CAPITAL DEBT AFFORDABILITY
ADVISORY COMMITTEE

State of

Vermont

RECOMMENDED ANNUAL NET TAX-SUPPORTED
DEBT AUTHORIZATION

September 2018

Prepared by:
PUBLIC RESOURCES ADVISORY GROUP
39 Broadway, Suite 1210
New York, NY 10006
(212) 566-7800

ELIZABETH A. PEARCE
STATE TREASURER

RETIREMENT DIVISION
TEL: (802) 828-2305
FAX: (802) 828-5182

UNCLAIMED PROPERTY DIVISION
TEL: (802) 828-2407

ACCOUNTING DIVISION
TEL: (802) 828-2301
FAX: (802) 828-2884

STATE OF VERMONT
OFFICE OF THE STATE TREASURER

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 Beth

DATE: September 28, 2018

RE: Capital Debt Affordability Advisory Committee Report for 2018

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 2018 ("Report").

This is the first year of the FY 2020-2021 biennium and the Committee is making a 2-year debt recommendation of $123,180,000. This represents a 7.0% reduction from the previously recommended and adopted authorization of $132,460,000. This is the third consecutive biennium for which the Committee has recommended a reduction in the authorized level of debt issuance, with prior reductions of 9.9% and 8.0% in the previous four years.

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 even with this recommended reduction, coupled with the current expected debt issuance for FY2019, the State's overall debt outstanding will continue to rise over the next several years. Under the Committee's recommendation, however, the rate of increase will moderate and by 2028 outstanding debt levels will drop to just below FY2019 levels

At the same time, the Committee notes the rating agencies concerns with respect to the level of deferred maintenance and/or capital infrastructure replacement among many state and local governments, and we recognize the need to maintain a proactive capital funding plan. To that end, the Committee discussed the need to develop pay-as-you go funding structures that would be beneficial to the capital and asset management process. Several state and local government models were discussed. The Committee plans on taking up this issue in the next months, in concert with the Administration, the General Assembly and Joint Fiscal Office, with the goal of providing recommendations for consideration in the upcoming legislative session.

The State's general obligation bond ratings were affirmed in August 2017 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. I would note that Moody's has changed its ratings criteria and will now place additional emphasis on the economy and liabilities/fixed costs such as debt, pensions and other post-employment benefits (OPEBs) but also, indirectly, Medicaid and other costs. The rating agencies are also taking new approaches in evaluating revenue volatility and reserves.

Our pension and OPEB liabilities are significant and our history of not paying the actuarially determined employer contributions (ADEC) has contributed to today's budgetary pressures. I am pleased that since FY 2007 the State has made its requisite pension contributions and in FY 2018 made a significant effort to address its liability with an additional $26.2 million contribution to the teacher's system, over and above the ADEC. Also, the FY 2019 adopted budget includes an additional pension contribution over and above the ADEC in the amount of $10 million. In addition, the FY 2019 budget directs that, after all general fund reserve requirements have been satisfied, fifty percent of any remaining unreserved and undesignated end-of-fiscal year 2019 general fund surplus shall be transferred to the teacher system OPEB trust. These steps further our resolve to address these liabilities. We must remain disciplined in our practices to provide retirement security and value to the taxpayer.

The rating agencies have also focused on states' financial preparedness related to the next economic downturn. In that regard, the State also took efforts to build its reserves in the FY19 budget, which increased the fiscal 2019 stabilization reserve to $78.18 million from $77.0 million in fiscal 2018. In addition, other reserves were increased, including the human service caseload reserves, resulting in an increase of all general fund related reserves from $122.3 to $206.7 million. Taking into account the reduction in the appropriation due to the changes to the general fund transfer to the education fund, all general fund related reserves represents 13.1% of 2019 general fund related appropriations compared to 6.6% for fiscal 2018 general fund related appropriations. The rating agencies are taking a somewhat different approach to reserves with a recognition of the needs for higher levels of reserves, assessment of levels in the context of revenue volatility, budget flexibility and fiscal shock stress testing. Despite our progress, continued discussion of the use of budget surplus funds, the adequacy of different reserve levels and their availability will be needed.

Our nation's tax, budgeting and fiscal policies present tremendous challenges and/or stresses going forward that will impact the State. Vermont also faces challenges, both in demographics and in economic growth. There are no quick fixes. We must continue to work together to develop solutions that serve not just immediate budget priorities but also the long-term economic prosperity of the State and all its citizens. We must continue and build on past practices and protect the State's reputation for fiscal prudence, conservative debt management, reserve maintenance, 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.

TABLE OF CONTENTS

1. Overview ... 1

2. State Debt ... 5

3. Debt Guidelines ... 21

4. National Credit Rating Methodologies and Criteria ... 31

5. Economic and Financial Forecasts ... 39

6. State Guidelines and Recent Events ... 44

7. Acknowledgements ... 57

8. Appendices ... 58

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

Based upon the economic and financial projections prepared by Economic and Policy Resources, Inc. (EPR), the administration's economist, the Committee's two-year debt recommendation for fiscal years 2020 and 2021 is $123,180,000, reflecting a reduction of 7.0% from the previous biennium recommendation of $132,460,000. 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.

CDAAC conducted a comprehensive review of affordability factors and metrics. The Committee reviews the State's annual cost of debt service as a percentage of revenues, and other debt ratios such as debt as a percentage of gross state product, debt as a percentage of personal income and debt per capita. Consistent with the criteria used by the rating agencies to evaluate U.S. states' overall credit ratings, CDAAC also reviewed debt metrics when combined with other state long-term liabilities, including pensions, other post-employment benefits and Medicaid. See Section 6, "State Debt Guidelines and Recent Events" for a detailed discussion of CDAAC's analytical approach.

As stated in past CDAAC reports, the more limited debt issuance among the State's peer triple-A rated states over the past four years and the State issuing more debt than it has been retiring has weakened the State's relative position compared to its peers. In addition, even with the 7% lower proposed authorization, the projected debt issuance of $108,835,000 in FY 2019 and $61,590,000 per year thereafter will still 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 with its debt per capita guideline under its current framework if the 2018 CDAAC recommendation was the same as the 2016 CDAAC biennium recommendation. Furthermore, a separate scenario indicates that debt per capita target could be achieved, assuming a 16.0% reduction in the 2018 CDAAC recommendation. Upon careful consideration, CDAAC opted to adopt the authorization with the 7% reduction as the 16% reduction was viewed as too severe of a biennial reduction for the State. Additionally, the Committee reviewed the benefits of the State increasing its pay-as-you-go capital funding, as discussed below.

CDAAC intends to consider that the State increase the use of pay-as-you-go resources to fund State capital projects. CDAAC notes the rating agencies' concerns regarding the level of state and local governments' deferred maintenance and deferred capital infrastructure replacement. (See "Capital Funding and Capital Plan" below.) The Committee believes that using additional pay-as-you-go ("Pay-go") funds would be beneficial for funding infrastructure including capital projects with shorter useful lives, such as technology projects, etc. The Committee noted the benefit of additional Pay-go funds – increase of Pay-go funds means more sources for capital projects, as well as reducing interest cost and total borrowing amounts over-time. The Committee reviewed examples of Pay-go models used by other state and local governments to increase Pay-go funds to be used for capital. Over the next few months, the Committee seeks to meet with members of the Administration and Joint Fiscal Office and meet later in the fiscal year to come up with specific recommendations.

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

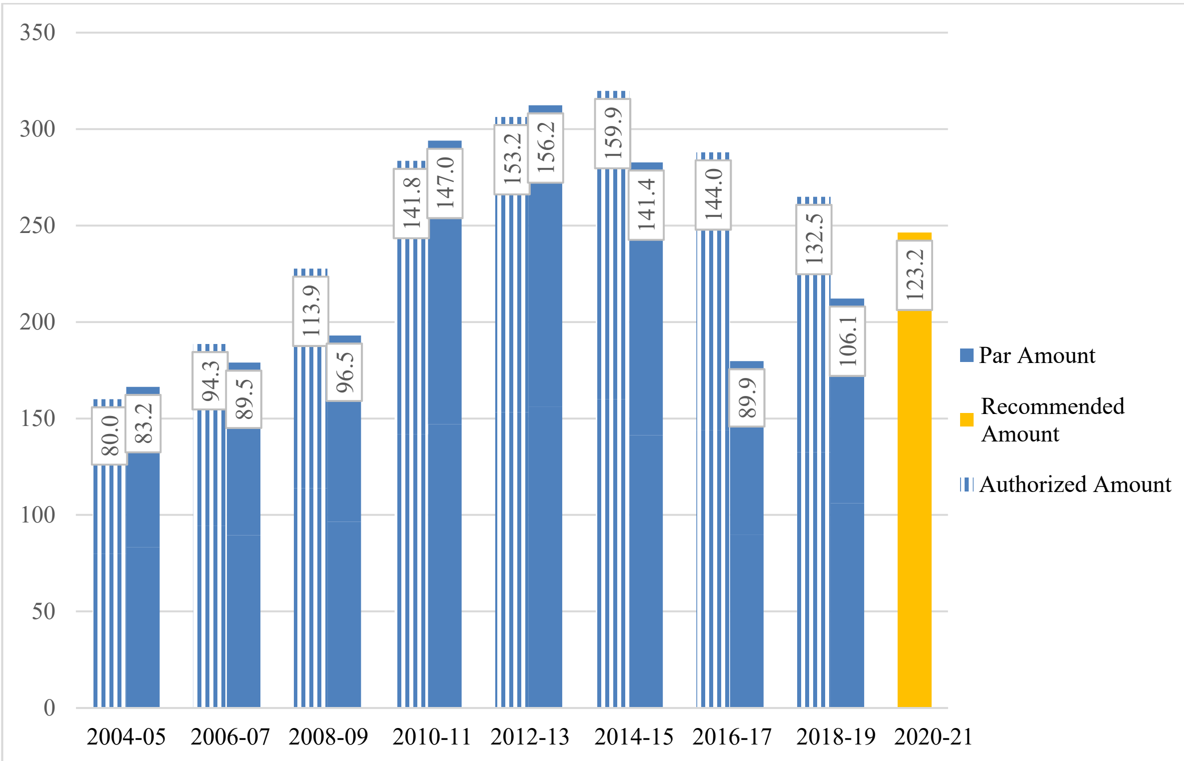
As a matter of practice, while the CDAAC legislation refers to an authorization of "net tax-supported debt," the amount of net tax-supported debt for the State means only general obligation (or "G.O.") debt, and this report assumes only G.O. debt for authorization purposes and in calculating its projected 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 fifteen years. For the period from 2004-2015, the biennial issuance approximately doubled; however, in recent years the State has taken steps to reduce its biennial authorization. The 2020-2021 authorization is a 23% reduction from the 2014-2015 biennial authorization amount of $159.9 million. The compound annual growth rate in debt authorizations from 2004 has been 3.1%. Including the 2020-2021 recommended authorization amount, the compound annual growth rate in debt authorizations is 2.7%.

(THIS SPACE INTENTIONALLY LEFT BLANK)

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), as amended by the 2018 Capital Bill (Act 190). 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. The par amount reflects $106.1 million aggregate par amount of the September 2017 issue. The State plans to issue its fiscal year 2019 bond towards the end of the calendar year 2018.

For fiscal years 2018-2019, the General Assembly has authorized $132,460,000 in new general obligation bonds. In addition, there was at that time $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 amount to $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), as amended by the 2018 Capital Bill Adjustment (Act 190), authorized $143,396,961.00 in total capital project spending consisting of: $132,460,000 in new general obligation debt and $10,936,961.00 from "unissued principal." The proceeds of the bonds will be allocated for a competitive grant program for Adult Tech Centers, adequate facilities for those suffering from mental illness, the ongoing commitment for Vermont's Clean Water Initiative, needed investments in State-owned buildings and facilities, and other appropriations of the State.

Vermont's Department of Building and General Services prepares an annual 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. With the passage of 32 V.S.A. § 310, the Administration is required to prepare and revise a ten-year State capital program plan on an annual basis, submitting it for approval by the general assembly. The statute requires the plan to include a list of all recommended projects in the current fiscal year, plus the following nine fiscal years thereafter. The recommendations include an assessment, projection of capital needs, and a comprehensive financial assessment. CDAAC believes that long-term capital planning coupled with projected funding sources will result in a more efficient funding process for State capital projects. The Committee expects to annually review and consider future capital improvement program plans.

Additionally, CDAAC reviewed rating agencies' concerns regarding the level of state and local governments' deferred maintenance on critical infrastructure and likelihood of this becoming an increasing focus in the rating agencies' evaluation of the creditworthiness. S&P recently published a report in May 2018 titled *Between a Budget and a Hard Place: The Risks of Deferring Maintenance for U.S. Infrastructure* that outlined the growing level of deferred maintenance in the U.S. and the absence of a standard for measuring the amount of deferred maintenance. The report also discusses the need for state and local governments to identify and report on deferred maintenance and for governments to establish asset replacement funding solutions. S&P also highlighted the District of Columbia as the leader in identifying and quantifying the amount of deferred maintenance and establishing replacement funding plans. In response, CDAAC evaluated several of the District's reports, plans and other documentation in regards to this initiative.

(THIS SPACE INTENTIONALLY LEFT BLANK)

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. Currently, the State has outstanding G.O. bonds payable primary from the State's General 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 also includes 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. Since the identification of the St. Albans capital lease in the 2015 audit, the State has deemed the Noresco Building and the State's capital equipment leases as capital leases, as well. The 2018 CDAAC Report includes the 27 Federal Street in St. Albans and the Noresco Building capital leases compared to prior reports in which the St. Albans capital leases was only recognized. (The State's capital equipment leases were all retired as of June 30, 2018.) The total amount of capital leases as of June 30, 2018, with a fair market value of $9.751 million, is included as net tax-supported debt.

Current Status

G.O. Debt and capital leases outstanding as of June 30, 2018 was $645,561,211. Amount authorized but unissued as of June 30, 2018 was $108,839,554.37, which consists of $97,902,593.37 of the remaining $132,460,000 authorization and $10,936,961.00 of "unissued principal."

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 five 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."

(THIS SPACE INTENTIONALLY LEFT BLANK)

Net Tax-Supported Debt Outstanding

The State's aggregate net tax-supported principal amount of debt increased from $588.9 million, as of June 30, 2017, to $645.6 million, as of June 30, 2018, an increase of 9.6%. However, the 2017 debt levels were unusually low due to the State not issuing bonds in fiscal year 2017. The State's aggregate net tax-supported principal amount of debt, as of June 30, 2018 compared to June 30, 2016, which was $637.1 million, is only a 1.34% increase. The table below sets forth the sources of the change in net tax-supported debt outstanding from fiscal year 2017 to fiscal year 2018 (in thousands).

Net Tax-Supported Debt as of 6/30/17	$588,868*
G.O. New Money Bonds Issued	106,095
Less: Retired G.O. Bonds………….…….	(47,345)
Less: Retired Capital Lease………….…….	(2,057)*
Net Tax-Supported Debt as of 6/30/18	$645,561

*Net tax-supported debt, as of June 30, 2017, did not include capital leases for the Noresco Building and the State's capital equipment leases within the 2017 CDAAC Report, whereas those respective capital leases are now included within the 2018 CDAAC Report.

(THIS SPACE INTENTIONALLY LEFT BLANK)

STATE OF VERMONT
Debt Statement
As of June 30, 2018 (In Thousands)

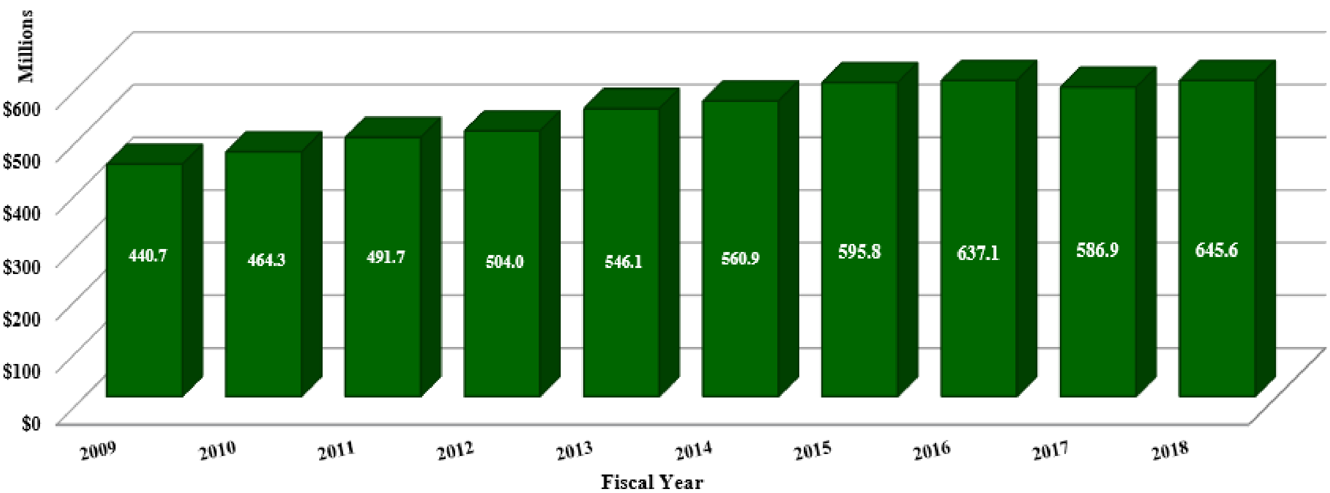
General Obligation Bonds:	
General Fund	$631,161
Transportation Fund	4,649
Capital Leases:	
27 Federal Street, St. Albans	$9,646
Noresco Building	105
Self-Supporting Debt:	
Special Obligation Transportation Infrastructure Bonds (TIBs)	$26,750
Reserve Fund Commitments[1]:	
Vermont Municipal Bond Bank	$584,510
Vermont Housing Finance Agency	155,000
VEDA Indebtedness[2]	175,000
Vermont Student Assistance Corporation	50,000
Vermont Telecommunications Authority[2]	40,000
Univ. of Vermont/State Colleges	100,000
Gross Direct and Contingent Debt	$1,776,821
Less:	
Self-Supporting Debt	(26,750)
Reserve Fund Commitments	(1,104,510)
Net Tax-Supported Debt[3]	**$645,561**

[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.

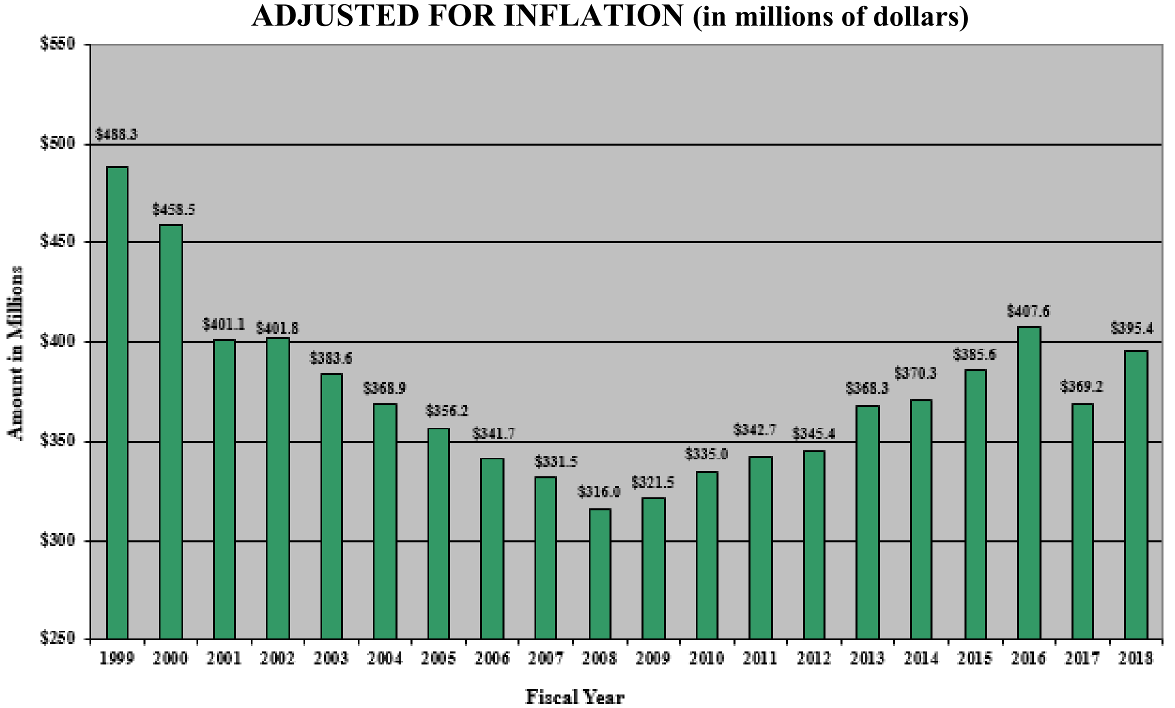
[2]As of July 1, 2018.

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

STATE OF VERMONT
GENERAL OBLIGATION BONDS OUTSTANDING FY 2007-2018 (in millions of dollars)



STATE OF VERMONT
GENERAL OBLIGATION DEBT OUTSTANDING, FY 1999-2018
ADJUSTED FOR INFLATION (in millions of dollars)



The table below sets forth the State's existing principal amounts outstanding and annual debt service requirements, as of June 30, 2018, without the issuance of any additional G.O. debt. Rating agencies consider Vermont's rapid debt amortization, with almost 70% of current principal retired by fiscal year 2029, 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		Capital Leases		Total	
Fiscal Year	Principal Outstanding	Debt Service*	Principal Outstanding	Debt Service	Principal Outstanding	Debt Service	Principal Outstanding	Total Debt Service*
2018	631,161	67,814	4,649	1,709	9,751	809	645,561	70,332
2019	580,819	72,783	3,231	1,630	9,418	922	593,468	75,334
2020	531,192	70,137	2,813	560	9,157	835	543,162	71,532
2021	481,499	68,234	2,396	541	8,862	854	492,757	69,629
2022	434,577	63,570	1,978	522	8,529	873	445,084	64,964
2023	389,490	60,008	1,560	502	8,157	893	399,207	61,403
2024	346,775	55,984	1,300	327	7,741	913	355,816	57,224
2025	304,110	54,292	1,040	317	7,280	933	312,430	55,542
2026	263,450	50,676	780	306	6,770	954	271,000	51,936
2027	224,755	47,250	520	295	6,207	976	231,482	48,521
2028	188,395	43,577	260	283	5,588	998	194,243	44,858
2029	154,195	40,204	-	272	4,908	1,020	159,103	41,496

* 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.

(THIS SPACE INTENTIONALLY LEFT BLANK)

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 $61,590,000 each fiscal year from 2020-2029.

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
6/30/2018	70,332	2.47%	645,561	8.35%
6/30/2019	75,334	7.11%	702,303	8.79%
6/30/2020	82,414	9.40%	708,147	0.83%
6/30/2021	86,706	5.21%	710,812	0.38%
6/30/2022	88,375	1.92%	713,129	0.33%
6/30/2023	91,272	3.28%	714,162	0.14%
6/30/2024	93,349	2.28%	714,601	0.06%
6/30/2025	97,724	4.69%	711,965	-0.37%
6/30/2026	99,975	2.30%	708,205	-0.53%
6/30/2027	102,216	2.24%	703,277	-0.70%
6/30/2028	104,009	1.75%	697,548	-0.81%
6/30/2029	105,903	1.82%	690,838	-0.96%

* Please see table titled "Historic and Projected Debt Ratios" on page 28 for projected debt relative to projected Vermont revenues.

(THIS SPACE INTENTIONALLY LEFT BLANK)

EXISTING AND PROJECTED NET TAX-SUPPORTED G.O. DEBT SERVICE ($000)													
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
	Current	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Est.
FY	D/S	$108.835M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	D/S
		5.00%	5.50%	6.00%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	
2019	75,334	0	0	0	0	0	0	0	0	0	0	0	75,334
2020	71,532	10,882	0	0	0	0	0	0	0	0	0	0	82,414
2021	69,629	10,610	6,467	0	0	0	0	0	0	0	0	0	86,706
2022	64,964	10,338	6,298	6,775	0	0	0	0	0	0	0	0	88,375
2023	61,403	10,066	6,129	6,591	7,083	0	0	0	0	0	0	0	91,272
2024	57,224	9,794	5,959	6,406	6,883	7,083	0	0	0	0	0	0	93,349
2025	55,542	9,522	5,790	6,221	6,683	6,883	7,083	0	0	0	0	0	97,724
2026	51,936	9,250	5,620	6,036	6,483	6,683	6,883	7,083	0	0	0	0	99,975
2027	48,521	8,978	5,451	5,851	6,283	6,483	6,683	6,883	7,083	0	0	0	102,216
2028	44,858	8,706	5,282	5,667	6,082	6,283	6,483	6,683	6,883	7,083	0	0	104,009
2029	41,496	8,434	5,112	5,482	5,882	6,082	6,283	6,483	6,683	6,883	7,083	0	105,903

EXISTING AND PROJECTED NET TAX-SUPPORTED G.O. BOND PRINCIPAL PAYMENTS ($000)													
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
	Current	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Est.
FY	Principal	$108.835M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	Principal
2019	52,093	0	0	0	0	0	0	0	0	0	0	0	52,093
2020	50,306	5,440	0	0	0	0	0	0	0	0	0	0	55,746
2021	50,405	5,440	3,080	0	0	0	0	0	0	0	0	0	58,925
2022	47,673	5,440	3,080	3,080	0	0	0	0	0	0	0	0	59,273
2023	45,878	5,440	3,080	3,080	3,080	0	0	0	0	0	0	0	60,558
2024	43,390	5,440	3,080	3,080	3,080	3,080	0	0	0	0	0	0	61,150
2025	43,386	5,440	3,080	3,080	3,080	3,080	3,080	0	0	0	0	0	64,226
2026	41,430	5,440	3,080	3,080	3,080	3,080	3,080	3,080	0	0	0	0	65,350
2027	39,518	5,440	3,080	3,080	3,080	3,080	3,080	3,080	3,080	0	0	0	66,518
2028	37,239	5,440	3,080	3,080	3,080	3,080	3,080	3,080	3,080	3,080	0	0	67,319
2029	35,139	5,440	3,080	3,080	3,080	3,080	3,080	3,080	3,080	3,080	3,080	0	68,299

EXISTING AND PROJECTED NET TAX-SUPPORTED G.O. BONDS OUTSTANDING ($000)													
		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
	Current	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Issue	Est.
FY	Debt	$108.835M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	61.590M	Debt
2018	645,561	0	0	0	0	0	0	0	0	0	0	0	645,561
2019	593,468	108,835	0	0	0	0	0	0	0	0	0	0	702,303
2020	543,162	103,395	61,590	0	0	0	0	0	0	0	0	0	708,147
2021	492,757	97,955	58,510	61,590	0	0	0	0	0	0	0	0	710,812
2022	445,084	92,515	55,430	58,510	61,590	0	0	0	0	0	0	0	713,129
2023	399,207	87,075	52,350	55,430	58,510	61,590	0	0	0	0	0	0	714,162
2024	355,816	81,635	49,270	52,350	55,430	58,510	61,590	0	0	0	0	0	714,601
2025	312,430	76,195	46,190	49,270	52,350	55,430	58,510	61,590	0	0	0	0	711,965
2026	271,000	70,755	43,110	46,190	49,270	52,350	55,430	58,510	61,590	0	0	0	708,205
2027	231,482	65,315	40,030	43,110	46,190	49,270	52,350	55,430	58,510	61,590	0	0	703,277
2028	194,243	59,875	36,950	40,030	43,110	46,190	49,270	52,350	55,430	58,510	61,590	0	697,548
2029	159,103	54,435	33,870	36,950	40,030	43,110	46,190	49,270	52,350	55,430	58,510	61,590	690,838

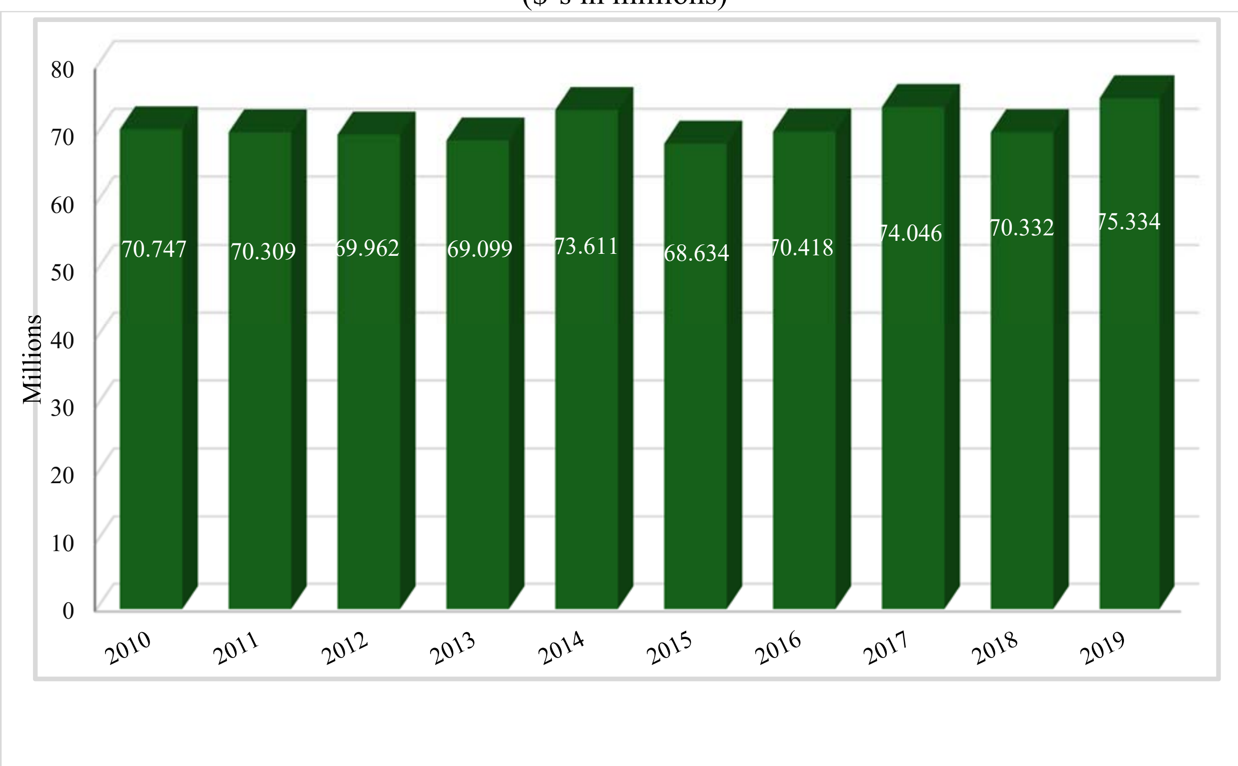
Net Tax-Supported Debt Service by Fiscal Year

The State's scheduled G.O. net debt service requirement ("D/S") for fiscal year 2019 is $75.3 million, 7.11% more than the $70.3 million paid in fiscal year 2018.

(in $ thousands)	
Net Tax-Supported D/S Paid in FY 2018	$70,332
Decrease in D/S Requirement FY 2018	(4,292)
D/S Increase Due to G.O. Debt Issued in FY 2018	9,294
Net Tax-Supported D/S Due in FY 2019[1]	$75,334

[1] The net debt service amount shown includes the interest subsidy from the federal government (calculated to be $1,133,787.27 during FY 2018), 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]
($'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 been necessary due to the 2012 amendment to 32 V.S.A. § 954 to permit the use of bond premium for capital projects.
[2]See table titled "Historic and Projected Debt Ratios" on page 28 for debt ratios relative to historic Vermont revenues and economic data.

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 credit factor.

Moral Obligation Indebtedness

Provided below is a summary of the State's moral obligation commitments as of June 30, 2018:

Reserve Fund Commitments (all figures as of June 30, 2018):

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, 2018, the VMBB has issued 85 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, 2018 was $584,510,000, and the principal amount of loans outstanding to municipal borrowers as of June 30, 2018 was $563,677,548. 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 VMBB 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, 2018, 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, 2018, the principal amount of bonds outstanding under the 2017 Resolution was $67,660,000. 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 https://emma.msrb.org/IssuerHomePage/Issuer?id=18CA7C36100779C7E053151ED20AEDDA&type=M

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, 2018, the VHFA's total outstanding indebtedness was $443,264,180. 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, 2018, the principal amount of outstanding debt covered by this moral obligation was $37,710,000. As of June 30, 2018, the debt service reserve fund requirement for this debt was $2,897,141, and the value of the debt service reserve fund was $3,043,999. 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 https://emma.msrb.org/IssuerHomePage/Issuer?id=6BF2519F3FCD38EBE053151E6E0A5CAB&type=M

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 two direct-pay letters of credit totaling $95 million from one of the banks. The direct-pay letters of credit are 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. VEDA has two variable-rate and two fixed-rate notes payable from a second bank totaling $80 million. The notes are collateralized from various repayment sources, including a $6.5 million collateral reserve fund held by a trustee and a debt service reserve fund pledge from the State in an amount of $75 million. The 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, 2018 was $93.8 million and the variable and fixed-rate note payable balances outstanding as of June 30, 2018 were $79 million. Act No. 157 (H.916), enacted in May 2018, increased VEDA's debt capacity from $155,000,000 to $175,000,000, effective July 1, 2018. 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 moral obligation pledge 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 $6.6 million is outstanding. It is not expected that the State will need to appropriate money to the respective reserve funds for VSAC. For additional information about VSAC, see its most recent disclosure document, which can be found on the EMMA system at http://emma.msrb.org.

Importantly, there has been a notable increase in the State's moral obligation commitments over the past eight (8) 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 $1,104.5 million, with the VMBB and VEDA granted most of the difference. However, the actual amount of moral obligation debt outstanding in the amount of $783.8 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 July 1, 2018

Issuer Name	Amount Provided In Statute	Actual Par Amount Outstanding
Vermont Municipal Bond Bank	$584,510,000	$584,510,000
Vermont Economic Development Authority	175,000,000	172,800,000
Vermont Housing Finance Agency	155,000,000	37,710,000
Vermont Student Assistance Corporation	50,000,000	6,600,000
University of Vermont	66,000,000	0
Vermont State Colleges	34,000,000	0
Vermont Telecommunications Authority	40,000,000	0
	$1,104,510,000	$801,620,000

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.

On January 22, 2018, S&P published *Issue Credit Ratings Linked To U.S. Public Finance Obligors' Creditworthiness* which updated the moral obligation criteria. The new methodology assesses the obligor's involvement, the intended payment source and whether there are any unusual political or administrative risks in the transaction. S&P then determines the rating by notches off the respective issuer according to the evaluation of the obligor. Several national obligor's have raised their respective ratings with only one notch below their respective issuer by displaying strong relationships within the three areas. There have been no ratings changes for each respective State issuer of moral obligation bonds since the published report.

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 affordability guidelines taking into account the comparative debt burden 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, 2018, at $645,561,211. Using 225% of G.O. debt for establishing a limit of moral obligation debt, the State would have had $348,002,725 in additional moral obligation capacity. Using 200% of G.O. debt for establishing a limit of moral obligation debt, the State would have had $186,612,422 in additional capacity. Using a more conservative 195%, the State still has $154,334,361 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/partners/initiatives/vhfa-publications

Vermont Student Assistance Corporation
https://www.vsac.org/news/annual-reports

*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.

(THIS SPACE INTENTIONALLY LEFT BLANK)

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. Recently, Minnesota was upgraded by S&P and is now included within the Peer Group. 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. See Section 6, "State Guidelines and Recent Events" for additional information, Therefore, the majority of the debt medians for the Peer Group were reduced, as well. However, with the addition of Minnesota to the Peer Group and its larger net tax-supported debt per capita compared to other states within the Peer Group, the median debt statistic for the Peer Group actually increased in regards to Debt Per Capita. The Peer Group's median Debt Per Capita changed from \$650 in 2017 to \$694 in 2018, median Debt as a Percentage of Personal Income decreased from 1.6% in 2017 to 1.5% in 2018 and median Debt as a Percentage of Gross State Product decreased from 1.4% in 2017 to 1.3% in 2018. Vermont was in the majority of states within the Peer Group that reduced debt levels in 2017 (due to not issuing bonds in 2017). As a result of the addition of Minnesota within the Peer Group and Vermont's decreased debt levels, the State's relative rankings slightly improved. If the State increases large authorized debt levels in future years, it is at risk of declines in its relative ranking to its triple-A Peer Group. See "State Guidelines and Recent Events" for more information.

In addition, Moody's, S&P and Fitch review "debt" or "long-term liabilities" as a significant rating factor within each respective rating criteria's. Specifically, Moody's and S&P have developed rating scorecards for state issuers which include an assigned specific criteria and weighting for "debt and pensions" or "debt and liability," respectively, 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. Also, Fitch's rating criteria has "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 $948 and the 5-year average of the median of the Peer Group is $759. Based on data from Moody's, Vermont's 5-year average debt per capita figure is $978, which is above the 5-year mean and 5-year 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 a limiting factor in the Committee's determination of the recommended debt authorization 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. 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 2017 (with a ranking of 24th), the State's position slipped each year, and in 2018, the State slightly increased its ranking to 25th position. (The State did not conduct its annual G.O. bond issuance in FY 2017). 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 1.8% for the mean and the median respectively (the five-year average of Moody's Mean and Moody's Median for the Peer Group is 2.1% and 1.9%, respectively). Based on data from Moody's, Vermont's net tax supported debt as a percent of personal income is 2.0%, 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 (with a ranking of 27th) and slightly increased in 2018 with a current ranking in the 28th position. (The State did not conduct its annual G.O. bond issuance in FY 2017.)

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 4.0%, 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 2019, increasing annually by 0.5% to a maximum rate of 6.5% in fiscal years 2022 through 2029.

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 2.1%, 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.

Act 11 (H.16), discussed further in Section 6, "State Guidelines and Recent Events, Statutory Change Relating to Revenues and Effect on Debt Service as a Percentage of Revenue," directed 100% State Sales & Use Tax and a portion of Meals and Rooms Tax to go the Education Fund directly compared to the previous practice of a General Fund transfer to the Education Fund. Due to the fact that the revenue allocation change became effective during the current fiscal year, there was insufficient time to analyze historical revenue pro formas and options for a revised guideline. Therefore, CDAAC is using an adjusted General Fund revenue projection for FY 2019 – FY 2029 for the Debt Service as a Percentage of Revenues calculations as if Act 11 did not occur in order to provide comparability to historic results. The 2019 report is expected to contain post Act 11 General Fund Revenue, an adjustment of historical revenue for comparability and a revised Debt Service as a Percentage of Revenues guideline. Please see Section 5, "Economic and Financial Forecasts."

Debt as a Percent of Gross State Product

At present the 2018 Moody's mean and median for debt as a percentage of gross state product for the Peer Group is 1.6% and 1.3%, 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 2018 statistics based on 2017 net tax supported debt as a percentage of 2016 state gross domestic product.) Based on data from Moody's, Vermont's 2017 net tax supported debt as a percentage of gross state product is 2.00%, 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 1.8% and 1.6% 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 27th in 2015 and 2016, 25th in 2017 and 28th in 2018.

(THIS SPACE INTENTIONALLY LEFT BLANK)

STATE OF VERMONT
2018 STATES RATED TRIPLE-A BY TWO OR MORE RATING AGENCIES
(as of July 31, 2018)

2018 Triple-A Rated States (1)*	Moody's	S&P	Fitch
Delaware	Yes	Yes	Yes
Florida (2)	Yes	Yes	Yes
Georgia	Yes	Yes	Yes
Indiana (3)	Yes	Yes	Yes
Iowa (3)	Yes	Yes	Yes
Maryland	Yes	Yes	Yes
Minnesota (4)	No	Yes	Yes
Missouri	Yes	Yes	Yes
North Carolina	Yes	Yes	Yes
South Carolina	Yes	No	Yes
South Dakota (5)	Yes	Yes	Yes
Tennessee	Yes	Yes	Yes
Texas	Yes	Yes (3)	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 2018. Sixteen states are currently rated triple-A by two or more of the nationally recognized rating agencies.

(2) Moody's upgraded Florida on June 21, 2018.

(3) 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.

(4) S&P upgraded Minnesota on July 25, 2018.

(5) 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	2014	2015	2016	2017	2018
All States	$1,436	$1,419	$1,431	$1,473	$1,477
Triple-A[1]	1,027	980	904	901	929
VERMONT	**878**	**954**	**1,002**	**1,068**	**987**

% of Personal Income	2014	2015	2016	2017	2018
All States	3.2%	3.1%	3.0%	3.0%	2.9%
Triple-A[1]	2.4	2.3	2.1	2.0	2.0
VERMONT	1.9	2.0	2.1	2.1	2.0

(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: $948 MEDIAN: $759
5-Year Average Vermont: $978

Triple-A Rated States[1]	Moody's Ratings[2]	S&P Ratings[2]	Fitch Ratings[2]	Moody's Debt Per Capita 2014	2015	2016	2017	2018
Alaska	Aa2/Negative	AA+/Negative	AA+/Negative	$1,573	$1,489	$1,422*	$1,691*	$1,574*
Delaware	Aaa/Stable	AAA/Stable	AAA/Stable	2,485	2,438	2,385	2,544	2,587
Florida	Aaa/Stable	AAA/Stable	AAA/Stable	1,008	973	1,038	961	889
Georgia	Aaa/Stable	AAA/Stable	AAA/Stable	1,064	1,043	1,029	992	986
Indiana	Aaa/Stable	AAA/Stable	AAA/Stable	533	474	463	310	295
Iowa	Aaa/Stable	AAA/Stable	AAA/Stable	275	250	239	228	219
Maryland	Aaa/Stable	AAA/Stable	AAA/Stable	1,791	1,889	1,928	2,122	2,164
Minnesota	Aa1/Stable	AAA/Stable	AAA/Stable	1,402*	1,538*	1,527*	1,480*	1,430
Missouri	Aaa/Stable	AAA/Stable	AAA/Stable	668	606	574	579	532
North Carolina	Aaa/Stable	AAA/Stable	AAA/Stable	806	739	721	659	611
South Carolina	Aaa/Stable	AA+/Stable	AAA/Stable	749	672	603	564	517
South Dakota	Aaa/Stable	AAA/Stable	AAA/Stable	391*	547*	652	641	694
Tennessee	Aaa/Stable	AAA/Stable	AAA/Stable	324	327	298	322	312
Texas	Aaa/Stable	AAA/Stable[4]	AAA/Stable	614	406	383	383	410
Utah	Aaa/Stable	AAA/Stable	AAA/Stable	1,187	1,060	921	824	772
Virginia	Aaa/Stable	AAA/Negative	AAA/Stable	1,302	1,356	1,418	1,486	1,515
MEAN[3]	___________	___________	__________	**1,027**	**980**	**904**	**901**	**929**
MEDIAN[3]	___________	___________	__________	**907**	**856**	**687**	**650**	**694**
VERMONT	Aaa/Stable	AA+/Stable	AAA/Stable	878	954	1,002	1,068	987

(1) States that carry at least two triple A ratings.
(2) Ratings as of July 31, 2018.
(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 and amount not used in calculating the mean or median for the indicated year.

STATE OF VERMONT
DEBT AS % OF PERSONAL INCOME COMPARISON

<u>Peer Group States (All states with at least two triple-A ratings)</u>
5-Year Average Mean and 5-Year Average Median Excluding Vermont:
MEAN: 2.1% MEDIAN: 1.9%
5-Year Average Vermont: 2.0%

Triple-A Rated States	Moody's Debt as % of 2016 Personal Income				
	2014	2015	2016	2017	2018
Alaska	3.2%	3.0%	2.7%*	3.0%*	2.8%*
Delaware	5.7	5.5	5.2	5.4	5.5
Florida	2.5	2.4	2.5	2.2	2.4
Georgia	2.9	2.8	2.7	2.5	2.0
Indiana	1.4	1.2	1.2	0.8	0.7
Iowa	0.6	0.6	0.5	0.5	0.5
Maryland	3.4	3.5	3.5	3.8	3.7
Minnesota	3.0*	3.2*	3.2*	2.9*	2.8
Missouri	1.7	1.5	1.4	1.4	1.2
North Carolina	2.1	1.9	1.8	1.6	1.5
South Carolina	2.2	1.9	1.7	1.5	1.3
South Dakota	0.9*	1.2*	1.4	1.4	1.5
Tennessee	0.8	0.8	0.7	0.8	0.7
Texas	1.5	1.0	0.9	0.8	0.9
Utah	3.4	3.0	2.5	2.1	1.9
Virginia	2.7	2.8	2.9	2.9	2.9
MEAN[1]	**2.4**	**2.3**	**2.1**	**2.0**	**2.0**
MEDIAN[1]	**2.4**	**2.2**	**1.8**	**1.6**	**1.5**
VERMONT	1.9	2.0	2.1	2.1	**2.0**

(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, as of July 31, 2018.
*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.

(THIS SPACE INTENTIONALLY LEFT BLANK)

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: 1.8% MEDIAN: 1.6%
5-Year Average Vermont: 2.0%

Moody's Debt as % 2016 Gross State Domestic Product					
Triple-A Rated States	2014	2015	2016	2017	2018
Alaska	2.2%	1.9%	1.9%*	2.4%*	2.3%*
Delaware	3.5	3.6	3.6	3.5	3.5
Florida	2.5	2.4	2.5	2.2	2.0
Georgia	2.5	2.3	2.2	2.1	1.9
Indiana	1.2	1.0	1.0	0.6	0.6
Iowa	0.6	0.5	0.5	0.4	0.4
Maryland	3.3	3.3	3.3	3.5	3.4
Minnesota	2.6*	2.7*	2.6*	2.5*	2.4
Missouri	1.6	1.3	1.3	1.2	1.1
North Carolina	1.7	1.6	1.5	1.4	1.2
South Carolina	2.0	1.8	1.6	1.4	1.2
South Dakota	0.8	1.0	1.2	1.2	1.3
Tennessee	0.8	0.7	0.7	0.7	0.6
Texas	1.2	0.7	0.6	0.7	0.7
Utah	2.6	2.2	2.0	1.7	1.5
Virginia	2.4	2.5	2.6	2.6	2.6
MEAN[1]	**2.0**	**1.8**	**1.8**	**1.7**	**1.6**
MEDIAN[1]	**2.1**	**1.8**	**1.6**	**1.4**	**1.3**
VERMONT	2.0	2.0	2.0	2.1	2.0

(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, as of July 31, 2018.
*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.

(THIS SPACE INTENTIONALLY LEFT BLANK)

STATE OF VERMONT
HISTORIC AND PROJECTED DEBT RATIOS

	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]									
2006	707	754	29	2.2	2.5	28	5.1	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	5.0	n.a.	n.a.
2009	692	865	34	1.8	2.5	35	5.5	n.a.	n.a.
2010	709	936	36	1.8	2.5	36	5.7	n.a.	n.a.
2011	747	1,066	37	1.9	2.8	36	5.1	n.a.	n.a.
2012	792	1,117	34	2.0	2.8	36	4.9	n.a.	n.a.
2013	811	1,074	33	1.9	2.8	35	4.6	n.a.	n.a.
2014	878	1,054	30	2.0	2.6	34	4.7	n.a.	n.a.
2015	954	1,012	28	2.1	2.5	31	4.2	n.a.	n.a.
2016	1,002	1,027	27	2.1	2.5	30	4.2	n.a.	n.a.
2017	1,068	1,006	24	2.2	2.5	27	4.3	n.a.	n.a.
2018	987	987	25	2.0	2.3	28	3.8	n.a.	n.a.
Current [2]	1,035	n.a.	n.a.	2.0	n.a.	n.a.	4.0	n.a.	n.a.
Projected (FYE 6/30) [3]		State Guideline [6]			State Guideline [7]			State Guideline	
2019	1,125	779		2.1	2.2		4.0	6.0	
2020	1,133	801		2.0	2.2		4.3	6.0	
2021	1,136	822		2.0	2.2		4.5	6.0	
2022	1,138	844		1.9	2.2		4.5	6.0	
2023	1,137	867		1.9	2.2		4.5	6.0	
2024	1,136	891		1.8	2.2		4.5	6.0	
2025	1,130	915		1.7	2.2		4.6	6.0	
2026	1,123	939		1.7	2.2		4.6	6.0	
2027	1,113	965		1.6	2.2		4.5	6.0	
2028	1,103	991		1.5	2.2		4.5	6.0	
2029	1,090	1,017		1.5	2.2		4.4	6.0	
5-Year Average of Moody's Mean for Triple-A States		948			2.1			n.a.	
5-Year Average of Moody's Median for Triple-A States		759			1.9			n.a.	

Note: Shaded figures in fiscal years 2019-2029 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 6, "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 $645.561 million as of 6/30/18 divided by Vermont's 2018 population of 623,657 as projected by EPR.

(3) Projections assume issuance of $108.835 million of G.O. debt in FY 2019 and $61.590 million in FY 2020 through FY 2029.

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

(5) Revenues are adjusted reflecting "current law" revenue forecasts, excluding changes related to Act 11 as calculated by EPR, 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 $759 increasing annually at 2.7%.

(7) The 5-year average of Moody's median for the Peer Group is 1.9%. Since the annual number is quite volatile, ranging from 1.9% to 2.5% over the last five years, the State Guideline is 2.2% for FY 2019 - FY 2029.

"Dashboard" Indicators

	Vermont[a]	Median Triple-A States[d]
Net Tax-Supported Debt:	$645,561,211	$3,250,390,000[c]
Debt As A Percent Of Gross State Product:	1.93%	1.3%[c]
Debt Per Capita:	$987	$694[c]
Debt As A Percent Of Personal Income:	1.96%	1.5%[c]
Debt Service As A Percent Of Operating Revenue[b]:	3.83%	N/A
Rapidity Of Debt Retirement:	38.2% (In 5 Years)	N/A
	69.9% (In 10 Years)	N/A
	91.9% (In 15 Years)	N/A
	100.00% (In 20 Years)	N/A

(a) Debt statistics for Vermont are as of June 30, 2018. Estimates of FY 2018 Gross State Product, Population, Personal Income and Operating Revenue prepared by EPR.
(b) Aggregate of State's General Fund, excluding changes related to Act 11 as calculated by EPR, and Transportation Fund.
(c) Source: Moody's Investors Service, 2018 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 July 31, 2018.

(THIS SPACE INTENTIONALLY LEFT BLANK)

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, 2018

	With TIBs(1)(2)	Without TIBs(2)
Net Tax-Supported Debt:	$672,311,211	$645,561,211
Debt As A Percent of Gross State Product:	2.01%	1.93%
Debt Per Capita:	$1,078	$987
Debt As A Percent of Personal Income:	2.04%	1.96%
Debt Service as a Percent of Operating Revenue(3):	3.96%	3.83%

(1)As of June 30, 2018, the outstanding principal amount of the State's Special Obligation Transportation Infrastructure Bonds, 2010 Series A, 2012 Series A and 2013 Series A, was $9,555,000, $8,065,000 and $9,130,000, respectively.

(2)Debt statistics for Vermont are as of June 30, 2018. Estimates of FY 2019 Gross State Product, Population, Personal Income and Operating Revenue were prepared by EPR.

(3)Aggregate of State's General Fund and Transportation Fund, excluding changes related to Act 11 as calculated by EPR.

(THIS SPACE INTENTIONALLY LEFT BLANK)

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 12, 2018, Moody's Investors Services released the final version of its "US States and Territories Rating Methodology" to replace its "US States Rating Methodology," last revised in April 2013.

At a high level, the primary revisions to the methodology were the inclusion of U.S. territories in the new criteria and the proposed adjustment of the weights for three of the four factors, with the Economy factor increasing from 20% to 25%, the Debt and Pensions factor increasing from 20% to 25% and the Governance factor decreasing from 30% to 20%. The Finance factor remained the same at 30% of the total score.

Previously, the Finance factor had three components: (i) revenue diversity, volatility and growth, (ii) structural balance and reserves, and (iii) liquidity. Under the new criteria, the two sub-factors, structural balance and reserves and liquidity remain, but the revenue diversity, volatility and growth subfactor was replaced by a Fixed Cost Ratio. The Fixed Cost Ratio is calculated to be the sum of Moody's "tread water" annual pension cost, debt service and the annual OPEB payment divided by own source revenue.

The new methodology provides an updated explanation of how Moody's assigns ratings to US states and territories. The report provides market participants with insight into the factors Moody's considers being most important to their state ratings and the understanding of the qualitative and quantitative considerations, including financial information and metrics. The report also introduces an updated state and territory methodology scorecard. The scorecard's purpose is to provide a reference tool that can be used to approximate credit profiles for US states and territories.

The methodology includes "key factors" and "sub-factors," as referred to by Moody's, to produce a preliminary scorecard-indicated outcome. The preliminary outcome may be adjusted up or down in half-notch increments, based on six notching adjustments. The combination of the 10 factors, as seen below, results in the scorecard-indicated outcome:

Rating Factors	**Factor Weighting**	**Rating Sub-Factors**	**Sub-Factor Weighting**
Economy	25%	Per Capita Income Relative to US Average	12.5%
		Nominal Gross Domestic Product	12.5%
Governance	20%	Governance/Constitutional Framework	20%
Finances	30%	Structural Balance	10%
		Fixed Costs/State Own-Source Revenue	10%
		Liquidity and Fund Balance	10%
Debt and Pensions	25%	(Moody's-adjusted Net Pension Liability + Net Tax-Supported Debt)/State GDP	25%
Total	**100%**	**Total**	**100%**

Preliminary Score (Before Notching Factors)	
Notching Factors	
Growth Trend	(notching adjustment)
Economic or Revenue Concentration or Volatility	(notching adjustment)
Pension or OPEB Characteristics Not Reflected in Current Metrics	(notching adjustment)
Willingness to Assume Responsibility for Distressed Local Governments	(notching adjustment)
Impaired Market Access	(notching adjustment)
Financial Stability	(notching adjustment)
Scorecard-Indicated Outcome	

For the debt and pensions sub-factor, Moody's previously calculated two ratios with a 10% weighting factor for each rations:

- Net Tax-Supported Debt / Total Governmental Fund Revenues, and
- 3-Year Average of the Adjusted Net Pension Liability / Total Governmental Fund Revenues

In the new methodology, for the debt and pensions sub-factor, Moody's now calculates a combined ratio for debt and pensions with a 25% weighting factor:

$$\frac{\text{Adjusted Net Pension Liability + Net Tax-Supported Debt}}{\text{State Gross Domestic Product}}$$

Adjusted Net Pension Liability (ANPL) is the difference between the fair market value of a pension plan's assets and its adjusted liabilities. Moody's adjusts the reported pension liabilities of U.S states to improve comparability and transparency based on a market-determined discount rate and the market value of assets.

Net Tax-Supported Debt (NTSD) is debt paid from statewide taxes and other general resources, net of obligations fully and reliably supported by pledged sources other than state taxes or operating resources, such as utility or local government revenue.

State Gross Domestic Product (State GDP) is used as a proxy for a state's capacity to carry liabilities, because the economy drives current and future tax revenue.

The table below summarizes how Moody's assesses this ratio for the scorecard.

Sub-Factor	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca
(Moody's-adjusted Net Pension Liability + Net Tax-Supported Debt)/State GDP	25%	Less than 10%	10%-20%	20%-30%	30%-40%	40%-50%	50%-75%	75%-100%	Greater than 100%

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 and pension sub-factor for Vermont for FY 2017 is approximately 15.1%.

As mentioned prior, Moody's also has added the Fixed Cost Ratio in the Finances rating factor. The Fixed Cost Ratio is calculated to be the sum of Moody's tread water annual pension cost, debt service and the annual OPEB payment divided by own source revenue. A strong argument can be made that the Fixed Cost Ratio adds to the weight of the debt and pensions factor since those costs are associated with a state's liabilities. Under the prior rating methodology, the debt and pensions factor made up 20% of the total rating score. Under the new criteria, the stated Debt and Pensions factor increases to 25%. Adding in the "weight" of the new Fixed Cost Ratio, which is 10% of the overall scorecard rating, results in the total debt and pension weight increasing from 20% to 35%.

Measurement	Sub-factor Weight	Aaa	Aa	A	Baa	Ba
Fixed Costs / State Own-Source Revenue	10%	Less than 5%	5%-12%	12%-20%	20%-25%	25%-35%

Based on the Moody's Median report titled "Adjusted Net Pension Liabilities Spike in Advance of Moderate Declines," dated August 27, 2018, Vermont's 2017 Adjusted Net Pension Liability (ANPL) and Net-Tax Supported Debt (NTSD) as a percent of state GDP was 17.8%, which ranks Vermont 10th of the 50 states, with 1 being the worst and 50 being the best. Vermont's 2017 fixed costs as a percentage of state revenue is 8.1%. 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.

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.

(THIS SPACE INTENTIONALLY LEFT BLANK)

	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.

(THIS SPACE INTENTIONALLY LEFT BLANK)

5. ECONOMIC AND FINANCIAL FORECASTS

This section of the report includes excerpts from the "Consensus Revenue Forecast Update for the General Fund, Transportation Fund, and Education Fund; Fiscal Years 2019 through 2020" prepared by Economic and Policy Resources, Inc. ("EPR") dated July 27, 2018.

"Against a backdrop of the strong likelihood that the U.S. economic upturn will survive through the current fiscal year and the likely State revenue impacts associated with the passage and implementation of Act 11, the staff recommends a near-term consensus forecast upgrade for the General Fund for fiscal years 2019 and fiscal year 2020 consistent with the "budget-based" consensus reconciliation. The forecast upgrade comes in response to the significant "late cycle" federal fiscal stimulus associated with the Federal Tax Cuts and Jobs Act (as passed last December), which will likely result in near-term and accelerating rates of economic growth (including payroll jobs and household employment growth). Also included in the staff recommendation is the likelihood that economic growth beyond the next 12 to 24 months will slow as the current, significant round of federal fiscal stimulus ebbs—resulting in slower rates of economic and revenue growth in the three out years of the of the State's five year fiscal planning period (or for fiscal years 2021, 2022, and 2023). For the Transportation Fund, the staff recommendation calls for between a \$2.1 million and \$1.5 million consensus forecast upgrade versus the January 2018 consensus forecast for fiscal years 2019 and 2020, respectively. These near-term forecast upgrades reflect the late economic cycle federal fiscal stimulus providing near-term "juice" for the economy, generally rising energy prices, and still robust consumer sentiment in 2019 and 2020 fiscal years. For the portion of the Education Fund that is included in the consensus forecasting process and prior to the updated funding allocations as passed in Act 11, the updated staff recommended consensus forecast includes a significant upgrade totaling \$15.6 million over the two year fiscal 2019 through fiscal 2020 period—at +\$7.2 million for fiscal 2019 and +\$8.4 million for fiscal 2020."

"As of July 2018, the 109 month U.S. economic expansion has become the second longest in recorded economic history. With more than \$1.0 trillion in "late economic cycle" fiscal stimulus from the Federal Tax Cuts and Jobs Act, the U.S. economy in fact looks to be on course to pick up further near-term momentum and will almost certainly become the longest economic upcycle in recorded economic history (dating back to 1854) when the upcycle passes through June of 2019. For an economic upcycle that is over nine years old, the current performance for the U.S. economy may go down as "one for the ages," despite uncertainties associated with the global trade, more volatile equity markets, the increasing threat from rising energy prices (which can be traced to the rising geopolitical uncertainties in the Middle East region and the Korean Peninsula in Asia), and tightening monetary policy by the Federal Reserve. However, that degree of pro-U.S. economic growth optimism does not necessarily have a completely "open field" within which to operate. There are at least some concerns in the current environment about the tightening monetary policy posture of the Federal Reserve, concerns about capacity constraints on the U.S. economy, and what looks by conventional measures to be an unsettling "flattening of the yield curve" which often signals the end of economic expansions."

"In Vermont, the State's economy for its part, reflects a generally "steady-as-you-go" outlook with below average rates of change. This reflects the negative demographic factors that have emerged over the past ten or so years and likewise appear to also apply to the entire northern New England region and for greater upstate New York. As with the past several consensus forecast updates, the near-term economic forecast in Vermont has been complicated by generally flat economic and labor market performance data, especially those relating to the state's on-going labor market expansion against a historically low rate of unemployment. From the recent payroll job estimates data, the State's economy continues to expand at an uneven and restrained pace on a seasonally-adjusted basis. Overall, labor markets in Vermont appear "flat," even in the northwest portion of the State. The northwest region has historically been the State's strongest region and has consistently tracked ahead of the U.S. average until recently. This appears to be an extension of constraints on labor supply that are unlikely to ease appreciably within the near-term future."

"The U.S. and Vermont economies are not yet showing signs of over-heating, and even with a negative interpretation of both of the above-discussed recession indicators, any downturn in the economy is likely still at least two years away—although it remains clear that the current U.S. economic and Vermont economic upcycles will not go on indefinitely. It is expected that the profile of near-term economic activity is likely to encourage a more restrained period of growth (e.g. a potential economic "sub-cycle" within the five year fiscal planning horizon."

Provided below are EPR's 2018 economic projections as compared to its 2017 economic projections. As shown, the 2018 projections show a decrease in population in all years of the forecast. Furthermore, the forecast for nominal personal income display an increase for the entire forecast period. The 2018 General Fund and Transportation Fund revenue projections are higher throughout the forecast period, as well. Although the population projections are lower from the previous projection on a year by year basis, the nominal dollar personal income and government revenue projections are higher from the previous projection on a year by year basis. Furthermore, 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 lower share of the State's personal income for government operations for the majority of the projection years.

(THIS SPACE INTENTIONALLY LEFT BLANK)

STATE OF VERMONT
POPULATION, PERSONAL INCOME AND REVENUE PROJECTIONS

2018 COMPARED TO 2017 PROJECTIONS

Population (Thousands)

Year	2017	2018	Change	% Change
2018	626.16	623.72	-2.44	-0.39%
2019	627.28	624.22	-3.07	-0.49%
2020	628.29	624.97	-3.32	-0.53%
2021	629.17	625.84	-3.32	-0.53%
2022	629.98	626.91	-3.08	-0.49%
2023	630.55	627.91	-2.64	-0.42%
2024	631.25	628.91	-2.33	-0.37%
2025	632.00	629.86	-2.15	-0.34%
2026	632.76	630.80	-1.96	-0.31%
2027	633.52	631.75	-1.77	-0.28%
2028	634.28	632.70	-1.58	-0.25%
2029		633.65	n.a.	n.a.

Nominal Dollar Personal Income (Millions)

Year	2017	2018	Change	% Change
2018	32,861.90	32,958.63	96.73	0.30%
2019	33,738.13	34,095.39	357.26	1.09%
2020	34,406.24	35,062.84	656.60	1.95%
2021	35,032.62	36,072.57	1,039.95	3.02%
2022	35,855.99	37,287.69	1,431.71	4.09%
2023	36,615.65	38,425.80	1,810.15	5.05%
2024	37,284.39	39,617.90	2,333.51	6.37%
2025	38,068.99	40,906.39	2,837.40	7.61%
2026	38,928.13	42,254.92	3,326.80	8.74%
2027	39,834.99	43,671.65	3,836.66	9.86%
2028	40,782.41	45,185.14	4,402.74	11.05%
2029		46,729.69	n.a.	n.a.

General Fund and Transportation Fund Reserve (Millions)

Year	2017	2018	Change	% Change
2018	1,761.66	1,837.84	76.18	4.33%
2019	1,817.34	1,864.92	47.58	2.70%
2020	1,855.25	1,898.65	43.40	2.39%
2021	1,879.92	1,911.72	31.80	1.71%
2022	1,925.72	1,950.80	25.08	1.33%
2023	1,975.38	2,008.66	33.28	1.73%
2024	2,023.86	2,069.26	45.40	2.30%
2025	2,071.73	2,128.87	57.14	2.82%
2026	2,119.14	2,189.93	70.79	3.42%
2027	2,168.78	2,248.45	79.67	3.76%
2028	2,220.71	2,313.48	92.77	4.28%
2029		2,382.55	n.a.	n.a.

General Fund and Transportation Fund Revenue as a Percent of Nominal Personal Income(1)

Year	2017	2018	Change	% Change
2018	5.4%	5.6%	0.2%	5.4%
2019	5.4%	5.5%	0.1%	5.4%
2020	5.4%	5.4%	0.0%	5.4%
2021	5.4%	5.3%	-0.1%	5.4%
2022	5.4%	5.2%	-0.1%	5.4%
2023	5.4%	5.2%	-0.2%	5.4%
2024	5.4%	5.2%	-0.2%	5.4%
2025	5.4%	5.2%	-0.2%	5.4%
2026	5.4%	5.2%	-0.3%	5.4%
2027	5.4%	5.1%	-0.3%	5.4%
2028	5.4%	5.1%	-0.3%	5.4%
2029		5.1%	n.a.	

(1) Forecasted revenues are based on economic data prior to the passage of Act 11 (H.16).

The growth improvement in projected personal income from the previous year forecast will impact Vermont's debt guideline of debt as a percentage of personal income. Higher personal income numbers will decrease the State's debt as a percentage of personal income at a constant amount of debt. The State is still under its guidelines of 2.2% with the increase in forecasted personal income figures.

Provided below are the forecasts of population, personal income, and nominal gross State product. As shown in the table below, population for fiscal year 2018 and 2019 is 623.7 thousand and 624.2 thousand, respectively, initially an increase of 0.08% and 0.12%, over the previous fiscal years. Personal income for fiscal year 2018 and 2019 is $33.0 billion and $34.1 billion, respectively, an increase of 3.45% and 2.84%, over the previous fiscal year, respectively. Nominal gross State product for fiscal year 2018 and 2019 is $33.5 billion and $35.0 billion, respectively, an increase of 4.45% and 2.31%, 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)
2017	623.7	31.9	32.2
2018	623.7	33.0	33.5
2019	624.2	34.1	35.0
2020	625.0	35.1	35.8
2021	625.8	36.1	37.3
2022	626.9	37.3	38.9
2023	627.9	38.4	40.4
2024	628.9	39.6	41.8
2025	629.9	40.9	43.2
2026	630.8	42.3	44.6
2027	631.7	43.7	46.0
2028	632.7	45.2	47.6
2029	633.6	46.7	49.2

(1) Administration-Legislative Consensus Long-Term Forecast (Calendar Years 2018-2029). These figures were prepared by EPR, as of August 7, 2018.

(THIS SPACE INTENTIONALLY LEFT BLANK)

As shown in the table below, total revenue for fiscal year 2018 is $109.5 million more than in fiscal year 2017, an increase of 6.3%. Fiscal year 2019 total revenue is forecasted to increase by $27.1 million, or 1.5%; the average annual revenue growth rate during the fiscal year period, 2019 through 2029, inclusive, is projected to be 2.95%.

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

Fiscal Year	General Fund	Transportation Fund	Total Revenue [(2)(3)]
2017	1,457.0	271.4	1,728.4
2018	1,558.9	279.0	1,837.8
2019	1,581.8	283.2	1,864.9
2020	1,611.6	287.0	1,898.6
2021	1,624.3	287.4	1,911.7
2022	1,662.2	288.6	1,950.8
2023	1,718.6	290.1	2,008.7
2024	1,776.5	292.8	2,069.3
2025	1,833.9	295.0	2,128.9
2026	1,891.6	298.3	2,189.9
2027	1,947.2	301.2	2,248.5
2028	2,008.5	305.0	2,313.5
2029	2,074.2	308.4	2,382.5

(1) Administration-Legislative Consensus Long-Term Forecast (Calendar Years 2018-2029). 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 7, 2018.

(2) Totals may not agree due to rounding.

(3) Forecasted revenues are based on economic data prior to the passage of Act 11 (H.16).

(THIS SPACE INTENTIONALLY LEFT BLANK)

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 16 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. 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 in 2016 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 Revenues and Effect on Debt Service as a Percentage of Revenue

Fiscal 2019 Appropriations Act, Act 11 (H.16) or the BIG BILL updates the funding allocation among the State's General Fund and Education Fund. Before the passage of Act 11, the State provided appropriations within the General Fund and transferred the respective allocation to the Education Fund. However, with the implementation of Act 11, the State now allocates 100% of Sales and Use Tax and 25% of Meals and Rooms Tax directly to the Education Fund.

As discussed previously in this report, debt service as a percent of revenues is utilized as one of the ratios establishing the state guidelines for future issuance. In years prior to Act 11, revenues were calculated with an aggregate revenue number consisting of the General Fund and Transportation Fund prior to any Education Fund transfers. After the passage of Act 11, the General Fund revenue is reduced. Thus, approximately $311 million of revenue which would have been allocated to the General Fund in FY 2019 now directly flows to the Education Fund. In order to keep the related debt service as a percent of revenues projections comparable to historical fund figures, the 2018 CDAAC Report utilizes the revenue calculations that were previously in place prior to Act 11, i.e., as if there had been no revenue reallocation between the General Fund and Education Fund. As previously mentioned in Section 3, "Debt Service as a Percentage of Revenues," the 2019 CDAAC Report is expected to include post Act 11 General Fund Revenue, an adjustment of historical revenue for comparability and a revised Debt Service as a Percentage of Revenues 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, 2017 and 2018 reports, which reports debt issuance from 2015, 2016 and 2017 respectfully, indicated the net tax-supported debt for US States remained virtually unchanged in 2015 from 2014 levels, 2016 from 2015 and 2017 from 2016 with a minimal year-over-year growth of 0.6%, 0.8% and 1.2%, respectfully.

Debt levels were expected to rise in 2017 despite three recent years with decreased and static state debt levels. 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. However, according to the American Society of Civil Engineer, the nation's infrastructure has still been neglected and needs improvement. In 2017, states issued fewer bonds to improve roads, water systems and other infrastructure project due to the fact that they waited to learn the particulars of President Trump's $1.5 trillion infrastructure plan. Although the plan is yet to be released, the President's proposed federal fiscal year 2019 U.S. budget reveals many infrastructure costs will now shift from federal funds to states, cities and private sector.

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 Recent Landscape of Municipal Bonds

The Tax Cuts and Jobs Act, passed in November 2017 and signed by President Trump in December 2017, took effect on January 1, 2018. The municipal market was severely impacted as it eliminated advance refundings and issuer's ability to refinance older and higher cost of debt prior to the call date. Advance refunding bond issuance totaled $91 billion in 2017, which accounted for 22.2 percent of supply, according to Thomson Reuters. Private activity bonds were analyzed for elimination, but ultimately were preserved.

The Tax Cuts and Jobs Act is impacting the municipal industry in other ways, as well. For instance, a reduction in the corporate tax rate has deterred the attractiveness of municipal bonds over corporate bonds for banks and insurance companies. Also, restrictions on state and local tax deductions could cause financial gaps for municipalities and thus create instances in which there is an increase of taxes for local residents. It is too early to realize the true positive or negative repercussions of the Tax Cuts and Job Act. That said, according to Thomson Reuters, the total number of bond issuances for January 2018 to August 2018 is $225 billion compared to $262 billion within the same time frame in 2017, a reduction of 14%.

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, 6.9% for federal fiscal year 2017 and 6.6% for federal fiscal year 2018. The federal fiscal year 2019 rate is 6.2%.

Through fiscal year 2018, 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 \$388,059.72. Based on the federal fiscal year 2019 rate of a 6.2% reduction, the subsidy is reduced by \$73,184.34 in fiscal year 2019. If the 6.2% reduction continues, the subsidy will be reduced by another \$70,995.35 in fiscal 2020 with declining annual amounts through the maturity date totaling \$398,084.33 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 \$73,184.34 reduction in fiscal year 2019 equates to approximately 0.09% of the projected \$75.334 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. 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.

As discussed above, Moody's considers debt and pension liabilities together and has incorporated this decision into its US States and Territories Rating Methodology. The "Debt and Pensions" factor reflects both bonded tax supported debt and adjusted net pension liabilities which equals 25% the total score (previously 10% each). Additionally, under the new methodology, Moody's also has added the Fixed Cost Ratio in the "Finances" rating factor. The Fixed Cost Ratio is calculated to be the sum of Moody's tread water annual pension cost, debt service and the annual OPEB payment divided by own source revenue. which is 10% of the overall scorecard rating, results in the total long-term lability weight increasing from 20% to 35%

On August 27, 2018, Moody's published its annual state pension report titled "Adjusted Net Pension Liabilities Spike in Advance of Moderate Declines," which updated Moody's ANPL for fiscal year 2017 for the 50 states. The 2018 report began state rankings based on the new debt and pension ratio contained in Moody's "US States and Territories Rating

Methodology" dated April 12, 2018, specifically, state ANPL + NTSD as a % of state GDP. Moody's notes that (i) total state ANPL reached $1.6 trillion in fiscal 2017. (ii) investment returns improved in fiscal 2017 and 2018, which will be reflected in fiscal 2018 and 2019 state financial statements, and (iii) many states remain at risk of pension investment losses placing additional demands on resources.

The following two tables provide Vermont's relative position among the 50 states with respect to its ANPL for 2016 and 2017 and a comparison of Vermont and Peer Group states with respect to Moody's pension ratios.

Moody's Pension Ratios	State of Vermont Rankings 2016[1]	2017[1]
ANPL as % of Personal Income	9	10
ANPL as % of State Gross Domestic Product	6	8
ANPL Per Capita	8	9
ANPL as % of State Government Revenues	20	18
Three-year Average ANPL as a % of State Government Revenues	19	N/A
ANPL + NTSD as a % of State Gross Domestic Product	N/A	10

Sources: Moody's *Moderate Adjusted Net Pension Liability Growth in 2016 Precedes Spike in 2017,* September 13, 2017.

Moody's *Adjusted Net Pension Liabilities Spike in Advance of Moderate Declines,* August 27, 2018.

[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	13.5	8.7	6,629	106
Florida	2.6	2.6	1210	52
Georgia	5.8	4.7	2,516	104
Indiana	7.2	5.9	3,188	110
Iowa	3.7	2.8	1,691	49
Maryland	17.4	15.9	10,371	263
Minnesota	6.2	5.2	3,273	68
Missouri	5.3	4.7	2,334	104
North Carolina	2.3	1.9	1007	36
South Carolina	14.2	13.2	5,747	207
South Dakota	6.6	5.6	3,194	116
Tennessee	3.4	2.9	1,484	52
Texas	10.6	8.3	4,955	196
Utah	3.2	2.5	1,350	47
Virginia	4.4	4.0	2,378	75
MEAN[1]	**7.1**	**5.9**	**3,422**	**105.7**
MEDIAN[1]	**5.8**	**4.7**	**2,516**	**104.0**
VERMONT	16.1	15.9	8,215	141
VERMONT's 50 STATE RANK	10	8	9	18

Source: Moody's *Adjusted Net Pension Liabilities Spike in Advance of Moderate Declines,* August 26, 2018.

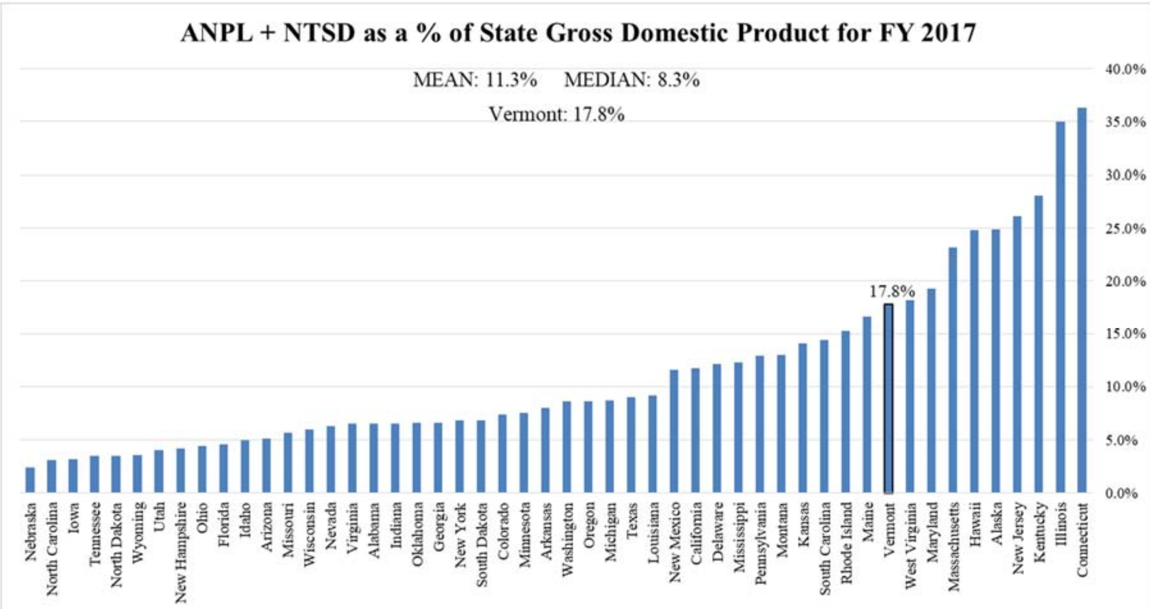
[1] Calculated by Public Resources Advisory Group. These calculations exclude all Vermont numbers and include only states rated triple-A by two or more of the rating agencies, year ended June 30th, 2017.

[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.

As discussed in Section 4, "Moody's US States Rating Methodology," Moody's updated the "Debt and Pension" factor with a combined ratio for debt and pensions with a 25% weighting factor. As can be seen in the table below, Vermont is currently ranked 10th out of the 50 states in regards to the new ratio. Please see below for a chart comparing Moody's new Debt and Pension ratio (ANPL+NTSD as a percentage of Gross State Project) compared to the other 49 states.

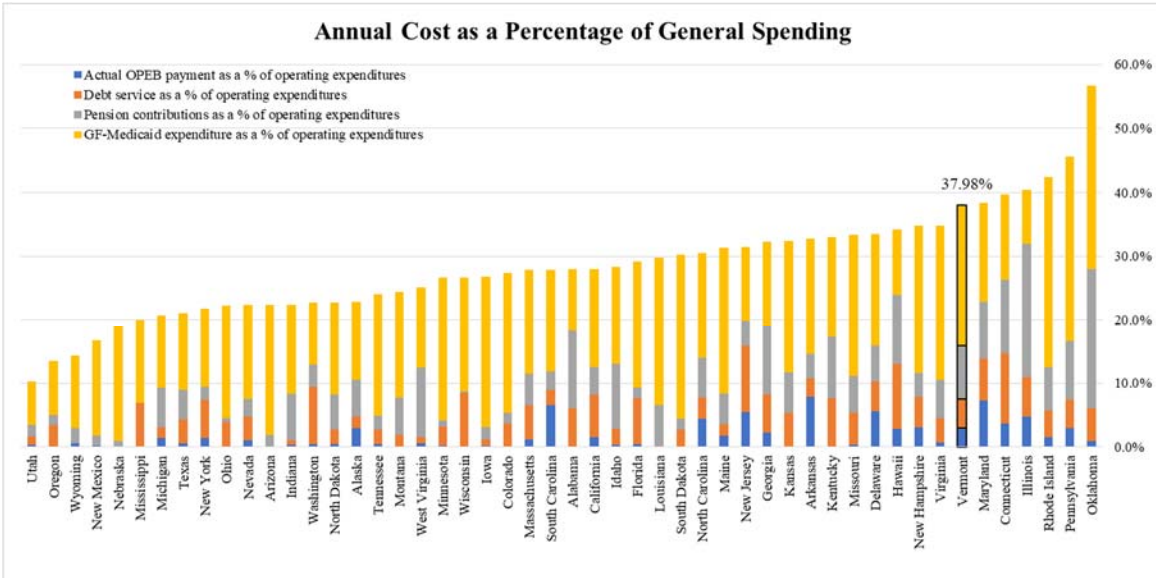


Source: Moody's State Pension Medians Report August 27, 2018

S&P's and Moody's -- Review of State and Local Budget Capacity

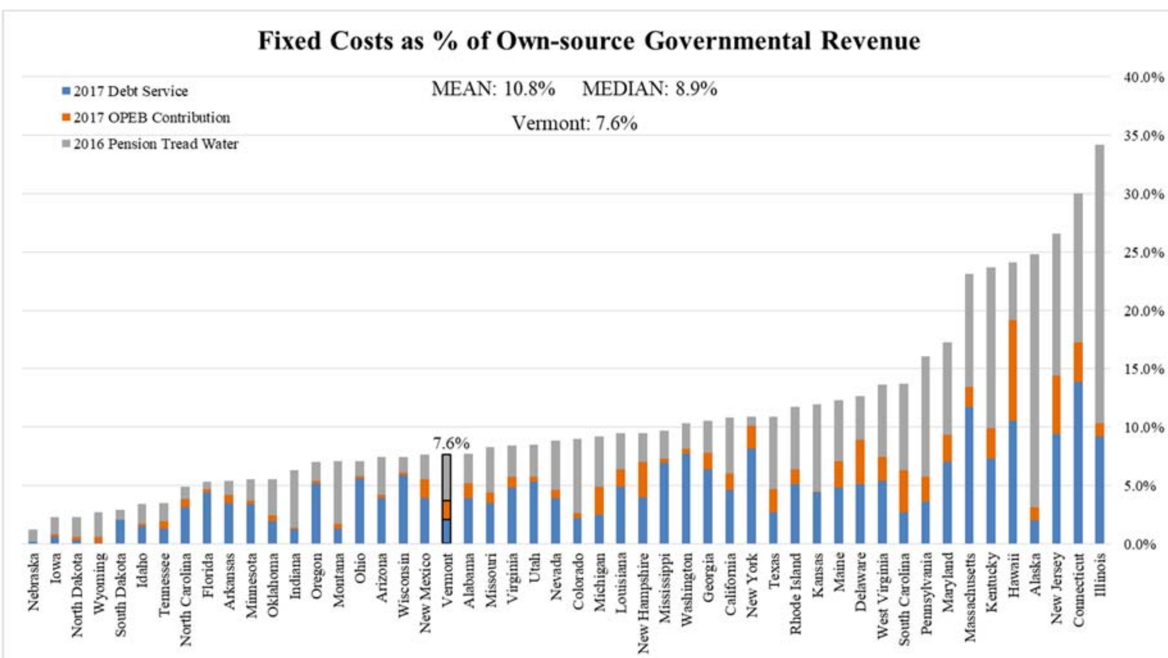
S&P and Moody's have identified their concerns with state and local governments' long-term debt liabilities as it relates to percentage of fixed cost to total operating budget capacity. With many states expecting the costs for pensions, debt and OPEBs expected to rise, the agencies are concerned that other funding priorities will be squeezed and for some states this could create reduced financial flexibility. Vermont is constrained by their pension, OPEB and Medicaid expenses compared to other states. The State should understand and prioritize the significance of the credit agencies' persistent assessment of their respective fixed costs. In order to combat Vermont's relative low rankings, it is recommended than the State preserve budgetary and financial capacity in considerations for future debt issuances.

As examined in Section 1, "Capital Funding and Capital Plan," CDAAC reviewed a S&P report in May 2018 titled *Between a Budget and a Hard Place: The Risks of Deferring Maintenance for U.S. Infrastructure* that outlined the growing level of deferred maintenance in the U.S. and the absence of a standard for measuring the amount of deferred maintenance. One portion of the report highlighted increasing amounts of expenses, specifically Medicaid, OPEB, debt service and pension contributions. S&P reports concern related to states ability to fund needed capital infrastructure. Please see below for an overview of Vermont's position among the 50 states in regards to annual costs as a percentage of general spending.



Note: Contribution and expenditure data is on a budgetary basis as of fiscal 2016.
Sources: S&P State budget data or National Association of State Budget Officers expenditure report.

Moody's Fixed Cost Ratio, which was also previously discussed, is an added ratio with the Finances factor that reviews debt service, OPEB and pension tread water costs to state own source revenue. Moody's reports concern related to states limited operating budget flexibility as many state pensions and OPEB costs are expected to rise faster than revenue growth in the future. Please see below for a chart comparing Moody's new Fixed Cost Ratio among the 50 states in order to review the State's current position among other states.



Source: Moody's State Pension Medians Report August 27, 2018

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 2017, 2018, and 2019 rainy day fund balances of the other triple-A states.

As mentioned in Section 4, "National Credit Rating Methodologies and Criteria," released in April 2016, Fitch 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.

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. See the chart below for a summary of the State's FY 2018 and budgeted FY 2019 operating reserves as a percentage of General Fund Appropriations and Health Care Resources Fund reserves.

	Fiscal Year 2018	Fiscal Year 2019
Total General Fund Appropriations	$1,563.59	$1,294.51
State Health Care Resources Fund	288.15	284.48
TOTAL	**$1,851.74**	**$1,579.00**
Reserves:		
Stabilization Reserve	$77.00	$78.18
27/53 Reserve	10.78	12.54
Human Services Caseload Reserve	22.00	100.09
Rainy Day Reserve	12.5	15.9
TOTAL	**$122.28**	**$206.71**
Operating Reserves as a Percentage of Total General Fund Appropriations and Health Care Resources Fund	6.60%	13.09%

Note: $'s in millions

The chart below provides the State's FY 2017 through budgeted FY 2019 operating reserves as a percentage of general government expenditures compared to the Peer Group.

Rainy Day Fund Balances As a Percentage of General Government Expenditures			
Triple-A Rated States	**Fiscal 2017**	**Fiscal 2018**	**Fiscal 2019**
Delaware	5.4	5.6	5.4
Florida	4.6	4.4	4.5
Georgia	10.0	10.0	10.0
Indiana	9.5	9.2	8.9
Iowa	8.3	8.6	9.2
Maryland	4.8	5.0	5.0
Minnesota	9.4*	8.8*	8.6
Missouri	3.2	3.2	3.1
No. Carolina	8.3	8.0	8.2
So. Carolina	6.4	6.4	6.7
So. Dakota	10.2	10.0	9.7
Tennessee	5.0	5.5	5.7
Texas	19.2	19.1	21.3
Utah	7.9	7.5	7.3
Virginia	2.7	1.4	1.4
Median[1]	7.2	7.0	7.3
VERMONT[2]	6.9	8.1	12.4

Source: "The Fiscal Survey of States 2018. A report by the National Governors Association and the National Association of State Budget Officers." Fiscal Year 2017 are "Actuals," Fiscal Year 2018 are "Estimated" and Fiscal 2019 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, as of July 31, 2018.

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

[3] Information for Georgia's FY 2018 and FY 2019 rainy day fund balance was not provided in the reports. Rainy day fund balance was assumed to stay constant at the FY 2017 level.

* 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.

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 more recently, a 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 statute requires the plan to include a list of all recommended projects in the current fiscal year, as well as the nine fiscal years thereafter. These recommendations 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. Currently, the State, led by the Agency of Transportation (AOT), is in the process of procuring a State-wide asset management system. AOT is working with the Department of Buildings and General Services (BGS), the agency responsible for State buildings and other agencies that manage capital assets of the State, to develop a system that will assist the State to identifying each asset, quantifying the amount of deferred maintenance and establishing replacement funding plans, establish priority funding requirements and ultimately manage the assets more efficiently.

The State's asset management system initiative builds on significant efforts have been made in this area in the past. 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.

The 2015 Capital Bill (Act 26), as amended by the 2016 Capital Bill Adjustment (Act 160), appropriates proceeds of bonds for water quality projects. 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 appropriated $21.9 million in fiscal year 2018 and $25.7 million in fiscal 2019 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:

https://www.vermonttreasurer.gov/content/cash/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 100^{th} 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.

(THIS SPACE INTENTIONALLY LEFT BLANK)

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.

(THIS SPACE INTENTIONALLY LEFT BLANK)

8. APPENDICES

A. 2018 State Debt Medians (Moody's Investors Service)

B. 2017 Fitch Ratings Credit Report

C. 2017 Moody's Investors Service Credit Report

D. 2017 Standard & Poor's Credit Report

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

APPENDIX A

MOODY'S
INVESTORS SERVICE

SECTOR IN-DEPTH
24 April 2018

Rate this Research

Contacts

Joshua Grundleger +1.212.553.1791
Analyst
joshua.grundleger@moodys.com

Emily Raimes +1.212.553.7203
VP-Sr Credit Officer/ Manager
emily.raimes@moodys.com

Nicholas Samuels +1.212.553.7121
VP-Sr Credit Officer
nicholas.samuels@moodys.com

Timothy Blake +1.212.553.4524
MD-Public Finance
timothy.blake@moodys.com

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

States - US

Medians - State debt continues slow growth trend

Total net tax-supported debt (NTSD) for the 50 states continued its slow growth pace, marking the fifth consecutive year of growth below 2%, according to our 2018 medians data. Slow growth in state revenues dampened appetites for new borrowing. Similarly, growth in state infrastructure spending has also slowed and projects remain heavily financed by current spending. As the economy continues to expand, debt ratios will continue to fall, reducing the debt burden for many states.

» **Total NTSD grew by 1.2%, continuing a half decade of slow growth.** NTSD increased in half of the states, with Illinois (Baa3 negative) accounting for most of the net national increase.

» **Debt ratios improved, continuing their multiyear improvements in many states**. Median NTSD relative to GDP, per capita and as a percentage of personal income declined by 5.7%, 4.3% and 2.1%, respectively.

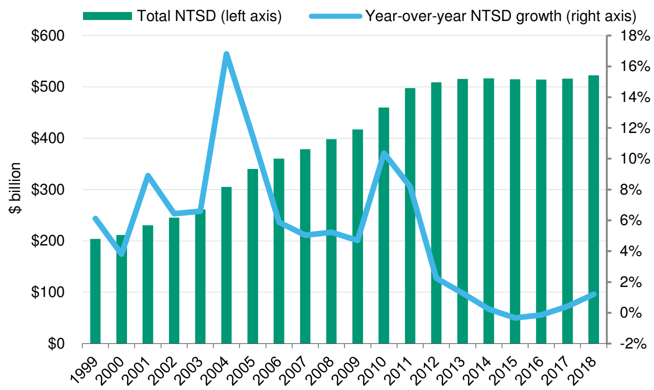
» **General obligation (GO) debt remains the most common type of debt outstanding.** The shares of debt by type remained stable, with GO debt constituting 52% of NTSD, followed by appropriation and lease debt at 20%. Eleven states do not issue any GO debt, while the state median was $1.4 billion in GO debt outstanding.

» **Debt service costs inched up to 4.2% of own-source governmental revenues.** Debt service may decline as a result of a spike in advanced refunding transactions at the end of 2017.

Our 2018 state debt medians are based on an analysis of calendar year 2017 debt issuance and fiscal year 2017 debt service. As in prior reports, trend data incorporate a one-year lag (i.e., data labeled 2018 reflect debt as of calendar year-end 2017).

Exhibit 1

Growth in state net tax-supported debt remains low



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

Source: Moody's Investors Service

Total net tax-supported debt (NTSD) continued its slow expansion, the fifth consecutive year of low or negative growth

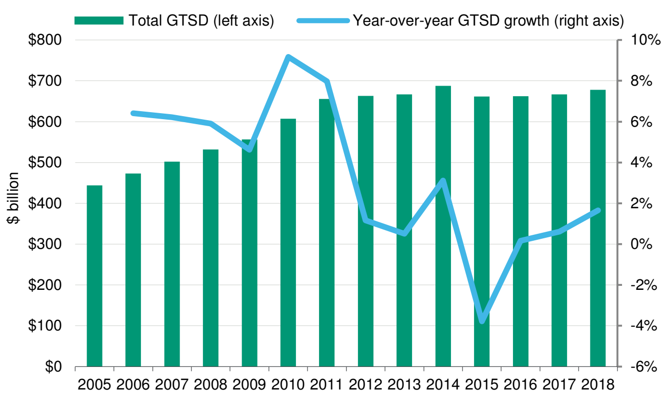
» Total NTSD grew by 1.2% to $522 billion from $516 billion last year.

» NTSD increased in 24 of the states. Illinois had the largest increase in debt in dollar terms at $5.2 billion (up 16.3% year-on-year), which was largely due to issuing long-term debt to finance payment of its bill backlog.

» Debt is likely to maintain slow growth in the next 12 to 24 months, as infrastructure spending will remain subdued. The federal infrastructure plan is unlikely to generate significant new expenditures.

Exhibit 2

Growth in gross tax-supported debt has accelerated



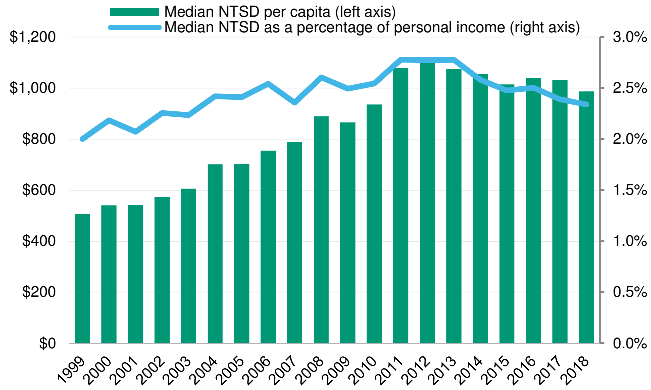
Source: Moody's Investors Service

Gross debt expanded slightly faster than NTSD, although overall growth in debt is likely to remain subdued

» Growth in gross tax-supported debt increased to 1.7% from 0.6% last year. Colorado (Aa1 stable) and Oregon (Aa1 stable) each had the largest increases in gross debt at more than $2.5 billion, up 20% year-on-year, due to expanded issuance under school bond guarantee programs.

» States continue to finance capital expenditures largely on a pay-go basis, with only 30% of capital expenditures financed by debt. Although debt remained flat, capital expenditures grew by an estimated 5.9% according to the National Association for State Budget Officers (NASBO).

Exhibit 3
Median debt burden continues to decline



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

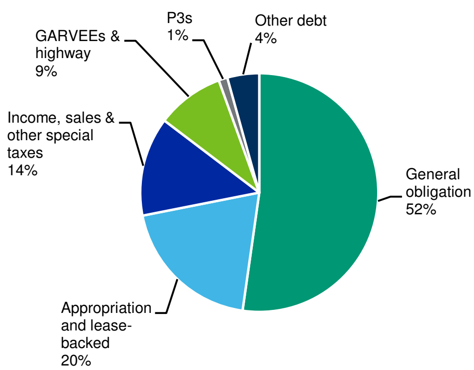
Debt ratios declined, continuing their multiyear improvements

» Despite slower national population growth (0.7%) than growth in total NTSD, median NTSD per capita fell by 4.3% to $987, as many states with moderate debt levels saw their NTSD contract alongside growing populations.

» Median NTSD to personal income (PI) continued a nearly decade-long decline, falling to 2.3%. NTSD to PI declined in 34 states. Hawaii (Aa1 stable) remains the only state with a double-digit figure (10.4%).

» Median NTSD as a percentage of GDP fell to its lowest level (2.1%) since 2006, as economic growth remained solid.

Exhibit 4
GO debt constitutes more than half of outstanding NTSD



Some historical debt figures have been updated and may not match prior published reports. GARVEE stands for grant anticipation revenue vehicle. P3s stands for public private partnerships.
Source: Moody's Investors Service

GO debt continues to comprise the largest share of state debt outstanding at 52.2%

» Appropriation and lease debt remains the second largest share of state debt outstanding at 19.7%.

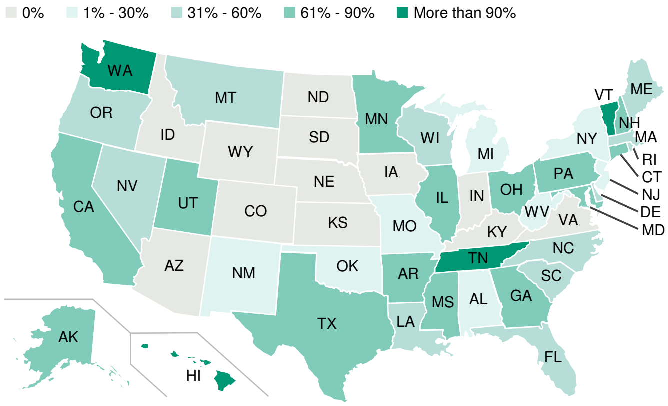
» Special tax debt accounts for 13.4% of NTSD, but is largely due to two states: Massachusetts (Aa1 stable) and New York (Aa1 stable). New York's special tax debt includes dedicated-tax bonds that are subject to appropriation.

» Highway revenue and GARVEE[1] bonds at 9.2% of NTSD are issued by all but 15 states.

» Variable rate debt totaled $18.3 billion or 3.5% of NTSD. Half of the states have variable rate debt exposure ranging from 0.3% of NTSD in Florida (Aa1 stable) to 23.8% in Indiana (Aaa stable).

» The distribution of debt by security type tends to remain stable. Lease and appropriation debt's share has eroded, while special tax — particularly income tax-backed debt — has expanded. These trends are likely to continue.

Exhibit 5
Use of general obligation (GO) debt varies widely by state
GO debt as % of NTSD

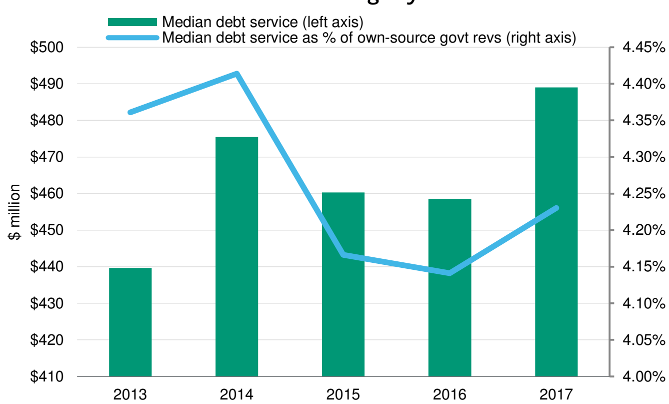


Source: Moody's Investors Service

Reliance on GO debt continues to vary

- » The use of GO debt varies considerably by state, depending on constitutional restrictions and political considerations.
- » Eleven states do not issue any GO debt, while in five states — Georgia (Aaa stable), Tennessee (Aaa stable), Vermont (Aaa stable), Hawaii and Washington (Aa1 stable) —more than 90% of outstanding NTSD is GO debt. States without GO debt tend to rely on lease and appropriation debt.

Exhibit 6
Median debt service costs increase slightly



Own-source revenues are reported as total governmental revenues less funds received from federal sources. Additional adjustments have been made to own-source revenues for Delaware, Massachusetts and Washington to reflect inclusion or exclusion of certain funds. Some historical debt figures have been updated and may not match prior published reports.
Source: Moody's Investors Service

Median debt service costs increased slightly to 4.2% of own-source governmental revenues in 2017

- » While 18 states experienced a decline in debt service, 24 states had a decline in debt service as a percentage of own-source revenues, as revenue grew at a faster rate.
- » Debt service expanded by more than $200 million in Louisiana (49.0% year-on-year, Aa3 negative), Florida (17.2%), New York (8.8%) and Connecticut (8.7%).
- » California ($8.0 billion) and Connecticut (13.8% of own-source revenues) had the highest debt service and debt service ratio, respectively.
- » The surge in advanced refunding at the end of 2017 may lead to a decline in debt service in 2018 and level off thereafter.

Appendix: Key metrics for US state debt medians

Exhibit 7

Net tax-supported debt - per capita and percentage of personal income

Net Tax-Supported Debt Per Capita			Rating	Net Tax-Supported Debt as a % of 2016 Personal Income		
1	Connecticut	$6,544	A1	1	Hawaii	10.4%
2	Massachusetts	$6,085	Aa1	2	Massachusetts	9.5%
3	Hawaii	$5,257	Aa1	3	Connecticut	9.5%
4	New Jersey	$4,281	A3	4	New Jersey	7.0%
5	New York	$3,082	Aa1	5	Illinois	5.6%
6	Illinois	$2,919	Baa3	6	Delaware	5.5%
7	Washington	$2,662	Aa1	7	Mississippi	5.2%
8	Delaware	$2,587	Aaa	8	New York	5.2%
9	California	$2,188	Aa3	9	Kentucky	5.1%
10	Rhode Island	$2,188	Aa2	10	Washington	5.0%
11	Maryland	$2,164	Aaa	11	Oregon	4.5%
12	Oregon	$2,017	Aa1	12	Rhode Island	4.4%
13	Kentucky	$1,995	Aa3*	13	California	3.9%
14	Mississippi	$1,854	Aa2	14	Louisiana	3.8%
15	Wisconsin	$1,660	Aa1	15	Maryland	3.7%
16	Louisiana	$1,627	Aa3	16	Wisconsin	3.6%
17	Alaska	$1,574	Aa3	17	Kansas	3.3%
18	Kansas	$1,554	Aa2*	18	New Mexico	3.0%
19	Virginia	$1,515	Aaa	19	Virginia	2.9%
20	Minnesota	$1,430	Aa1	20	West Virginia	2.9%
21	Pennsylvania	$1,311	Aa3	21	Alaska	2.8%
22	New Mexico	$1,139	Aa1	22	Minnesota	2.8%
23	Ohio	$1,118	Aa1	23	Pennsylvania	2.6%
24	West Virginia	$1,056	Aa2	24	Ohio	2.5%
25	Vermont	$987	Aaa	25	Georgia	2.4%
26	Georgia	$986	Aaa	26	Alabama	2.3%
27	Maine	$900	Aa2	27	Maine	2.1%
28	Alabama	$898	Aa1	28	Vermont	2.0%
29	Florida	$889	Aa1	29	Florida	2.0%
30	New Hampshire	$773	Aa1	30	Utah	1.9%
31	Utah	$772	Aaa	31	Arizona	1.6%
32	South Dakota	$694	Aaa*	32	Arkansas	1.6%
33	Michigan	$673	Aa1	33	Michigan	1.5%
34	Arizona	$651	Aa2*	34	Nevada	1.5%
35	Arkansas	$639	Aa1	35	North Carolina	1.5%
36	Nevada	$637	Aa2	36	South Dakota	1.5%
37	North Carolina	$611	Aaa	37	New Hampshire	1.4%
38	Missouri	$532	Aaa	38	South Carolina	1.3%
39	South Carolina	$517	Aaa	39	Idaho	1.2%
40	Colorado	$484	Aa1*	40	Missouri	1.2%
41	Idaho	$482	Aa1*	41	Colorado	0.9%
42	Texas	$410	Aaa	42	Texas	0.9%
43	Tennessee	$312	Aaa	43	Tennessee	0.7%
44	Oklahoma	$303	Aa2	44	Oklahoma	0.7%
45	Indiana	$295	Aaa*	45	Indiana	0.7%
46	Iowa	$219	Aaa*	46	Iowa	0.5%
47	Montana	$177	Aa1	47	Montana	0.4%
48	North Dakota	$133	Aa1*	48	North Dakota	0.2%
49	Wyoming	$38	NGO**	49	Wyoming	0.1%
50	Nebraska	$20	Aa1*	50	Nebraska	0.0%
	Mean	$1,477			Mean	2.9%
	Median	$987			Median	2.3%

*Issuer rating (No GO debt outstanding)

**No general obligation debt

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

Exhibit 8

State net tax-supported debt and gross tax-supported debt

	Net Tax-Supported Debt ($ Thousands)		Rating		Gross Tax-Supported Debt ($ Thousands)		Ratio
1	California	$86,507,000	Aa3	1	California	$92,675,000	1.07
2	New York	$61,173,092	Aa1	2	New York	$61,529,982	1.01
3	Massachusetts	$41,744,847	Aa1	3	New Jersey	$43,916,002	1.14
4	New Jersey	$38,557,606	A3	4	Massachusetts	$42,857,944	1.03
5	Illinois	$37,374,448	Baa3	5	Illinois	$38,461,848	1.03
6	Connecticut	$23,479,445	A1	6	Washington	$32,457,502	1.65
7	Washington	$19,711,256	Aa1	7	Texas	$28,182,738	2.43
8	Florida	$18,664,395	Aa1	8	Connecticut	$28,112,910	1.20
9	Pennsylvania	$16,788,401	Aa3	9	Minnesota	$23,360,535	2.93
10	Maryland	$13,095,582	Aaa	10	Pennsylvania	$22,548,094	1.34
11	Ohio	$13,040,038	Aa1	11	Michigan	$22,497,968	3.36
12	Virginia	$12,834,076	Aaa	12	Florida	$21,242,795	1.14
13	Texas	$11,603,694	Aaa	13	Ohio	$18,571,633	1.42
14	Georgia	$10,287,595	Aaa	14	Virginia	$17,214,114	1.34
15	Wisconsin	$9,621,950	Aa1	15	Oregon	$16,953,645	2.03
16	Kentucky	$8,884,897	Aa3*	16	Wisconsin	$13,535,009	1.41
17	Oregon	$8,354,427	Aa1	17	Maryland	$13,095,582	1.00
18	Minnesota	$7,973,810	Aa1	18	Kentucky	$12,718,513	1.43
19	Louisiana	$7,621,350	Aa3	19	Colorado	$11,815,533	4.35
20	Hawaii	$7,504,305	Aa1	20	Georgia	$10,287,595	1.00
21	Michigan	$6,703,628	Aa1	21	Alabama	$9,609,219	2.20
22	North Carolina	$6,281,556	Aaa	22	Louisiana	$8,923,480	1.17
23	Mississippi	$5,532,900	Aa2	23	Utah	$7,806,840	3.26
24	Arizona	$4,569,056	Aa2*	24	Hawaii	$7,529,682	1.00
25	Kansas	$4,526,773	Aa2*	25	North Carolina	$6,281,556	1.00
26	Alabama	$4,375,177	Aa1	26	Mississippi	$5,977,735	1.08
27	Missouri	$3,250,390	Aaa	27	Arizona	$4,569,056	1.00
28	Colorado	$2,715,533	Aa1*	28	Kansas	$4,526,773	1.00
29	South Carolina	$2,595,211	Aaa	29	Maine	$4,444,222	3.70
30	Delaware	$2,488,993	Aaa	30	Tennessee	$4,266,401	2.03
31	Utah	$2,393,846	Aaa	31	Indiana	$4,248,693	2.16
32	New Mexico	$2,378,230	Aa1	32	West Virginia	$3,365,469	1.76
33	Rhode Island	$2,318,173	Aa2	33	Missouri	$3,250,390	1.00
34	Tennessee	$2,098,486	Aaa	34	Rhode Island	$3,031,425	1.31
35	Indiana	$1,969,124	Aaa*	35	Delaware	$2,985,593	1.20
36	Arkansas	$1,920,111	Aa1	36	Alaska	$2,887,900	2.48
37	West Virginia	$1,916,830	Aa2	37	South Carolina	$2,828,196	1.09
38	Nevada	$1,910,259	Aa2	38	New Mexico	$2,378,230	1.00
39	Maine	$1,202,673	Aa2	39	Idaho	$2,375,038	2.87
40	Oklahoma	$1,192,740	Aa2	40	Oklahoma	$2,216,756	1.86
41	Alaska	$1,164,500	Aa3	41	Nevada	$2,211,357	1.16
42	New Hampshire	$1,038,040	Aa1	42	Iowa	$2,037,626	2.95
43	Idaho	$827,014	Aa1*	43	New Hampshire	$1,959,661	1.89
44	Iowa	$690,076	Aaa*	44	Arkansas	$1,920,111	1.00
45	Vermont	$615,759	Aaa	45	Vermont	$1,411,919	2.29
46	South Dakota	$603,126	Aaa*	46	North Dakota	$1,390,163	13.80
47	Montana	$186,305	Aa1	47	South Dakota	$702,281	1.16
48	North Dakota	$100,763	Aa1*	48	Montana	$357,827	1.92
49	Nebraska	$38,545	Aa1*	49	Nebraska	$38,545	1.00
50	Wyoming	$21,840	NGO**	50	Wyoming	$21,840	1.00
	Total	$ 522,447,871			Total	$ 677,588,927	
	Mean	$10,448,957			Mean	13,551,779	1.91
	Median	$4,450,975			Median	6,129,646	1.32

*Issuer rating (No GO debt outstanding)
**No general obligation debt
Source: Moody's Investors Service

Exhibit 9

Net tax-supported debt as percentage of gross state domestic product

	2016 NTSD as % of 2014 State GDP			2017 NTSD as % of 2015 State GDP			2018 NTSD as % of 2016 State GDP	
1	Connecticut	9.04%	1	Connecticut	9.11%	1	Connecticut	9.03%
2	Massachusetts	8.49%	2	Hawaii	8.77%	2	Hawaii	8.86%
3	Hawaii	8.46%	3	Massachusetts	8.33%	3	Massachusetts	8.25%
4	New Jersey	6.83%	4	New Jersey	6.98%	4	New Jersey	6.70%
5	Mississippi	5.12%	5	Mississippi	5.19%	5	Mississippi	5.10%
6	Kentucky	4.65%	6	Kentucky	4.76%	6	Illinois	4.70%
7	Washington	4.64%	7	Washington	4.38%	7	Kentucky	4.52%
8	New York	4.37%	8	New York	4.15%	8	Washington	4.13%
9	Illinois	4.32%	9	Illinois	4.14%	9	New York	4.08%
10	California	3.85%	10	Rhode Island	4.03%	10	Rhode Island	4.03%
11	Oregon	3.77%	11	Delaware	3.48%	11	Oregon	3.65%
12	Rhode Island	3.65%	12	California	3.47%	12	Delaware	3.48%
13	Wisconsin	3.53%	13	Oregon	3.46%	13	Maryland	3.42%
14	Delaware	3.41%	14	Maryland	3.43%	14	California	3.30%
15	Maryland	3.30%	15	Wisconsin	3.30%	15	Louisiana	3.22%
16	Louisiana	3.09%	16	Louisiana	3.14%	16	Wisconsin	3.07%
17	Kansas	3.01%	17	Kansas	3.03%	17	Kansas	3.01%
18	West Virginia	2.92%	18	West Virginia	2.83%	18	West Virginia	2.63%
19	New Mexico	2.71%	19	New Mexico	2.82%	19	Virginia	2.60%
20	Minnesota	2.64%	20	Virginia	2.60%	20	New Mexico	2.54%
21	Florida	2.55%	21	Minnesota	2.49%	21	Minnesota	2.35%
22	Virginia	2.50%	22	Pennsylvania	2.41%	22	Pennsylvania	2.33%
23	Pennsylvania	2.25%	23	Alaska	2.35%	23	Alaska	2.31%
24	Maine	2.23%	24	Florida	2.23%	24	Alabama	2.13%
25	Georgia	2.19%	25	Vermont	2.20%	25	Ohio	2.08%
26	Vermont	2.13%	26	Alabama	2.16%	26	Maine	2.03%
27	Ohio	2.13%	27	Maine	2.06%	27	Florida	2.02%
28	Alabama	2.11%	28	Ohio	2.06%	28	Vermont	1.98%
29	Utah	1.96%	29	Georgia	2.02%	29	Georgia	1.94%
30	Arizona	1.88%	30	Utah	1.69%	30	Arkansas	1.58%
31	Alaska	1.80%	31	Arizona	1.65%	31	Utah	1.52%
32	Michigan	1.60%	32	Arkansas	1.47%	32	Arizona	1.49%
33	Arkansas	1.58%	33	Michigan	1.45%	33	Michigan	1.37%
34	South Carolina	1.54%	34	South Carolina	1.38%	34	New Hampshire	1.34%
35	North Carolina	1.53%	35	New Hampshire	1.36%	35	Nevada	1.31%
36	New Hampshire	1.51%	36	North Carolina	1.33%	36	South Dakota	1.25%
37	Nevada	1.28%	37	Nevada	1.22%	37	South Carolina	1.24%
38	Missouri	1.27%	38	Missouri	1.20%	38	Idaho	1.21%
39	Idaho	1.19%	39	South Dakota	1.13%	39	North Carolina	1.20%
40	South Dakota	1.18%	40	Idaho	1.08%	40	Missouri	1.09%
41	Colorado	0.76%	41	Tennessee	0.68%	41	Colorado	0.84%
42	Tennessee	0.66%	42	Texas	0.66%	42	Texas	0.73%
43	Texas	0.65%	43	Oklahoma	0.65%	43	Oklahoma	0.66%
44	Indiana	0.63%	44	Colorado	0.62%	44	Tennessee	0.63%
45	Oklahoma	0.61%	45	Indiana	0.61%	45	Indiana	0.57%
46	Montana	0.57%	46	Montana	0.47%	46	Montana	0.40%
47	Iowa	0.44%	47	Iowa	0.40%	47	Iowa	0.37%
48	North Dakota	0.21%	48	North Dakota	0.20%	48	North Dakota	0.19%
49	Wyoming	0.06%	49	Wyoming	0.06%	49	Wyoming	0.06%
50	Nebraska	0.01%	50	Nebraska	0.03%	50	Nebraska	0.03%
	Mean	2.66%		Mean	2.61%		Mean	2.57%
	Median	2.16%		Median	2.18%		Median	2.05%

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 Investors Service, US Bureau of Economic Analysis

Exhibit 10

Net tax-supported debt as a percentage of personal income

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Alabama	2.0%	2.8%	2.5%	2.4%	2.6%	2.5%	2.5%	2.4%	2.3%	2.3%	2.3%	2.3%
Alaska	2.7%	2.4%	2.2%	3.2%	3.0%	3.3%	2.8%	3.2%	2.9%	2.6%	3.0%	2.8%
Arizona	2.0%	2.0%	2.5%	2.3%	2.8%	2.8%	2.5%	2.5%	2.4%	2.1%	1.8%	1.6%
Arkansas	1.4%	1.7%	1.3%	1.0%	1.1%	1.0%	1.2%	1.7%	1.9%	1.7%	1.5%	1.6%
California	4.4%	4.3%	4.4%	5.6%	6.0%	6.0%	5.8%	5.3%	5.0%	4.6%	4.1%	3.9%
Colorado	0.9%	0.8%	0.8%	1.0%	1.3%	1.3%	1.2%	1.1%	1.0%	0.9%	0.7%	0.9%
Connecticut	7.8%	7.3%	8.2%	8.7%	9.5%	9.1%	9.1%	9.2%	8.8%	9.2%	9.5%	9.5%
Delaware	5.5%	5.2%	5.4%	6.2%	6.8%	6.8%	6.2%	5.7%	5.6%	5.3%	5.4%	5.5%
Florida	3.1%	2.8%	2.9%	2.9%	3.0%	3.0%	2.8%	2.5%	2.5%	2.5%	2.2%	2.0%
Georgia	3.0%	3.0%	3.0%	3.3%	3.3%	3.1%	3.0%	2.9%	2.8%	2.7%	2.4%	2.4%
Hawaii	10.6%	9.9%	9.4%	9.9%	10.1%	9.6%	10.0%	10.6%	11.0%	9.9%	10.3%	10.4%
Idaho	0.6%	1.2%	1.6%	1.7%	1.6%	1.7%	1.6%	1.5%	1.4%	1.2%	1.1%	1.2%
Illinois	5.5%	5.2%	4.6%	4.4%	5.7%	6.0%	5.7%	5.6%	5.7%	5.2%	4.9%	5.6%
Indiana	2.1%	1.5%	1.5%	1.5%	1.4%	1.3%	1.2%	1.4%	0.8%	0.8%	0.7%	0.7%
Iowa	0.3%	0.3%	0.2%	0.2%	0.7%	0.8%	0.7%	0.6%	0.6%	0.5%	0.5%	0.5%
Kansas	3.7%	3.5%	3.2%	3.0%	3.2%	3.1%	2.8%	2.6%	2.4%	3.3%	3.4%	3.3%
Kentucky	4.3%	4.7%	4.8%	5.4%	6.1%	6.1%	5.9%	5.7%	5.4%	5.3%	5.4%	5.1%
Louisiana	4.9%	4.3%	3.3%	3.6%	3.5%	3.7%	3.7%	3.7%	3.9%	3.8%	3.8%	3.8%
Maine	1.9%	1.9%	2.2%	2.2%	2.4%	2.3%	2.1%	2.4%	2.4%	2.3%	2.1%	2.1%
Maryland	2.8%	3.0%	3.3%	3.4%	3.3%	3.6%	3.6%	3.4%	3.6%	3.6%	3.7%	3.7%
Massachusetts	9.4%	9.8%	8.9%	9.2%	9.2%	9.4%	9.3%	9.0%	9.8%	9.7%	9.6%	9.5%
Michigan	2.2%	2.2%	2.2%	2.1%	2.2%	2.2%	2.2%	2.1%	1.9%	1.8%	1.6%	1.5%
Minnesota	2.2%	2.3%	2.1%	2.4%	2.8%	2.7%	3.0%	3.0%	3.3%	3.1%	2.9%	2.8%
Mississippi	4.9%	4.8%	5.2%	5.0%	5.1%	5.6%	5.4%	5.2%	5.3%	5.2%	5.3%	5.2%
Missouri	1.9%	2.1%	2.0%	2.2%	2.2%	2.0%	1.8%	1.7%	1.6%	1.4%	1.4%	1.2%
Montana	1.5%	1.2%	1.2%	1.1%	1.1%	1.0%	0.9%	0.7%	0.6%	0.6%	0.5%	0.4%
Nebraska	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nevada	1.7%	2.0%	2.2%	2.3%	2.4%	2.2%	1.9%	1.7%	1.7%	1.5%	1.4%	1.5%
New Hampshire	1.3%	1.3%	1.3%	1.6%	1.9%	1.8%	1.9%	1.8%	1.6%	1.5%	1.4%	1.4%
New Jersey	7.6%	7.5%	7.3%	7.2%	7.8%	7.8%	7.6%	7.3%	7.5%	7.2%	7.3%	7.0%
New Mexico	5.3%	4.8%	4.6%	4.4%	5.6%	4.2%	3.8%	3.4%	3.6%	3.3%	3.3%	3.0%
New York	6.7%	6.3%	6.3%	6.5%	6.7%	6.6%	6.3%	6.0%	5.7%	5.5%	5.2%	5.2%
North Carolina	2.4%	2.8%	2.5%	2.3%	2.3%	2.3%	2.4%	2.1%	2.0%	1.9%	1.6%	1.5%
North Dakota	1.0%	1.1%	1.0%	0.8%	0.8%	0.6%	0.7%	0.5%	0.4%	0.3%	0.3%	0.2%
Ohio	3.0%	2.9%	2.8%	2.6%	2.8%	2.8%	2.8%	2.7%	2.7%	2.6%	2.5%	2.5%
Oklahoma	1.5%	1.5%	1.5%	1.6%	1.8%	1.3%	1.2%	1.0%	0.9%	0.7%	0.7%	0.7%
Oregon	4.6%	5.0%	4.6%	5.2%	5.6%	5.5%	5.2%	4.9%	4.9%	4.6%	4.2%	4.5%
Pennsylvania	2.4%	2.4%	2.5%	2.4%	2.7%	2.8%	2.8%	2.6%	2.5%	2.5%	2.7%	2.6%
Rhode Island	4.6%	4.7%	4.5%	5.2%	5.3%	4.7%	4.7%	4.5%	4.3%	3.9%	4.3%	4.4%
South Carolina	2.3%	3.3%	2.9%	2.9%	2.7%	2.5%	2.3%	2.2%	1.9%	1.7%	1.5%	1.3%
South Dakota	0.8%	0.9%	0.8%	0.4%	0.9%	0.9%	0.9%	0.9%	1.2%	1.4%	1.3%	1.5%
Tennessee	0.7%	0.7%	0.7%	0.9%	1.0%	1.0%	0.9%	0.8%	0.8%	0.8%	0.8%	0.7%
Texas	1.3%	1.4%	1.4%	1.4%	1.6%	1.5%	1.5%	1.5%	1.0%	0.9%	0.8%	0.9%
Utah	2.3%	1.9%	1.5%	3.2%	4.1%	4.4%	3.8%	3.4%	3.0%	2.5%	2.1%	1.9%
Vermont	2.1%	2.0%	1.8%	1.8%	1.9%	2.0%	1.9%	2.0%	2.1%	2.1%	2.2%	2.0%
Virginia	1.8%	1.9%	1.9%	2.1%	2.4%	2.6%	2.9%	2.7%	2.8%	2.8%	2.9%	2.9%
Washington	5.1%	5.1%	5.1%	5.3%	6.2%	6.0%	6.4%	6.4%	6.1%	5.5%	5.2%	5.0%
West Virginia	3.9%	3.9%	3.6%	3.5%	3.8%	3.6%	3.3%	3.0%	2.7%	3.3%	3.1%	2.9%
Wisconsin	4.2%	4.1%	4.0%	4.6%	4.8%	4.8%	4.7%	4.4%	4.2%	4.0%	3.8%	3.6%
Wyoming	0.3%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mean	3.2%	3.2%	3.1%	3.2%	3.5%	3.4%	3.3%	3.2%	3.2%	3.0%	3.0%	2.9%
Median	2.4%	2.6%	2.5%	2.5%	2.8%	2.8%	2.8%	2.6%	2.5%	2.5%	2.4%	2.3%

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 11

Debt service ratio

		FY 2015			FY 2016			FY 2017
1	Connecticut	14.3%	1	Connecticut	13.3%	1	Connecticut	13.8%
2	Massachusetts	11.7%	2	Massachusetts	12.1%	2	Massachusetts	11.7%
3	Hawaii	10.9%	3	Hawaii	10.4%	3	Hawaii	10.5%
4	Illinois	9.2%	4	New Jersey	10.1%	4	New Jersey	9.4%
5	New Jersey	8.5%	5	Illinois	8.8%	5	Illinois	9.2%
6	Washington	8.3%	6	Washington	8.1%	6	New York	8.1%
7	New York	7.6%	7	New York	7.4%	7	Washington	7.7%
8	Kentucky	7.6%	8	Kentucky	7.4%	8	Kentucky	7.3%
9	Delaware	6.6%	9	Maryland	6.6%	9	Maryland	7.0%
10	Georgia	6.5%	10	Mississippi	6.3%	10	Mississippi	6.9%
11	Rhode Island	6.4%	11	Georgia	6.2%	11	Georgia	6.4%
12	Maryland	6.2%	12	Utah	5.9%	12	Wisconsin	5.9%
13	Mississippi	6.0%	13	West Virginia	5.8%	13	Ohio	5.6%
14	Wisconsin	6.0%	14	Wisconsin	5.7%	14	West Virginia	5.4%
15	Utah	5.9%	15	Ohio	5.6%	15	Utah	5.3%
16	West Virginia	5.8%	16	Delaware	5.5%	16	Oregon	5.2%
17	Oregon	5.7%	17	Oregon	4.9%	17	Delaware	5.1%
18	Nevada	5.6%	18	California	4.9%	18	Rhode Island	5.1%
19	Ohio	5.5%	19	Maine	4.8%	19	New Mexico*	5.0%
20	California	5.3%	20	Virginia	4.8%	20	Louisiana	4.9%
21	Maine	5.1%	21	Nevada	4.7%	21	Virginia	4.8%
22	Virginia	4.9%	22	New Mexico	4.4%	22	Maine	4.8%
23	New Hampshire	4.7%	23	Rhode Island	4.4%	23	California	4.6%
24	Arizona	4.4%	24	Arizona	4.3%	24	Florida	4.4%
25	New Mexico	4.3%	25	New Hampshire	4.3%	25	Kansas	4.4%
26	Arkansas	4.1%	26	Kansas	4.0%	26	Alabama*	4.0%
27	Florida	4.0%	27	Pennsylvania	4.0%	27	New Hampshire	4.0%
28	Alabama	3.8%	28	Florida	3.9%	28	Nevada	3.9%
29	Pennsylvania	3.7%	29	Alaska	3.8%	29	Arizona	3.9%
30	Minnesota	3.7%	30	Minnesota	3.7%	30	Pennsylvania	3.6%
31	South Carolina	3.7%	31	Alabama	3.7%	31	Missouri	3.5%
32	Missouri	3.5%	32	Louisiana	3.6%	32	Arkansas	3.5%
33	North Carolina	3.4%	33	Missouri	3.4%	33	Minnesota	3.4%
34	Kansas	3.4%	34	North Carolina	3.3%	34	North Carolina	3.1%
35	Louisiana	3.1%	35	South Carolina	3.2%	35	South Carolina	2.7%
36	Michigan	2.7%	36	Texas	2.7%	36	Texas	2.7%
37	Colorado	2.5%	37	Michigan	2.5%	37	Michigan	2.5%
38	Alaska	2.4%	38	Colorado	2.5%	38	Colorado	2.2%
39	Texas	2.4%	39	Arkansas	2.3%	39	South Dakota	2.1%
40	South Dakota	2.1%	40	South Dakota	2.2%	40	Vermont	2.1%
41	Vermont	2.1%	41	Vermont	2.0%	41	Oklahoma	1.9%
42	Oklahoma	1.8%	42	Oklahoma	1.9%	42	Idaho	1.5%
43	Idaho	1.6%	43	Idaho	1.6%	43	Alaska	1.4%
44	Tennessee	1.3%	44	Montana	1.4%	44	Montana	1.3%
45	Montana	1.3%	45	Tennessee	1.3%	45	Tennessee	1.3%
46	Indiana	1.2%	46	Indiana	1.2%	46	Indiana	1.2%
47	Iowa	0.7%	47	Iowa	0.7%	47	Iowa	0.6%
48	North Dakota	0.5%	48	North Dakota	0.5%	48	North Dakota	0.3%
49	Wyoming	0.1%	49	Wyoming	0.1%	49	Nebraska	0.2%
50	Nebraska	0.1%	50	Nebraska	0.1%	50	Wyoming	0.1%
	Mean	4.6%		Mean	4.5%		Mean	4.5%
	Median	4.2%		Median	4.1%		Median	4.2%

*Figures use fiscal 2016 own-source revenues; fiscal 2017 audited financial statements not available at time of publication. Own-source revenues are reported total governmental revenues less funds received from federal sources. Additional adjustments have been made to own-source revenues for Delaware, Massachusetts and Washington to reflect inclusion or exclusion of certain funds.

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

Source: Moody's Investors Service

Exhibit 12

Demand debt and direct loans/private placements

State	NTSD ($ Thousands)	Demand Debt ($ Thousands)	Direct Loans/ Private Placements ($ Thousands)	# Direct Loans/ Private Placements
Alabama	$4,375,177	$0	$263,512	6
Alaska	$1,164,500	$0	$0	0
Arizona	$4,569,056	$0	$0	0
Arkansas	$1,920,111	$0	$27,704	2
California	$86,507,000	$3,421,420	$13,745	1
Colorado	$2,715,533	$0	$0	0
Connecticut	$23,479,445	$1,657,315	$434,865	2
Delaware	$2,488,993	$0	$1,657	2
Florida	$18,664,395	$60,400	$0	0
Georgia	$10,287,595	$0	$0	0
Hawaii	$7,504,305	$0	$0	0
Idaho	$827,014	$33,500	$0	0
Illinois	$37,374,448	$600,000	$0	0
Indiana	$1,969,124	$468,165	$289,075	4
Iowa	$690,076	$0	$49,854	2
Kansas	$4,526,773	$510,490	$0	0
Kentucky	$8,884,897	$185,000	$0	0
Louisiana	$7,621,350	$424,375	$405,800	5
Maine	$1,202,673	$0	$0	0
Maryland	$13,095,582	$59,450	$70,438	12
Massachusetts	$41,744,847	$3,469,990	$866,535	7
Michigan	$6,703,628	$123,275	$0	0
Minnesota	$7,973,810	$0	$0	0
Mississippi	$5,532,900	$0	$0	0
Missouri	$3,250,390	$0	$0	0
Montana	$186,305	$0	$0	0
Nebraska	$38,545	$0	$0	0
Nevada	$1,910,259	$0	$3,400	1
New Hampshire	$1,038,040	$0	$0	0
New Jersey	$38,557,606	$1,020,875	$1,744,380	8
New Mexico	$2,378,230	$420,000	$284,800	3
New York	$61,173,092	$1,799,470	$50,000	1
North Carolina	$6,281,556	$0	$0	0
North Dakota	$100,763	$0	$0	0
Ohio	$13,040,038	$430,635	$0	0
Oklahoma	$1,192,740	$0	$0	0
Oregon	$8,354,427	$495,055	$369,549	4
Pennsylvania	$16,788,401	$594,615	$81,800	1
Rhode Island	$2,318,173	$38,400	$38,400	2
South Carolina	$2,595,211	$0	$0	0
South Dakota	$603,126	$0	$0	0
Tennessee	$2,098,486	$245,536	$0	0
Texas	$11,603,694	$1,670,781	$1,726,620	25
Utah	$2,393,846	$0	$118,700	1
Vermont	$615,759	$0	$0	0
Virginia	$12,834,076	$50,000	$1,670	1
Washington	$19,711,256	$0	$0	0
West Virginia	$1,916,830	$0	$0	0
Wisconsin	$9,621,950	$486,170	$203,905	1
Wyoming	$21,840	$0	$0	0
TOTAL	$522,447,871	$18,264,917	$7,046,409	91

Source: Moody's Investors Service

Exhibit 13

Key metrics for US territories

	American Samoa	Northern Mariana Islands	Guam	U.S. Virgin Islands	Puerto Rico
Rating	Ba3	No Rating	Ba1	Caa3	Ca
2018 Debt Outstanding					
Net Tax-Supported Debt ($ Thousands)	$86,370	$75,935	$1,268,978	$1,853,270	
Gross Tax-Supported Debt ($ Thousands)	$86,370	$75,935	$1,268,978	$1,868,405	
NTSD Key Metrics					
NTSD as % of GDP	13.1%	6.1%	21.9%	47.9%	
NTSD per Capita ($)	$1,474	$1,501	$7,799	$17,701	
Debt Service Key Metrics					
Debt Service ($ Thousands)	$6,433	$9,122	$88,876	$179,982	
Debt Service as % of Own-Source Governmental Revenues	7.0%	3.2%	10.2%	12.0%	
Debt Service as % of Total Governmental Revenues	2.6%	2.3%	7.2%	14.7%	

Data for Puerto Rico is unavailable.
Source: Moody's Investors Service

Basis for state debt medians

Our 2018 state debt medians are based on our analysis of calendar year 2017 debt issuance and fiscal year 2017 debt service. As in prior year reports, the presentation of debt trend data incorporates a one-year lag (i.e., the data labeled 2018 reflect debt as of calendar year-end 2017).

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 (e.g., 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 owing 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 14

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	
P3s 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 and Territories, April 12, 2018

Outlook

» 2018 Outlook - 2018 Outlook stable as modest revenue growth continues, December 7, 2017

Endnotes

1 GARVEE stands for grant anticipation revenue vehicle.

REPORT NUMBER 1118450

Contacts

Joshua Grundleger +1.212.553.1791
Analyst
joshua.grundleger@moodys.com

Robert Canfield +1.212.553.3801
Associate Analyst
robert.canfield@moodys.com

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

APPENDIX B

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
Eric Kim
+1 212 908--024
eric.kim@fitchratings.com

Marcy Block
+1 212 908-0239
marcy.block@fitchratings.com

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.

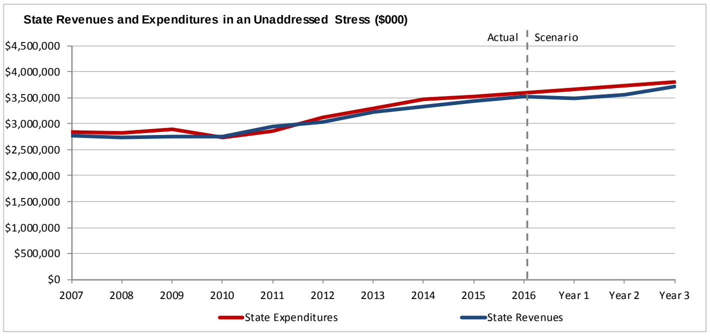
Long-Term Liability Burden: 'aa': Vermont's long-term liabilities burden is moderate and above the median for U.S. states.

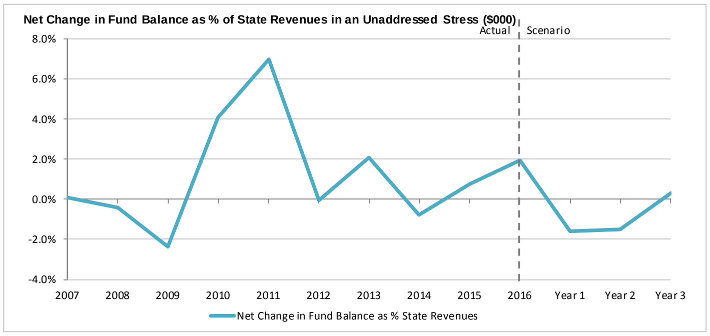
Operating Performance: 'aaa': Fitch anticipates Vermont will utilize its broad gap-closing capacity to manage through economic downturns while maintaining a high level of fundamental financial flexibility. The state has taken steps during the expansion to expand its flexibility and position itself well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

The ratings above were solicited and assigned or maintained at the request of the rated entity/Issuer or a related third party. Any exceptions follow below.

APPENDIX C

MOODY'S
INVESTORS SERVICE

CREDIT OPINION
10 August 2017

New Issue

Rate this Research

Analyst Contacts

Dan Seymour, CFA 212-553-4871
VP-Senior Analyst
dan.seymour@moodys.com

Timothy Blake 212-553-4524
MD-Public Finance
timothy.blake@moodys.com

Emily Raimes 212-553-7203
VP-Sr Credit Officer/ Manager
emily.raimes@moodys.com

CLIENT SERVICES

Americas 1-212-553-1653

Asia Pacific 852-3551-3077

Japan 81-3-5408-4100

EMEA 44-20-7772-5454

State of Vermont

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

Summary Rating Rationale

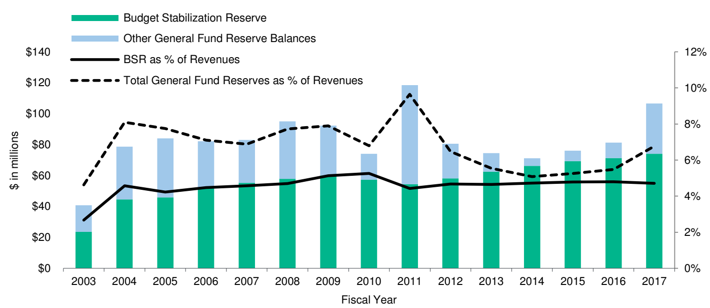
Moody's Investors Service has assigned Aaa ratings to the State of Vermont's $33 million General Obligation Bonds 2017 Series A and $67 million General Obligation Bonds 2017 Series B. The outlook is stable. Moody's maintains an Aaa rating on Vermont's outstanding GO bonds.

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

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

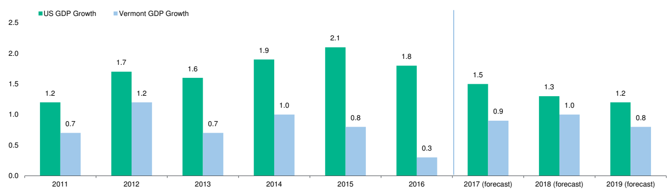
Economy

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

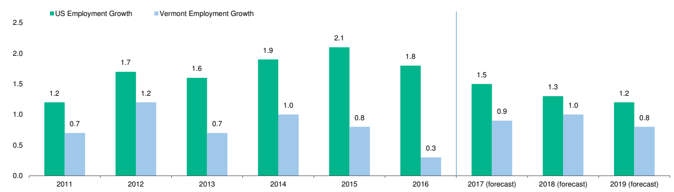
Vermont's Economic Growth is Lagging ..



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.

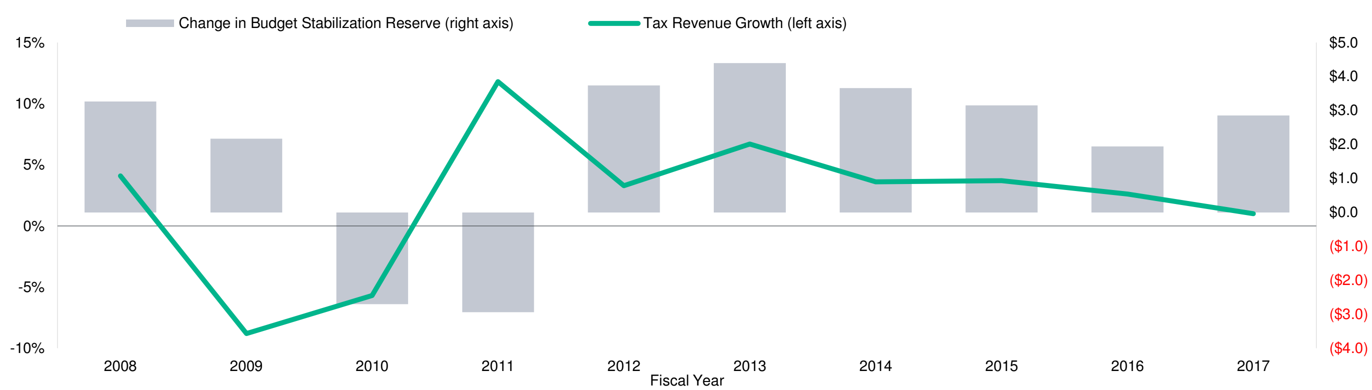
Exhibit 5
Vermont's Revenue Sources
($ in millions)

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

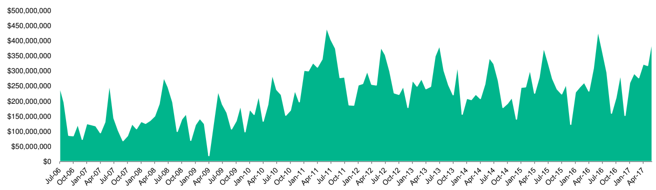
LIQUIDITY

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

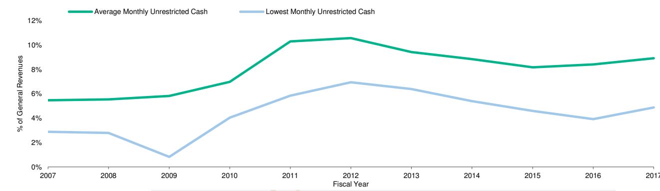
Monthly Unrestricted Cash



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

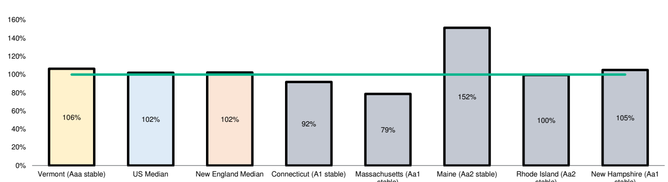
A few positives about Vermont's pension burden are important to note.

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

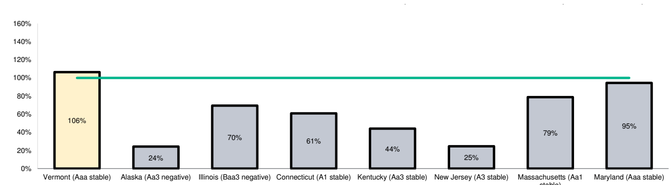
Actual Contribution Relative to "Tread Water" Contribution



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

REPORT NUMBER 1087349

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

MOODY'S INVESTORS SERVICE

APPENDIX D

S&P Global
Ratings

RatingsDirect®

Vermont; General Obligation

Primary Credit Analyst:
Jillian Legnos, Boston (1) 617-530-8243; jillian.legnos@spglobal.com

Secondary Contact:
Sussan S Corson, New York (1) 212-438-2014; sussan.corson@spglobal.com

Table Of Contents

Rationale

Outlook

Government Framework

Financial Management Assessment: 'Strong'

Economy

Budgetary Performance

Debt And Liability Profile

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.

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 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.

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.

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 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.

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 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.

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

APPENDIX E

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.)