date totaling $499,342.89 overall. While this sequestration impact is a very unfortunate development, it does not materially alter Vermont's projected debt service as a percentage of revenue ratios; specifically, a $80,117.73 reduction in fiscal year 2018 equates to approximately 0.11% of the projected $70.252 million of debt service payments due that year.

Moody's Adjustment to Pension Data and Adjusted State Pension Liability Medians

On July 12, 2012, Moody's published a Request for Comments regarding proposed adjustments to pension data. On April 17, 2013, the adopted adjustments were published. The adjustments are intended to enhance transparency and comparability. As discussed above, Moody's considers debt and pension liabilities separately and has incorporated this decision into its US States Rating Methodology. The "debt" category reflects both bonded debt and adjusted net pension liabilities, with each accounting for half of the category, or, 10% each of the total score. While rating agencies have always taken pension funding into consideration, recent moves have involved increasing quantification. The measures used in the scorecard are not the conventional asset/liability of the debt related to tax base but instead are the debt related to total governmental revenue. At the present time, there is no indication that the new pension treatment or the scorecard will threaten existing ratings. However, it is indicative of the spotlight being placed on pension funding from several different sources.

On June 27, 2013 Moody's published "Adjusted Pension Liability Medians for US States." This inaugural report presents adjusted pension data for the 50 individual states for fiscal year 2011, based on Moody's recently published methodology for analyzing state and local government pension liabilities. The report ranks states based on ratios measuring the size of their adjusted net pension liabilities (ANPL) relative to several measures of economic capacity: state revenues, GDP and personal income.

On October 6, 2016, Moody's published its fifth annual report titled "Low Returns, Weak Contributions Drive Growth of State Pension Liabilities," which updated Moody's ANPL for fiscal year 2015 for the 50 states. Key takeaways of the report are summarized below:

- ANPL reached $1.25 trillion in fiscal 2015.
- Pension liabilities will grow in the next two years because returns fell short of 2015 and 2016 targets.
- Half of the states didn't contribute sufficient amounts to curb ANPL.
- Vermont's relative position among the 50 states with respect to its ANPL for 2014 and 2015 is as follows:

Moody's Pension Ratios	State of Vermont Rankings 2014[1]	State of Vermont Rankings 2015[1]
ANPL as % of Personal Income	12	10
ANPL as % of State Gross Domestic Product	11	9
ANPL Per Capita	12	8
ANPL as % of State Government Revenues	21	22
Three-year Average ANPL as a % of State Government Revenues	22	22

Source: Moody's *Low Returns, Weak Contributions Drive Growth of State Pension Liabilities,* October 6, 2016.

[1]Rankings are in numerically descending order, with the state having the highest Moody's Adjusted Net Pension Liability statistic ranked 1st and the state having the lowest Adjusted Net Pension Liability statistic ranked 50th.

STATE OF VERMONT AND PEER GROUP STATES' MOODY'S PENSION LIABILITIES METRICS*

Triple-A Rated States	Moody's Adjusted Net Pension Liability (ANPL)			
	As % of PI	As % of State GDP	Per Capita ($)	As % of Revenues
Delaware	8.5	5.7	4,078	68
Florida	1.7	1.7	751	33
Georgia	4.6	3.9	1,879	86
Indiana	6.2	5	2,543	91
Iowa	2.7	2.1	1,197	37
Maryland	13.6	12.6	7,624	200
Missouri	4.0	3.5	1,706	80
North Carolina	1.4	1.2	589	22
South Carolina	12.1	11.4	4,615	177
South Dakota	4.1	3.4	1,842	75
Tennessee	2.4	2.1	1,016	39
Texas	9.6	7.8	4,509	189
Utah	3.7	2.9	1,439	53
Virginia	3.6	3.2	1,859	62
MEAN[1]	**5.6**	**4.8**	**2,546**	**86.6**
MEDIAN[1]	**4.1**	**3.5**	**1,851**	**71.5**
VERMONT	12.3	12.1	5,873	106
VERMONT's 50 STATE RANK	10	9	8	21

Source: Moody's *Low Returns, Weak Contributions Drive Growth of State Pension Liabilities,* October 6, 2016.

[1] Calculated by Public Resources Advisory Group. These calculations exclude all Vermont numbers and include only states rated triple-A by two or more of the rating agencies, year ended June 30th, 2015.

[2] Vermont numbers include the combined defined benefits plans of the Vermont State Employees' Retirement System and the Vermont State Teachers' Retirement System.

[3] Rankings are in numerically descending order, with the state having the highest Moody's Adjusted Net Pension Liability statistic ranked 1st and the state having the lowest Adjusted Net Pension Liability statistic ranked 50th.

*Sources does not take into account differing retirement benefits among states.

Reserve or Rainy Day Fund Balances

The rating agencies are also putting greater emphasis on the importance of having robust general fund reserve fund balances, commonly referred to as rainy day funds. Historically, a rainy day fund target of 5% of general fund expenditures was considered conservative and a credit positive by the rating agencies, but more recently the rating agencies have indicated that higher reserve funds are more consistent with triple-A ratings. In fact, Moody's US States Rating Methodology cited "Available Balances greater than 10%, with Requirements to Rebuild Rainy Day Fund if drawn upon" for their sub-factor Finances Measurement of "Available Balances as % of Operating Revenue (5-year average)." Additionally, the State's most recent Standard and Poor's report published in August 2017, S&P notes that "substantial deterioration of budget reserves or a deteriorating liability position could negatively pressure the [State's] rating." The table below shows the fiscal year 2016, 2017, and 2018 rainy day fund balances of the other triple-A states.

As mentioned in Section 4, "National Credit Rating Methodologies and Criteria," Fitch released its new criteria, which has a different approach to evaluating reserve or rainy day balances. Rather than having a set target % of general fund expenditures, it determines reserve adequacy taking into consideration revenue volatility and budget flexibility.

Vermont has several reserve funds in order to reduce the effects of variations in revenues and are considered "available reserve funds." These are statutorily defined in 32 V.S.A.§§ 308-308e. The General Fund Stabilization Fund Reserve and Transportation Fund Stabilization Fund Reserve are determined on a self-building 5% budgetary basis and administered by the Commissioner of Finance and Management. The General Fund Balance Reserve is known as the "Rainy Day Reserve." Any remaining and undesignated General Fund amount is determined by the Emergency Board annually at its July meeting for deposit into this fund up to an additional 5% level. The use of this fund is restricted to 50% for unforeseen or emergency needs.

Finally, in fiscal year 2017 the State recognized the pressures placed on the budget by periodic 53rd week Medicaid vendor payments and 27th payroll payments. The State created new reserves to build over time the amount to fully fund these payments when needed.

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Rainy Day Fund Balances As a Percentage of General Government Expenditures			
Triple-A Rated States	**Fiscal 2016**	**Fiscal 2017**	**Fiscal 2018**
Delaware	5.5	5.4	5.4
Florida	4.6	4.5	4.6
Georgia	9.3	9.3	9.3
Indiana	9.8	9.6	9.5
Iowa	10.1	8.3	8.3
Maryland	5.2	4.9	5.0
Missouri	3.2	3.2	3.2
No. Carolina	7.4	6.6	7.6
So. Carolina	7.0	6.2	6.6
So. Dakota	9.8	9.9	9.9
Tennessee	4.5	4.9	5.5
Texas	18.4	19.4	21.2
Utah	7.8	7.7	7.5
Virginia	1.2	2.7	1.4
Median[1]	7.2	6.4	7.1
VERMONT[2]	5.3	6.1	8.1

Source: "The Fiscal Survey of States 2017. A report by the National Governors Association and the National Association of State Budget Officers." Fiscal Year 2016 are "Actuals," Fiscal Year 2017 are "Estimated" and Fiscal 2018 are 'Recommended."

[1] Calculated by Public Resources Advisory Group. These calculations exclude all Vermont numbers and include only states rated triple-A by any two of the three rating agencies, year ended June 30th, 2017.

[2] The State's FY 2018 percentage does not include an authorized transfer of $4.69 million in July 2017 and a potential transfer of $5.19 million in January 2018.

[3] Information for Georgia's FY 2017 and FY 2018 rainy day fund balance was not provided in the reports. Rainy day fund balance was assumed to stay constant at the FY 2016 level.

Capital Planning Program and the Impact of Capital Spending Upon the Economic Conditions of the State

All three rating agencies include the condition of Vermont's economy as a significant factor in their respective ratings. Capital improvements – whether financed through the use of debt, funded through direct appropriation or federal funds, or advanced through public private collaboration - have a significant impact on the State's economy. Further, the link between investment in infrastructure and economic development is widely accepted. As noted in a March 2012 report prepared by the United States Department of Treasury with the Council of Economic Advisors, titled *A New Economic Analysis of Infrastructure Investment*, states that "well-designed infrastructure investments can raise economic growth, productivity, and land values, while also providing significant positive spillovers

to areas such as economic development, energy efficiency, public health, and manufacturing." These points notwithstanding, the report also states that not every infrastructure project is worth the investment. Metrics are needed to ensure that economic growth through infrastructure investment is done in an affordable and sustainable manner.

For several years, the Committee has discussed at length the need for a multi-year capital planning process to identify and prioritize Vermont's capital needs. The Committee applauds the General Assembly for implementing first a six-year, and now ten-year State capital program plan in its latest capital construction and State bonding adjustment act. 32 V.S.A. § 310 thus provides that the Governor prepare and revise a plan on an annual basis, submitting it for approval by the General Assembly. The plan will include a list of all recommended projects in the current fiscal year, as well as the five fiscal years thereafter. These recommendations will include an assessment, projection of capital need, and a comprehensive financial assessment. The Committee expects to annually review and consider future capital improvement program plans.

The Committee also recognizes that the process set forth in 32 V.S.A. § 310 must also incorporate a comprehensive review of our current capital stock, its condition, and future replacement needs. Significant efforts have been made in this area. The Department of Buildings and General Services (BGS) has undertaken such efforts with State buildings. The Agency of Transportation (AOT) has studied road infrastructure needs, including the condition of Vermont bridges. In 2009, the General Assembly charged the Treasurer and AOT to prepare a report containing a long-term needs assessment for repair, maintenance, and rehabilitation of bridges and culverts in the state with funding options for such long-term needs. This ultimately led to the creation of the Special Obligation Transportation Infrastructure Bond Program and the substantial leveraging of federal matching funds. While this increased funding corresponded with transportation infrastructure funding from other sources – namely ARRA and federal highway funds after Tropical Storm Irene – the condition of the State's transportation infrastructure has improved dramatically since 2007. In particular, the percentage of federal, State and municipal bridges deemed "structurally deficient" decreased by half - from approximately 20% to approximately 10% - from 2007 through 2012.

As discussed in Section 1, "Overview", Sec. 11. Natural Resources, of the 2015 Capital Bill (Act 26), as amended by the 2016 Capital Bill Adjustment (Act 160), appropriates proceeds of bonds for water quality projects. Vermont is currently gathering information on funding options and recommendations for long-term financing of water quality needs with the development of long-term revenue models to sustain water quality needs. Projects include plans to implement phosphorus control upgrades at municipal wastewater treatment plants. Other projects include stormwater management, agricultural mitigation and remediation and natural resources (rivers, wetlands, floodplains restoration and forestry) projects that are necessary to comply with the Vermont Clean Water Act (Act 64). The State has identified a variety of revenue sources to dedicate to the effort, including municipal, state, private and federal moneys. There is currently a funding gap of $1.36 billion over the 20 year period. The current capital bill appropriates $21.9 million in fiscal year 2018 and $23.47 million toward clean water initiatives. It is expected that additional revenues will be identified and dedicated to this program gap. The State may use dedicated revenue bonds to bridge the timing of the capital needs and available revenues.

As part of its discussions in 2014 and again in 2015, the Committee reviewed information prepared by the Auditor of Accounts' Office showing Vermont's rankings on a series of measures both of economic health and quality of life compared to other triple-A rated states. Vermont scores quite well in most categories, and with respect to the economic data, this is reflected in Vermont's favorable rankings relative to other triple-A rated states based upon several rating agencies' assessments, with Standard & Poor's in particular stating that "Vermont's quality of life and well-educated workforce provide economic development opportunities."

There is always a concern at the rating agencies when a state meaningfully enlarges its debt program to ameliorate periodic economic downturns. The rating agencies will often advise that long-term annual costs, in the form of higher debt service and frequently higher administrative and operating expenses, can accompany such an increased debt program. The Committee believes it is of critical importance to strike the correct balance between infrastructure investment and economic growth on the one hand, and maintaining affordable and sustainable levels of debt authorizations and capital spending on the other.

Implementation of Financial Reporting Webpage

In September of 2014, the Treasurer's Office launched the State of Vermont's Financial Reporting Web Page. This page organizes, in one location, ten items that the National Association of State Auditors, Comptrollers and Treasurers (NASACT) recommend that state government's provide for interim disclosure. NASACT represents the elected or appointed government officials tasked with the management of state finances.

These ten items are: tax revenues, budget updates, cash flow, debt outstanding, economic forecasts, pension and other post-employment benefits (OPEBs), interest rate swaps and bank liquidity, investments, debt management policies, and filings made to the Electronic Municipal Market Access (EMMA) system. The page may be accessed at:

http://www.vermonttreasurer.gov/cash-investments/financial-reporting/disclaimer

At the time of publication, NASACT indicated that Vermont's web page was the first statewide reporting site incorporating all ten of NASACT's recommendations, and at NASACT's 100th Anniversary Conference, Vermont's State Treasurer received the President's Award for exceptional efforts in government financial management and accountability, in part for her leadership in developing the disclosure web site. Delaware, Georgia, Maryland, Massachusetts, Tennessee, Utah and Wisconsin have followed suit and provided a respective website with NASACT's recommendations.

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7. ACKNOWLEDGEMENTS

We would like to express our gratitude to the State Treasurer's Office, the Department of Finance and Management, EPR, and various officers and staff members of the State, whose assistance has been invaluable in completing this report. Certain computations and projections were made based on population, personal income, and revenue projections provided by EPR. The numbers presented herein have not been audited and are, therefore, subject to change, possibly in a substantial manner.

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8. APPENDICES

A. Debt Affordability Scenario for FY 2018

B. 2017 State Debt Medians (Moody's Investors Service)

C. 2017 Fitch Ratings Credit Report

D. 2017 Moody's Investors Service Credit Report

E. 2017 Standard & Poor's Credit Report

F. Preliminary Economic Metrics for Moody's Triple-A States, Prepared by the Office of Douglas R. Hoffer, Auditor of Accounts.

G. Full Text of 32 V.S.A. §1001, Capital Debt Affordability Advisory Committee

APPENDIX A

Public Resources Advisory Group
Historical and Projected Debt Ratios with Capital Lease
DPC Compliant Case: $108.835 Million first year, $60.450 Million Annually through 2028 (Fixed Inflator - 2.7%)

	Net Tax-Supported Debt Per Capita (in $)			**Net Tax-Supported Debt as Percent of Personal Income**			**Net Tax-Supported Debt Service as Percent of Revenues [5]**		
Fiscal Year (ending 6/30)	State of Vermont	Moody's Median	State's Rank [4]	State of Vermont	Moody's Median	State's Rank [4]	State of Vermont [5]	Moody's Median	State's Rank [4]
Actual [1]									
2004	724	701	24	2.5	2.4	25	6.7	n.a.	n.a.
2005	716	703	25	2.3	2.4	27	6.0	n.a.	n.a.
2006	707	754	29	2.2	2.5	28	5.4	n.a.	n.a.
2007	706	787	28	2.1	2.4	30	5.1	n.a.	n.a.
2008	707	889	32	2.0	2.6	33	5.1	n.a.	n.a.
2009	692	865	34	1.8	2.5	35	5.0	n.a.	n.a.
2010	709	936	36	1.8	2.5	36	5.5	n.a.	n.a.
2011	747	1066	37	1.9	2.8	36	5.7	n.a.	n.a.
2012	792	1117	34	2.0	2.8	36	5.1	n.a.	n.a.
2013	811	1074	33	1.9	2.8	35	4.9	n.a.	n.a.
2014	878	1054	30	2.0	2.6	34	4.9	n.a.	n.a.
2015	954	1012	28	2.1	2.5	31	4.2	n.a.	n.a.
2016	1002	1027	27	2.1	2.5	30	4.2	n.a.	n.a.
2017	1068	1006	24	2.2	2.5	27	4.3	n.a.	n.a.
Current [2]	1,036	n.a.	n.a.	2.0	n.a.	n.a.	4.1	n.a.	n.a.
Projected (FYE 6/30) [3]		State Guideline [6]			State Guideline [7]			State Guideline	
2018	1,031	833		2.0	2.3		4.0	6.0	
2019	1,120	855		2.1	2.3		4.4	6.0	
2020	1,125	878		2.1	2.3		4.8	6.0	
2021	1,126	902		2.0	2.3		4.9	6.0	
2022	1,127	927		2.0	2.3		4.9	6.0	
2023	1,126	952		1.9	2.3		4.9	6.0	
2024	1,124	977		1.9	2.3		4.9	6.0	
2025	1,117	1,004		1.9	2.3		5.0	6.0	
2026	1,109	1,031		1.8	2.3		5.0	6.0	
2027	1,098	1,059		1.7	2.3		5.0	6.0	
2028	1,087	1,087		1.7	2.3		4.9	6.0	
5-Year Average of Moody's Mean for Triple-A States		967			2.3			n.a.	
5-Year Average of Moody's Median for Triple-A States		811			2.1			n.a.	

(1) Actual data compiled by Moody's Investors Service, reflective of all 50 states. Moody’s uses states’ prior year figures to calculate the “Actual” year numbers in the table.
(2) Calculated by Public Resources Advisory Group, using outstanding G.O. debt of $647.981 million as of 9/30/17 divided by Vermont's 2017 population of 625.281 as projected by EPR.
(3) Projections assume issuance of $108.835 million of G.O. debt in FY 2019 and $60.450 million in FY 2020 through FY 2028.
(4) Rankings are in numerically descending order (i.e., from high to low debt).
(5) Revenues are adjusted reflecting "current law" revenue forecasts based on a consensus between the State's administration and legislature. Current debt service is net of the federal interest subsidies on the Build America Bond issues, and projected debt service is based on estimated interest rates ranging from 5% to 6.5% over the project period. Calculated by Public Resources Advisory Group.
(6) State Guideline equals the 5-year average of Moody's median for the Peer Group of $811 increasing annually at 2.7%.
(7) The 5-year average of Moody's median for the Peer Group is 2.1%. Since the annual number is quite volatile, ranging from 2.1% to 2.6% over the last five years, the State Guideline is 2.3% for FY 2018 - FY 2028.

State of Vermont

DPC Compliant Case: $108.835 Million first year, $60.450 Million Annually through 2028 (Fixed Inflator - 2.7%)

$60.450 Million Annually through 2028 ($120.900 Million two year authorization)

EXISTING AND PROJECTED NET TAX-SUPPORTED G.O. DEBT SERVICE ($000)

FY	Current D/S[1]	2018 Issue[2] $0.000M	2019 Issue 108.835M	2020 Issue 60.450M	2021 Issue 60.450M	2022 Issue 60.450M	2023 Issue 60.450M	2024 Issue 60.450M	2025 Issue 60.450M	2026 Issue 60.450M	2027 Issue 60.450M	2028 Issue 60.450M	Total Est. D/S
2018	70,252	0	0	0	0	0	0	0	0	0	0	0	70,252
2019	80,546	0	0	0	0	0	0	0	0	0	0	0	80,546
2020	76,851	0	11,426	0	0	0	0	0	0	0	0	0	88,277
2021	74,950	0	11,127	6,647	0	0	0	0	0	0	0	0	92,724
2022	70,287	0	10,828	6,466	6,949	0	0	0	0	0	0	0	94,530
2023	66,729	0	10,528	6,285	6,753	6,949	0	0	0	0	0	0	97,244
2024	62,552	0	10,229	6,103	6,557	6,753	6,949	0	0	0	0	0	99,143
2025	60,872	0	9,930	5,922	6,360	6,557	6,753	6,949	0	0	0	0	103,343
2026	57,269	0	9,631	5,741	6,164	6,360	6,557	6,753	6,949	0	0	0	105,424
2027	53,857	0	9,332	5,560	5,968	6,164	6,360	6,557	6,753	6,949	0	0	107,499
2028	50,197	0	9,032	5,379	5,771	5,968	6,164	6,360	6,557	6,753	6,949	0	109,131

EXISTING AND PROJECTED NET TAX-SUPPORTED G.O. BOND PRINCIPAL PAYMENTS ($000)

FY	Current Principal[1]	2018 Issue[2] $0.000M	2019 Issue 108.835M	2020 Issue 60.450M	2021 Issue 60.450M	2022 Issue 60.450M	2023 Issue 60.450M	2024 Issue 60.450M	2025 Issue 60.450M	2026 Issue 60.450M	2027 Issue 60.450M	2028 Issue 60.450M	Total Est. Principal
2018	47,543	0	0	0	0	0	0	0	0	0	0	0	47,543
2019	51,988	0	0	0	0	0	0	0	0	0	0	0	51,988
2020	50,306	0	5,440	0	0	0	0	0	0	0	0	0	55,746
2021	50,405	0	5,440	3,020	0	0	0	0	0	0	0	0	58,865
2022	47,673	0	5,440	3,020	3,020	0	0	0	0	0	0	0	59,153
2023	45,878	0	5,440	3,020	3,020	3,020	0	0	0	0	0	0	60,378
2024	43,390	0	5,440	3,020	3,020	3,020	3,020	0	0	0	0	0	60,910
2025	43,386	0	5,440	3,020	3,020	3,020	3,020	3,020	0	0	0	0	63,926
2026	41,430	0	5,440	3,020	3,020	3,020	3,020	3,020	3,020	0	0	0	64,990
2027	39,518	0	5,440	3,020	3,020	3,020	3,020	3,020	3,020	3,020	0	0	66,098
2028	37,239	0	5,440	3,020	3,020	3,020	3,020	3,020	3,020	3,020	3,020	0	66,839

EXISTING AND PROJECTED NET TAX-SUPPORTED G.O. BONDS OUTSTANDING ($000)

FY	Current Debt[1]	2018 Issue[2] $0.000M	2019 Issue 108.835M	2020 Issue 60.450M	2021 Issue 60.450M	2022 Issue 60.450M	2023 Issue 60.450M	2024 Issue 60.450M	2025 Issue 60.450M	2026 Issue 60.450M	2027 Issue 60.450M	2028 Issue 60.450M	Total Est. Debt
2017[3]	647,981	0	0	0	0	0	0	0	0	0	0	0	647,981
2018	645,456	0	0	0	0	0	0	0	0	0	0	0	645,456
2019	593,468	0	108,835	0	0	0	0	0	0	0	0	0	702,303
2020	543,162	0	103,395	60,450	0	0	0	0	0	0	0	0	707,007
2021	492,757	0	97,955	57,430	60,450	0	0	0	0	0	0	0	708,592
2022	445,084	0	92,515	54,410	57,430	60,450	0	0	0	0	0	0	709,889
2023	399,207	0	87,075	51,390	54,410	57,430	60,450	0	0	0	0	0	709,962
2024	355,816	0	81,635	48,370	51,390	54,410	57,430	60,450	0	0	0	0	709,501
2025	312,430	0	76,195	45,350	48,370	51,390	54,410	57,430	60,450	0	0	0	706,025
2026	271,000	0	70,755	42,330	45,350	48,370	51,390	54,410	57,430	60,450	0	0	701,485
2027	231,482	0	65,315	39,310	42,330	45,350	48,370	51,390	54,410	57,430	60,450	0	695,837
2028	194,243	0	59,875	36,290	39,310	42,330	45,350	48,370	51,390	54,410	57,430	60,450	689,448

[1]Numbers reflect the issuance of the 2017A and 2017B general obligation bonds ("2017 Bonds") in the aggregate amount of $106,095,00 issued on September 13, 2017.

[2]The State issued the 2017 Bonds in FY 2018, however, current debt service and outstanding debt figures include the principal and interest on the 2017 Bonds. The State does not intend to issue and future general obligation bonds in FY 2018.

[3]As of September 30, 2017.

APPENDIX B

MOODY'S
INVESTORS SERVICE

SECTOR IN-DEPTH
3 May 2017

Rate this Research

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State Government - US

Medians - Total State Debt Remains Essentially Flat in 2017

Total net tax-supported debt (NTSD) for US state governments remains virtually stagnant for a fourth year in a row. The small increase in 2017 reflects a shift towards pay-go capital spending and a reluctance to take on new obligations amid slow revenue growth. Minimal change in NTSD will likely continue over the next year due to continued modest revenue increases, higher interest rates, and uncertainty over federal fiscal policy and Medicaid funding.

» **Total NTSD rose 0.8% as states turned to more pay-go spending for infrastructure and other capital projects.** This reflects the fourth year in a row that NTSD increased less than 1%, with total debt outstanding rising to $517 billion from $513 billion.[1] In a sign that pay-go is increasing, total capital expenditures grew by an estimated 7.9% in fiscal 2016 as bond financing stayed flat, according to the National Association of State Budget Officers (NASBO).

» **Median debt service costs declined slightly to 4.1% of own-source governmental revenues (revenues less federal funding).** Lower debt service costs result from fewer new debt issuances and savings realized through refundings.

» **The median NTSD per capita and as a percent of personal income stayed relatively level.** The minimal change is rooted in population and income increases that are keeping pace with slow debt growth. States will continue to have more financial flexibility to tap into a growing economic base as debt liabilities remain fairly level.

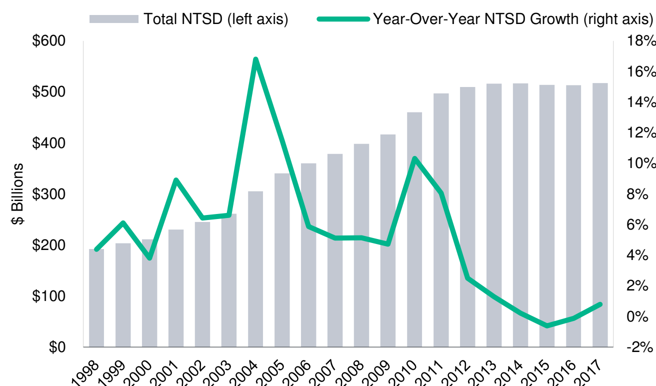
» **General obligation (GO) debt comprises the largest share of state debt outstanding at 52%.** Highway revenue debt and GARVEEs, at 9% of total state debt, will likely increase as states address transportation infrastructure needs. States also issue GO and appropriation debt for transportation purposes.

» **Reliance on GO debt continues to vary across the country.** Many states have constitutional provisions restricting GO issuance, while political considerations can make it easier to gain approval for other forms of debt.

Our 2017 state debt medians are based on an analysis of calendar year 2016 debt issuance and fiscal year 2016 debt service. As in prior reports, trend data incorporate a one-year lag (i.e., data labeled 2017 reflect debt as of calendar year end 2016).

Exhibit 1

Total State Net Tax-Supported Debt (NTSD) Remains Essentially Flat as States Turn to Pay-Go Capital Spending



Some historical debt figures have been updated and may not match prior published reports.
Source: Moody's Investors Service

NTSD increased by less than 1% with states using pay-go to finance more capital needs

» NTSD increased by 0.8%, the fourth year in a row with a change below 1%. About half the states saw an increase in NTSD with a decline for the rest. [2]

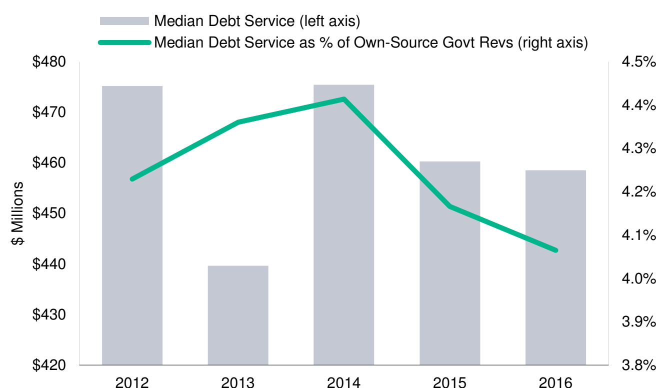
» Alabama (Aa1 stable) posted a 21% increase in NTSD due to the issuance of highway revenue bonds and bonds secured by BP settlement revenues.[3]

» In an indication that states are increasingly turning to pay-go funding, total capital expenditures grew by an estimated 7.9% in fiscal 2016 while bond financing remained flat, according to NASBO.

» Though NTSD will grow slowly over the next year, debt levels will likely rise over the next two to three years as states address deferred infrastructure needs.

Exhibit 2

Median Debt Service Costs Decline Slightly With Fewer New Issuances and Savings From Refundings



Some historical debt figures have been updated and may not match prior published reports.
Source: Moody's Investors Service

Fewer new debt issuances and savings from refundings lead to small decline in median debt service costs

» Debt service costs as a percent of own-source governmental revenues declined for 32 states, with the median dropping to 4.1% from 4.2%.

» New Jersey (A3 stable) had the largest percentage increase in debt service costs, rising to 10.1% of own-source governmental revenues from 8.5%.

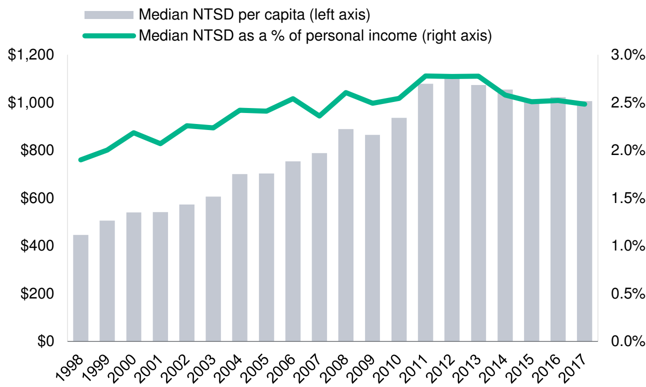
» Connecticut (Aa3 negative) continues to have the highest debt service cost of the 50 states, though it declined to 13.3% from 14.3%.

» Debt service costs will likely remain level or continue to decline given the low interest rate environment and fewer debt issuances over the last two years.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

Exhibit 3

Population and Personal Income Growth Stay on Pace With Slow Debt Growth



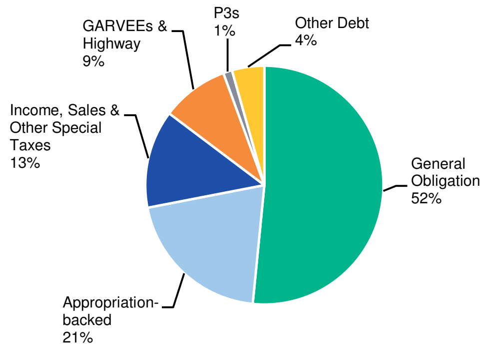
Some historical debt figures have been updated and may not match prior published reports.
Source: Moody's Investors Service

Median NTSD per capita and as percent of personal income remain relatively level

- The median NTSD per capita declined slightly to $1,006 from $1,023, reflecting population growth exceeding the slow growth in debt in some states.
- The median for NTSD as a percent of personal income remained at 2.5% for the third year in a row, reflecting income growth that is keeping pace with slow debt growth.
- NTSD per capita increased for 22 states. NTSD as a percent of personal income increased for 13 states while 10 states saw virtually no change.
- Moderate population and personal income growth will continue to keep pace with slow debt growth in the near term. States will have more financial flexibility to tap into growing economic bases as debt liabilities remain fairly level.

Exhibit 4

General Obligation Debt Accounts for More Than Half of Total State Debt

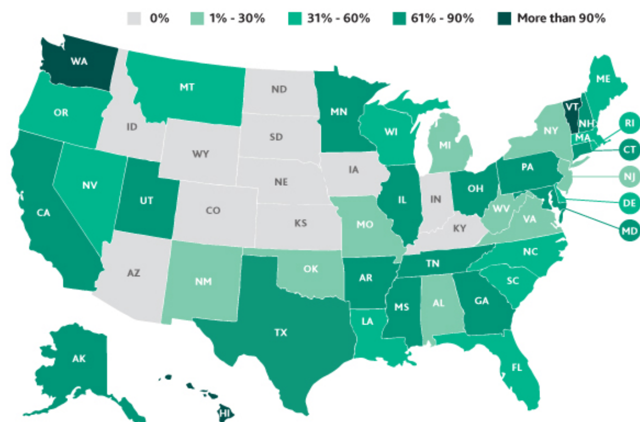


GARVEE stands for grant anticipation revenue vehicles. P3s are public-private partnership availability payments.
Source: Moody's Investors Service

General obligation debt continues to comprise largest share of state debt outstanding

- GO debt comprises 52% of NTSD. Appropriation-backed debt again accounts for the second largest share at 20%, while availability payment P3s comprise 1%.
- Highway revenue debt and GARVEEs, 9% of total state debt, will likely increase as a share of total debt outstanding as states address transportation infrastructure needs. States also issue GO and appropriation debt for transportation purposes.
- Most state debt remains fixed rate and publicly offered. Variable rate demand debt totaled $21.1 billion, a modest 5.4% increase from the previous year and representing 4% of total NTSD. Direct bank loans and private financings account for 1% of total NTSD.

Exhibit 5
Use of General Obligation (GO) Debt Varies Widely by State
GO debt as % of NTSD



Source: Moody's Investors Service

Reliance on GO debt continues to vary

» Constitutional provisions in many states prohibit or severely limit the issuance of GO bonds. In some states, taxpayer concerns and other political considerations can make it easier to gain approval to issue other forms of debt, such as appropriation-backed or special tax debt.

» As a result, the reliance on GO debt varies widely from state to state, ranging from 94% of NTSD in Vermont (Aaa stable) to 0% in 11 other states.

» This variation in outstanding pledges will continue in the next year.

Appendix: Key Metrics for US State Debt Medians

Exhibit 6

Net Tax-Supported Debt - Per Capita and Percent of Personal Income

Net Tax-Supported Debt Per Capita			Rating	Net Tax-Supported Debt as a % of 2015 Personal Income		
1	Connecticut	$6,505	Aa3	1	Hawaii	10.5%
2	Massachusetts	$5,983	Aa1	2	Massachusetts	9.8%
3	Hawaii	$5,018	Aa1	3	Connecticut	9.7%
4	New Jersey	$4,388	A3	4	New Jersey	7.3%
5	New York	$3,070	Aa1	5	Washington	5.4%
6	Washington	$2,717	Aa1	6	Delaware	5.4%
7	Delaware	$2,544	Aaa	7	New York	5.3%
8	Illinois	$2,511	Baa2	8	Kentucky	5.3%
9	California	$2,217	Aa3	9	Mississippi	5.2%
10	Rhode Island	$2,131	Aa2	10	Illinois	5.1%
11	Maryland	$2,122	Aaa	11	Oregon	4.4%
12	Kentucky	$2,057	Aa2*	12	Rhode Island	4.3%
13	Mississippi	$1,847	Aa2	13	California	4.2%
14	Oregon	$1,842	Aa1	14	Wisconsin	3.8%
15	Wisconsin	$1,739	Aa2	15	Maryland	3.8%
16	Alaska	$1,691	Aa2	16	Louisiana	3.7%
17	Louisiana	$1,615	Aa3	17	Kansas	3.4%
18	Kansas	$1,575	Aa2*	18	New Mexico	3.3%
19	Virginia	$1,486	Aaa	19	Alaska	3.0%
20	Minnesota	$1,480	Aa1	20	Minnesota	2.9%
21	Pennsylvania	$1,337	Aa3	21	Virginia	2.9%
22	New Mexico	$1,260	Aa1	22	Pennsylvania	2.7%
23	Ohio	$1,087	Aa1	23	West Virginia	2.6%
24	Vermont	$1,068	Aaa	24	Alabama	2.6%
25	Alabama	$1,019	Aa1	25	Ohio	2.5%
26	Georgia	$992	Aaa	26	Georgia	2.5%
27	West Virginia	$989	Aa2	27	Vermont	2.2%
28	Florida	$961	Aa1	28	Florida	2.2%
29	New Hampshire	$897	Aa1	29	Utah	2.1%
30	Maine	$889	Aa2	30	Maine	2.1%
31	Utah	$824	Aaa	31	Arizona	1.8%
32	Arizona	$696	Aa2*	32	New Hampshire	1.6%
33	Michigan	$689	Aa1	33	North Carolina	1.6%
34	North Carolina	$659	Aaa	34	Michigan	1.6%
35	South Dakota	$641	Aaa*	35	Arkansas	1.5%
36	Arkansas	$588	Aa1	36	South Carolina	1.5%
37	Nevada	$587	Aa2	37	South Dakota	1.4%
38	Missouri	$579	Aaa	38	Nevada	1.4%
39	South Carolina	$564	Aaa	39	Missouri	1.4%
40	Idaho	$424	Aa1*	40	Idaho	1.1%
41	Texas	$383	Aaa	41	Texas	0.8%
42	Oklahoma	$365	Aa2	42	Oklahoma	0.8%
43	Colorado	$353	Aa1*	43	Tennessee	0.8%
44	Tennessee	$322	Aaa	44	Indiana	0.8%
45	Indiana	$310	Aaa*	45	Colorado	0.7%
46	Iowa	$228	Aaa*	46	Iowa	0.5%
47	Montana	$207	Aa1	47	Montana	0.5%
48	North Dakota	$151	Aa1*	48	North Dakota	0.3%
49	Wyoming	$41	NGO**	49	Wyoming	0.1%
50	Nebraska	$18	NGO**	50	Nebraska	0.0%
	Mean	$1,473			Mean	3.0%
	Median	$1,006			Median	2.5%

*Issuer Rating (No GO debt outstanding)
**No General Obligation Debt
Sources: Moody's Investors Service; US Census Bureau; US Bureau of Economic Analysis

Exhibit 7

State Net Tax-Supported Debt and Gross Tax-Supported Debt

	Net Tax-Supported Debt ($ Thousands)		Rating
1	California	$86,998,000	Aa3
2	New York	$60,619,669	Aa1
3	Massachusetts	$40,756,031	Aa1
4	New Jersey	$39,246,548	A3
5	Illinois	$32,147,550	Baa2
6	Connecticut	$23,265,534	Aa3
7	Florida	$19,814,300	Aa1
8	Washington	$19,804,130	Aa1
9	Pennsylvania	$17,087,111	Aa3
10	Maryland	$12,764,867	Aaa
11	Ohio	$12,621,591	Aa1
12	Virginia	$12,500,577	Aaa
13	Texas	$10,681,942	Aaa
14	Georgia	$10,228,974	Aaa
15	Wisconsin	$10,051,056	Aa2
16	Kentucky	$9,126,299	Aa2*
17	Minnesota	$8,171,607	Aa1
18	Louisiana	$7,559,921	Aa3
19	Oregon	$7,540,513	Aa1
20	Hawaii	$7,168,256	Aa1
21	Michigan	$6,839,600	Aa1
22	North Carolina	$6,681,880	Aaa
23	Mississippi	$5,519,778	Aa2
24	Alabama	$4,955,766	Aa1
25	Arizona	$4,823,805	Aa2*
26	Kansas	$4,579,718	Aa2*
27	Missouri	$3,528,926	Aaa
28	South Carolina	$2,796,209	Aaa
29	New Mexico	$2,623,075	Aa1
30	Utah	$2,513,135	Aaa
31	Delaware	$2,421,656	Aaa
32	Rhode Island	$2,250,938	Aa2
33	Tennessee	$2,144,741	Aaa
34	Indiana	$2,056,661	Aaa*
35	Colorado	$1,954,579	Aa1*
36	West Virginia	$1,810,703	Aa2
37	Arkansas	$1,757,229	Aa1
38	Nevada	$1,726,789	Aa2
39	Oklahoma	$1,432,084	Aa2
40	Alaska	$1,254,600	Aa2
41	New Hampshire	$1,197,280	Aa1
42	Maine	$1,183,607	Aa2
43	Iowa	$714,873	Aaa*
44	Idaho	$712,929	Aa1*
45	Vermont	$666,935	Aaa
46	South Dakota	$555,012	Aaa*
47	Montana	$216,082	Aa1
48	North Dakota	$114,247	Aa1*
49	Nebraska	$34,780	NGO**
50	Wyoming	$24,259	NGO**
	Total	$ 517,246,352	
	Mean	$10,344,927	
	Median	$4,701,762	

	Gross Tax-Supported Debt ($ Thousands)		Gross to Net Ratio
1	California	$93,333,000	1.07
2	New York	$60,999,984	1.01
3	New Jersey	$44,814,043	1.14
4	Massachusetts	$41,710,051	1.02
5	Illinois	$33,512,669	1.04
6	Washington	$31,047,330	1.57
7	Connecticut	$27,571,354	1.19
8	Texas	$27,569,477	2.58
9	Minnesota	$24,820,882	3.04
10	Michigan	$23,234,600	3.40
11	Pennsylvania	$23,052,243	1.35
12	Florida	$20,179,400	1.02
13	Ohio	$18,183,386	1.44
14	Virginia	$16,906,342	1.35
15	Wisconsin	$13,829,289	1.38
16	Oregon	$13,802,379	1.83
17	Kentucky	$12,809,423	1.40
18	Maryland	$12,764,867	1.00
19	Georgia	$10,228,974	1.00
20	Colorado	$9,254,579	4.73
21	Louisiana	$8,824,573	1.17
22	Utah	$8,129,466	3.23
23	Hawaii	$7,195,868	1.00
24	North Carolina	$6,681,880	1.00
25	Mississippi	$6,190,133	1.12
26	Alabama	$5,484,964	1.11
27	Arizona	$4,823,805	1.00
28	Tennessee	$4,590,206	2.14
29	Kansas	$4,579,718	1.00
30	Maine	$4,452,541	3.76
31	Indiana	$4,406,224	2.14
32	Missouri	$3,528,926	1.00
33	West Virginia	$3,417,165	1.89
34	South Carolina	$3,061,905	1.10
35	Rhode Island	$3,039,958	1.35
36	Delaware	$2,939,056	1.21
37	Alaska	$2,870,300	2.29
38	New Mexico	$2,623,075	1.00
39	Nevada	$2,335,729	1.35
40	Oklahoma	$2,276,771	1.59
41	Idaho	$2,160,815	3.03
42	Iowa	$2,094,153	2.93
43	New Hampshire	$2,056,756	1.72
44	Arkansas	$1,757,229	1.00
45	Vermont	$1,435,585	2.15
46	North Dakota	$874,253	7.65
47	South Dakota	$673,037	1.21
48	Montana	$369,380	1.71
49	Nebraska	$34,780	1.00
50	Wyoming	$24,259	1.00
	Total	$ 662,556,783	
	Mean	13,251,136	1.77
	Median	5,837,549	1.35

*Issuer Rating (No GO debt outstanding)
**No General Obligation Debt
Source: Moody's Investors Service

Exhibit 8

Net Tax-Supported Debt as Percent of Gross State Domestic Product

	2015 NTSD as % of 2013 State GDP			2016 NTSD as % of 2014 State GDP			2017 NTSD as % of 2015 State GDP	
1	Hawaii	9.25%	1	Connecticut	9.02%	1	Connecticut	9.20%
2	Connecticut	8.42%	2	Hawaii	8.52%	2	Hawaii	8.92%
3	Massachusetts	8.24%	3	Massachusetts	8.33%	3	Massachusetts	8.40%
4	New Jersey	6.96%	4	New Jersey	6.82%	4	New Jersey	6.91%
5	Mississippi	5.09%	5	Mississippi	5.16%	5	Mississippi	5.22%
6	Washington	5.05%	6	Washington	4.67%	6	Kentucky	4.72%
7	Illinois	4.78%	7	Kentucky	4.64%	7	Washington	4.45%
8	Kentucky	4.67%	8	New York	4.40%	8	New York	4.23%
9	New York	4.57%	9	Illinois	4.35%	9	Illinois	4.14%
10	California	4.20%	10	California	3.87%	10	Rhode Island	4.02%
11	Rhode Island	4.00%	11	Oregon	3.77%	11	Delaware	3.52%
12	Oregon	3.85%	12	Rhode Island	3.64%	12	California	3.51%
13	Delaware	3.74%	13	Wisconsin	3.52%	13	Maryland	3.49%
14	Wisconsin	3.69%	14	Delaware	3.45%	14	Oregon	3.46%
15	Maryland	3.33%	15	Maryland	3.31%	15	Wisconsin	3.33%
16	Louisiana	3.09%	16	Louisiana	3.10%	16	Louisiana	3.16%
17	New Mexico	2.87%	17	Kansas	3.03%	17	Kansas	3.06%
18	Minnesota	2.76%	18	New Mexico	2.71%	18	New Mexico	2.81%
19	Virginia	2.52%	19	Minnesota	2.65%	19	Virginia	2.60%
20	Florida	2.48%	20	Florida	2.56%	20	Minnesota	2.49%
21	West Virginia	2.43%	21	West Virginia	2.54%	21	Alabama	2.48%
22	Utah	2.34%	22	Virginia	2.49%	22	West Virginia	2.44%
23	Maine	2.33%	23	Pennsylvania	2.25%	23	Pennsylvania	2.41%
24	Georgia	2.32%	24	Maine	2.23%	24	Alaska	2.38%
25	Ohio	2.27%	25	Georgia	2.21%	25	Florida	2.23%
26	Kansas	2.22%	26	Vermont	2.14%	26	Vermont	2.22%
27	Pennsylvania	2.22%	27	Ohio	2.14%	27	Ohio	2.07%
28	Arizona	2.10%	28	Alabama	2.11%	28	Maine	2.07%
29	Alabama	2.10%	29	Utah	1.97%	29	Georgia	2.05%
30	Vermont	2.09%	30	Arizona	1.89%	30	Utah	1.70%
31	Alaska	1.84%	31	Alaska	1.80%	31	Arizona	1.66%
32	South Carolina	1.79%	32	Michigan	1.59%	32	New Hampshire	1.62%
33	Michigan	1.74%	33	Arkansas	1.59%	33	Arkansas	1.48%
34	Arkansas	1.74%	34	South Carolina	1.55%	34	Michigan	1.46%
35	New Hampshire	1.64%	35	North Carolina	1.54%	35	South Carolina	1.39%
36	North Carolina	1.62%	36	New Hampshire	1.51%	36	North Carolina	1.35%
37	Nevada	1.45%	37	Nevada	1.28%	37	Nevada	1.24%
38	Missouri	1.36%	38	Missouri	1.27%	38	Missouri	1.20%
39	Idaho	1.32%	39	South Dakota	1.23%	39	South Dakota	1.17%
40	South Dakota	1.04%	40	Idaho	1.19%	40	Idaho	1.09%
41	Colorado	0.89%	41	Oklahoma	0.80%	41	Oklahoma	0.77%
42	Oklahoma	0.83%	42	Colorado	0.76%	42	Tennessee	0.68%
43	Tennessee	0.74%	43	Tennessee	0.66%	43	Texas	0.66%
44	Texas	0.71%	44	Texas	0.65%	44	Colorado	0.62%
45	Indiana	0.69%	45	Indiana	0.63%	45	Indiana	0.61%
46	Montana	0.60%	46	Montana	0.57%	46	Montana	0.48%
47	Iowa	0.48%	47	Iowa	0.44%	47	Iowa	0.41%
48	North Dakota	0.27%	48	North Dakota	0.21%	48	North Dakota	0.20%
49	Wyoming	0.07%	49	Wyoming	0.06%	49	Wyoming	0.06%
50	Nebraska	0.02%	50	Nebraska	0.01%	50	Nebraska	0.03%
	Mean	2.74%		Mean	2.66%		Mean	2.64%
	Median	2.25%		Median	2.18%		Median	2.23%

State GDP numbers have a one-year lag.
Some historical debt figures have been updated and may not match prior published reports.
Sources: Moody's Analytics; US Bureau of Economic Analysis

Exhibit 9

Net Tax-Supported Debt as a Percentage of Personal Income

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Alabama	2.2%	2.0%	2.8%	2.5%	2.4%	2.6%	2.5%	2.5%	2.4%	2.3%	2.3%	2.6%
Alaska	2.6%	2.7%	2.4%	2.2%	3.2%	3.0%	3.3%	2.8%	3.2%	3.0%	2.7%	3.0%
Arizona	2.2%	2.0%	2.0%	2.5%	2.3%	2.8%	2.8%	2.5%	2.5%	2.3%	2.1%	1.8%
Arkansas	1.6%	1.4%	1.7%	1.3%	1.0%	1.1%	1.0%	1.2%	1.7%	1.9%	1.7%	1.5%
California	4.6%	4.4%	4.3%	4.4%	5.6%	6.0%	6.0%	5.8%	5.3%	5.1%	4.7%	4.2%
Colorado	0.9%	0.9%	0.8%	0.8%	1.0%	1.3%	1.3%	1.2%	1.1%	1.0%	0.9%	0.7%
Connecticut	8.0%	7.8%	7.3%	8.2%	8.7%	9.5%	9.1%	9.1%	9.2%	9.3%	9.8%	9.7%
Delaware	5.3%	5.5%	5.2%	5.4%	6.2%	6.8%	6.8%	6.2%	5.7%	5.5%	5.2%	5.4%
Florida	3.2%	3.1%	2.8%	2.9%	2.9%	3.0%	3.0%	2.8%	2.5%	2.4%	2.5%	2.2%
Georgia	2.7%	3.0%	3.0%	3.0%	3.3%	3.3%	3.1%	3.0%	2.9%	2.8%	2.7%	2.5%
Hawaii	12.1%	10.6%	9.9%	9.4%	9.9%	10.1%	9.6%	10.0%	10.6%	10.8%	9.9%	10.5%
Idaho	0.6%	0.6%	1.2%	1.6%	1.7%	1.6%	1.7%	1.6%	1.5%	1.4%	1.2%	1.1%
Illinois	5.9%	5.5%	5.2%	4.6%	4.4%	5.7%	6.0%	5.7%	5.6%	5.7%	5.2%	5.1%
Indiana	1.6%	2.1%	1.5%	1.5%	1.5%	1.4%	1.3%	1.2%	1.4%	0.8%	0.8%	0.8%
Iowa	0.4%	0.3%	0.3%	0.2%	0.2%	0.7%	0.8%	0.7%	0.6%	0.6%	0.5%	0.5%
Kansas	3.8%	3.7%	3.5%	3.2%	3.0%	3.2%	3.1%	2.8%	2.6%	2.5%	3.4%	3.4%
Kentucky	4.5%	4.3%	4.7%	4.8%	5.4%	6.1%	6.1%	5.9%	5.7%	5.3%	5.2%	5.3%
Louisiana	3.1%	4.9%	4.3%	3.3%	3.6%	3.5%	3.7%	3.7%	3.7%	3.9%	3.8%	3.7%
Maine	2.0%	1.9%	1.9%	2.2%	2.2%	2.4%	2.3%	2.1%	2.4%	2.3%	2.2%	2.1%
Maryland	3.0%	2.8%	3.0%	3.3%	3.4%	3.3%	3.6%	3.6%	3.4%	3.5%	3.5%	3.8%
Massachusetts	9.8%	9.4%	9.8%	8.9%	9.2%	9.2%	9.4%	9.3%	9.0%	9.5%	9.5%	9.8%
Michigan	2.1%	2.2%	2.2%	2.2%	2.1%	2.2%	2.2%	2.2%	2.1%	1.9%	1.8%	1.6%
Minnesota	2.1%	2.2%	2.3%	2.1%	2.4%	2.8%	2.7%	3.0%	3.0%	3.2%	3.2%	2.9%
Mississippi	4.8%	4.9%	4.8%	5.2%	5.0%	5.1%	5.6%	5.4%	5.2%	5.1%	5.2%	5.2%
Missouri	1.6%	1.9%	2.1%	2.0%	2.2%	2.2%	2.0%	1.8%	1.7%	1.6%	1.4%	1.4%
Montana	1.4%	1.5%	1.2%	1.2%	1.1%	1.1%	1.0%	0.9%	0.7%	0.7%	0.6%	0.5%
Nebraska	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nevada	2.2%	1.7%	2.0%	2.2%	2.3%	2.4%	2.2%	1.9%	1.7%	1.7%	1.5%	1.4%
New Hampshire	1.4%	1.3%	1.3%	1.3%	1.6%	1.9%	1.8%	1.9%	1.8%	1.7%	1.5%	1.6%
New Jersey	7.9%	7.6%	7.5%	7.3%	7.2%	7.8%	7.8%	7.6%	7.3%	7.4%	7.3%	7.3%
New Mexico	4.7%	5.3%	4.8%	4.6%	4.4%	5.6%	4.2%	3.8%	3.4%	3.5%	3.3%	3.3%
New York	6.7%	6.7%	6.3%	6.3%	6.5%	6.7%	6.6%	6.3%	6.0%	5.7%	5.5%	5.3%
North Carolina	2.8%	2.4%	2.8%	2.5%	2.3%	2.3%	2.3%	2.4%	2.1%	1.9%	1.8%	1.6%
North Dakota	1.2%	1.0%	1.1%	1.0%	0.8%	0.8%	0.6%	0.7%	0.5%	0.4%	0.3%	0.3%
Ohio	2.9%	3.0%	2.9%	2.8%	2.6%	2.8%	2.8%	2.8%	2.7%	2.7%	2.6%	2.5%
Oklahoma	1.4%	1.5%	1.5%	1.5%	1.6%	1.8%	1.7%	1.6%	1.3%	1.0%	0.9%	0.8%
Oregon	4.5%	4.6%	5.0%	4.6%	5.2%	5.6%	5.5%	5.2%	4.9%	4.8%	4.6%	4.4%
Pennsylvania	2.3%	2.4%	2.4%	2.5%	2.4%	2.7%	2.8%	2.8%	2.6%	2.5%	2.5%	2.7%
Rhode Island	4.1%	4.6%	4.7%	4.5%	5.2%	5.3%	4.7%	4.7%	4.5%	4.2%	3.8%	4.3%
South Carolina	2.5%	2.3%	3.3%	2.9%	2.9%	2.7%	2.5%	2.3%	2.2%	1.9%	1.7%	1.5%
South Dakota	0.7%	0.8%	0.9%	0.8%	0.4%	0.9%	0.9%	0.9%	0.9%	1.2%	1.4%	1.4%
Tennessee	0.8%	0.7%	0.7%	0.7%	0.9%	1.0%	1.0%	0.9%	0.8%	0.8%	0.7%	0.8%
Texas	1.0%	1.3%	1.4%	1.4%	1.4%	1.6%	1.5%	1.5%	1.5%	1.0%	0.9%	0.8%
Utah	2.7%	2.3%	1.9%	1.5%	3.2%	4.1%	4.4%	3.8%	3.4%	3.0%	2.5%	2.1%
Vermont	2.2%	2.1%	2.0%	1.8%	1.8%	1.9%	2.0%	1.9%	2.0%	2.1%	2.1%	2.2%
Virginia	1.7%	1.8%	1.9%	1.9%	2.1%	2.4%	2.6%	2.9%	2.7%	2.8%	2.8%	2.9%
Washington	4.9%	5.1%	5.1%	5.1%	5.3%	6.2%	6.0%	6.4%	6.4%	6.2%	5.7%	5.4%
West Virginia	4.4%	3.9%	3.9%	3.6%	3.5%	3.8%	3.6%	3.3%	3.0%	2.7%	2.8%	2.6%
Wisconsin	4.3%	4.2%	4.1%	4.0%	4.6%	4.8%	4.8%	4.7%	4.4%	4.2%	4.0%	3.8%
Wyoming	0.3%	0.3%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Median	2.5%	2.4%	2.6%	2.5%	2.5%	2.8%	2.8%	2.8%	2.6%	2.5%	2.5%	2.5%

Some historical debt figures have been updated and may not match prior published reports.

Sources: Moody's Investors Service; US Bureau of Economic Analysis

Exhibit 10

Debt Service Ratio

		FY 2014			FY 2015			FY 2016
1	Connecticut	11.8%	1	Connecticut	14.3%	1	Connecticut	13.3%
2	Hawaii	11.7%	2	Hawaii	10.9%	2	Massachusetts	10.4%
3	Massachusetts	10.3%	3	Massachusetts	10.0%	3	Hawaii	10.4%
4	New York	8.7%	4	Illinois	9.2%	4	New Jersey	10.1%
5	New Jersey	8.1%	5	New Jersey	8.5%	5	Illinois	8.8%
6	Illinois	8.1%	6	New York	7.6%	6	New York	7.4%
7	Kentucky	7.7%	7	Kentucky	7.6%	7	Kentucky	7.4%
8	Delaware	7.6%	8	Delaware	7.3%	8	Washington	7.0%
9	Wisconsin	7.2%	9	Washington	7.0%	9	Maryland	6.5%
10	Washington	7.0%	10	Georgia	6.5%	10	Mississippi	6.3%
11	Rhode Island	6.9%	11	Rhode Island	6.4%	11	Georgia	6.2%
12	Georgia	6.7%	12	Maryland	6.2%	12	Delaware	6.1%
13	West Virginia	6.6%	13	Mississippi	6.0%	13	Utah	5.9%
14	Utah	6.3%	14	Wisconsin	6.0%	14	Wisconsin	5.8%
15	Oregon	6.2%	15	Utah	5.9%	15	Ohio	5.6%
16	Nevada	6.2%	16	West Virginia	5.8%	16	West Virginia*	5.5%
17	Maryland	6.2%	17	Oregon	5.7%	17	Oregon	4.9%
18	Mississippi	5.9%	18	Nevada	5.6%	18	California	4.9%
19	California	5.7%	19	Ohio	5.5%	19	Maine	4.8%
20	Ohio	5.6%	20	California	5.3%	20	Virginia	4.8%
21	Maine	4.9%	21	Maine	5.1%	21	Nevada	4.7%
22	New Hampshire	4.8%	22	Virginia	4.9%	22	Arizona*	4.4%
23	Virginia	4.6%	23	New Hampshire	4.7%	23	Rhode Island	4.4%
24	Louisiana	4.6%	24	Arizona	4.4%	24	New Hampshire	4.3%
25	Arizona	4.6%	25	New Mexico	4.3%	25	Pennsylvania	4.2%
26	Florida	4.3%	26	Arkansas	4.1%	26	New Mexico*	4.0%
27	Pennsylvania	4.2%	27	Florida	4.0%	27	Florida	3.9%
28	New Mexico	4.2%	28	Alabama	3.8%	28	Minnesota	3.7%
29	Alabama	4.0%	29	Pennsylvania	3.7%	29	Louisiana	3.6%
30	North Carolina	3.7%	30	Minnesota	3.7%	30	Alabama**	3.5%
31	South Carolina	3.7%	31	South Carolina	3.7%	31	Missouri	3.4%
32	Minnesota	3.6%	32	Missouri	3.5%	32	North Carolina	3.3%
33	Missouri	3.6%	33	North Carolina	3.4%	33	South Carolina	3.2%
34	Michigan	3.0%	34	Kansas	3.4%	34	Kansas	2.8%
35	Arkansas	2.6%	35	Louisiana	3.1%	35	Oklahoma	2.7%
36	Colorado	2.5%	36	Michigan	2.7%	36	Texas	2.7%
37	Oklahoma	2.4%	37	Oklahoma	2.6%	37	Michigan	2.5%
38	Texas	2.3%	38	Colorado	2.5%	38	Colorado	2.5%
39	Vermont	2.3%	39	Alaska	2.4%	39	Arkansas	2.3%
40	South Dakota	2.1%	40	Texas	2.4%	40	Vermont	2.0%
41	Idaho	1.7%	41	South Dakota	2.2%	41	Alaska*	1.7%
42	Kansas	1.7%	42	Vermont	2.1%	42	Montana	1.4%
43	Tennessee	1.5%	43	Idaho	1.6%	43	South Dakota	1.4%
44	Montana	1.4%	44	Tennessee	1.3%	44	Tennessee	1.3%
45	Indiana	1.3%	45	Montana	1.3%	45	Indiana	1.2%
46	Alaska	0.9%	46	Indiana	1.2%	46	Idaho	1.0%
47	Iowa	0.8%	47	Iowa	0.7%	47	Iowa	0.7%
48	North Dakota	0.3%	48	North Dakota	0.5%	48	North Dakota	0.5%
49	Nebraska	0.1%	49	Wyoming	0.1%	49	Wyoming	0.1%
50	Wyoming	0.1%	50	Nebraska	0.1%	50	Nebraska	0.1%
	Mean	4.6%		Mean	4.6%		Mean	4.4%
	Median	4.4%		Median	4.2%		Median	4.1%

*Figures based on fiscal 2015 revenues; fiscal 2016 audited financial statements not available at time of publication.

**Figure based on unaudited fiscal 2016 revenues.

Some historical debt figures have been updated and may not match prior published reports.

Source: Moody's Investors Service

Exhibit 11

Demand Debt and Direct Loans/Private Placements

State	NTSD ($ Thousands)	Demand Debt ($ Thousands)	Direct Loans / Private Placements ($ Thousands)	# Direct Loans / Private Placements
Alabama	$4,955,766	$0	$263,512	6
Alaska	$1,254,600	$0	$0	0
Arizona	$4,823,805	$0	$0	0
Arkansas	$1,757,229	$0	$500	1
California	$86,998,000	$4,808,000	$13,745	1
Colorado	$1,954,579	$0	$0	0
Connecticut	$23,265,534	$1,657,315	$0	0
Delaware	$2,421,656	$0	$2,565	3
Florida	$19,814,300	$65,200	$0	0
Georgia	$10,228,974	$0	$0	0
Hawaii	$7,168,256	$0	$0	0
Idaho	$712,929	$36,000	$0	0
Illinois	$32,147,550	$600,000	$0	0
Indiana	$2,056,661	$464,755	$289,075	4
Iowa	$714,873	$0	$12,640	1
Kansas	$4,579,718	$510,490	$0	0
Kentucky	$9,126,299	$243,080	$0	0
Louisiana	$7,559,921	$424,375	$205,800	4
Maine	$1,183,607	$0	$0	0
Maryland	$12,764,867	$59,450	$48,000	10
Massachusetts	$40,756,031	$2,642,290	$913,935	7
Michigan	$6,839,600	$136,275	$0	0
Minnesota	$8,171,607	$0	$0	0
Mississippi	$5,519,778	$166,010	$0	0
Missouri	$3,528,926	$0	$0	0
Montana	$216,082	$0	$0	0
Nebraska	$34,780	$0	$0	0
Nevada	$1,726,789	$0	$7,405	1
New Hampshire	$1,197,280	$0	$0	0
New Jersey	$39,246,548	$678,100	$1,743,270	8
New Mexico	$2,623,075	$420,000	$284,800	3
New York	$60,619,669	$1,799,470	$0	0
North Carolina	$6,681,880	$0	$0	0
North Dakota	$114,247	$0	$0	0
Ohio	$12,621,591	$465,730	$0	0
Oklahoma	$1,432,084	$0	$0	0
Oregon	$7,540,513	$404,405	$265,515	1
Pennsylvania	$17,087,111	$594,615	$81,800	1
Rhode Island	$2,250,938	$38,400	$38,400	2
South Carolina	$2,796,209	$0	$0	0
South Dakota	$555,012	$245,536	$0	0
Tennessee	$2,144,741	$491,536	$0	0
Texas	$10,681,942	$2,827,315	$1,565,000	27
Utah	$2,513,135	$0	$0	0
Vermont	$666,935	$0	$0	0
Virginia	$12,500,577	$127,385	$3,340	1
Washington	$19,804,130	$0	$0	0
West Virginia	$1,810,703	$0	$0	0
Wisconsin	$10,051,056	$1,201,300	$279,800	5
Wyoming	$24,259	$0	$0	0
Total	$517,246,352	$21,107,032	$6,019,102	86

Source: Moody's Investors Service

Exhibit 12
Key Metrics for US Territories

	American Samoa	Northern Mariana Islands	Guam	U.S. Virgin Islands*	Puerto Rico
Rating	Ba3	No Rating	No Rating	Caa1	Caa3
2017 Debt Outstanding					
Net Tax-Supported Debt ($ Thousands)	$88,423	$80,375	$1,235,263	$1,988,098	$56,839,000
Gross Tax-Supported Debt ($ Thousands)	$88,423	$80,375	$1,235,263	$2,004,908	$62,340,000
NTSD Key Metrics					
NTSD as % of GDP	13.8%	8.7%	21.5%	52.8%	55.1%
NTSD per Capita ($)	$1,540	$1,537	$7,639	$19,172	$16,662
Debt Service Key Metrics					
Debt Service ($ Thousands)	$7,286	$8,495	$88,876	$174,365	$3,191,710
Debt Service as % of Fiscal 2015 Own-Source Govt Revenues	7.5%	4.2%	10.8%	17.5%	28.1%

*Rating is seniormost special tax rating
Source: Moody's Investors Service

Basis for State Debt Medians

Our 2017 state debt medians are based on our analysis of calendar year 2016 debt issuances and fiscal year 2016 debt service. As in prior-year reports, the presentation of debt trend data incorporates a one-year lag (i.e., the data labeled 2017 reflect debt as of calendar year end 2016).

In considering debt burden, our focus is largely on net tax-supported debt (NTSD), which we characterize as debt secured by statewide taxes and other general resources, net of obligations that are self-supporting from pledged sources other than state taxes or operating resources – such as utility or local government revenues. We also examine gross debt, which captures debt supported by revenues other than state taxes and general resources. This includes self-supporting general obligation (GO) debt, special assessment bonds and contingent debt liabilities that may not have direct tax support but represent commitments to make debt service payments under certain conditions (i.e., state guarantees and bonds backed by state moral obligation pledges that have never been tapped).

The debt and debt service ratios of some states are relatively high because they issue debt for purposes that in other states would be financed at the local level, such as for schools or mass transit. Some states' debt service ratios rank higher than their NTSD ratios due to conservative debt management practices, such as rapid debt amortization. Conversely, some states' debt service ratios rank relatively lower due to the use of capital appreciation bonds or long maturity schedules.

Exhibit 13

Comparison of NTSD and Gross Tax-Supported Debt (GTSD)

Generally included in NTSD	Generally Excluded from NTSD/ Included in GSTD
General obligation debt paid from statewide taxes and fees	Self-supporting general obligation debt with an established history of being paid from sources other than taxes or general revenues
Appropriation backed bonds	Moral obligation debt with an established history of being paid from sources other than taxes or general revenues
Lease revenue bonds	Tobacco securitization bonds, with no state backup
Special tax bonds secured by statewide taxes and fees	Unemployment insurance obligation bonds
Highway bonds, secured by gas taxes and DMV fees	Debt guaranteed, but not paid, by the state
GARVEE bonds	Special assessment bonds
Lottery bonds	
Moral obligation debt paid from statewide taxes and fees	
Capital leases	
P3's with state concession obligation	
Pension obligation bonds	

Source: Moody's Investors Service

These ratios have been calculated based on our definition of net tax-supported debt, debt service and own-source governmental revenues, and in most cases will differ from a state's own published calculations of debt limits or debt affordability. There is no correlation between our ratios and a state's compliance with its internal policies.

Moody's Related Research

Methodology

» US States Rating Methodology, April 17, 2013

Outlook

» 2017 Outlook - Revenue Trends Support Stability; Some States Still Pressured, December 8, 2016

Endnotes

1 Some historical debt figures have been updated and may not match data in prior published reports.

2 This year, Indiana's (Aaa stable) stadium and convention center bonds are not included in NTSD. The bonds are secured by pledged local taxes, which have been sufficient to pay debt service for the last five years and are expected to remain sufficient through the life of the bonds. If local revenues prove insufficient or are at risk of becoming insufficient to pay debt service, a state appropriation is in place to pay debt service and the bonds will again be included in the state's NTSD.

3 Nebraska (certificates of participation rated Aa2 stable) had the largest percentage growth in NTSD of 125%, though the dollar increase was small. Nebraska still has one of the lowest debt burdens of all 50 states.

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APPENDIX C

State of Vermont

New Issue Report

Ratings

Long-Term Issuer Default Rating	AAA

New Issues

$66,880,000 General Obligation Vermont Citizen Bonds (Negotiated), Series 2017A	AAA
$33,465,000 General Obligation Bonds (Competitive), Series 2017B	AAA

Outstanding Debt

General Obligation Bonds	AAA

Rating Outlook

Stable

Analysts

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New Issue Summary

Sale Date: Week of August 21.

Series: State of Vermont, General Obligation Bonds, 2017 Series A (Vermont Citizen Bonds) and Series B.

Purpose: To fund various capital projects.

Security: General obligations of the state of Vermont backed by its full faith and credit.

Analytical Conclusion: Vermont's 'AAA' IDR primarily reflects conservative financial management, including prompt action to address projected budget gaps and sound reserves. Vermont's economic growth has been steady but slow. The moderate long-term liability burden should remain relatively stable given changes to improve pension sustainability over time.

Key Rating Drivers

Economic Resource Base: Vermont's small and modestly growing economy is tilted towards health and educational services, manufacturing, and tourism and remains exposed to several key large employers. During the recession, Vermont's peak-to-trough employment loss of 4.8% was less severe than the national 6.3% decline. The state's jobs recovery has been on par with the national trend. Vermont's population is older than most states' and domestic out-migration continues to pose a challenge. The state's labor force has been flat to declining over the past decade, in contrast to slow growth at the national level. High educational attainment levels provide some potential for more accelerated economic gains, but the state has not fully benefited from that potential to date.

Revenue Framework: 'aaa': Fitch anticipates Vermont's revenues used for direct state operations will grow at a moderate pace, reflecting our expectations for the state's economy. Property taxes represent the largest component of state revenues and have grown at a robust rate, but these revenues do not drive the state's overall revenue framework. Property tax revenues are essentially passed through to school districts, rather than being used for state operations, and are adjusted annually based on multiple factors including decisions of voters in local school districts. The state has complete legal control over its revenues.

Expenditure Framework: 'aaa': The state maintains ample expenditure flexibility with a low burden of carrying costs for liabilities and the broad expense-cutting ability common to most U.S. states. Vermont has been particularly focused on addressing healthcare spending, including Medicaid, which is a key expense driver.

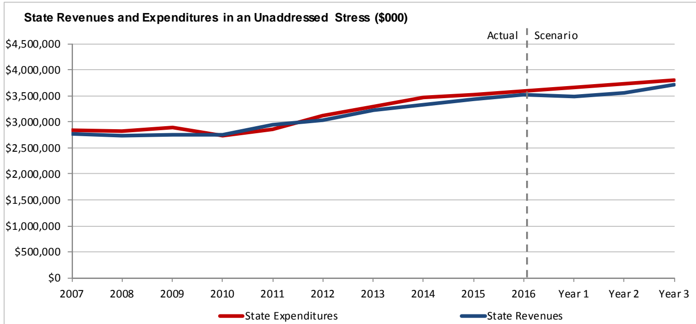
Long-Term Liability Burden: 'aa': Vermont's long-term liabilities burden is moderate and above the median for U.S. states.

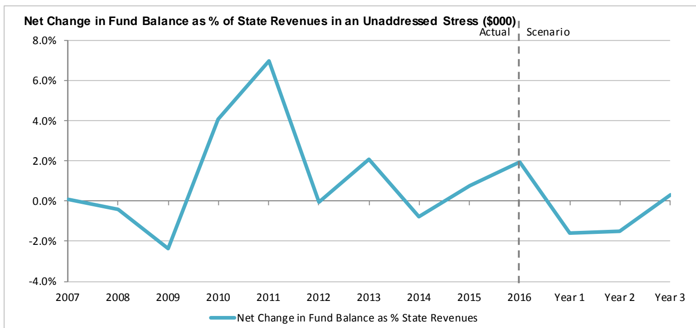
Operating Performance: 'aaa': Fitch anticipates Vermont will utilize its broad gap-closing capacity to manage through economic downturns while maintaining a high level of fundamental financial flexibility. The state has taken steps during the expansion to expand its flexibility and position itself well for the next downturn.

Vermont, State of (VT)

Scenario Analysis

v. 2.0 2017/04/14





Analyst Interpretation of Scenario Results:

Vermont's exceptionally strong gap-closing capacity derives from institutional and statutory mechanisms, and a demonstrated ability to prudently manage through economic downturns. Official revenue forecasts are updated at minimum twice a year through the Emergency Board, a consensus process involving the administration and legislature. During the Great Recession, the state moved to quarterly updates to enhance its ability to respond to rapidly changing fiscal circumstances. The governor can implement a spending reduction plan unilaterally (if a revenue forecast downgrades revenues less than one percent from the prior forecast) or with legislative cooperation. During the Great Recession, and again in a more recent shortfall, the governor, legislature, and other key stakeholders including employee unions, worked quickly and cooperatively to develop spending rescission plans to address emerging deficits. The state's recent trend has been to focus on expenditure cuts, such as negotiated wage reductions or programmatic cuts, rather than revenue increases.

The state maintains multiple budget reserves including fully-funded budget stabilization reserves (5% of revenues) in each of its three primary operating funds (general, education and transportation), and separate, fund-specific reserves or unreserved balances of lesser amounts. At fiscal year-end 2017, the various general fund reserves totaled just over $100 million, representing approximately 7% of general fund spending. Education fund reserves were approximately 5% of education fund spending. On a combined basis, total general and education fund reserves at the end of fiscal 2017 covered approximately 6% of general and education fund spending.

Vermont's revenue sensitivity calculated using the Fitch Analytical Sensitivity Tool (FAST) of negative 0.1% is among the lowest for states. The 50-states median year one revenue decline in a moderate economic downturn is 3.2%. Fitch considers Vermont's metric to be somewhat understated because of the school funding and property tax system. The state records property tax collections as its own revenues and essentially passes them through to local school districts with only indirect effect on Vermont's fundamental fiscal flexibility. Primary operating revenues for state functions are historically more volatile than property taxes, and typical of other state governments, as indicated by the fiscal stress experienced during the last recession. Between fiscal 2008 and 2010, Vermont's general fund tax revenues declined 14%.

Scenario Parameters:	Year 1	Year 2	Year 3
GDP Assumption (% Change)	(1.0%)	0.5%	2.0%
Expenditure Assumption (% Change)	2.0%	2.0%	2.0%
Revenue Output (% Change)	(1.0%)	2.0%	4.1%

Revenues, Expenditures, and Net Change in Fund Balance	Actuals										Scenario Output		
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Year 1	Year 2	Year 3
Expenditures													
Total Expenditures	4,085,001	4,146,918	4,318,873	4,666,695	4,860,504	5,017,124	5,157,410	5,408,365	5,611,911	5,614,127	5,726,410	5,840,938	5,957,757
% Change in Total Expenditures	7.0%	1.5%	4.1%	8.1%	4.2%	3.2%	2.8%	4.9%	3.8%	0.0%	2.0%	2.0%	2.0%
State Expenditures	2,841,043	2,828,986	2,892,526	2,739,842	2,852,399	3,129,968	3,291,870	3,470,157	3,524,751	3,592,491	3,664,341	3,737,628	3,812,380
% Change in State Expenditures	8.4%	(0.4%)	2.2%	(5.3%)	4.1%	9.7%	5.2%	5.4%	1.6%	1.9%	2.0%	2.0%	2.0%
Revenues													
Total Revenues	4,018,099	4,061,042	4,175,754	4,677,762	4,949,512	4,929,587	5,088,868	5,276,849	5,532,771	5,554,187	5,559,294	5,669,780	5,856,645
% Change in Total Revenues	5.8%	1.1%	2.8%	12.0%	5.8%	(0.4%)	3.2%	3.7%	4.8%	0.4%	0.1%	2.0%	3.3%
Federal Revenues	1,243,958	1,317,932	1,426,347	1,926,853	2,008,105	1,887,156	1,865,540	1,938,208	2,087,160	2,021,636	2,062,069	2,103,310	2,145,377
% Change in Federal Revenues	4.0%	5.9%	8.2%	35.1%	4.2%	(6.0%)	(1.1%)	3.9%	7.7%	(3.1%)	2.0%	2.0%	2.0%
State Revenues	2,774,141	2,743,110	2,749,407	2,750,909	2,941,407	3,042,431	3,223,328	3,338,641	3,445,611	3,532,550	3,497,225	3,566,470	3,711,269
% Change in State Revenues	6.6%	(1.1%)	0.2%	0.1%	6.9%	3.4%	5.9%	3.6%	3.2%	2.5%	(1.0%)	2.0%	4.1%
Excess of Revenues Over Expenditures	(66,902)	(85,876)	(143,119)	11,067	89,008	(87,537)	(68,542)	(131,516)	(79,140)	(59,941)	(167,116)	(171,158)	(101,111)
Total Other Financing Sources	69,495	74,755	78,438	101,450	116,561	85,505	136,216	104,926	104,723	128,397	111,953	117,243	113,448
Net Change in Fund Balance	2,593	-11,121	-64,681	112,517	205,569	-2,032	67,674	-26,590	25,583	68,456	-55,163	-53,915	12,337
% Total Expenditures	0.1%	(0.3%)	(1.5%)	2.4%	4.2%	(0.0%)	1.3%	(0.5%)	0.5%	1.2%	(1.0%)	(0.9%)	0.2%
% State Expenditures	0.1%	(0.4%)	(2.2%)	4.1%	7.2%	(0.1%)	2.1%	(0.8%)	0.7%	1.9%	(1.5%)	(1.4%)	0.3%
% Total Revenues	0.1%	(0.3%)	(1.5%)	2.4%	4.2%	(0.0%)	1.3%	(0.5%)	0.5%	1.2%	(1.0%)	(1.0%)	0.2%
% State Revenues	0.1%	(0.4%)	(2.4%)	4.1%	7.0%	(0.1%)	2.1%	(0.8%)	0.7%	1.9%	(1.6%)	(1.5%)	0.3%

Notes: Scenario analysis represents an unaddressed stress on issuer finances. Fitch's downturn scenario assumes a -1.0% GDP decline in the first year, followed by 0.5% and 2.0% GDP growth in Years 2 and 3, respectively. Expenditures are assumed to grow at a 2.0% rate of inflation. For further details, please see Fitch's US Tax-Supported Rating Criteria.

Rating History (IDR and General Obligation Bonds)

Rating	Action	Outlook/ Watch	Date
AAA	Affirmed	Stable	8/11/17
AAA	Revised	Stable	4/05/10
AA+	Affirmed	Stable	4/13/06
AA+	Upgraded	—	10/25/99
AA	Assigned	—	8/18/92

Rating Sensitivities

Operating Performance and Economic Potential: The rating is sensitive to changes in Vermont's fundamental credit characteristics. Weakened fiscal discipline or material deterioration in economic growth prospects could negatively affect the rating.

Credit Profile

Revenue Framework

The state's revenues used for direct state operations consist primarily of personal and corporate income taxes, sales and use taxes, and a meals and rooms tax meant to export a share of the tax burden to visiting tourists. Vermont also levies a state property tax for education, an unusual feature for state governments, which is the largest source of total state revenues. Since Vermont essentially passes through property tax collections to local school districts, Fitch discounts the importance of this stream in the revenue framework assessment. There are no legal limitations on the state's ability to raise revenues.

Fitch anticipates steady growth in Vermont's revenues, just ahead of inflation, given the state's moderate economic growth prospects. Vermont's historical total tax revenue growth, adjusted for policy changes, has been slightly positive on a real basis.

Vermont has no legal limitations on its ability to raise revenues through base broadenings, rate increases, or the assessment of new taxes or fees.

Expenditure Framework

Education is the state's largest expenditure from own-source revenues, driven by the unique funding system in Vermont with the state covering the full cost for locally administered K-12 schools primarily through the property tax, a general fund appropriation, and a share of the sales and use tax. Health and human services, primarily Medicaid, is the second-largest expenditure area.

Spending growth, absent policy actions, will likely be slightly ahead of revenue growth, driven primarily by Medicaid, requiring regular budget measures to ensure ongoing balance. The fiscal challenge of Medicaid is common to all U.S. states, and the nature of the program as well as federal government rules limit the states' options in managing the pace of spending growth.

Federal action to revise Medicaid's programmatic and financial structure remains a possibility given recent federal legislative and administrative efforts. Most proposals to date include a basic restructuring of federal Medicaid funding to a capped amount. Whether a change in federal Medicaid funding has consequences for Fitch's assessment of a state's credit quality would depend on the state's fiscal response to those changes. Responses that create long-term structural deficits or increase liability burdens could negatively affect both the expenditure framework assessment and the IDR.

Vermont has been particularly aggressive in addressing the long-term national trend of steadily rising healthcare costs (including Medicaid), with the most recent effort being a shift towards outcome-based care under an 'all-payer' system, rather than the traditional fee-for-service model. This January, Vermont started an initial all-payer pilot program with Medicaid patients. Under terms of agreements with the federal government for the all-payer system, Vermont will transition Medicare and Medicaid to an outcome-based accountable care organization model, with the goal of getting participation from private insurers and providers as well over the program's initial five-year period.

Related Research

Fitch Rates Vermont's $100MM GOS 'AAA'; Outlook Stable (August 2017)

2016 State Pension Update: New Accounting, Old Challenges (November 2016)

Related Criteria

U.S. Public Finance Tax-Supported Rating Criteria (May 2017)

For education, state spending growth pressure is somewhat offset by the funding structure as school districts' property tax rates (collected by localities on behalf of the state) increase when voter-approved school district budgets increase. Revenue growth does not fully mitigate spending increases though, exposing the state to a level of ongoing expenditure growth as reflected in the steadily growing annual state general fund appropriation to the education fund.

Vermont's fixed carrying cost burden is low and Fitch anticipates it remaining stable given the state's commitment to full actuarial contributions to its pension systems and careful management of debt issuance. Overall, the state retains ample flexibility to adjust main expenditure items.

Long-Term Liability Burden

Vermont's combined burden of debt and unfunded pension liabilities is a moderate 11.3% of personal income, based on the most recently available data and Fitch's revised 6% investment return assumption for pension plans. Debt levels remain modest at just 2% and are closely monitored through the state's Capital Debt Affordability Advisory Committee (CDAAC). The governor and legislature consistently stay within CDAAC's recommendations for annual bond issuance.

Net pension liabilities are more significant. The pension liability calculations include essentially 100% of the liability in the Vermont State Retirement System and the State Teachers' Retirement System, for which the state makes the full actuarial contribution. Market losses during the last two recessions contributed to recent growth in net liabilities for both systems. Since the Great Recession the state has negotiated with employee groups and implemented multiple changes including to benefits, contributions, and actuarial methods to improve pension sustainability over time. Given recent shifts to somewhat more conservative actuarial assumptions, including a decrease in the investment return assumption to 7.5% from 7.95%, Fitch anticipates Vermont's long-term liability burden will remain consistent with a 'aa' assessment over the long term.

Operating Performance

Vermont's exceptionally strong gap-closing capacity derives from institutional and statutory mechanisms, and a demonstrated ability to prudently manage through economic downturns. For details, see Scenario Analysis, page 2.

The state's budgeting practices tend to be conservative in forecasting and proactive through the fiscal year, with most fiscal years ending with a general fund budget surplus despite the lack of a statutory or constitutional balanced budget requirement. Through the economic expansion Vermont has maintained its primary budget reserves. Recently the state has taken steps to build in additional fiscal capacity through additional reserves including the general fund balance reserve (balance of $17.2 million at fiscal year-end 2017, or 1.2% of general fund revenues), a human services caseload reserve (newly established with $10 million at fiscal year-end 2017), and a 27/53 reserve that will set aside funds for the infrequent years with a 27th biweekly payroll or 53rd weekly Medicaid payment cycle ($5.3 million at fiscal year-end 2017). Based on the enacted budgets for fiscal 2018, and an anticipated general fund rescission plan (discussed further below), Fitch anticipates reserves will decline modestly in fiscal 2018 primarily to address one-time issues.

Current Developments

Fiscal 2017 general fund revenues were up slightly from the prior year (1.1%) and essentially in line with the January forecast. Slow personal income and sales tax revenue growth was offset

by stronger than anticipated corporate income tax collections; the corporate income tax over-performance was attributable mainly to the processing of a series of anticipated refunds extending beyond the fiscal year-end. This $16.3 million in budgeted refunds was a key driver of a downward revenue revision for fiscal 2018 that the state's emergency board adopted at its July 2017 meeting.

Based on that new revenue forecast, the state entered the current fiscal year with a projected general fund revenue shortfall of $28.9 million, or approximately 2% of projected general fund revenues. The joint fiscal committee approved the administration’s full rescission plan at its August 17 meeting, which included a mix of recurring and one-time solutions to address the shortfall. The one-time solutions, including use of the fiscal 2017 general fund surplus and a draw on the general fund balance reserve, are intended to address what the state considers a one-time bump in corporate tax refunds due mainly to recent mergers and acquisitions involving local companies.

For the education fund, the enacted fiscal 2018 budget includes draws on unallocated balances from prior years as well as on the budget stabilization reserve to fund a shift in the teachers' pension normal cost to the education fund from the general fund. The budget stabilization reserve balance is budgeted to decline to approximately $25 million, or 3.6% of revenues. In fiscal 2019, the state will allocate an additional cent of the sales tax (to 36% from 35%) to the education fund to offset the shift of the pension normal cost going forward. The governor also intends to recommend in his fiscal 2019 executive budget that the education fund budget stabilization reserve be restored to its 5% statutory maximum.

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APPENDIX D

MOODY'S
INVESTORS SERVICE

CREDIT OPINION

10 August 2017

New Issue

Rate this Research

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State of Vermont

New Issue - Moody's Assigns Aaa to Vermont's GO Bonds; Outlook Stable

Summary Rating Rationale

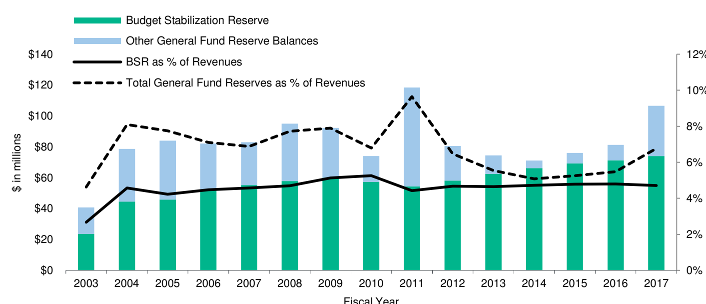
Moody's Investors Service has assigned Aaa ratings to the State of Vermont's $33 million General Obligation Bonds 2017 Series A and $67 million General Obligation Bonds 2017 Series B. The outlook is stable. Moody's maintains an Aaa rating on Vermont's outstanding GO bonds.

The Aaa rating recognizes Vermont's strong fiscal management, a track record of running surpluses most years even when revenues do badly, modest debt, and a small but productive economy.

Vermont's primary credit challenge is its above-average net pension liability paired with an increasingly unfavorable demographic profile. We expect the state to maintain its commitment to balanced budgets even as this challenge poses some budget pressures in the next few decades.

Exhibit 1

Vermont Has Kept Reserves Steady Throughout Economic Cycles



Note: The spike in total general fund reserves in 2011 and drawdown in 2012 was primarily the Human Caseload Reserve, which relates to changes in federal Medicaid payments.
Source: State of Vermont

Credit Strengths

- Strong fiscal management leading to surpluses most years
- Good progress on funding pension liabilities
- Modest debt burden

Credit Challenges

- Above-average net pension liability
- Aging population and work force
- Slow economic and revenue growth

Rating Outlook

The stable outlook reflects the state's proven ability to balance its budget in a variety of operating environments. Having grown fund balance and liquidity substantially in the past few years, Vermont is financially well-positioned for the future.

Factors that Could Lead to an Upgrade

- Not applicable

Factors that Could Lead to a Downgrade

- Reversal of recent progress toward better funding of pension liabilities
- Reversal of historical track record of running budget surpluses even in bad years
- Protracted population loss, aging of population, and/or shrinkage of workforce leading to poor revenue trends and difficulty servicing liabilities

Key Indicators

Exhibit 2

Vermont	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Operating Fund Revenues (000s)	2,507,356	2,636,432	2,748,223	2,858,148	2,927,613
Balances as % of Operating Fund Revenues	7.6%	7.3%	2.5%	2.3%	0.6%
Net Tax-Supported Debt (000s)	507,624	549,995	597,520	627,192	666,935
Net Tax-Supported Debt/Personal Income	1.9%	2.0%	2.1%	2.1%	2.2%
Net Tax-Supported Debt/Personal Income 50 State Median	2.8%	2.6%	2.5%	2.5%	2.5%
Debt/Own-Source Governmental Funds Revenue	16.6%	16.9%	17.8%	18.1%	18.7%
Debt/Own-Source Governmental Funds Revenue Median	37.4%	36.1%	35.8%	34.4%	N/A
ANPL/Own-Source Govt Funds Revenue	129.7%	107.9%	110.6%	106.1%	N/A
ANPL/Own-Source Govt Funds Revenue Median	92.6%	87.6%	81.5%	83.1%	N/A
Total Non-Farm Employment Change (CY)	1.2%	0.7%	1.0%	0.8%	0.3%
Per Capita Income as a % of US (CY)	101.4%	102.5%	101.4%	100.8%	101.5%

Source: Moody's Investors Service

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

Recent Developments

Vermont ran another surplus in fiscal 2017 (ended 6/30/2017), increasing its total general fund reserve balances by about $25 million. The state achieved this despite a lackluster year for revenues. Personal income taxes and sales taxes each grew by less than 2% and came in below forecast, and corporate income taxes had a rough year because of a number of refund requests.

After a downgraded revenue forecast in January, the state as usual adjusted its budget to its revenues.

The state in June passed its fiscal 2018 budget, totaling $1.5 billion for the general fund and $5.8 billion for all funds. The forecast is for both income and sales taxes to accelerate this year.

Detailed Rating Considerations

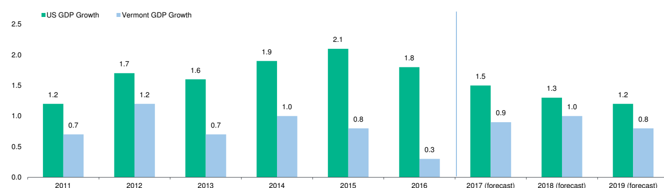
Economy

Vermont's small economy continues to experience demographic challenges familiar to the New England region. The state's population is declining modestly (down 0.2% last year) and aging (the median age of 42.7 is way above the US median age of 37.9), and its labor force is shrinking.

Vermont's economic growth and employment growth have tracked below US growth rates for most of this expansion, which is likely to continue given the demographic profile of the state.

Exhibit 3

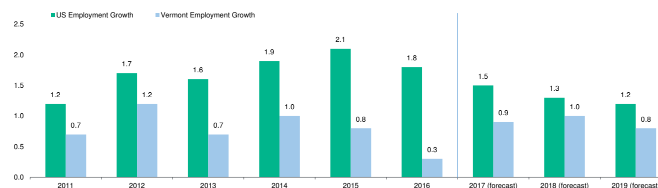
Vermont's Economic Growth is Lagging ..



Source: Vermont; Moody's Analytics

Exhibit 4

… as is Employment Growth



Source: Vermont; Moody's Analytics

That said, Vermont's population is well-educated and income in the state is above-average. The state's poverty and unemployment rates are both low. The median home in Vermont is worth 20% more than the median home in the United States. Receipts from the state's income tax and sales tax continue to grow steadily if modestly.

Advanced manufacturing, healthcare, and tourism will continue to drive the state economy overall.

Finances and Liquidity

Vermont's conservative fiscal management and healthy financial reserves are important strengths for the state.

We consider three of Vermont's funds to be operating funds: the general fund, the transportation fund, and the education fund. Of the state's $5.8 billion of total appropriations, roughly $3.5 billion are from state revenues (i.e., not federal aid), or what we call own-source revenues. The state's approximately $3 billion of tax revenue sources for these three funds are detailed below.

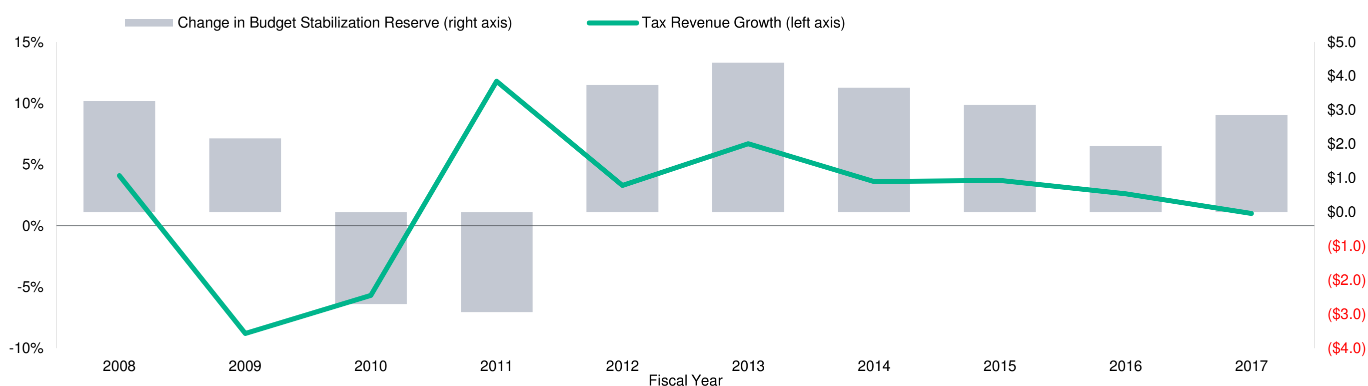
Exhibit 5
Vermont's Revenue Sources
($ in millions)

Revenue Source	2018 Budget	% of 2018 Tax Revenues	
Property Tax	$1,054	35%	Statewide property tax levy for education
Personal Income Tax	$795	26%	8.95% top marginal rate
Sales & Use Tax	$397	13%	6%
Gasoline Tax and Other Transportation Fees	$280	9%	2% of gasoline price subject to floor; other various fees
Meals & Rooms Tax	$172	6%	9%
Corporate Income Tax	$87	3%	8.5% top marginal rate
Insurance Tax	$58	2%	2% of premiums
Other	$211	7%	
Total	$3,054		

Source: State of Vermont

The state has proven its ability to maintain a good amount of liquidity and financial reserves even when revenues perform poorly. During the depths of the financial crisis, Vermont ran two deficits (indicated by a decline in the Budget Stabilization Reserve), each less than $3 million. Overall, Vermont has proven its ability to adjust its budget to its revenues even in bad years.

Exhibit 6
Vermont Runs Surpluses Most Years
$ in millions



Source: State of Vermont

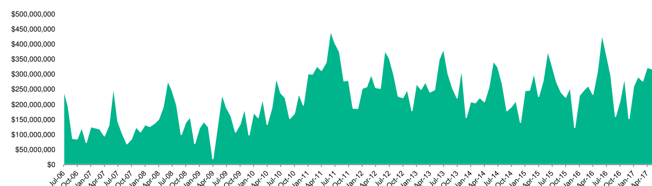
LIQUIDITY

Vermont's liquidity is good, and has improved over the past decade. The Vermont state treasurer is the custodian for state operating funds, as well as many non-operating funds.

The treasurer reports a monthly unrestricted cash balance, which is a good proxy for the state's operating liquidity.

Exhibit 7

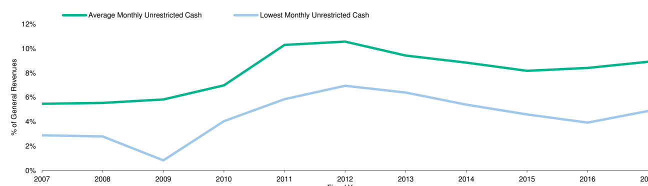
Monthly Unrestricted Cash



Source: Vermont State Treasurer

Exhibit 8

Cash as % of General Revenues



(Fiscal 2017 cash balances are as % of 2016 revenues)
Source: State of Vermont

Under state law, the treasurer can also at certain times of year borrow from certain segregated or restricted funds not shown in the above.

Debt and Pensions

Vermont's debt is modest and likely to stay that way.

Favorably, the state's Capital Debt Affordability Advisory Committee periodically recommends a borrowing authorization in an amount intentionally designed to help preserve the state's high credit rating. The state has adopted the committee's recommendations each year for 26 years.

Exhibit 9

Vermont's Debt is Modest Compared with Regional Peers
(A lower-number rank is a higher debt burden)

State	Debt to Personal Income (Rank)	Debt Per Capita (Rank)
Vermont (Aaa stable)	2.2% (27)	$1,068 (24)
US Median	2.5%	$1,006
Massachusetts (Aa1 stable)	9.8% (2)	$5,983 (2)
Connecticut (A1 stable)	9.7% (3)	$6,505 (1)
Rhode Island (Aa2 stable)	4.3% (12)	$2,131 (10)
Maine (Aa2 stable)	2.1% (30)	$889 (30)
New Hampshire (Aa1 stable)	1.6% (32)	$897 (29)

Source: Moody's Investors Service

DEBT STRUCTURE

Most of Vermont's capital borrowings are general obligation bonds.

Exhibit 10

Vermont's Debt Profile
$ in thousands

Debt	Outstanding 6/30/2017	Security
General Obligation Bonds	$577,060	Full Faith and Credit
Leases	$9,845	Lease Payments
Transportation Infrastructure Bonds	$28,340	Motor Fuels Tax
Net Tax Supported Debt	$615,245	

Source: State of Vermont

Vermont's debt service is $74 million a year, which is 2% of own-source revenues and about half the median debt service burden for a state.

In addition to the net tax supported debt shown above, Vermont has pledged its "moral obligation" commitment to cover debt service on a little more than $1 billion of debt, primarily municipal borrowings conducted through the Vermont Municipal Bond Bank (Aa1 stable).

As the borrowers for this moral obligation debt have always made their payments on time, we exclude this debt from the state's debt burden.

DEBT-RELATED DERIVATIVES

Vermont is not party to any debt-related derivatives.

PENSIONS AND OPEB

Vermont is an above-average pension state, and its net pension liability paired with its aging population remains the biggest credit weakness at the Aaa level. Nonetheless, Vermont's pension situation is nothing out of the ordinary for the New England region. Several neighboring states face similar pension challenges reflecting the demographic dynamics of an aging population and work force.

Exhibit 11

Vermont's Pension Liabilities are Big
(A lower-number rank is a bigger liability)

State	ANPL to Personal Income (rank)	ANPL Per Capita (rank)
Vermont (Aaa stable)	12.3% (10)	$5,873 (8)
US Median	5.8%	$2,393
New England Median	12.9%	$5,795
Connecticut (A1 stable)	22% (3)	$14,738 (3)
Massachusetts (Aa1 stable)	13.8% (6)	$8,419 (5)
Maine (Aa2 stable)	13.5% (8)	$5,717 (10)
Rhode Island (Aa2 stable)	9.7% (16)	$4,843 (14)
New Hampshire (Aa1 stable)	2.3% (46)	$1,267 (41)

ANPL stands for the Moody's Adjusted Net Pension Liability
Source: Moody's Investors Service

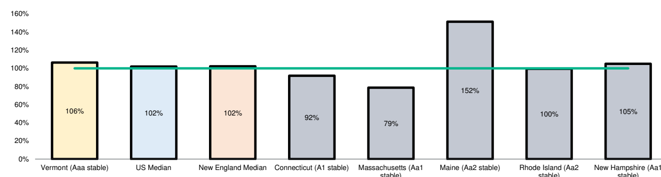
A few positives about Vermont's pension burden are important to note.

First, Vermont is aggressively funding its net pension liability, and has adopted several measures (such as lowering the assumed rate of return) to assure it remains on track to full funding by 2037.

As a proxy to measure whether a state's net pension liabilities are generally on track to grow or shrink, we look at the contribution it would need to make to "tread water" (meaning to keep net pension liabilities unchanged assuming all actuarial assumptions are met), and compare that to its actual contribution. Vermont's actual contributions are more than its tread water contribution, reflecting its path toward improving funded ratios over the coming years. This cannot be said about all states, and Vermont's pension contributions put it in a much better position than some of the states with the biggest pension problems.

Exhibit 12

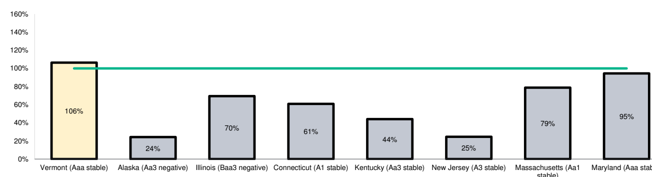
Actual Contribution Relative to "Tread Water" Contribution



Note: These figures are from our 2015 Pension Medians Report. The figures are likely to change each year.
Source: Moody's Investors Service

Exhibit 13

Vermont's Contributions Distinguish it from Biggest-Liability States



Note: This chart compares Vermont with the states with the biggest Moody's ANPL relative to personal income
Source: Moody's Investors Service

Crucially, we expect Vermont to continue servicing its pension liabilities with minimal budget stress, in contrast to some of the states shown in the above chart. Vermont's projected required contribution next year for the two plans the state contributes to is about $140 million. Those required contributions are projected to increase to about $320 million by 2037 – a big increase (and at risk of being higher if actuarial assumptions prove too optimistic), but nothing unmanageable for a state with more than $3 billion of projected tax revenues this year.

Overall, Vermont's pension liabilities are a weakness at the Aaa level, but a manageable one in concert with a low debt burden and a conservative fiscal approach.

Governance

Vermont's governance is a key strength. The state's financial management has demonstrated its ability to adjust its budget to revenue shortfalls. The state has run consistent surpluses in spite of lackluster revenue growth in some years and increasing pension contributions.

Legal Security

Vermont is pledging its full faith and credit to the payment of debt service on these general obligation bonds. State law requires the treasurer to pay debt service on the bonds whether or not the funds to do so have been appropriated.

Use of Proceeds

Proceeds of the bonds will be used for various capital projects.

Obligor Profile

Vermont is the second-smallest state by population (625,000). The state is primarily rural. Its gross state product of $30 billion is by far the smallest among the 50 states.

Methodology

The principal methodology used in this rating was US States Rating Methodology published in April 2013. Please see the Rating Methodologies page on www.moodys.com for a copy of this methodology.

Ratings

Exhibit 14

Vermont (State of)

Issue	Rating
General Obligation Bonds 2017 Series A	Aaa
Rating Type	Underlying LT
Sale Amount	$33,465,000
Expected Sale Date	09/13/2017
Rating Description	General Obligation
General Obligation Bonds 2017 Series B	Aaa
Rating Type	Underlying LT
Sale Amount	$66,880,000
Expected Sale Date	09/13/2017
Rating Description	General Obligation

Source: Moody's Investors Service

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APPENDIX E

S&P Global
Ratings

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Vermont; General Obligation

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Vermont; General Obligation

Credit Profile		
US$66.88 mil GO bnds ser 2017B due 08/15/2037		
Long Term Rating	AA+/Stable	New
US$33.465 mil GO bnds (Vermont Citizen Bnds) ser 2017A due 08/15/2037		
Long Term Rating	AA+/Stable	New
Vermont GO		
Long Term Rating	AA+/Stable	Affirmed

Rationale

S&P Global Ratings has assigned its 'AA+' rating and stable outlook to the State of Vermont's general obligation (GO) bonds, 2017 series A (Vermont Citizen Bonds) and 2017 series B. At the same time, S&P Global Ratings affirmed its 'AA+' rating on the state's GO debt outstanding and it's 'A+' rating on the state's moral obligation bonds. The outlook on all ratings is stable.

The ratings reflect our opinion of the state's:

- Strong financial and budget management policies that have contributed to consistent reserve and liquidity levels over time;
- Employment composition reflective of the U.S. economy that is characterized by average income levels and low unemployment rates, but a recent slower-than-average pace of growth by most measures and population declines in the past three calendar years;
- Well-defined debt affordability and capital planning processes, in our view, that have limited leverage and contributed to a modest tax-supported debt burden with rapid amortization of tax-supported debt; and
- Significant pension and other postemployment benefits (OPEB), which remain sizable relative to those of state peers despite some recent reform efforts.

The state's full faith and credit pledge secures the series 2017A and series 2017B bonds. Issuance proceeds will finance various capital projects within the state.

In our opinion, Vermont has a history of actively managing its budget over time, which we view as a positive credit factor. State statute requires Vermont to conduct revenue forecasts twice a year, in July and January. The budget is created off of estimates in January and updated after the July forecast. Most recently, the state's $1.6 billion fiscal 2018 budget was signed into law on June 28, 2017. The July 2017 forecast revised estimates downward slightly to peg a shortfall of $28.8 million or 1.8% of expenditures, which we consider minor. The state reports that the majority of the shortfall, 57%, stems from $16.3 million of corporate tax refunds that will be paid out in fiscal 2018. In addition, a large portion, 39%, of the gap is created from an $11.2 million downswing in personal income tax revenues. To address the shortfall, the state has created a rescission plan that includes using surplus from fiscal 2017 operations to close the gap. We believe the state's process for identifying, remediating, and monitoring budget shortfalls early in the fiscal year allows for flexibility of resolution.

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Vermont also implemented a rescission plan for fiscal 2017 that closed a $21.04 million gap through several measures including underspending in Medicaid and a reduction in appropriations for fiscal 2017, which did not have 53rd pay week as did fiscal 2016. Preliminary unaudited results indicate the state ended fiscal 2017 with general fund revenues of $1.456 billion creating an operating gain of $34.3 million, which was offset by $5.8 million net transfers out to other funds and transfers to reserves of $28.5 million.

The general fund budget stabilization reserve has grown in recent years. In fiscal 2017, reserves increased 4.0% to $74.1 million from $71.25 million in fiscal 2016 and $69.31 million in 2015. The account's $74.1 million balance represents 4.8% of fiscal 2017 expenditures, which we consider good. In addition, the general fund balance reserve sat at $17.18 million at the close of fiscal 2017. The stabilization reserves for the general, transportation, and education funds ended the year at their statutory maximums of 5% of expenditures.

We anticipate that the relatively weak demographic trends in recent years will persist and continue to dampen the state's economic growth potential. Vermont's population of 624,594 has declined at an increasing rate in the past three years: by 0.02% in 2014, 0.14% in 2015, and 0.24% in 2016. The population grew slightly, by 0.11%, in 2013 after a 0.05% decline in 2012. Despite this weaker demographic pattern, income levels have expanded at a healthy pace and per capita personal income has been at or above that of the U.S. for the past eight years. However, Vermont's pace of economic recovery has been uneven and more recently, growth has lagged that of the U.S., a trend we expect to continue.

The state received approval to extend its Global Commitment to Health Medicaid waiver from the Centers for Medicare and Medicaid Services in October 2016. The approval granted is effective for a five-year term beginning Jan. 1, 2017, and ending Dec. 31, 2021. The state contends that updates to the terms of the waiver, including moving to a "per member per month" model from an aggregate budget neutrality agreement for consistency across the federal landscape, are minor and without major effect to operations. Given the uncertainty around health care in the federal landscape, the state reports that the potential impact from changes in federal law is indeterminate at this time.

In our view, Vermont's debt burden is moderate. We calculate fiscal year-end 2016 tax-backed debt per capita at only $1,069, while debt amortization is rapid, with most tax-backed debt maturing within 10 years. All of Vermont's tax-supported debt issuance is governed by a comprehensive capital and debt affordability process.

Vermont's pension liabilities are weak, in our view, with what we consider a relatively low three-year-average funded ratio of 66% across the two pension plans for which the state has a reported liability. Furthermore, we consider the funding discipline of Vermont's pension plans to be average. State contributions to Vermont's pension plans are expressed as a percent of payroll; however, the contribution amounts are based on actuarial determination. Vermont has historically funded its pension liabilities at actuarially determined levels. However, pension liabilities have grown considerably in the past several years and funded ratios steadily deteriorated through fiscal 2016 and are below those of state peers. Total annual plan contributions in fiscal years 2014 through 2016 did not cover a level equal to service cost and interest cost plus some amortization of the unfunded liability, according to our calculations, which we believe could weaken the strength of the state's pension liability profile over time.

In our opinion, OPEB liabilities also remain high with an unfunded liability of $1.82 billion or $2,917 per capita

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according to our calculations. The state created an irrevocable trust for the Vermont State Employees' Retirement System (VSRS) OPEB plan in fiscal 2007; however, there is limited asset accumulation in the fund. Before fiscal 2014, health care expenses related to The State Teachers Retirement System (STRS) were not explicitly budgeted or funded but were treated as an amortized actuarial loss. In fiscal 2014, the legislature created the Retired Teachers' Health and Medical Benefits Fund to separate health care expenses from the pension fund. The state reports that it is not currently making pre-funding contributions to either trust fund.

Based on the analytical factors we evaluate for states, on a scale of '1.0' (strongest) to '4.0' (weakest), we have revised our composite score for Vermont to a '1.8' from a '1.7' reflecting the state's weak pension liability profile.

Outlook

The stable outlook reflects our view that although Vermont has a very strong budgetary management framework, the state's slower-than-average economic growth will continue to pressure the budget during our two-year outlook horizon. In addition, pension and OPEB liabilities remain high relative to those of state peers. While we believe the state has implemented reform efforts to reduce its long-term retirement liabilities, including increasing pension contributions in excess of actuarially determined levels, we note that the funded ratio across plans has steadily decreased in recent years as the liability has rapidly grown. A demonstrated improvement in the economic metrics or the pension and OPEB liability position could translate into a higher rating. Although we do not envision it at this time, given Vermont's history of proactively managing the state budget and recent actions to address retirement liabilities, substantial deterioration of budget reserves or a deteriorating liability position could negatively pressure the rating.

Government Framework

Vermont does not have a constitutional or statutory requirement to enact or maintain a balanced budget, but it has consistently maintained sound finances. In our view, the state has significant flexibility to increase the rate and base of its major tax revenues, which include income taxes, sales taxes, and a statewide property tax that funds the state's support of local education. We view Vermont's revenue sources as diverse. The state does not allow voter initiatives. Vermont maintains the ability to adjust disbursements in order to maintain sufficient liquidity. Debt service can be paid without a budget, but there is no other legal priority for debt.

The state's tax structure is broad, and its revenue sources are diverse across several operating funds. The general fund relies primarily on unrestricted revenues from personal and corporate income, sales and use, and meal taxes.

The education fund relies primarily on a statewide property tax, and an appropriation from the general fund. The education stabilization reserve ended the year at the statutory maximum of 5% of expenditures. The transportation fund relies primarily on federal-match grant revenues, a motor vehicle license fee, and a motor fuel tax.

On a scale of '1.0' (strongest) to '4.0' (weakest), we have assigned a '1.6' to Vermont's government framework.

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Financial Management Assessment: 'Strong'

S&P Global Ratings considers Vermont's financial management practices strong under its financial management assessment methodology, indicating financial practices are strong, well embedded, and likely sustainable.

Much of Vermont's debt and financial management practices are embedded in state statute. These, along with internally developed policies, guide the state's long-term budget and capital planning, debt management, and investing practices. The state has a well-established consensus revenue-estimating process. According to statute, the joint fiscal office and administration provides its respective revenue estimates for the general, transportation, and federal funds for the current and next succeeding fiscal year to the Vermont Emergency Board.

Vermont law also requires a long-term capital plan. The governor submits a capital budget annually to the General Assembly based on debt management provisions outlined by the state's capital debt affordability advisory committee. The committee's estimate is nonbinding, but the state legislature has never authorized new long-term GO debt in excess of the committee's estimated amount. The state has formal debt management policies, including a statutory debt affordability analysis developed by the capital debt affordability advisory committee that Vermont integrates into the operating budget development process and updates at least annually. Vermont has not entered into any interest rate swaps and thus does not have an adopted swap management policy. Statutory restrictions and adopted administrative policies govern investment management, and the office of the state treasurer monitors compliance.

Budget management framework

The state has multiple tools to assist financial management. Vermont monitors revenues and publishes results monthly; and the emergency board meets at least twice annually, in July and January, to evaluate the revenue forecast and make adjustments, if necessary. The state forecasts also include Medicaid revenues and spending. These consensus forecasting meetings can be convened more frequently, and were held quarterly during fiscal years 2008 through 2010, due to the recession and the potential impact on revenues and expenditures. The emergency board includes the governor and the legislative chairs of the house and senate fiscal appropriations committees. The forecasting process includes traditional economic and revenue forecasting, which Vermont performs with the assistance of outside economists, for the current and next succeeding fiscal year, as well as a less detailed forecast for the next eight years.

The governor has statutory authorization to adjust the budget within certain revenue and expenditure change limits when the Vermont Legislature is not in session. Vermont maintains stabilization reserve funds at statutory levels to reduce their effect on annual revenue variations. In 1993, the state created separate budget stabilization reserves within the general and transportation funds. The amount in each of these reserves is not to exceed 5% of previous-year appropriations. In fiscal 1999, the state created an education fund budget stabilization reserve, which is to fund in a range of 3.5%-5.0% of expenditures. Vermont statute requires annual funding of such reserves. The governor included a proposal in the fiscal 2013 executive budget to increase the general fund stabilization fund to 5.25% from 5.00%, but instead, the legislature added a general fund balance reserve fund with a separate cap of 5.00% of expenditures.

On a scale of '1' (strongest) to '4' (weakest), we have assigned a '1' to Vermont's financial management.

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Economy

According to our report, "For U.S. State and Local Governments, The Resilient But Shallow Expansion Complicated Budget Management," published July, 24, 2017, on RatingsDirect, we expect the New England economy to continue to expand at the same pace we've seen over the past five years. Forecasts for GDP growth in 2018 are slightly above the region's forecast in 2017 and actual results recorded in 2016, with growth driven in large part by demand in the housing market. However, we expect most of this growth will be concentrated in Connecticut and Massachusetts. Other states in the region, including Vermont, are expected to see a decline in new housing construction as pent-up demand from the recession has largely been met.

Vermont's economy is driven by tourism, higher education, electronics, consumer-goods manufacturing, and agriculture. Exports continue to be an important part of the state's economy at 16% of gross state product (GSP), with a substantial portion going to Canada according to IHS Global Insight Inc. Exports in 2016 were primarily made up of computer and electronic products (63.6%) followed by food manufactures (6.8%), and machinery (4.84%). In 2016, Vermont's exports totaled $2.9 billion of which 39.7% was with Canada. Recent data from the International Trade Administration show that Vermont's export performance has deteriorated for six years, with total exports shrinking by 6% from 2015. The state's value of total exports in real terms has not been as low as it is currently since 2003, according to IHS Markit.

Vermont's employment diversity by sector is generally in line with the nation's, in our view, and has not demonstrated more cyclicality than when the U.S. Global Foundries completed its acquisition of IBM, which is the second-largest private-sector employer in the state and accounts for a large portion of the state's manufacturing employment and exports. Global Foundries employs about 2,600 at its Essex Junction plant, which manufactures semiconductors for consumer electronic products, including chips for cell phones and other devices. According to IHS Markit, a large portion of the state's manufacturing exports includes computers and electronics products from the facility. The Vermont Yankee nuclear power plant ceased power production at the end of 2014 and the facility is in the process of placing spent fuel into dry cast storage. Employment levels in 2015 reflected that development. The transition to site restoration will take multiple years, and state officials indicate that this close is not expected to immediately affect power prices, given that Vermont power companies do not purchase power from this plant.

The state reports it was the second state in New England to complete its labor market recovery from the last recession, following the State of Massachusetts. Health care employment, in particular, will be a growth driver; however, IHS Markit forecasts very slow total employment growth of 0.5% in 2017 and an average annual growth rate of 0.5% between 2017 and 2020, which is well below forecast national employment growth rates. Despite the slow forecast employment growth, IHS projects unemployment rates to remain low in the next few years at about 3.1%, as labor force growth will be stagnant. As of June 2017, the state's unemployment rate is 3.2%, which is below the U.S. rate of 4.4% for the same time period.

State income levels are strong in our opinion. State per capita income of $50,321 in 2016 was 102% of that of the U.S. However, GDP per capita of $49,780 in 2016 is only 87% of that of the nation and has historically remained at about this level. In 2016 and 2017, real state GDP rose 0.79% and 0.92%, respectively, compared with 1.54% and 2.58% for

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the nation.

Vermont's quality of life and well-educated workforce provide economic development opportunities; however, the state ranks low among the states in its business tax and regulatory environment and its slow labor force growth could stifle future economic growth prospects. Vermont's population has grown more slowly than the nation as a whole; for 2010-2016, its population decreased by 0.2% compared with the nation's growth of 4.7%. Furthermore, the state's aging population--34% over 55 and 18% over 65, compared with 28% and 15%, respectively, for the nation, will continue to be a drag on the state's growth potential in our view.

On a scale of '1' (strongest) to '4' (weakest), we have assigned a '2.1' to Vermont's economy.

Budgetary Performance

The fiscal 2018 general fund consensus revenue forecast was $1.51 billion for the fiscal 2018 budget. Appropriations total $1.561 billion and the budget projected a budget stabilization reserve of $77 million. The general fund consensus revenue forecast in July 2017 decreased the general fund revenue estimate for fiscal 2018 creating a shortfall of $28.8 million between revenues and appropriations. This decrease, according to the state, is due to a one-time event of increased corporate tax refunds and a decrease in the personal income tax forecast.

Preliminary unaudited results indicate the state ended fiscal 2017 with general fund revenues of $1.456 billion creating an operating gain of $34.3 million, which was offset by $5.8 million of net transfers out to other funds and transfers to reserves of $28.5 million. Vermont ended fiscal 2016--the last audited year--with the budget stabilization reserves in the general fund, transportation fund, and education fund fully funded at their maximum statutory levels of 5% of the previous year's budgetary appropriations, along with some additional reserves in the general fund. These three funds' stabilization reserves remained funded at their statutory maximums through the recent recession.

S&P Global Ratings considers the state's general fund revenues to be diverse, with personal income tax constituting 52% of fiscal 2016 revenue collections, while sales tax makes up 17% of revenues.

Vermont maintains separate budget stabilization funds in its general, transportation, and education funds that are available to offset undesignated fund deficits. The statutory maximum for the three stabilization reserves is 5% of the prior-year budgetary appropriations, and the education stabilization fund also has a statutory minimum of 3.5% of the prior-year appropriation. The three stabilization funds have been at their statutory maximums since fiscal 2007. Vermont pools the cash reserves for these major funds, which results in sufficient liquidity for operations during the fiscal year. Officials indicated that the state has not externally borrowed for liquidity since fiscal 2004.

On a scale of '1.0' (strongest) to '4.0' (weakest), we have assigned a '1.4' to Vermont's budgetary performance.

Debt And Liability Profile

Debt

Vermont's total tax-supported debt is moderate about $1,069 per capita, or 2.1% of personal income and 2.1% of GSP.

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The fiscal 2016 tax-supported debt service was low, in our view, at about 2.1% of general governmental expenditures. Vermont's debt portfolio consists of only fixed-rate debt, without any exposure to interest rate swaps. The state also does not have any direct placement debt. We consider the debt amortization to be rapid, with officials retiring more than 68% of tax-supported debt over the next 10 years.

The state has a debt affordability committee that annually recommends a maximum amount of debt issuance for the next two fiscal years, and while the committee's recommendations are not binding, Vermont has consistently adhered to them. The authorization for fiscal years 2018 and 2019 totals $132.5 million, which is down 8.01% from the previous biennium recommendation of $144 million. Debt service can be paid without a budget, but there is no other priority for the payment of debt before other general state expenditures.

State pension liability

Vermont maintains three statutory defined benefit pension plans. The VSRS is a single-employer plan with about 8,436 active members. The STRS and Vermont Municipal Employees' Retirement System (MERS) are multiple-employer, cost-sharing plans with approximately 9,919 and 6,966 active members, respectively. The state appropriates funding for the first two systems; the municipal system is supported entirely by municipal employers and employees.

The state's unfunded pension liability represents Vermont's proportionate share of the VSRS and STRS plans. We consider Vermont's three-year-average, pension-funded ratio across the five pension plans to be relatively low at 66%. The state's pension-funded ratio as of June 30, 2016, is also considered relatively low at 62%, which is down from 65% in fiscal 2015 and 72% in fiscal 2014.

Vermont lowered its long-term investment return assumptions for the VSRS and STRS plans to 7.50% in July 2017 from the 7.95% rate agreed on in fiscal 2015. Through 2014, actuarial valuations used a "select and ultimate" method for developing interest rate assumptions where return assumptions varied by period ranging from 6.25% in year one to 9.0% in years 17 and later. The lower assumed discount rate is expected to increase required employer contribution rates in future fiscal years.

State contributions for VSRS and STRS are actuarially based and funding has been at least 100% of the actuarially determined contribution (ADC) historically, which we view positively. Vermont budgets for pension contributions based on percentage rates of each member's annual earnable compensation and the actuarial valuations from the previous fiscal year. It budgets for the STRS ADC appropriation at the beginning of the year. The VSRS ADC accrues as a percent of salary expenses throughout the year and the state adjusts subsequent appropriations to reconcile variations in actual payroll from year to year to meet the projected ADC. Each plan's actuary recommends a contribution amount and each plan's retirement board reviews the actuary's recommendations annually before submitting their recommendation to the governor and both houses of the legislature for inclusion in Vermont's annual budget. The legislature is not required to follow the recommendations of the actuaries or governor.

Since fiscal 2012, actual annual contributions to the systems have exceeded the respective ADCs, which state officials attribute to conservative budgeting. For VSRS, actual contributions of $54.3 million in fiscal 2016 represented 118% of the pension ADC. For STRS, actual contributions (from employers and non-employers) of $76.948 in fiscal 2016 represented 106.3% of the ADC. We note that aggregate annual plan contributions across the two plans were under amounts necessary for the plans to cover a portion of the amortization in unfunded liability as well as certain cost

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drivers of the annual change in the liability, according to our calculations, which we believe could weaken the strength of the state's pension liability profile over time.

We believe, on the whole, management factors and actuarial inputs do not significantly encumber or improve our view of the state's overall pension funding discipline. VSRS and STRS assume a closed amortization schedule of which 21 years remain; however, the plans use the level percentage of pay method, which assumes rising future payroll and results in escalating absolute pension contributions over time. The VSRS plan reported a return of 1.69% in 2016 and the STRS plan reported a return of 1.44% in the fiscal 2016 comprehensive annual financial report. Neither plan projects an asset depletion date under the most recently available Governmental Accounting Standards Board reporting as of June 30, 2016, which includes projected fiduciary net position cash flows based off of the state's since retired select-and-ultimate interest rate assumption method (ranging from 6.25 to 9.00%) due to lags in reporting. We believe the underlying assumptions under this reporting including the interest rate method and mortality assumptions are unrealistic. Officials note that the select-and-ultimate method was discontinued for reporting effective fiscal 2015 when the interest rate assumption changed to 7.95% and reporting in fiscal 2017 will include an interest rate assumption of 7.5%. In addition, officials note that mortality assumptions have been tested for reasonability against more recently published tables and will be updated for fiscal 2017.We note that the state has hired a new actuary firm that is currently completing reviews of certain assumptions. We believe changes in assumptions could change liability projections in the future. The STRS plan's ratio of active members to beneficiaries equals 1.05, which is significantly below the median national ratio of 1.50. The VSRS plan's ratio is slightly higher at 1.28. We believe the plans incorporate experience trends and industry standards in their experience studies conducted at least every five years.

Vermont's proportionate share of the plans' net pension liability translates into what we view as a moderate $3,131 per capita and 6.4% of personal income.

Other postemployment benefits

Vermont offers postemployment medical insurance, dental insurance, and life insurance benefits to retirees of the multiemployer STRS and the single-employer VSRS. While the state's unfunded OPEB liability is relatively high, in our view, at $2,917 per capita, Vermont has made plan adjustments to manage the liability.

The VSTRS plan enrolled its retirees in a Medicare Part D Employer Group Waiver Plan (EGWP) from a retiree drug subsidy program as of Jan. 1, 2014, in part to achieve cost savings. As of June 30, 2014, however, the VSTRS OPEB unfunded actuarial accrued liability (UAAL) increased 7.6% to almost $767 million, reflecting demographic experience and other refinements of estimated savings related to the EGWP implementation. The unfunded liability rose again in fiscal 2015 to $1.003 million or by 31% primarily due to updates to the methodology used in setting cost assumptions based on revisions to actuarial standards. The plan's cost-setting assumptions were updated again in fiscal 2016 using actual claims information for the plan's population and resulted in a decrease of the plan's UAAL by $325.2 million or 32.4% as of June 30, 2016. ADCs were approximately $52 million in fiscal 2016 and $45 million in fiscal 2015. State contributions under pay-as-you go financing of $31.6 million in fiscal 2016 and $25 million in fiscal 2015 represented 52% and 56% of actuarially determined levels, respectively. Before fiscal 2015, health care expenses for the plan's retirees were paid through a sub-fund of the defined benefit pension trust fund and no state contribution was explicitly budgeted or funded.

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Vermont's VSRS plan enrolled in Medicare's EGWP a year after STRS and was effective as of Jan. 1, 2015. The state has also established an OPEB trust fund for the VSRS, but as of June 30, 2016, it contained only $21.4 million of assets, for a 1.8% actuarial asset funded ratio. The plan has an unfunded liability of $1.1 billion as of June 30, 2016, which is 4.7% higher compared with 2015. The actuarial annual OPEB cost in fiscal 2014 was $76.2 million for the plan, of which Vermont paid almost 45% under pay-as-you-go funding. .

The separate multiemployer Vermont Municipal Employees Health Benefit Fund for local government is administered by the state, but has no liability to the state, and is not included in our OPEB calculations.

On a scale of '1.0' (strongest) to '4.0' (weakest), we have assigned a '2.7' to Vermont's debt and liability profile.

Ratings Detail (As Of August 11, 2017)		
Vermont GO		
Long Term Rating	AA+/Stable	Affirmed
Vermont GO		
Long Term Rating	AA+/Stable	Affirmed
Vermont GO bnds		
Long Term Rating	AA+/Stable	Affirmed

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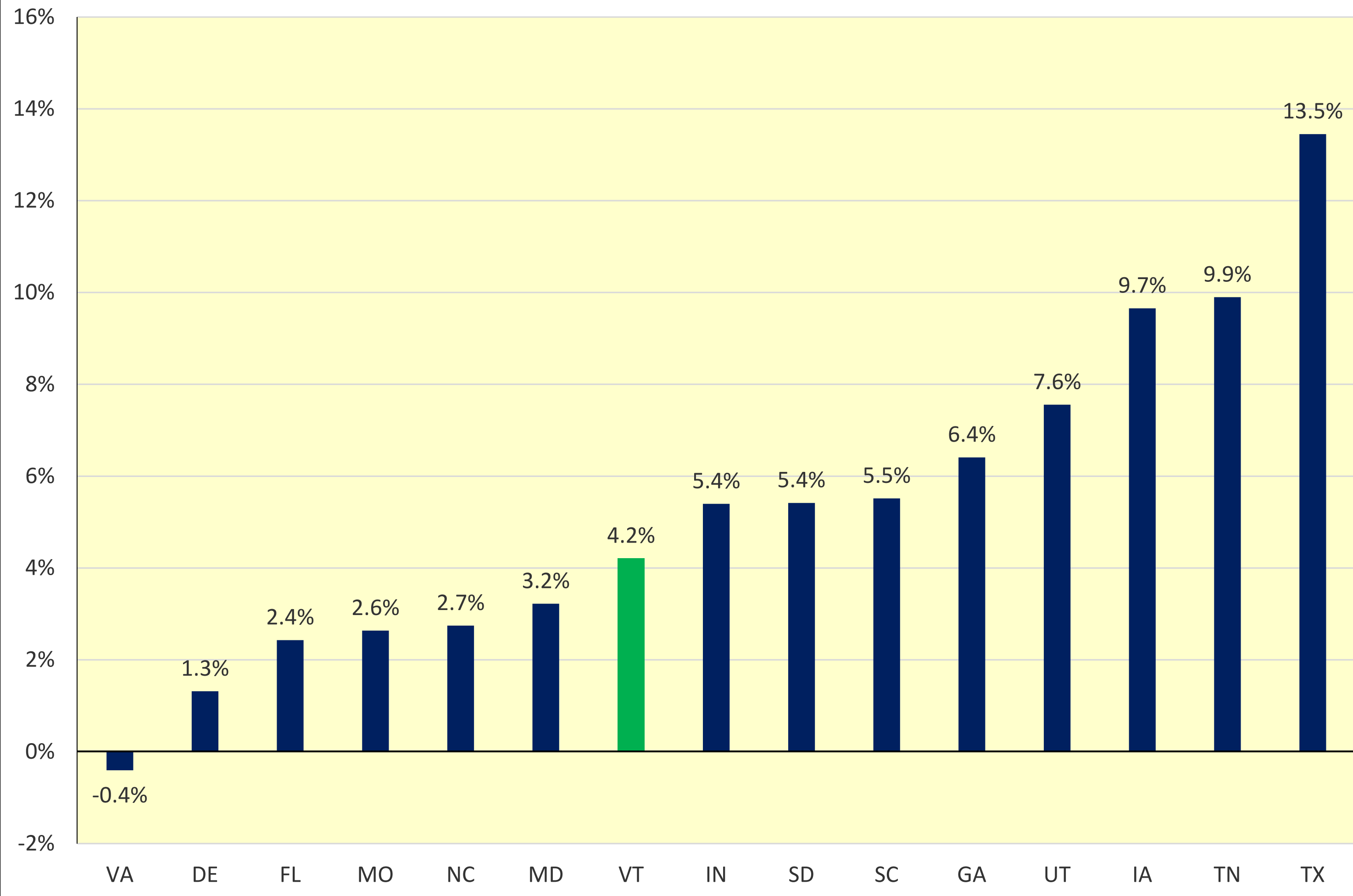
APPENDIX F

CDAAC

Preliminary Economic Metrics
for
Moody's Triple A States

Doug Hoffer

21 September 2017


Percent Change in Real Per Capita GDP, 2010 - 2016
(Source: BEA)
16%
14%
12%
10%
8%
6%
4%
2%
0%
-2%
-0.4%
1.3%
2.4%
2.6%
2.7%
3.2%
4.2%
5.4%
5.4%
5.5%
6.4%
7.6%
9.7%
9.9%
13.5%
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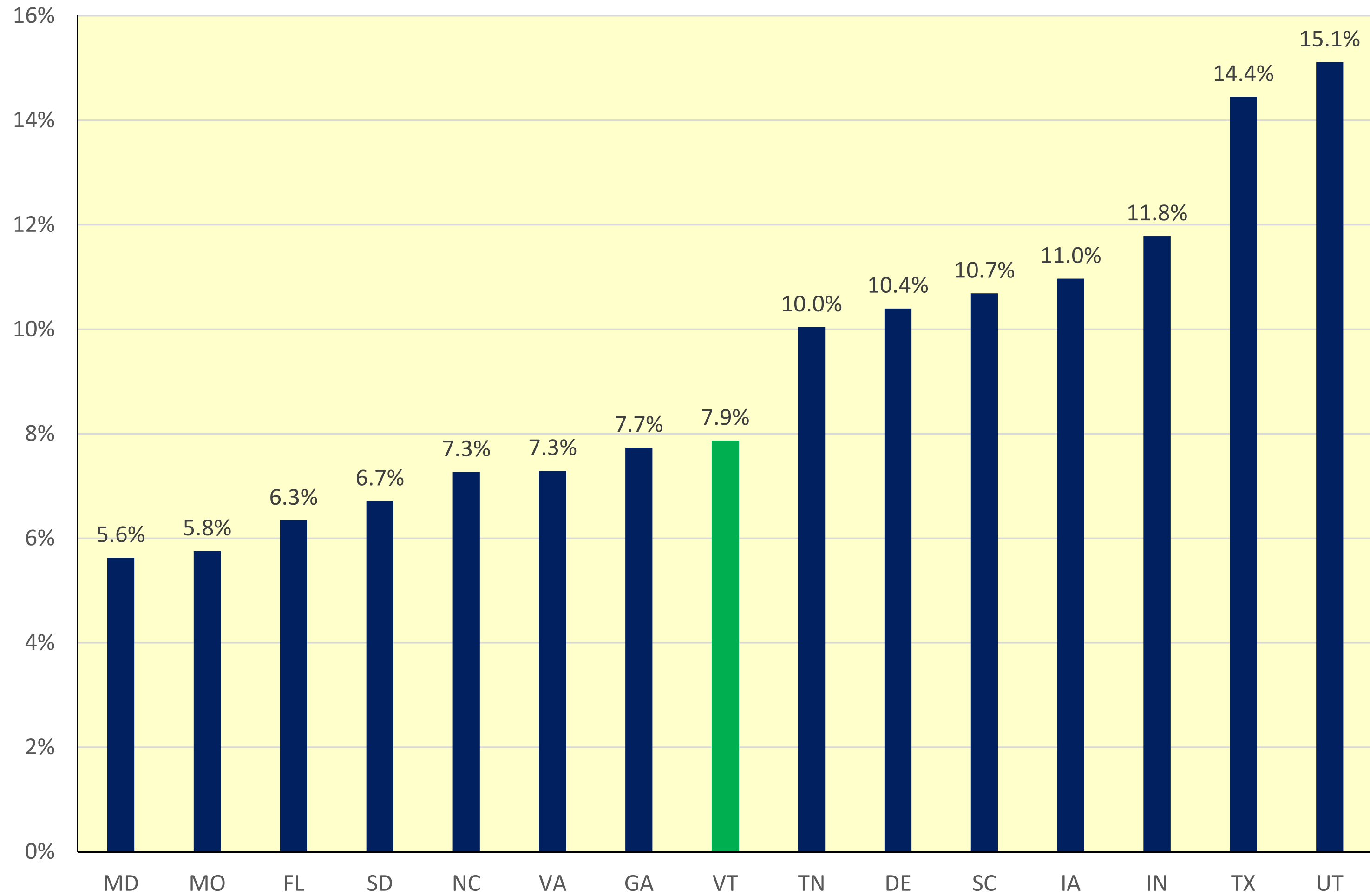
Percent Change in Real Per Capita Income, 2010 - 2015
(Source: BEA)
16%
14%
12%
10%
8%
6%
4%
2%
0%
5.6%
5.8%
6.3%
6.7%
7.3%
7.3%
7.7%
7.9%
10.0%
10.4%
10.7%
11.0%
11.8%
14.4%
15.1%
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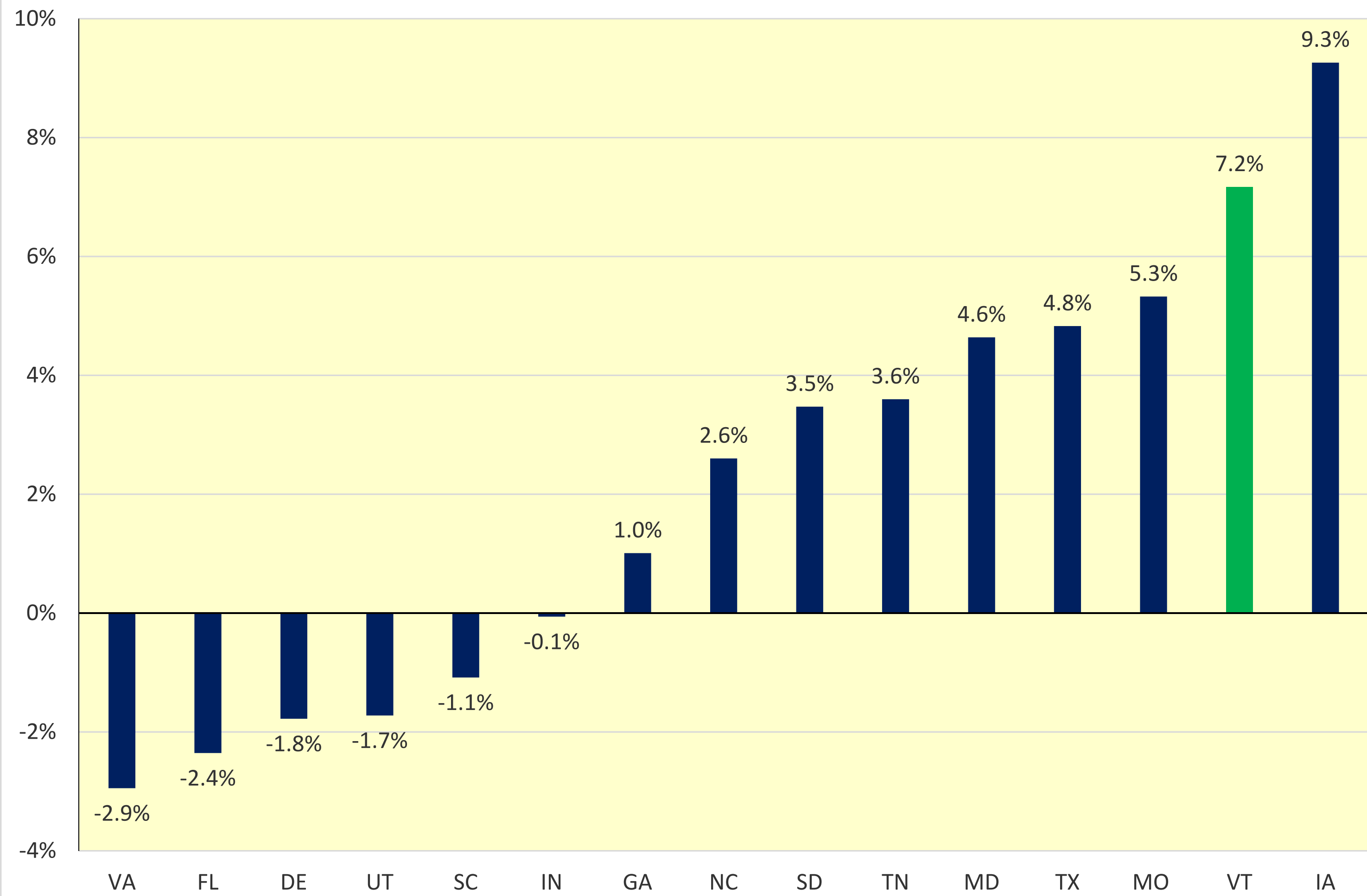

Percent Change in Median Household Income, 2010 - 2015
(Source: Census/CPS, three-year rolling average)
10%
8%
6%
4%
2%
0%
-2%
-4%
-2.9%
-2.4%
-1.8%
-1.7%
-1.1%
-0.1%
1.0%
2.6%
3.5%
3.6%
4.6%
4.8%
5.3%
7.2%
9.3%
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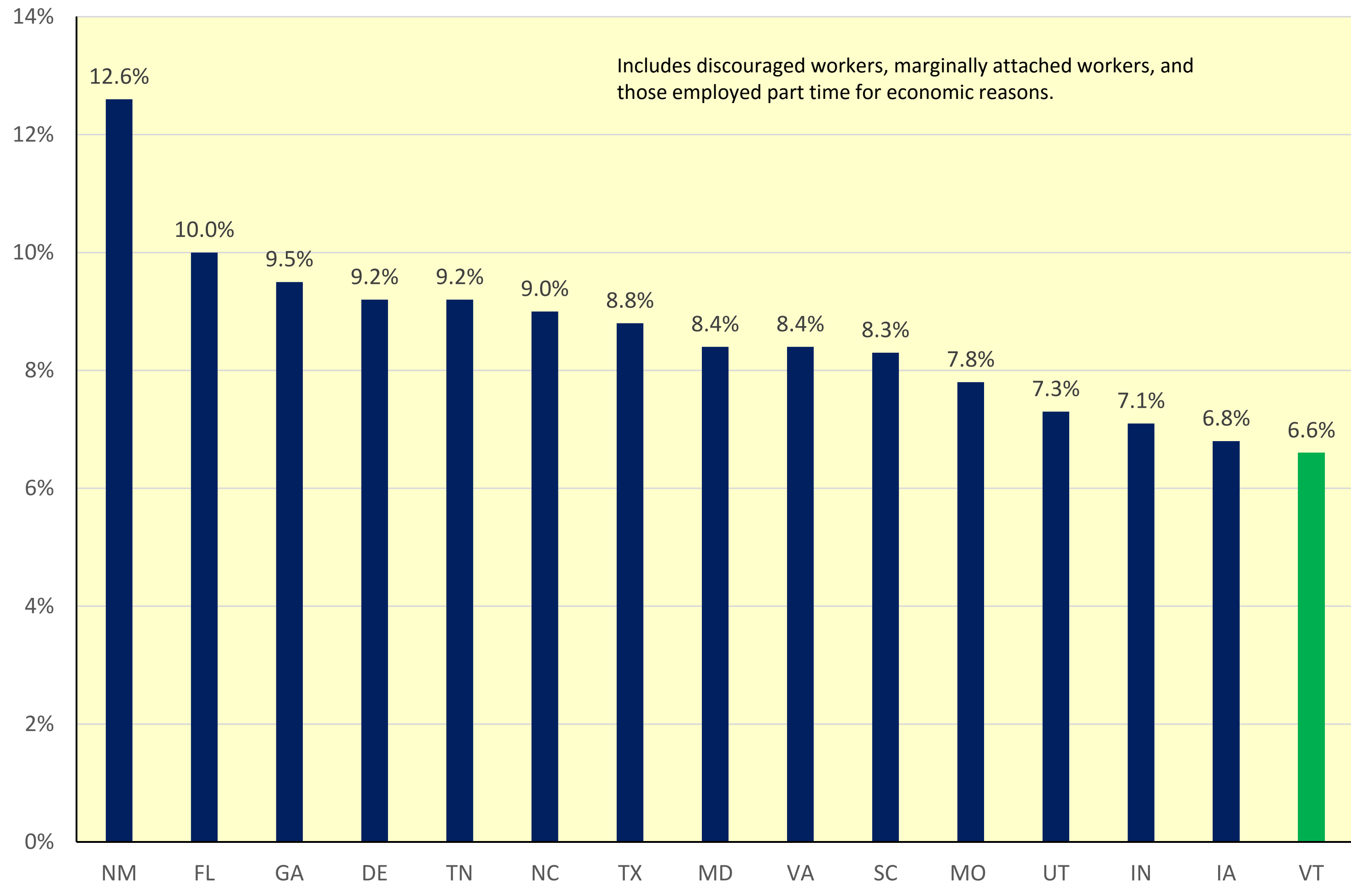

Total Unemployment (U-6), 3rd Q 2016 - 2nd Q 2017
Source: BLS)
Includes discouraged workers, marginally attached workers, and those employed part time for economic reasons.
14%
12%
10%
8%
6%
4%
2%
0%
12.6%
10.0%
9.5%
9.2%
9.2%
9.0%
8.8%
8.4%
8.4%
8.3%
7.8%
7.3%
7.1%
6.8%
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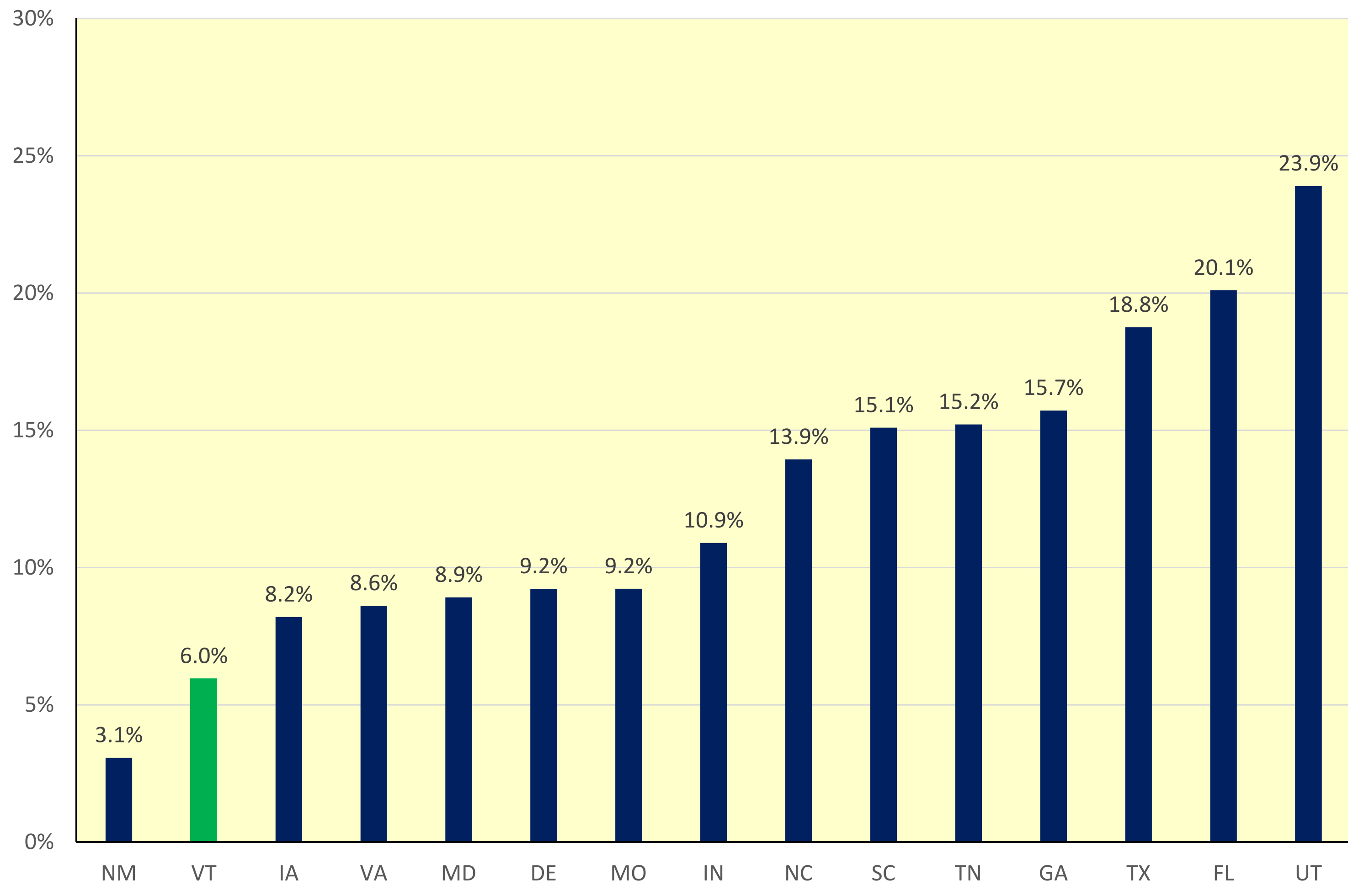
Percent Change in Total Non-Farm Jobs, 2010 - 2017
(Source: BLS / CES)
30%
25%
20%
15%
10%
5%
0%
3.1%
6.0%
8.2%
8.6%
8.9%
9.2%
9.2%
10.9%
13.9%
15.1%
15.2%
15.7%
18.8%
20.1%
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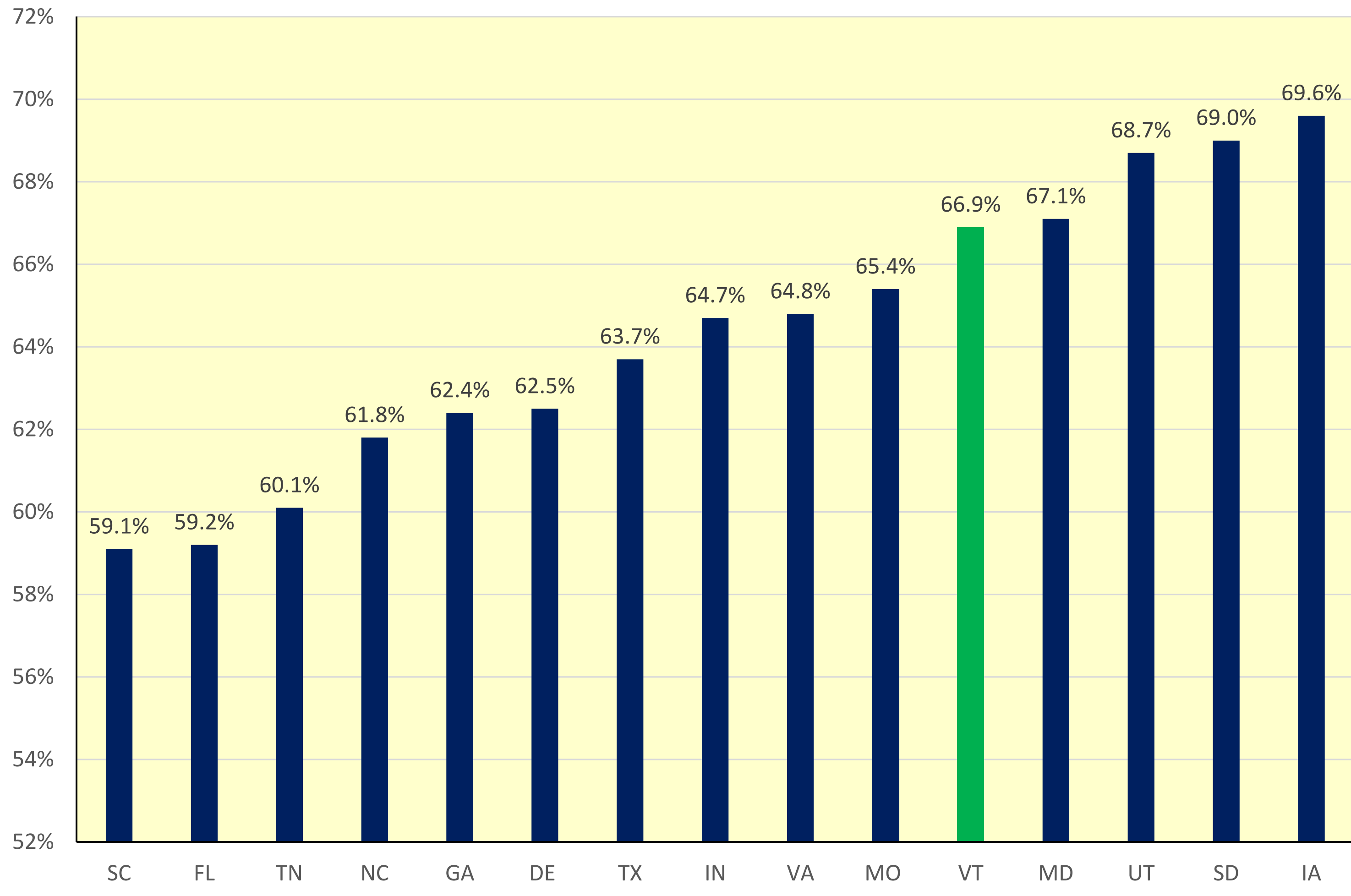
Labor Force Participation Rate, 2016
(Source: BLS)
72%
70%
68%
66%
64%
62%
60%
58%
56%
54%
52%
59.1%
59.2%
60.1%
61.8%
62.4%
62.5%
63.7%
64.7%
64.8%
65.4%
66.9%
67.1%
68.7%
69.0%
69.6%
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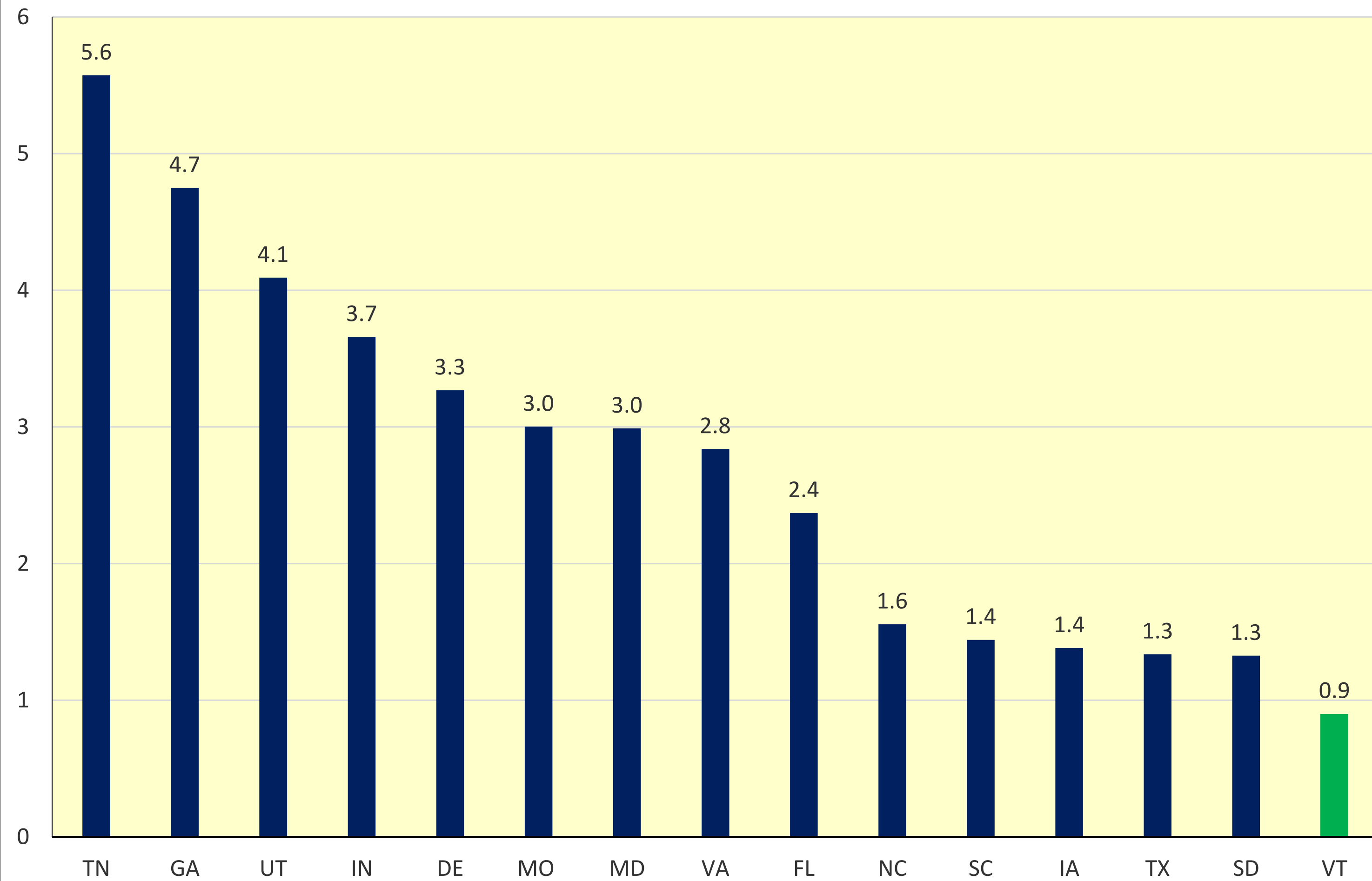
Bankruptcy Filings Per Capita, 2016
(Source: American Bankruptcy Institute)
6
5
4
3
2
1
0
5.6
4.7
4.1
3.7
3.3
3.0
3.0
2.8
2.4
1.6
1.4
1.4
1.3
1.3
0.9
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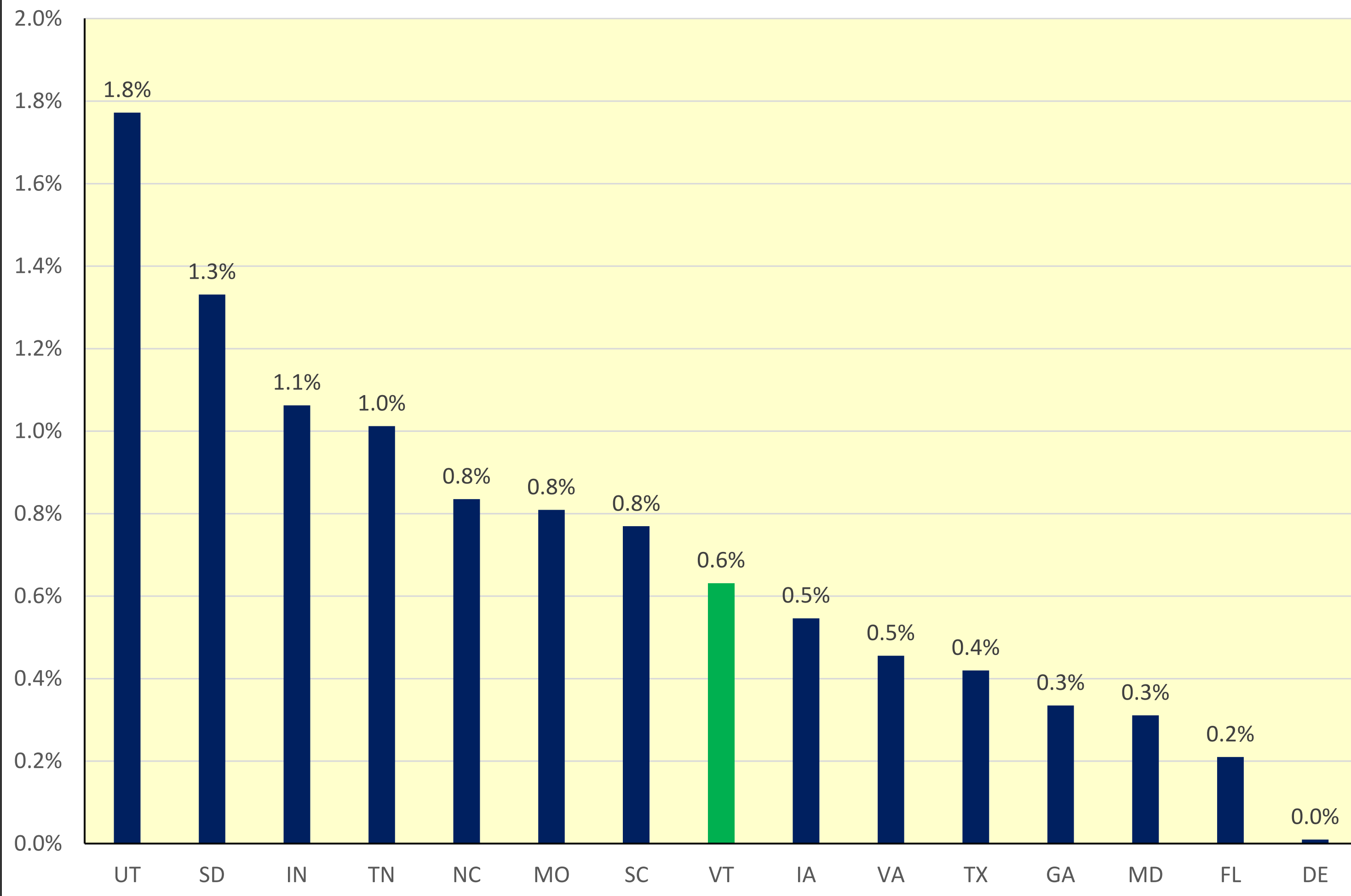
Jobs Lost to Foreign Competition as a Percent of Private Sector Jobs, 2010 - 2015
(Source: BLS and DOL / TAA)
2.0%
1.8%
1.6%
1.4%
1.2%
1.0%
0.8%
0.6%
0.4%
0.2%
0.0%
1.8%
1.3%
1.1%
1.0%
0.8%
0.8%
0.8%
0.6%
0.5%
0.5%
0.4%
0.3%
0.3%
0.2%
0.0%
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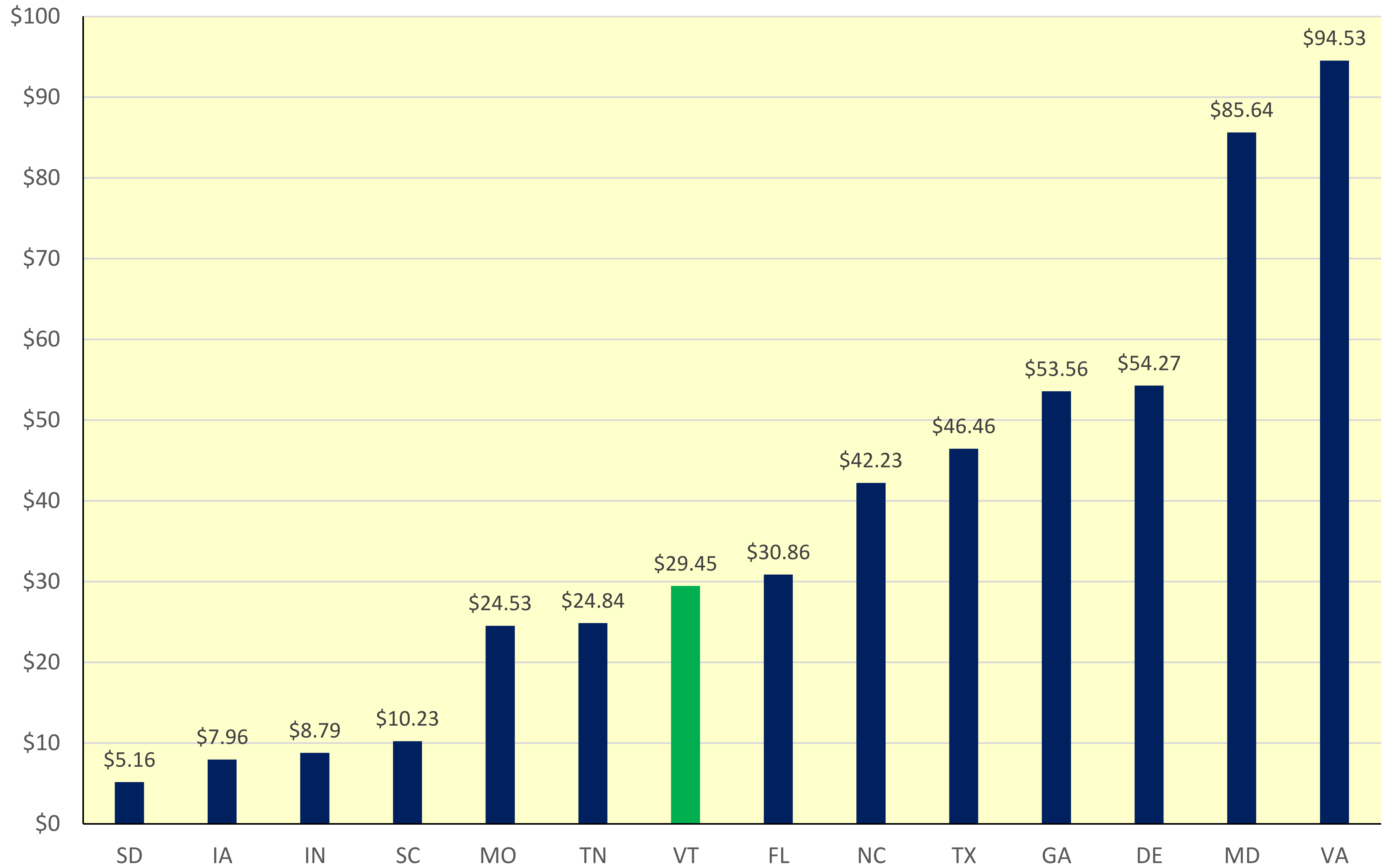
Per Capita Venture Capital Investments
Five-Year Average, 2012 - 2016
(Source: PWC and NVCA)
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
$5.16
$7.96
$8.79
$10.23
$24.53
$24.84
$29.45
$30.86
$42.23
$46.46
$53.56
$54.27
$85.64
$94.53
SD
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MD
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APPENDIX G

Title 32: Taxation and Finance

Chapter 13: DEBTS AND CLAIMS

Sub-Chapter 08: Management Of State Debt

32 V.S.A. § 1001. Capital Debt Affordability Advisory Committee

§ 1001. Capital Debt Affordability Advisory Committee

(a) Committee established. A Capital Debt Affordability Advisory Committee is hereby created with the duties and composition provided by this section.

(b)(1) Committee duties. The Committee shall review annually the size and affordability of the net State tax-supported indebtedness and submit to the Governor and to the General Assembly an estimate of the maximum amount of new long-term net State tax-supported debt that prudently may be authorized for the next fiscal year. The estimate of the Committee shall be advisory and in no way bind the Governor or the General Assembly.

(2) The Committee shall conduct ongoing reviews of the amount and condition of bonds, notes, and other obligations of instrumentalities of the State for which the State has a contingent or limited liability or for which the State Legislature is permitted to replenish reserve funds, and, when deemed appropriate, recommend limits on the occurrence of such additional obligations to the Governor and to the General Assembly.

(3) The Committee shall conduct ongoing reviews of the amount and condition of the Transportation Infrastructure Bond Fund established in 19 V.S.A. § 11f and of bonds and notes issued against the fund for which the state has a contingent or limited liability.

(c) Committee estimate of a prudent amount of net State tax-supported debt; affordability considerations. On or before September 30 of each year, the Committee shall submit to the Governor and the General Assembly the Committee's estimate of net State tax-supported debt which prudently may be authorized for the next fiscal year, together with a report explaining the basis for the estimate. In developing its annual estimate, and in preparing its annual report, the Committee shall consider:

(1) The amount of net State tax-supported indebtedness that, during the next fiscal year, and annually for the following nine fiscal years:

(A) will be outstanding; and

(B) has been authorized but not yet issued.

(2) A projected schedule of affordable State net state tax-supported bond authorizations, for the next fiscal year and annually for the following nine fiscal years. The assessment of the affordability of the projected authorizations shall be based on all of the remaining considerations specified in this section.

(3) Projected debt service requirements during the next fiscal year, and annually for the following nine fiscal years, based upon:

(A) existing outstanding debt;

(B) previously authorized but unissued debt; and

(C) projected bond authorizations.

(4) The criteria that recognized bond rating agencies use to judge the quality of issues of State bonds, including:

(A) existing and projected total debt service on net tax-supported debt as a percentage of combined General and Transportation Fund revenues, excluding surpluses in these revenues which may occur in an individual fiscal year; and

(B) existing and projected total net tax-supported debt outstanding as a percentage of total state personal income.

(5) The principal amounts currently outstanding, and balances for the next fiscal year, and annually for the following nine fiscal years, of existing:

(A) obligations of instrumentalities of the State for which the State has a contingent or limited liability;

(B) any other long-term debt of instrumentalities of the State not secured by the full faith and credit of the State, or for which the State Legislature is permitted to replenish reserve funds; and

(C) to the maximum extent obtainable, all long-term debt of municipal governments in Vermont which is secured by general tax or user fee revenues.

(6) The impact of capital spending upon the economic conditions and outlook for the State.

(7) The cost-benefit of various levels of debt financing, types of debt, and maturity schedules.

(8) Any projections of capital needs authorized or prepared by the Agency of Transportation, the Joint Fiscal Office, or other agencies or departments.

(9) Any other factor that is relevant to:

(A) the ability of the State to meet its projected debt service requirements for the next five fiscal years; or

(B) the interest rate to be borne by, the credit rating on, or other factors affecting the

marketability of State bonds.

(10) The effect of authorizations of new State debt on each of the considerations of this section.

(d) Committee composition.

(1) Membership. Committee membership shall consist of:

(A) As ex officio members:

(i) the State Treasurer;

(ii) the Secretary of Administration; and

(iii) a representative of the Vermont Municipal Bond Bank chosen by the directors of the Bank.

(B) Two individuals with experience in accounting or finance, who are not officials or employees of State government appointed by the Governor for six-year terms.

(C) The Auditor of Accounts who shall be a nonvoting ex officio member.

(D) One person who is not an official or employee of State government with experience in accounting or finance appointed by the State Treasurer for a six-year term.

(2) The State Treasurer shall be the Chairperson of the Committee.

(e) Other attendants of committee meetings. Staff of the Legislative Council and the Joint Fiscal Committee shall be invited to attend Committee meetings for the purpose of fostering a mutual understanding between the Executive and Legislative Branches on the appropriate statistics to be used in committee reviews, debt affordability considerations, and recommendations.

(f) Information. All public entities whose liabilities are to be considered by the Committee shall annually provide the State Treasurer with the information the Committee deems necessary for it to carry out the requirements of this subchapter. (Added 1989, No. 258 (Adj. Sess.), § 1; amended 2007, No. 121 (Adj. Sess.), § 28; 2007, No. 200 (Adj. Sess.), § 25, eff. June 9, 2008; 2009, No. 50, § 31.)