CAPITAL DEBT AFFORDABILITY ADVISORY COMMITTEE

State of

Vermont

RECOMMENDED ANNUAL NET TAX-SUPPORTED DEBT AUTHORIZATION

2024 Report

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INTRODUCTION

Background and Purpose

The Capital Debt Affordability Advisory Committee (the "Committee" or "CDAAC") was created by Act No. 258 of 1989. The Committee is required, on or before September 30 of each year, to submit to the Governor and the General Assembly the Committee's estimate of net State tax-supported debt that prudently may be authorized for the next fiscal year, together with a report explaining the basis for that estimate. The full text of 32. V.S.A. Chapter 13, Subchapter 8, "Management of State Debt," which details CDAAC's statutory mandate in its entirety, is included as **Appendix A** to this Report.

In its 2012 Capital Construction and State Bonding Budget Adjustment Act (Sec. 1 of Act No. 104 of 2012), the General Assembly expressed its intent to move permanently 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 began presenting a two-year debt recommendation.

As in years past, this report relies upon U.S. State debt medians contained in a report from Moody's Investor's Service (included as **Appendix B**), which is the source of data for calculating the peer state debt ratios that inform the State's debt guidelines. Because Moody's 2024 report was not available by the September 30 statutory deadline, this report again uses Moody's 2023 medians.

Biennial Net Tax-Supported Debt Recommendation

The Committee's two-year recommendation for fiscal years 2026 and 2027 is $100,000,000.

In its discussions this year, the Committee reviewed several different biennium recommendation scenarios of $100 million, $108 million, $123.18 million and $172 million, applied them to its established metrics, and determined that the first three clearly were affordable. The Committee members also considered significant input on capital needs, informed in part by a review of the State's 10-year capital plan. The Committee also discussed the number and size of projects otherwise being funded, which include $150 million of previously authorized capital bill projects that have not yet been bonded for, a large amount of FEMA projects related to State's flooding events, and various other pandemic and post-pandemic-related federal programs with funding lapsing in 2025 and 2026.

The Agency of Administration voiced concern about the State's limited capacity to take on significant additional capital projects over the coming biennium due to a variety of factors including a limited number of contractors and project capacity in the State as a whole. The Committee also recognized that its projections assume significant issuance of previously authorized debt over the next several years, including $75 million in spring 2025 and almost $140 million during the FY2026-2027 biennium. Based upon these considerations, CDAAC determined that a recommendation between $100 million and $108 million was prudent and likely to meet the State's needs, compared to a larger yet potentially still affordable recommendation.

Understanding concerns from both the Administration and the Legislature that additional and considerable capital needs could be forthcoming, the unanimous decision of the Committee was to recommend $100 million, with recognition there would be an opportunity to recommend an increase from this amount for the second half of the biennium.

Consistent with statutory requirements, this final report also analyzes each of the following considerations:

1. The amount of net State tax-supported indebtedness that, during the next fiscal year, and annually for the following nine fiscal years, will be outstanding; and has been authorized but not yet issued (see Section 1, “State Debt”);
2. A projected schedule of affordable net State tax-supported bond authorizations for the next fiscal year and annually for the following nine fiscal years (see Section 1, “State Debt”);
3. Projected debt service requirements during the next fiscal year, and annually for the following nine fiscal years, based upon existing outstanding debt; previously authorized but unissued debt; and projected bond authorizations (see Section 1, “State Debt”);
4. The criteria that recognized bond rating agencies use to judge the quality of issues of State bonds, including existing and projected total debt service on net tax-supported debt as a percentage of combined General and Transportation Fund revenues and existing and projected total net tax-supported debt outstanding as a percentage of total State personal income (see Section 3, “Debt Guidelines” and Section 5, “Additional Credit and Affordability Considerations”);
5. The principal amounts currently outstanding, and balances for the next fiscal year, and annually for the following nine fiscal years, of existing obligations of instrumentalities of the State for which the State has a contingent or limited liability; 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 to the maximum extent obtainable, all long-term debt of municipal governments in Vermont that is secured by general tax or user fee revenues (see Section 1, “State Debt”);
6. The impact of capital spending upon the economic conditions and outlook for the State (see Section 2, “Economic and Financial Forecasts”);
7. The cost-benefit of various levels of debt financing, types of debt, and maturity schedules (see Section 1, “State Debt”);
8. Any projections of capital needs authorized or prepared by the Agency of Transportation, the Joint Fiscal Office, or other agencies or departments (see Section 5, “Additional Credit and Affordability Considerations”);
9. Any other factor that is relevant to the ability of the State to meet its projected debt service requirements for the next five fiscal years; or the interest rate to be borne by, the credit rating on, or other factors affecting the marketability of State bonds (see Section 5, “Additional Credit and Affordability Considerations”); and
10. The effect of authorizations of new State debt on each of the above considerations.

Recommended Updates to Statute

In addition to its two-year debt recommendation and this accompanying report, the Committee also proposes two revisions to modernize the existing statute as follows:

1. With the expansion of rating agency criteria to include a holistic view of liabilities beyond simply debt, and given the large magnitude of the State’s unfunded pension and other post-employment benefit (OPEB) liabilities relative to the State’s direct (bond-related) debt, the

Committee proposes including metrics that account for unfunded pension and OPEB liabilities.

2. Given the centrality of the State's capital assets to its capital planning process, and the inclusion by at least one rating agency of capital asset metrics, measures of the useful life of the state's capital assets and the potential for future capital maintenance and replacement costs.

A markup of existing statute incorporating these proposed changes is included as **Appendix F**.

State Reserves Study and Stress-Testing Report

Act No. 87 of 2024, the Budget Adjustment Act, Sec. 61, amended Act No. 78 of 2023, the Appropriations Act, to add Sec. E.131.2, "Treasurer: State Reserves Study," and Sec. E.131.3, "Treasurer: Stress-Testing Report."

For the State Reserves Study, the Treasurer, in consultation with the Department of Finance and Management and the Joint Fiscal Office, is directed to report on:

> *(1) the current fiscal reserve practices of the State, including a review of which funds have statutory reserves and which funds do not;*
>
> *(2) the fiscal reserve practices of other states and best practices;*
>
> *(3) how Vermont's fiscal reserve practices compare to those of other states and to best practices; and*
>
> *(4) the cash reserve policies of the State as it compares to reserve requirements.*

The report is to include *"the Treasurer's findings and any recommendations for changes to the fiscal reserve practices of the State."*

For the Stress-Testing Report, the Treasurer, in consultation with the Department of Finance and Management and the Joint Fiscal Office, is directed to:

> *…submit a written report to the Joint Fiscal Committee on fiscal stress-testing practices and methodologies in other states. The report shall address the extent to which such practices may be useful or beneficial and include any recommendations for the implementation of stress-testing practices in State government.*

Both reports are to be delivered on or before December 15, 2024. The Committee recognizes that either or both reports could inform both the CDAAC's report and the Committee's recommended updates to statute. To the extent practicable, the Treasurer's Office and the Committee will attempt to incorporate any additional recommended statutory updates shortly after the reports become available, and in advance of the 2025 legislative session.

1. STATE DEBT

In general, the State has borrowed money by issuing General Obligation (G.O.) bonds, which the State pledges its full faith and credit to repay. From 2010 through 2013, the State also issued three series of Special Obligation Transportation Infrastructure Bonds (TIBs), however these bonds were redeemed in June 2022. Also, with the implementation of GASB 87 and GASB 96 in fiscal year 2022, the State was required to report both leases and subscription-based information technology arrangements (SBITAs) that exceed 12 months in length as liabilities (i.e., debt).

The State has also authorized the Vermont Housing Finance Agency (VHFA) to issue bonds to finance affordable housing projects and to use a portion of the State's property transfer tax to pay the bonds' debt service. The State also has established certain statewide authorities that have the power to issue revenue bonds that are not secured by State taxes, but for which the State has contingent or limited liability, sometimes referred to as "moral obligation."

The Committee and the rating agencies include the State's G.O. debt, leases, SBITAs and the VHFA Property Transfer Bonds as net tax-supported debt. If the State issued TIBs again, these would also be included as net tax-supported debt[1].

General Obligation Bonds

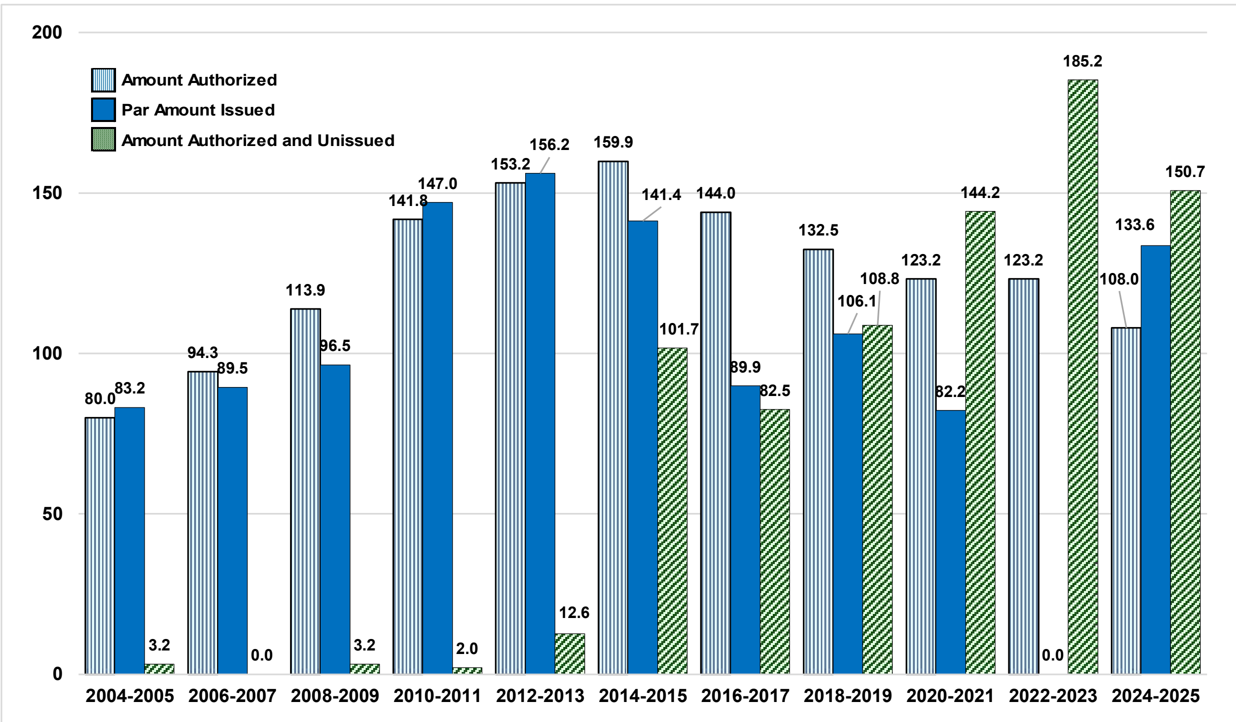
The State has no constitutional or other limit on its power to issue G.O. bonds besides borrowing only for public purposes. Pursuant to various appropriation acts, the State has authorized and issued G.O. bonds for a variety of projects or purposes. Each appropriation act historically specified projects or purposes and the amount of General Fund, Transportation Fund or Special Fund bonds to be issued, but as a practical matter the State has issued General Obligation bonds financed exclusively from the State's General Obligation Debt Service Fund since 2010. Currently, the State's G.O. Debt Service Fund is capitalized almost entirely by transfers from the State's General Fund, with a small amount of outstanding debt ($1.3 million, or slightly more than 0.2%) supported by the Transportation Fund that will be repaid in 2029. The last G.O. bonds supported by other special funds were repaid in 2017.

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 issue date of such bonds and such bonds must be payable in substantially equal or diminishing amounts annually (i.e., level principal). 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 issue date of the bonds; as a practical matter the first payment typically occurs within one year. 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.

[1] Additionally, Moody's Investor's Service includes certain bonds that have been issued by Vermont Economic Development Authority and Vermont Educational and Health Buildings Financing Agency on behalf of borrowers that are State-designated providers of developmental and mental health services, among other services, and has been licensed and authorized pursuant to State statutes to provide such services. The current amount of the designated provider bonds that Moody's considers as State Net Tax Supported Debt is $15 million; the Committee does not include this amount because the other two agencies do not, and because the amount is de minimis.

The CDAAC has recommended reduced or level debt authorizations starting with the fiscal year 2016-2017 biennium. Recommended authorizations, which have been adopted by the Governor and the General Assembly have been reduced by 32.5% since the 2014-2015 biennium.

STATE OF VERMONT
HISTORICAL GENERAL OBLIGATION BOND AUTHORIZATIONS, ISSUANCE AND CUMULATIVE AUTHORIZED BUT UNISSUED AMOUNTS 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) The "Authorized" amount reflects the two-year authorized amount of the General Assembly. These amounts exclude any amounts authorized that relate to 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.

(4) The $133.6 million Par Amount Issued and $150.7 million Amount Authorized and Unissued in the FY2024-2025 biennium reflects the issuance of the State's General Obligation Bonds, 2023 Series A on September 7, 2023, and 2024 Series A on June 20, 2024.

VHFA Property Transfer Bonds

The VHFA Property Transfer Bonds were issued in January 2018 and are payable from revenues received from a State tax upon the transfer by deed of title to property located within the State. The bonds were issued generally with a level debt service amortization structure, had an outstanding par amount of $27.28 million as of June 30, 2024, and are scheduled to mature in November 2037.

Leases
The total amount of Leases as of June 30, 2024, with a fair market value of $76.84 million, is included as net tax-supported debt.

Subscription Based Information Technology Arrangements (SBITAs)
The total amount of SBITAs as of June 30, 2024, with a fair market value of $16.804 million, is being added to the State's calculation of net tax-supported debt.

Net Tax-Supported Debt Outstanding
The State's aggregate net tax-supported debt principal amount increased from $633.735 million as of June 30, 2023, to $727.168 million as of June 30, 2024, an increase of 14.7%. This increase in is the context of an 8.5% decrease from 2022 to 2023, and was due primarily to the State issuing two series of bonds during fiscal year 2024, after not issuing bonds since the end of fiscal year 2021. The inclusion of Subscription Based Information Technology Arrangements also added $16.804 million. The VHFA Bonds' outstanding principal decreased by $1.495 million, and the net principal amount of leases outstanding decreased by $0.367 million. The table below sets forth the sources of the change in net tax-supported debt outstanding from fiscal year 2023 to fiscal year 2024 (in thousands).

Net Tax-Supported Debt as of 6/30/23	$633,735
Plus: New G.O. Bonds	197,700
Plus: New Lease Principal	13,576
Plus: Include SBITAs	16,804
Less: Retired G.O. Bonds	(119,210)
Less: Retired VHFA Property Transfer Bonds	(1,495)
Less: Lease Principal Payments	(13,942)
Net Tax-Supported Debt as of 6/30/24	$727,168

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STATE OF VERMONT
Debt Statement
As of June 30, 2024 (In Thousands)

General Obligation Bonds[1]:	
General Fund	$604,945
Transportation Fund	1,300
VHFA Property Transfer Tax Bonds:	
Property Transfer Tax Bonds, Series 2018	$27,280
Leases & SBITAs:	
Various Leases	$76,839
Subscription Based Information Technology Arrangements	16,804
Reserve Fund Commitments[2]:	
Vermont Municipal Bond Bank	$612,491
Vermont Housing Finance Agency	155,000
Vermont Economic Development Authority	181,000
Vermont Student Assistance Corporation	50,000
Vermont Telecommunications Authority[3]	40,000
University of Vermont/State Colleges	100,000
Gross Direct and Contingent Debt	$1,865,659
Less:	
Reserve Fund Commitments	$1,138,491
Net Tax-Supported Debt	**$727,168**

[1]Since 2010, debt service on general obligation bonds is paid for from the State's General Obligation Debt Service fund. Amounts given above represent financing sources of the General Obligation Debt Service fund.

[2]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.

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

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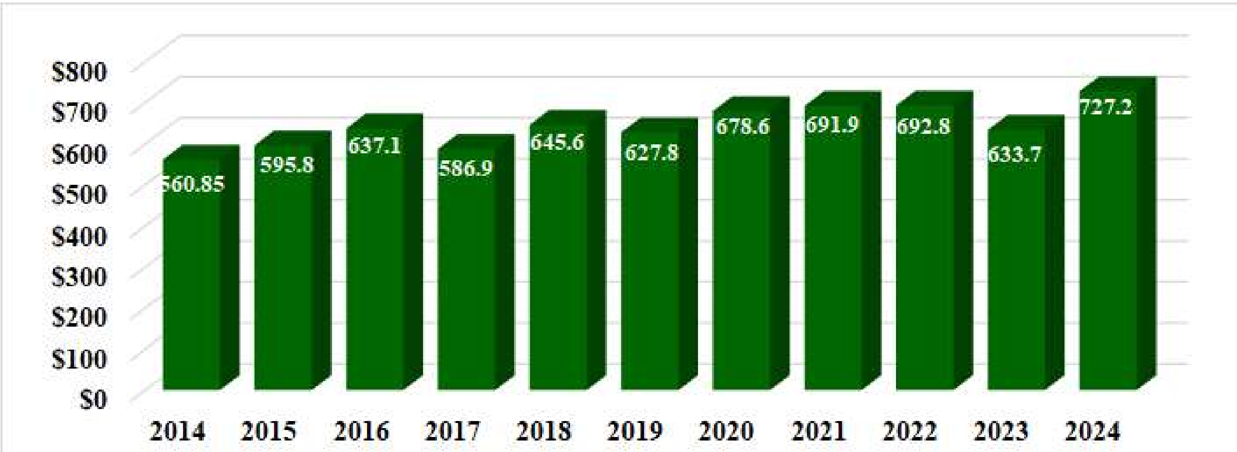
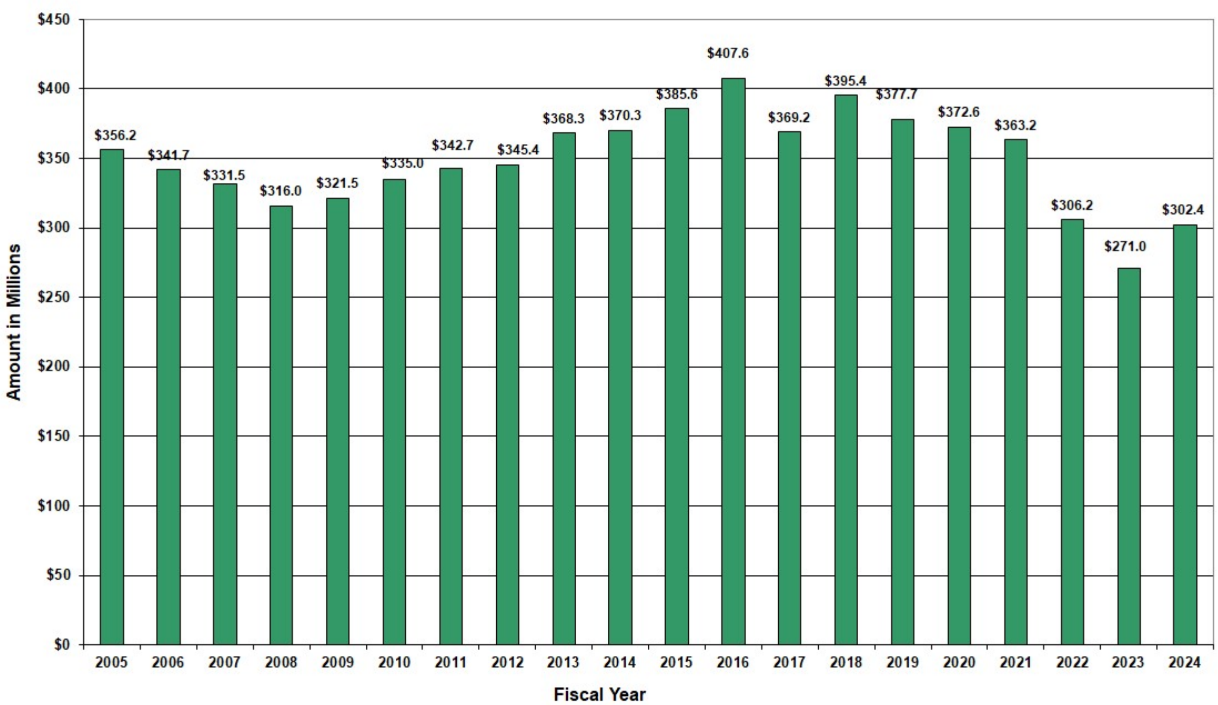
STATE OF VERMONT
LONG-TERM NET TAX-SUPPORTED DEBT OUTSTANDING FY 2014-2024
(in millions of dollars, by fiscal year)



STATE OF VERMONT
GENERAL OBLIGATION DEBT OUTSTANDING, FY 2005-2024
ADJUSTED FOR INFLATION[1,2] (in millions of dollars)



[1]Does not include VHFA Property Transfer Bonds and Leases.
[2]Adjusted for inflation to FY 1996.

The table below sets forth the State's existing principal amounts outstanding and annual debt service requirements, as of June 30, 2024, without the issuance of any additional debt. Rating agencies consider Vermont's rapid debt amortization, with almost 80% of current principal retired by fiscal year 2034, to be a positive credit factor.

OUTSTANDING NET TAX-SUPPORTED DEBT
(in thousands of dollars)

	NET TAX-SUPPORTED DEBT											
	GO Debt				Revenue Bonds							
	General Fund		Transportation Fund		VHFA Transfer Tax Bonds		Leases		SBITAs		Total	
Fiscal Year	Principal Outstanding	Debt Service	Principal Outstanding	Debt Service	Principal Outstanding	Debt Service	Principal Outstanding	Debt Service	Principal Outstanding	Debt Service	Principal Outstanding	Debt Service
2024	604,945	70,698	1,300	327	27,280	2,501	76,839	15,036	16,804	12,969	727,168	101,532
2025	549,080	78,235	1,040	317	25,745	2,496	65,000	13,191	9,870	7,220	650,735	101,459
2026	495,235	75,552	780	306	24,155	2,502	55,116	11,051	5,697	4,325	580,983	93,735
2027	443,050	71,526	520	295	22,515	2,500	45,786	10,327	3,187	2,575	515,058	87,224
2028	393,260	66,890	260	283	20,820	2,501	37,089	9,521	2,338	877	453,767	80,072
2029	345,475	62,753	-	272	19,070	2,498	28,989	8,765	1,796	588	395,331	74,875
2030	299,715	58,715	-	-	17,255	2,501	20,824	8,679	1,249	561	339,043	70,457
2031	257,080	53,665	-	-	15,375	2,499	12,710	8,473	697	561	285,862	65,198
2032	220,705	45,761	-	-	13,420	2,501	7,092	5,835	140	561	241,357	54,658
2033	184,330	44,276	-	-	11,390	2,501	2,872	4,322	-	140	198,592	51,239
2034	152,605	38,260	-	-	9,280	2,502	457	2,446	-	-	162,342	43,208
Note: This table sets forth the existing G.O. net tax-supported debt without the issuance of any additional debt.												

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Long-Term Net Tax-Supported Debt and Debt Service Projections

The State's projected annual Long-Term Net Tax-Supported Debt service and debt outstanding are presented on the following pages and summarized below. The projected debt service assumes interest rates of 5%, the issuance of $75,000,000 in fiscal year 2025, $68,925,000 in each of fiscal years 2026 through 2029, and $50,000,000 each fiscal year from 2030 through 2035. The amounts projected to be issued from fiscal year 2025 through 2029 would fully utilize the State's previously authorized but unissued debt.

PROJECTED LONG-TERM NET TAX-SUPPORTED DEBT
DEBT SERVICE AND DEBT OUTSTANDING*
(in thousands of dollars)

Fiscal Year Ending	Long-Term Net Tax Supported Debt Debt Service	% Change	Long-Term Net Tax Supported Debt Outstanding	% Change
6/30/2025	101,459	15.93%	725,735	-3.62%
6/30/2026	101,235	-0.22%	721,158	-0.63%
6/30/2027	101,432	0.19%	716,958	-0.58%
6/30/2028	100,817	-0.61%	713,942	-0.42%
6/30/2029	101,983	1.16%	710,331	-0.51%
6/30/2030	103,757	1.74%	686,493	-3.36%
6/30/2031	102,620	-1.10%	663,262	-3.38%
6/30/2032	96,078	-6.37%	646,207	-2.57%
6/30/2033	96,532	0.47%	628,392	-2.76%
6/30/2034	92,248	-4.44%	614,592	-2.20%
6/30/2035	89,487	-2.99%	603,359	-1.83%

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

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EXISTING AND PROJECTED LONG-TERM NET TAX-SUPPORTED DEBT SERVICE ($000)

FY	Current D/S*	2025 Issue $75.000M	2026 Issue 68.925M	2027 Issue 68.925M	2028 Issue 68.925M	2029 Issue 68.925M	2030 Issue 50.000M	2031 Issue 50.000M	2032 Issue 50.000M	2033 Issue 50.000M	2034 Issue 50.000M	2035 Issue 50.000M	Total Est. D/S
2025	101,459	0	0	0	0	0	0	0	0	0	0	0	101,459
2026	93,735	7,500	0	0	0	0	0	0	0	0	0	0	101,235
2027	87,224	7,313	6,896	0	0	0	0	0	0	0	0	0	101,432
2028	80,072	7,125	6,724	6,896	0	0	0	0	0	0	0	0	100,817
2029	74,875	6,938	6,551	6,724	6,896	0	0	0	0	0	0	0	101,983
2030	70,457	6,750	6,379	6,551	6,724	6,896	0	0	0	0	0	0	103,757
2031	65,198	6,563	6,206	6,379	6,551	6,724	5,000	0	0	0	0	0	102,620
2032	54,658	6,375	6,034	6,206	6,379	6,551	4,875	5,000	0	0	0	0	96,078
2033	51,239	6,188	5,861	6,034	6,206	6,379	4,750	4,875	5,000	0	0	0	96,532
2034	43,208	6,000	5,689	5,861	6,034	6,206	4,625	4,750	4,875	5,000	0	0	92,248
2035	36,824	5,813	5,516	5,689	5,861	6,034	4,500	4,625	4,750	4,875	5,000	0	89,487

EXISTING AND PROJECTED LONG-TERM NET TAX-SUPPORTED DEBT PRINCIPAL PAYMENTS ($000)

FY	Current Principal*	2025 Issue $75.000M	2026 Issue 68.925M	2027 Issue 68.925M	2028 Issue 68.925M	2029 Issue 68.925M	2030 Issue 50.000M	2031 Issue 50.000M	2032 Issue 50.000M	2033 Issue 50.000M	2034 Issue 50.000M	2035 Issue 50.000M	Total Est. Principal
2025	61,759	0	0	0	0	0	0	0	0	0	0	0	61,759
2026	76,433	3,750	0	0	0	0	0	0	0	0	0	0	80,183
2027	69,753	3,750	3,450	0	0	0	0	0	0	0	0	0	76,953
2028	65,924	3,750	3,450	3,450	0	0	0	0	0	0	0	0	76,574
2029	61,291	3,750	3,450	3,450	3,450	0	0	0	0	0	0	0	75,391
2030	58,437	3,750	3,450	3,450	3,450	3,450	0	0	0	0	0	0	75,987
2031	56,288	3,750	3,450	3,450	3,450	3,450	2,500	0	0	0	0	0	76,338
2032	53,181	3,750	3,450	3,450	3,450	3,450	2,500	2,500	0	0	0	0	75,731
2033	44,505	3,750	3,450	3,450	3,450	3,450	2,500	2,500	2,500	0	0	0	69,555
2034	42,765	3,750	3,450	3,450	3,450	3,450	2,500	2,500	2,500	2,500	0	0	70,315
2035	36,250	3,750	3,450	3,450	3,450	3,450	2,500	2,500	2,500	2,500	2,500	0	66,300

EXISTING AND PROJECTED LONG-TERM NET TAX-SUPPORTED DEBT OUTSTANDING ($000)

FY	Current Debt*	2025 Issue $75.000M	2026 Issue 68.925M	2027 Issue 68.925M	2028 Issue 68.925M	2029 Issue 68.925M	2030 Issue 50.000M	2031 Issue 50.000M	2032 Issue 50.000M	2033 Issue 50.000M	2034 Issue 50.000M	2035 Issue 50.000M	Total Est. Debt
2025	650,735	75,000	0	0	0	0	0	0	0	0	0	0	725,735
2026	580,983	71,250	68,925	0	0	0	0	0	0	0	0	0	721,158
2027	515,058	67,500	65,475	68,925	0	0	0	0	0	0	0	0	716,958
2028	453,767	63,750	62,025	65,475	68,925	0	0	0	0	0	0	0	713,942
2029	395,331	60,000	58,575	62,025	65,475	68,925	0	0	0	0	0	0	710,331
2030	339,043	56,250	55,125	58,575	62,025	65,475	50,000	0	0	0	0	0	686,493
2031	285,862	52,500	51,675	55,125	58,575	62,025	47,500	50,000	0	0	0	0	663,262
2032	241,357	48,750	48,225	51,675	55,125	58,575	45,000	47,500	50,000	0	0	0	646,207
2033	198,592	45,000	44,775	48,225	51,675	55,125	42,500	45,000	47,500	50,000	0	0	628,392
2034	162,342	41,250	41,325	44,775	48,225	51,675	40,000	42,500	45,000	47,500	50,000	0	614,592
2035	131,159	37,500	37,875	41,325	44,775	48,225	37,500	40,000	42,500	45,000	47,500	50,000	603,359

*Includes State G.O. Bonds, VHFA Property Transfer Bonds, Leases and SBITAs.

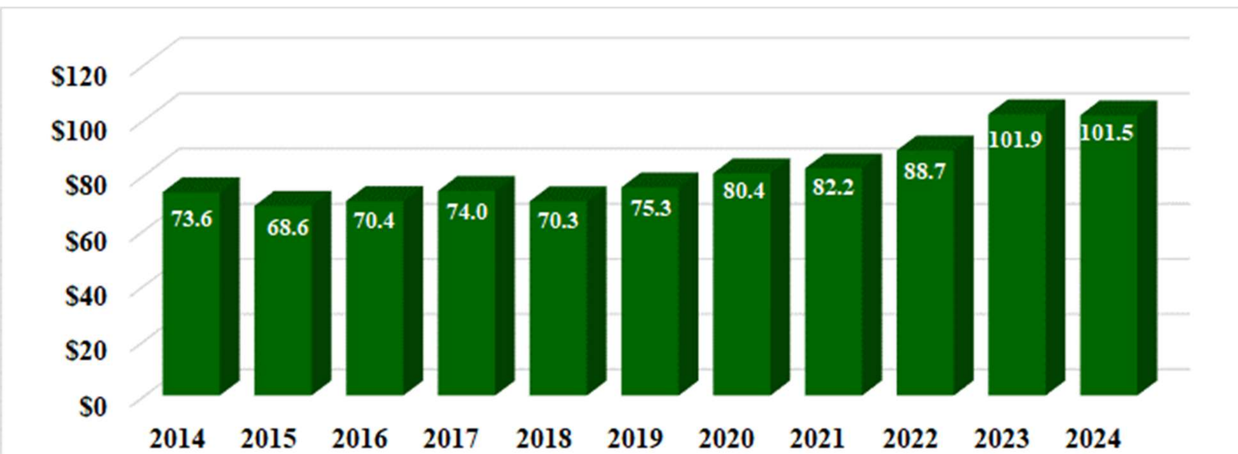
Net Tax-Supported Debt Service by Fiscal Year

The State's projected scheduled Long-Term Net Tax-Supported Debt Service requirement ("D/S") for fiscal year 2025 is $101.5 million, 0.4% less than the $101.9 million paid in fiscal year 2024.

STATE OF VERMONT
CHANGE IN NET TAX SUPPORTED DEBT SERVICE (FY 24 – FY 25)
(in $ thousands)

Long-Term Net Tax-Supported D/S Paid in FY 2024	$101,853
Decrease in D/S Requirement FY 2024	(394)
Long-Term Net Tax-Supported D/S Due in FY 2025	$101,459

STATE OF VERMONT
HISTORICAL LONG-TERM NET TAX-SUPPORTED DEBT
DEBT SERVICE [1,2]
(in millions of dollars)



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See table titled "Historic and Projected Debt Ratios" for debt ratios relative to historic Vermont revenues and economic data.

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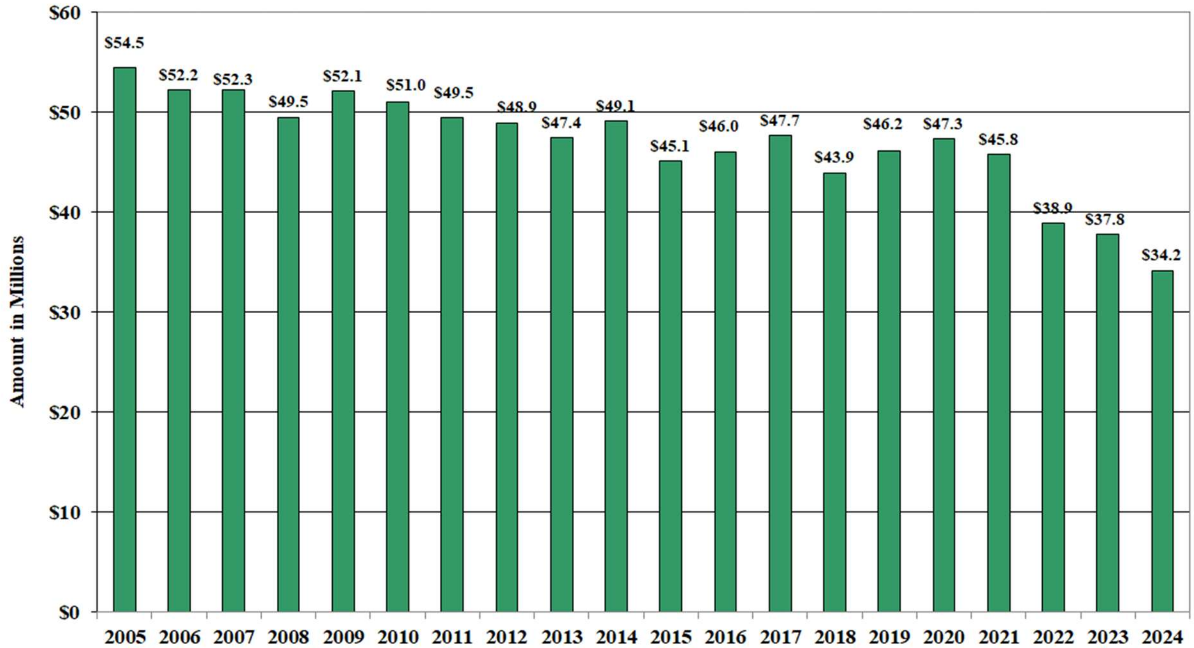
STATE OF VERMONT
GENERAL OBLIGATION DEBT SERVICE, FY 2005-2024
ADJUSTED FOR INFLATION [1,2] (in millions of dollars)



[1]Does not include VHFA Property Transfer Bonds and Leases.
[2]Adjusted for inflation to FY 1996.

Moral Obligation Indebtedness

Provided below is a summary of the State's moral obligation commitments as of June 30, 2024:

Reserve Fund Commitments (all figures as of June 30, 2024):

1. **Vermont Municipal Bond Bank (d/b/a Vermont Bond Bank) (VBB):** The VBB 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 purchasing their obligations in addition to the ordinary competitive bidding channels. By using the VBB, small individual issues of governmental units can be combined into one larger issue that attracts more investors.

   As of June 30, 2024, the VBB has issued 84 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, 2024, was $612,491,000, and the principal amount of loans outstanding to municipal borrowers as of June 30, 2024, was $591,275,178. For bonds issued under the 1988 Resolution, the VBB 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 VBB 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 VBB 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, 2024, the VBB has also issued two 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, 2024, the principal amount of bonds outstanding under the 2017 Resolution was $83,450,000. The 2017 Resolution bonds are not supported by a reserve fund, but do benefit from the State intercept.

The State Treasurer, the VBB 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.

On August 11, 2022, the VBB issued the first series of bonds that included consent for changes to the General Resolution through the purchase of new bonds. Once effective upon receipt of requisite consents, the proposed modifications will create two new categories of General Resolution bonds called the Community Revenue Bonds and Enhanced Community Revenue Bonds. Bonds issued prior to the effective date of the modifications will be called the Legacy Bonds and will no longer be issued once the modifications are effective.

The Community Revenue Bonds will continue to benefit from the State intercept, but will not include a debt service reserve fund and therefore, will have no ability to access the moral obligation. The Community Revenue Bonds will be superior to the Enhanced Community Revenue Bonds that will benefit from a debt service reserve fund. The net impact of this structure may be a reduction in VBB's use of the moral obligation.

The proposed modifications will become effective when 66.67% of holders consent to the changes. as of June 30, 2024, approximately 27.8% of the owners of the General Resolution Bonds consented to the proposed modifications.

For additional information about the VBB, see its most recent disclosure document, which can be found on the Electronic Municipal Market Access ("EMMA") system at https://emma.msrb.org.

2. **Vermont Housing Finance Agency:** 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 is empowered to issue notes and bonds to fulfill its corporate purposes. 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 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, 2024, the principal amount of outstanding debt covered by this moral obligation was $53,985,802, the debt service reserve fund requirement for this debt was $3,365,691, and the value of the debt service reserve fund was $3,942,018. 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.

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 amount of commercial paper outstanding under this program at June 30, 2024, was $87.5 million, and is supported by two direct-pay letters of credit totaling $83 million from one of the banks. The direct-pay letters of credit are collateralized from various repayment sources, including a $8 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 one variable-rate and three fixed-rate notes payable from a second bank totaling $102 million. The notes are collateralized from various repayment sources, including a $9.4 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. Act No. 79, enacted in June 2019, increased the State's moral obligation commitment for VEDA from $175 million to $181 million, effective July 1, 2019. For additional information about VEDA, see its most recent disclosure document, which can be found on the EMMA system at https://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. VSAC has no moral obligation debt outstanding, and thus it is not expected that the State will need to appropriate money to the respective reserve funds for VSAC.

As shown in the following page, the State's moral obligation commitments have increased only modestly over the past ten (10) years, by approximately $35.0 million or 4.5%. The increases came from VEDA, at $25 million, and VBB at $21.4 million, with reductions of $10.9 million from VSAC and $0.5 million from VHFA.

In the absence of explicit rating agency guidelines for moral obligation debt, or comparative data from Vermont's triple-A peer group, or a consistent approach among the triple-A peer group regarding the size, nature and role of such debt, CDAAC has since 2008 employed a guideline that moral obligation commitments should not exceed a range of between 200% and 225% of the State's Long-Term Net Tax-Supported Debt. Using this guideline, the State's moral obligation capacity would be between $1.454 billion and $1.636 billion, so the State would have between $316 million and $498 million of additional moral obligation capacity.

Reserve Fund Commitments:

State of Vermont
Moral Obligation Commitments and Debt Outstanding
As of June 30, 2024

Issuer Name	As of June 30, 2014 Amount Provided In Statute	As of June 30, 2014 Actual Par Amount Outstanding	As of June 30, 2024 Amount Provided In Statute	As of June 30, 2024 Actual Par Amount Outstanding	10-Year Change Amount Provided In Statute	10-Year Change Actual Par Amount Outstanding
VBB	$591,060,000	$591,060,000	$612,491,000	$612,491,000	$21,431,000	$21,431,000
VEDA	130,000,000	130,000,000	181,000,000	155,000,000	51,000,000	25,000,000
VHFA	155,000,000	54,515,000	155,000,000	53,985,802	-	(529,198)
VSAC	50,000,000	10,890,000	50,000,000	-	-	(10,890,000)
UVM	66,000,000	-	66,000,000	-	-	-
VSCS	34,000,000	-	34,000,000	-	-	-
VTA	40,000,000	-	40,000,000	-	-	-
	$1,066,060,000	$786,465,000	$1,138,491,000	$821,476,802	$72,431,000	$35,011,802

*The Vermont Municipal Bond Bank's debt obligations are secured first by the general obligation or revenue pledge of the participating municipalities, and second by State intercept of payments to municipalities, before the moral obligation is utilized.

CDAAC continues to believe 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 Long-Term Net Tax-Supported Debt. Ultimately, the effect of contingent liabilities and reserve fund commitments on the State's debt affordability depends upon this debt's reliance on the State's general operating revenues. The rating agencies do not include contingent obligations in the State's net tax-supported indebtedness until such debt becomes actual (through a payment or a replenishment obligation being made). As such, as long as 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.vtbondbank.org/investors

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

Each year CDAAC performs 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 affordability guidelines.

Second, with respect to the "types of debt," Vermont and its financing agencies have utilized a variety of debt types: VSAC, VHFA and VEDA sell revenue bonds, and Vermont has also issued TIBs. The State Treasurer's office also has considered a variety of financing options for the State's infrastructure needs, but because of Vermont's high credit ratings G.O. Bonds have generally offered the most cost-effective financing solution.

The State G.O. indebtedness maturity schedules are directly tied to State statute. Moreover, as indicated elsewhere herein, Vermont's current debt repayment for its G.O. bonds allow 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. Likewise, the State is precluded by Federal regulations from structuring tax-exempt debt to have an average life materially longer than the useful life of the asset(s) being financed. 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.

2. ECONOMIC AND FINANCIAL FORECASTS

This section of the report includes independent and consensus official State forecasting information provided by Economic and Policy Resources, Inc. ("EPR"), the State Economist for the Administration, dated September 4, 2024, in conjunction with Kavet Rockler & Associates, LLC, the State Economist for the Legislature. As shown in the table below, total revenue for fiscal year 2024 was $49.3 million more than in fiscal year 2023, an increase of 1.9%. The average annual revenue growth rate during the fiscal year period, 2024 through 2034, inclusive, is projected to be 2.9%.

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

Fiscal Year	General Fund	Transportation Fund	Property Transfer Tax[2]	Total Revenue[3]	Y-o-Y Change ($)	Y-o-Y Change(%)
2023	2,369.1	295.1	2.5	2,666.8	-	-
2024	2,410.6	303.0	2.5	2,716.1	49.3	1.9%
2025	2,440.4	317.8	2.5	2,760.7	44.6	1.6%
2026	2,499.2	323.0	2.5	2,824.7	63.9	2.3%
2027	2,561.7	326.7	2.5	2,890.8	66.2	2.3%
2028	2,653.7	331.8	2.5	2,988.0	97.1	3.4%
2029	2,760.8	336.5	2.5	3,099.8	111.9	3.7%
2030	2,863.1	341.5	2.5	3,207.2	107.3	3.5%
2031	2,965.8	346.1	2.5	3,314.4	107.2	3.3%
2032	3,068.0	350.2	2.5	3,420.8	106.4	3.2%
2033	3,174.9	354.5	2.5	3,531.9	111.2	3.3%
2034	3,282.7	359.0	2.5	3,644.3	112.3	3.2%

(1) Administration-Legislative Consensus Long-Term Forecast (Calendar Years 2025-2034). 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 September 4, 2024.

(2) Represents a portion of the State's property transfer tax set-aside to pay debt service on the VHFA Property Transfer Bonds.

(3) Totals may not agree due to rounding.

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Provided below are the forecasts of population, personal income, and nominal gross State product. Over the next ten years, Vermont's population is forecast to grow between 0.1% and 0.2% per year, personal income between 4% and 5% per year, and nominal gross state product between 3.5% and 4.7% per year.

STATE OF VERMONT
PRIOR YEAR, CURRENT AND PROJECTED ECONOMIC DATA[1]

Year	Population (in thousands)	Change from Prior Year	Personal Income (in $ billions)	Change from Prior Year	Nominal GSP (in $ billions)	Change from Prior Year
2023	647.5	-	43.0	-	43.1	-
2024	648.6	0.2%	45.2	5.0%	45.1	4.7%
2025	649.7	0.2%	47.2	4.5%	46.8	3.8%
2026	650.6	0.2%	49.3	4.4%	48.6	3.7%
2027	651.6	0.1%	51.4	4.3%	50.4	3.7%
2028	652.5	0.2%	53.7	4.4%	52.3	3.8%
2029	653.6	0.2%	56.0	4.3%	54.3	3.9%
2030	654.7	0.2%	58.5	4.4%	56.3	3.7%
2031	655.8	0.2%	61.0	4.3%	58.3	3.5%
2032	656.9	0.2%	63.5	4.2%	60.3	3.5%
2033	658.0	0.2%	66.2	4.2%	62.4	3.5%
2034	659.0	0.1%	68.8	4.0%	64.6	3.5%

(1) Administration-Legislative Consensus Long-Term Forecast (Calendar Years 2023-2034). These figures were provided by EPR, as of September 4, 2024.

Below are official State consensus 2024 economic projections as compared to its 2023 economic projections. As shown, the 2024 projections show a decrease in population in all years of the forecast, and a corresponding decrease in nominal personal income through 2029. However, revenue projections both absolutely and as a percentage of nominal personal income are projected to increase during the entire forecast period.

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STATE OF VERMONT
POPULATION, PERSONAL INCOME AND REVENUE PROJECTIONS
2024 COMPARED TO 2023

Population (Thousands)

Year	2023	2024	Change	% Change
2023	649.1	647.5	-1.6	-0.2%
2024	650.9	648.6	-2.3	-0.3%
2025	652.5	649.7	-2.8	-0.4%
2026	654.0	650.6	-3.4	-0.5%
2027	655.5	651.6	-3.9	-0.6%
2028	656.8	652.5	-4.3	-0.7%
2029	658.1	653.6	-4.6	-0.7%
2030	659.4	654.7	-4.7	-0.7%
2031	660.6	655.8	-4.8	-0.7%
2032	661.8	656.9	-4.9	-0.7%
2033	662.9	658.0	-4.9	-0.7%
2034	-	659.0	n.a.	n.a.

Nominal Dollar Personal Income (Billions)

Year	2023	2024	Change	% Change
2023	43.11	43.04	-0.1	-0.2%
2024	45.36	45.19	-0.2	-0.4%
2025	47.40	47.22	-0.2	-0.4%
2026	49.48	49.30	-0.2	-0.4%
2027	51.61	51.42	-0.2	-0.4%
2028	53.83	53.68	-0.1	-0.3%
2029	56.09	55.99	-0.1	-0.2%
2030	58.45	58.45	0.0	0.0%
2031	60.91	60.97	0.1	0.1%
2032	63.40	63.53	0.1	0.2%
2033	66.02	66.19	0.2	0.3%
2034	-	68.84	n.a.	n.a.

General Fund, Transportation Fund, TIBs and Property Transfer Tax Revenue (Millions)

Year	2023	2024	Change	% Change
2023	2,664.12	2,666.76	2.64	0.10%
2024	2,546.46	2,716.09	169.63	6.66%
2025	2,567.38	2,760.74	193.36	7.53%
2026	2,639.63	2,824.67	185.04	7.01%
2027	2,761.30	2,890.83	129.53	4.69%
2028	2,865.21	2,987.96	122.75	4.28%
2029	2,951.54	3,099.82	148.28	5.02%
2030	3,058.21	3,207.17	148.96	4.87%
2031	3,166.88	3,314.37	147.49	4.66%
2032	3,275.81	3,420.75	144.94	4.42%
2033	3,392.59	3,531.93	139.34	4.11%
2034	-	3,644.26	n.a.	n.a.

General Fund, Transportation Fund and Property Transfer Tax Revenue as a Percent of Nominal Personal Income

Year	2023	2024	Change	% Change
2023	6.18%	6.20%	0.0%	0.3%
2024	5.61%	6.01%	0.4%	7.1%
2025	5.42%	5.85%	0.4%	7.9%
2026	5.33%	5.73%	0.4%	7.5%
2027	5.35%	5.62%	0.3%	5.1%
2028	5.32%	5.57%	0.2%	4.6%
2029	5.26%	5.54%	0.3%	5.3%
2030	5.23%	5.49%	0.3%	4.9%
2031	5.20%	5.44%	0.2%	4.5%
2032	5.17%	5.38%	0.2%	4.2%
2033	5.14%	5.34%	0.2%	3.8%
2034	-	5.29%	n.a.	n.a.

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3. DEBT GUIDELINES

Since September 2004, the Committee has pursued a strategy to achieve a triple-A rating from all three nationally recognized credit rating agencies by benchmarking Vermont against triple-A rated states. 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. These guidelines historically have been:

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

Since 2011, CDAAC has also measured Debt as a Percentage of Gross State Product. While the rating agencies continue to report on this metric, it is highly correlated with Debt as a Percentage of Personal Income, and CDAAC has not used it as a basis for its 10-year projections. For brevity, starting with this year's report CDAAC has elected to discontinue including this measure.

CDAAC notes that Debt as a Percentage of Personal Income and Debt Service as a Percentage of Revenues are generally understood to be the primary credit indicators of the State's ability to pay, and are identified specifically in CDAAC's statutory charge. However, certain rating agencies continue to calculate and monitor the State's Debt Per Capita, and indeed, S&P's recently released new rating methodology (discussed in more detail starting on page 30) relies heavily upon both direct debt, and pension and other post-employment benefits (OPEB) unfunded liabilities per capita in its issuer credit profile measures. Debt per capita is also S&P's sole bond-related (as opposed to pension/OPEB or combined liabilities) debt measure.

At present, for its relative measures of Debt Per Capita and Debt as a Percent of Personal Income, CDAAC uses a peer group made up of all states that have at least <u>two</u> 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, and since the Committee began using this approach in 2004 the Peer Group of triple-A rated states has expanded from nine (9) to seventeen (17) states. Additionally, as Vermont has not had a triple-A rating since July 2019, this year the Committee also discussed whether to expand the Peer Group to include states rated at or above Vermont's current ratings of Aa1/AA+/AA+ by Moody's, S&P and Fitch; this would add seven (7) additional states bringing the Peer Group to twenty-four (24) members. Finally, as the rating agencies' criteria have evolved to include absolute measures, that provide specific ranges and thresholds of debt metrics associated with corresponding ratings, the Committee has also discussed whether relative measures such as the Peer Group comparison continue to be a useful approach.

For its 2024 report, the Committee has elected to retain the current triple-A states Peer Group and to continue its practice of using Debt Per Capita and Debt as a Percent of Personal Income projections relative to this Peer Group. However, the Committee may consider adjusting the Peer Group states in future reports, or may expand its use of absolute measures as it currently does for Debt Service as a Percent of Revenues, in which case it could de-emphasize Peer Group metrics and provide them for information and context, or eliminate relative metrics altogether.

Debt Per Capita

The Committee considers a guideline of the State's performance versus the 5-year average of the mean and median debt per capita of the Peer Group of triple-A rated states over the nine-year projection period. Because Moody's state debt medians for 2024 were not available by the report's due date, the 5-year average of the mean of the Peer Group through 2023 remained $1,021, the 5-year average of the median of the Peer Group remained $630, and Vermont's 5-year average debt per capita figure remained $1,132, which was 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.

The debt per capita State guideline calculation is based on a starting point of the 5-year average of the median debt per capita median of Peer Group states, and an annual inflation factor, in order to achieve a realistic perspective on the future direction of debt per capita median for these states. CDAAC currently uses an inflator of 2.7% or 90% of an assumed 3% inflation rate, which in turn has been a reasonable assumption for long-term consumer price inflation. This is also in line with the most recent monthly level of year-over-year consumer price inflation of 2.5% and with the 10-year annualized CPI of 2.8%, in both cases as of August 2024.

Starting with its 2013 report, CDAAC's debt recommendation has exceeded its 10-year Debt Per Capita projection in some or all years, but this was deemed to reflect certain Peer Group states with very little debt more than indicating Vermont had excessive debt, and the Committee de-emphasized this measure accordingly. However, as mentioned above, with S&P explicitly including an absolute direct debt per capita measure in its new rating criteria, as well as a per capita measure of pension and OPEB unfunded liabilities, the Committee likely will want to keep tracking per capita metrics going forward.

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 target is 1.8% for the median (the five-year averages of Moody's Mean and Moody's Median for the Peer Group are 1.8% and 1.2%, respectively). Based on data from Moody's, Vermont's 5-year average net tax supported debt as a percent of personal income is 2.0%, which is slightly higher than the 5-year mean and 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 information.

The Committee discussed the limitations of personal income as a measure particularly as it pertains to Vermont, because the number does not include realized capital gains; it was suggested that if this information were available by state, Vermont's relative position might improve.

Debt Service as a Percentage of Revenues

In the absence of a readily available peer group measure from the rating agencies, this guideline is an absolute number versus a mean or median relative to triple-A rated states. CDAAC's adopted standard since 2004 is a ratio of no greater than 6%, reduced from 8% previously, for annual Long-Term Net Tax-Supported Debt service as a percent of the annual aggregate of the General and Transportation Fund revenues, as well as the dedicated property transfer tax revenues associated with the VHFA Property Transfer Bonds. At present, this ratio equals approximately 3.1%, as can be seen within the table titled "Historic and Projected Debt Ratios." Vermont's debt service as a percentage of revenues has improved from 4.7% in 2012 to 3.7% in 2024. With the growth in General and Transportation Funds and relative stability of the State's annual debt service, this measure has not exceeded 4% since 2020, nor is it projected to under the current recommended authorization; as such, this year the Committee decided to lower this guideline to 4%.

In terms of the debt service projections provided in the table titled "Historic and Projected Debt Ratios," the analysis assumes future interest rates (coupons) on pro forma G.O. bond issues at 5.0% in fiscal years 2025 through 2035.

The CDAAC statute defines operating revenues as General and Transportation Fund revenues based upon the historic general flexibility in the uses of these funds for meeting financial operational needs of the State.

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STATE OF VERMONT
2024 STATES RATED TRIPLE-A BY TWO OR MORE RATING AGENCIES
(as of September 30, 2024)

2023 Triple-A Rated States(1)	Moody's	S&P	Fitch
Delaware	Yes	Yes	Yes
Florida	Yes	Yes	Yes
Georgia	Yes	Yes	Yes
Idaho	Yes	**No**	Yes
Indiana(2)	Yes	Yes	Yes
Iowa	Yes	Yes	Yes
Maryland	Yes	Yes	Yes
Minnesota	Yes	Yes	Yes
Missouri	Yes	Yes	Yes
North Carolina	Yes	Yes	Yes
Ohio (3)	Yes	Yes	Yes
South Carolina	Yes	**No**	Yes
South Dakota	Yes	Yes	Yes
Tennessee	Yes	Yes	Yes
Texas(2)	Yes	Yes	Yes
Utah	Yes	Yes	Yes
Virginia	Yes	Yes	Yes
VERMONT(4)	**No**	**No**	**No**

(1) Seventeen (17) states are rated triple-A by two or more of the nationally recognized rating agencies as of September 30, 2024.

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

Ohio was upgraded to AAA by Fitch on September 8, 2022, to Aaa by Moody's on December 1, 2023, and to AAA by S&P on December 8, 2023.

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STATE OF VERMONT
MEAN DEBT RATIOS COMPARISON

Per Capita	2019	2020	2021	2022	2023	5-Year CAGR[2]
All States	$1,493	$1,506	$1,535	$1,872	$1,808	3.9%
Triple-A[1]	958	950	962	1,070	1,163	3.9%
VERMONT	**1,140**	**1,061**	**1,102**	**1,185**	**1,173**	**0.6%**

% of Personal Income	2019	2020	2021	2022	2023	5-Year CAGR[2]
All States	2.8%	2.6%	2.5%	3.0%	2.7%	-0.7%
Triple-A[1]	1.9	1.7	1.7	1.8	1.8	-0.8%
VERMONT	**2.2**	**1.9**	**1.9**	**2.0**	**1.9**	**-2.9%**

(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.
(2) Compound annual growth rate.

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STATE OF VERMONT
DEBT PER CAPITA COMPARISON

<u>Peer Group States (All states with at least two triple-A rating)</u>
5-Year Average Mean and 5-Year Average Median Excluding Vermont:
MEAN: $1,021 MEDIAN: $630
5-Year Average Vermont: $1,132

Triple-A Rated States[1]	Moody's Ratings[2]	S&P Ratings[2]	Fitch Ratings[2]	Moody's Debt Per Capita 2019	2020	2021	2022	2023	5-Year Average
Delaware	Aaa/Stable	AAA/Stable	AAA/Stable	3,206	3,289	3,400	4,143	4,266	3,661
Maryland	Aaa/Negative	AAA/Stable	AAA/Stable	2,343	2,323	2,410	2,818	3,147	2,608
Virginia	Aaa/Stable	AAA/Stable	AAA/Stable	1,502	1,677	1,746	1,823	2,047	1,759
Ohio	Aaa/Stable	AAA/Stable	AAA/Stable	1,156*	1,158*	1,146*	1,718*	1,642	1,642
Minnesota	Aaa/Stable	AAA/Stable	AAA/Stable	1,415	1,406	1,400	1,462	1,638	1,464
VERMONT	**Aa1/Stable**	**AA+/Stable**	**AA+/Stable**	**1,140**	**1,061**	**1,102**	**1,185**	**1,173**	**1,132**
Georgia	Aaa/Stable	AAA/Stable	AAA/Stable	996	971	987	1,087	1,144	1,037
Utah	Aaa/Stable	AAA/Stable	AAA/Stable	792	720	866	899	827	821
Florida	Aaa/Stable	AAA/Stable	AAA/Stable	812	780	710	756	661	744
North Carolina	Aaa/Stable	AAA/Stable	AAA/Stable	531	586	581	686	700	617
South Dakota	Aaa/Stable	AAA/Stable	AAA/Stable	618	493	482	561	557	542
Idaho	Aaa/Stable	AA+/Stable	AAA/Stable	506*	540*	490*	464	591	528
Texas	Aaa/Stable	AAA/Stable	AAA/Stable	389	379	365	682	680	499
South Carolina	Aaa/Stable	AA+/Stable	AAA/Stable	503	469	415	435	444	453
Missouri	Aaa/Stable	AAA/Stable	AAA/Stable	487	464	413	398	378	428
Tennessee	Aaa/Stable	AAA/Stable	AAA/Stable	305	292	266	285	294	288
Indiana	Aaa/Stable	AAA/Stable	AAA/Stable	270	251	233	217	366	267
Iowa	Aaa/Stable	AAA/Stable	AAA/Stable	207	150	157	408	392	263
MEAN[3]				**958**	**950**	**962**	**1,070**	**1,163**	**1,021**
MEDIAN[3]				**618**	**586**	**581**	**684**	**680**	**630**

(1) States that carry at least two triple A ratings.
(2) Ratings as of September 30, 2024.
(3) These calculations exclude all Vermont numbers.
* Indicates that the state was not rated triple-A by 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.

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STATE OF VERMONT
DEBT AS % OF PERSONAL INCOME COMPARISON

Peer Group States (All states with at least two triple-A ratings)
5-Year Average Mean and 5-Year Average Median Excluding Vermont:
MEAN: 1.8% MEDIAN: 1.2%
5-Year Average Vermont: 2.0%

Triple-A Rated States	Moody's Debt as % of Personal Income					
	2019	2020	2021	2022	2023	5-year Average
Delaware	6.5	6.1	6.0	7.0	6.9	6.5
Maryland	3.8	3.5	3.5	4.1	4.4	3.9
Virginia	2.7	2.8	2.8	2.8	3.0	2.8
Ohio	2.3*	2.1*	2.1*	3.0*	2.8	2.8
Minnesota	2.6	2.4	2.3	2.2	2.4	2.4
Georgia	2.3	2.0	1.9	2.0	2.0	2.0
VERMONT	**2.2**	**1.9**	**1.9**	**2.0**	**1.9**	**2.0**
Utah	1.9	1.5	1.7	1.6	1.4	1.6
Florida	1.7	1.5	1.3	1.2	1.0	1.3
North Carolina	1.2	1.2	1.2	1.2	1.2	1.2
Idaho	1.2*	1.2*	1.0*	0.9	1.1	1.0
South Carolina	1.2	1.0	0.9	0.8	0.8	0.9
South Dakota	1.3	0.9	0.8	0.9	0.8	0.9
Texas	0.8	0.7	0.7	1.1	1.1	0.9
Missouri	1.1	0.9	0.8	0.7	0.7	0.8
Tennessee	0.7	0.6	0.5	0.5	0.5	0.6
Indiana	0.6	0.5	0.5	0.4	0.6	0.5
Iowa	0.4	0.3	0.3	0.7	0.7	0.5
MEAN[1]	**1.9**	**1.7**	**1.7**	**1.8**	**1.8**	**1.8**
MEDIAN[1]	**1.3**	**1.2**	**1.2**	**1.2**	**1.1**	**1.2**

(1) These calculations exclude all Vermont numbers and include only states rated triple-A by two or more of the rating agencies during the periods shown, as of September 30, 2024.

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

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STATE OF VERMONT
HISTORIC AND PROJECTED DEBT RATIOS

	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)									
2014	878	1,054	30	2.0	2.6	34	4.7	5.1	n.a.
2015	954	1,012	28	2.1	2.5	31	4.2	5.3	n.a.
2016	1,002	1,027	27	2.1	2.5	30	4.2	4.3	n.a.
2017	1,068	1,006	24	2.2	2.5	27	4.3	4.1	n.a.
2018	987	987	25	2.0	2.3	28	4.0	4.2	n.a.
2019	1,140	1,068	25	2.2	2.2	26	4.1	4.1	n.a.
2020	1,061	1,071	26	1.9	2.0	29	4.3	3.8	n.a.
2021	1,102	1,039	24	1.9	1.9	27	4.0	3.9	n.a.
2022	1,185	1,179	25	2.0	2.1	26	3.7	2.1	n.a.
2023	1,173	1,178	26	1.9	2.2	27	3.7	n.a.	n.a.
2024	1,173	1,178	n.a.	1.9	2.2	n.a.	3.7	n.a.	n.a.
Current (2)	1,121	n.a.	n.a.	1.6	n.a.	n.a.	3.7	n.a.	n.a.
Projected (FYE 6/30) (3)		State Guideline (6)			State Guideline (7)			State Guideline	
2025	1,117	647		1.5	1.8		3.7	4.0	
2026	1,108	664		1.5	1.8		3.6	4.0	
2027	1,100	682		1.4	1.8		3.5	4.0	
2028	1,094	701		1.3	1.8		3.4	4.0	
2029	1,087	720		1.3	1.8		3.3	4.0	
2030	1,049	739		1.2	1.8		3.2	4.0	
2031	1,011	759		1.1	1.8		3.1	4.0	
2032	984	780		1.0	1.8		2.8	4.0	
2033	955	801		0.9	1.8		2.7	4.0	
2034	933	822		0.9	1.8		2.5	4.0	
2035	914	845		0.8	1.8		2.4	4.0	
5-Year Average of Moody's Mean for Triple-A States		1,021			1.8			n.a.	
5-Year Average of Moody's Median for Triple-A States		630			1.2			n.a.	

Note: Shaded figures in the State's debt per capita projection in fiscal years 2025-2035 represent the period when Vermont is expected to exceed the projected, respective State Guideline consistent with the current guideline calculation methodology and the assumption that the State will issue bonds consistent with the proposed two-year authorization (footnote (3)).

(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, Inc. using outstanding Long-Term Net Tax-Supported Debt of $727,168 million as of 6/30/24 divided by Vermont's 2024 consensus population estimate of 648,600 as provided by EPR.

(3) Projections assume issuance of $75 million of G.O. debt in FY2025, $68.925 million from FY2026through FY2029, and $50 million from FY2030 through FY2035.

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

(5) Revenues are aggregate of State's General Fund, including changes related to Act 11 as calculated by EPR, and Transportation Fund, as well as the dedicated property transfer tax revenues associated with the VHFA Property Transfer Bonds. Projected debt service is based on estimated interest rates at 5% over the projected period. Calculated by Public Resources Advisory Group, Inc.

(6) State Guideline equals the 5-year average of Moody's median for the Peer Group of $630 increasing annually at 2.7%.

(7) The 5-year average of Moody's median for the Peer Group is 1.2%. Since the annual number can be volatile, ranging from 1.2% to 1.9% over the last five years, the State Guideline is 1.8% for FY2025 through FY2035.

"Dashboard" Indicators

	Vermont[a]	Median Triple-A States[b,c]
Long-Term Net Tax-Supported Debt:	$727,167,852	$4,344,115,000
Debt As A Percent Of Gross State Product:	1.61%	1.0%
Debt Per Capita:	$1,121	$680
Debt As A Percent Of Personal Income:	1.61%	1.1%
Debt Service As A Percent Of Operating Revenue[d]:	3.74%	N/A
Rapidity Of Debt Retirement:	45.6% (In 5 Years)	N/A
	77.7% (In 10 Years)	N/A
	94.2% (In 15 Years)	N/A
	100.0% (In 20 Years)	N/A

(a) Debt statistics for Vermont are as of June 30, 2024. Estimates of FY 2024 Gross State Product, Population, Personal Income and Operating Revenue consensus official State forecasts provided by EPR.
(b) 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 September 30, 2024.
(c) Source: Moody's Investors Service, 2023 State Debt, Pension and OPEB Medians Report calculated by Public Resources Advisory Group, Inc.
(d) Aggregate of State's General Fund, including changes related to Act 11 as calculated by EPR, and Transportation Fund, as well as the dedicated property transfer tax revenues associated with the VHFA Property Transfer Bonds.

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4. NATIONAL CREDIT RATING METHODOLOGIES AND CRITERIA

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

On September 9, 2024, S&P released its "Methodology for Rating U.S. Governments," which fully superseded its "U.S. State Ratings Methodology" that had been the basis of the State of Vermont's rating since October 17, 2016. S&P's new methodology consolidates its rating criteria for U.S. states, counties, municipalities, school districts, and special government districts under a single framework. Importantly, S&P stated that all U.S. state and territory ratings would remain unchanged under the new criteria.

The State's most recent S&P rating report from May 30, 2024, uses the previous methodology, which includes the important categories of review, referred to as "factors," as follows:

(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 weighted. 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 S&P's most recent report, Vermont's composite score was 1.8, unchanged from the 2022 and 2023 reports. The scores for each factor are as follows:

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

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 <u>score individually and weight equally</u>: 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.

Provided on 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	1,190	2
Debt as a % of Personal Income	Below 2%	2% - 4%	1.8%	1
Debt Service as a % of Spending	Below 2%	2%- 6%	2.1%	1
Debt as a % of Gross State Product	Below 2%	2% - 4%	1.7%	1
Debt Amortization (10 year)	80% - 100%	60%-80%	80%	2

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

Regarding pension liabilities, S&P assesses two indicators: (i) three-year average of the pension funded ratio and (ii) pension funding discipline. As described within their methodology, S&P analysis covers changes in assets and liabilities, funded ratios, funding discipline, and unfunded pension liability. S&P considers a state's commitment to funding annual contributions that address the long-term pension liability is a key credit consideration. The scoring of the three-year average of the pension funded ratio is detailed below.

Three-Year Average of Pension Funded Ratio	Indicator	Score
90% or above	Strong	1
80% - 90%	Good	2
60% - 80%	Relatively Low	3
60% or below	Weak	4

[*] Shaded grey indicates the State's three-year pension funded ratio of 63% in accordance with S&P's methodology based on S&P's rating report of the State dated May 30, 2024.

Based on the State's most recent rating report in May 2024, the State's three-year average of the pension funded ratio was 63%, which is considered relatively low and results in a score of 3.

S&P's review of a state's pension funding discipline includes an assessment of a state's funding policy, specifically reviewing whether it has an actuarial basis, and whether annual contributions usually meet or exceed the actuarially determined levels. S&P also reviews whether total annual plan contributions typically cover certain costs that drive the annual changes in the unfunded pension liability across plans, as well as an estimated annual amortization component of the unfunded liability. S&P also considers management factors and actuarial inputs to inform their assessment of a state's funding discipline.

S&P noted within Vermont's rating report in August 2023, and reiterated in May 2024, that they "believe that retirement liabilities are less of a source of credit pressure than they were before pension reform but are still sizable relative to those of state peers."

The last component of the debt and liability profile is a review of other post-employment benefits risks. For this assessment, S&P focuses on the relative level of unfunded OPEB liability compared to other states and the legal and practical flexibility that a state has to adjust these liabilities and the overall strategy to manage the costs of these benefits given the impact to future contribution rates and budgetary requirements.

In S&P's most recent rating report from May 2024, it noted that "the improvements represent meaningful gains, but we note that the per capita OPEB liability…. is still large and well above what is typical among other states."

Moody's US States Rating Methodology

On July 24, 2024, Moody's published its "US States and Territories Rating Methodology" to replace its "US States and Territories Rating Methodology," updated as of March 22, 2022, however, the State's Aa1 scorecard outcome was published on May 31, 2024, using the 2022 methodology, summarized below:

Rating Factors	Factor Weighting	Rating Sub-Factors	Sub-Factor Weighting	State Measure	State Score
Economy	30%	Resident Income (PCI Adjusted for RPP / US PCI)	15%	95.9%	Aa
		Economic Growth (5-Year CAGR real GDP – 5-Year CAGR US real GDP)	15%	-0.7%	Aa
Governance	20%		20%	Aaa	
Financial Performance	20%		20%	Aaa	Aaa
Leverage	30%	Long-term Liabilities Ratio (Debt + Moody's-adjusted Net Pension Liability + Moody's adjusted Net OPEB Liability + Other Long-term Liabilities)/Own-Source Revenue	20%	175%	Aa
		Fixed-Costs Ratio (Adjusted Fixed Costs / Own-Source Revenue)	10%	9.0%	Aaa
Total	**100%**	**Total**	**100%**		
Notching Factors		Very Limited or Concentrated Economy	**2 to 0**		0
Scorecard-Indicated Outcome					**Aa1**
Assigned Rating					**Aa1**

Vermont's Aa1 actual rating matches the State's indicative scorecard rating of Aa1.

Fitch Rating Criteria for US State and Local Governments

On April 2, 2024, Fitch released its updated "U.S. Public Finance State Governments and Territories Rating Criteria," which did not substantially change the rating criteria for U.S. States.

Notable aspects of the criteria included 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.

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.

Fitch considers the credit impact of OPEBs in evaluating a government's expenditure framework and operating performance but does not include this liability as part of an issuer's long-term liability burden except in limited cases. Fitch does not view OPEB liabilities akin to debt and net pension.

Please see the guidance table on the following page that outlines general expectations for a given rating category.

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	aaa	aa	a	bbb	bb
Revenue Framework (aa)					
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
Expenditure Framework (aaa)					
Natural Pace of Spending Growth Relative to Expected Revenue Growth	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
Long-Tern Liability Burden (aa)					
Combined Burden of Debt and Unfunded Pension Liabilities in Relation to Resource Base	Low Liabilities less than 10% of personal income	Moderate Liabilities less than 20% of personal income	Elevated but still in the moderate range Liabilities less than 40% of personal income	High Liabilities less than 60% of personal income	Very High Liabilities 60% or more of personal income
Operating Performance (aaa)					
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.
Overall Additional Considerations	In addition to the key rating driver assessments discussed above, the final rating assigned also considers certain additional risk factors that may affect the rating conclusion. These additional risk factors work asymmetrically, where only below-standard features are factored into the final rating levels. For U.S. state and local governments, these risk factors are management and economic characteristics that are significantly outside the U.S. norm.				

Fitch reviews 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 criteria, Fitch provides more in-depth opinions on reserve adequacy related to individual issuers' inherent budget flexibility and revenue volatility.

In 2017, Vermont was rated under the new criteria and there was no change to the State's AAA rating at that time as the result of the new criteria. However, the State was downgraded to AA+ by Fitch in July 2019, as previously discussed, and the AA+ rating was affirmed most recently in May 2024. In its 2024 report, Fitch scored the State as follows based on the four key rating factors:

Revenue Framework: 'aa'
Expenditure Framework: 'aaa'
Long-term Liability Burden: 'aa'
Operating Performance: 'aaa'

Under long-term liability burden Fitch notes that "Vermont's long-term liabilities burden is above the U.S. state median but remains moderate compared to the state's economic resource base. Vermont's elected leaders maintains close oversight and management of debt issuance, and have engaged in multiple efforts to improve the sustainability of retirement liabilities over time."

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5. ADDITIONAL CREDIT AND AFFORDABILITY CONSIDERATIONS

Moody's Adjustment to Pension Data and Adjusted State Pension Liability Medians
As previously discussed in Section 4, "National Credit Rating Methodologies and Criteria," in recent years Moody's, S&P and Fitch have added other "long-term liabilities" primarily pension and OPEB liabilities as rating factors.

On September 26, 2023, Moody's published its annual state liability report titled "Ability to Service Long-term Liabilities and Fixed Cost Improves," which now reports each states' debt, adjusted net pension liability, adjusted net OPEB liability and other long-term liabilities as a percentage of own-source revenue, among other liability information and comparative ratios.

Moody's pension data reflected on the upcoming pages reflects 2022 data based on 2021 liabilities and utilizes a FTSE Pension Liability Index of 4.48% as a discount rate to value liabilities in standard adjustments.

The following two tables provide Vermont's relative position among the 50 states with respect to its ANPL for fiscal 2021 and fiscal 2022 and a comparison of Vermont and Peer Group states with respect to Moody's pension ratios.

Moody's Pension Ratios	State of Vermont Rankings 2020[1,2]	2021[1,2]	2022[1,2]
ANPL as % of Personal Income	8	8	7
ANPL as % of State Gross Domestic Product	7	7	6
ANPL Per Capita	9	8	8
ANPL as % of Own-Source Revenue	14	12	10
Debt + ANPL + ANOL + Other Long-term Liabilities as a % of Own-Source Revenue	N/A	13	11

Sources:

Moody's *Debt, Pension and OPEB Liabilities All Up in Fiscal 2021,* September 7, 2022.

Moody's *Ability to Service Long-term Liabilities and Fixed Cost Improves,* September 26, 2023.

[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.

[2]Based on a FTSE Pension Liability Index of 4.48%.

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

Triple-A Rated States	Moody's Adjusted Net Pension Liability (ANPL)[1]			
	As % of PI	As % of State GDP	Per Capita ($)	As % of Revenues
South Carolina	12.3	11.7	5,570	169.0
Maryland	12.1	13.0	9,198	162.2
VERMONT[3]	**18.0**	**18.2**	**11,407**	**154.5**
Texas	7.6	6.0	4,713	134.0
Missouri	4.7	4.2	2,655	92.5
Iowa	5.3	4.3	3,095	74.9
Delaware	9.0	6.5	5,548	67.7
Indiana	4.5	3.9	2,596	67.0
Ohio	2.4	2.0	1,411	41.6
Minnesota	3.2	2.8	2,165	34.6
Florida	1.6	1.7	1,047	34.5
Georgia	2.0	1.7	1,151	34.5
Virginia	2.2	2.0	1,521	32.5
North Carolina	2.2	1.8	1,241	32.0
Utah	2.5	1.9	1,422	31.6
South Dakota	2.8	2.5	1,839	30.1
Idaho	2.1	2.0	1,125	28.3
MEAN[2]	4.6	4.1	2,784	64.3
MEDIAN[2]	2.8	2.5	1,839	34.6
VERMONT's 50 STATE RANK[4]	7	6	8	10

Source: Moody's *Ability to Service Long-term Liabilities and Fixed Cost Improves,* September 26, 2023.

[1]Based on a FTSE PLI of 4.48%.

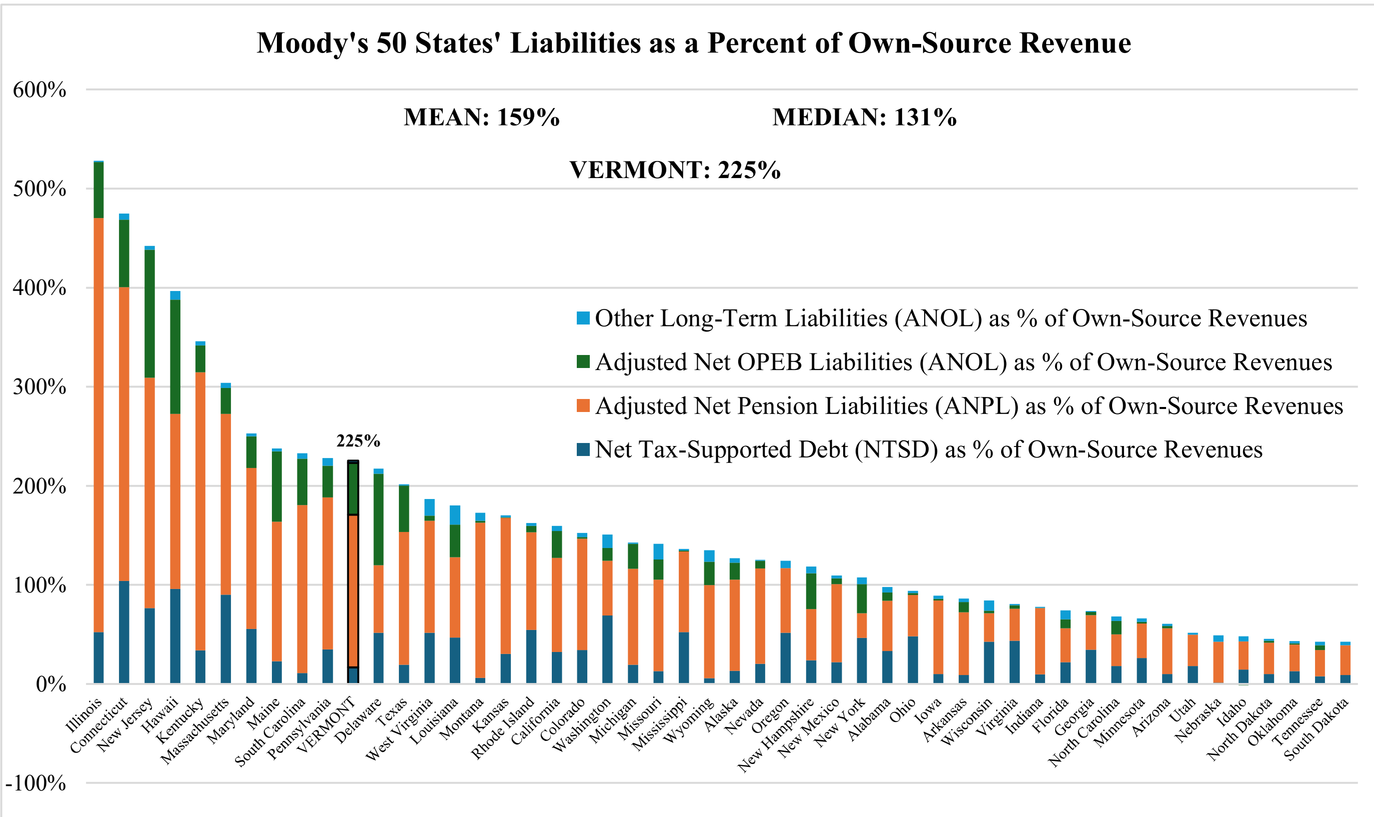
[2] Calculated by Public Resources Advisory Group, Inc. These calculations exclude all Vermont numbers and include only states rated triple-A by two or more of the rating agencies, as of September 30th, 2024.

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

[4]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.

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

As discussed in Section 4, "Moody's US States Rating Methodology," the updated methodology includes a "Leverage" factor with a weight of 30% and adjusted OPEB liabilities and other long-term liabilities along with debt and pensions. As can be seen in the table below, Vermont is currently ranked 11th out of the 50 states in long-term liabilities ratio (lower numbers indicate relatively greater liabilities). Please see below for a chart comparing Vermont's Moody's long-term liabilities ratio compared to those of the other 49 states.



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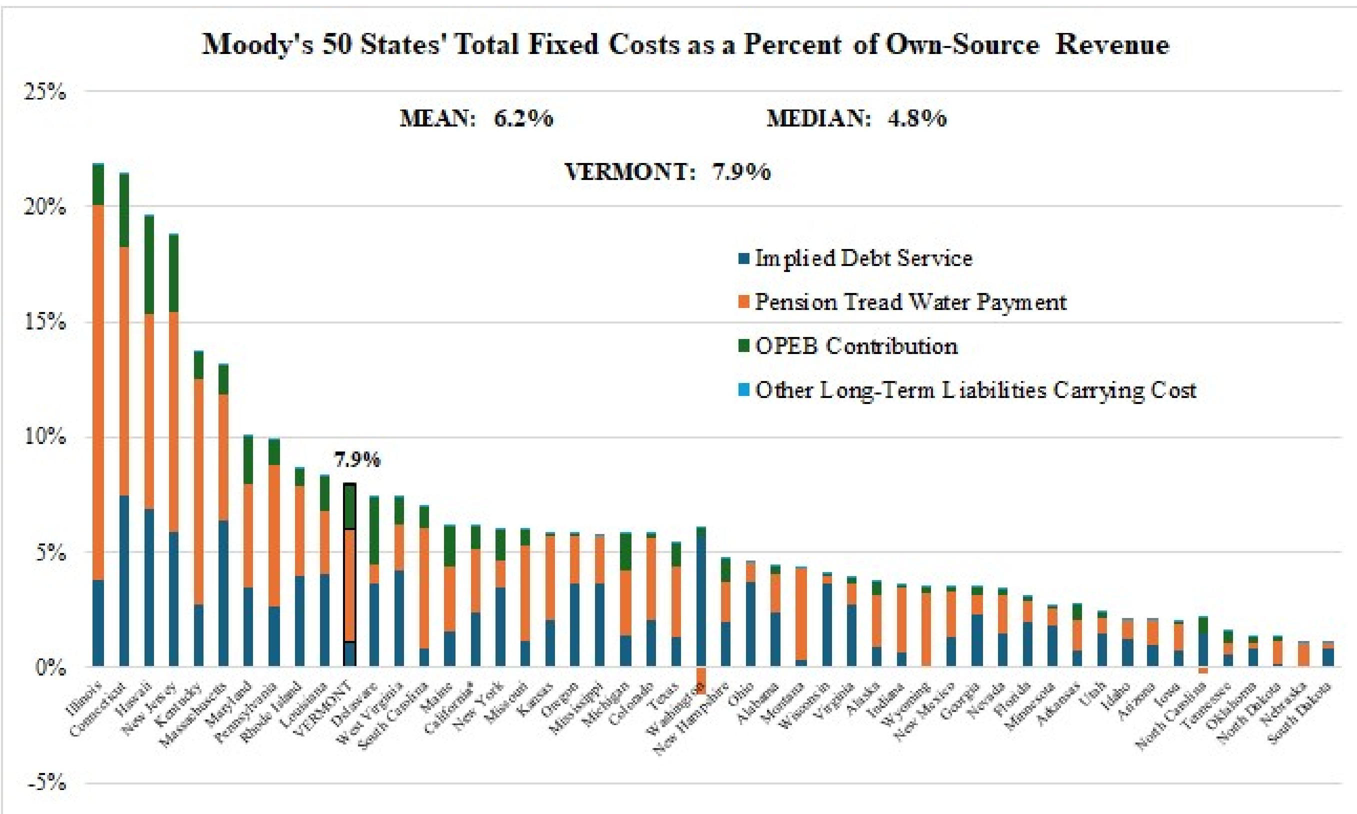
Moody's – Review of State and Local Budget Capacity

Moody's has raised concerns with state and local governments' long-term debt liabilities as they relate 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.

Moody's Fixed Cost Ratio, which was also previously discussed, is a ratio within the "Leverage" factor that compares implied debt service, OPEB contributions and pension tread water costs to state own-source revenue. Please see below for a chart comparing Vermont's Moody's Fixed Cost Ratio compared to the ratios for the other 49 states; currently Vermont is ranked 11th out of 50 (lower numbers indicate relatively higher fixed costs).



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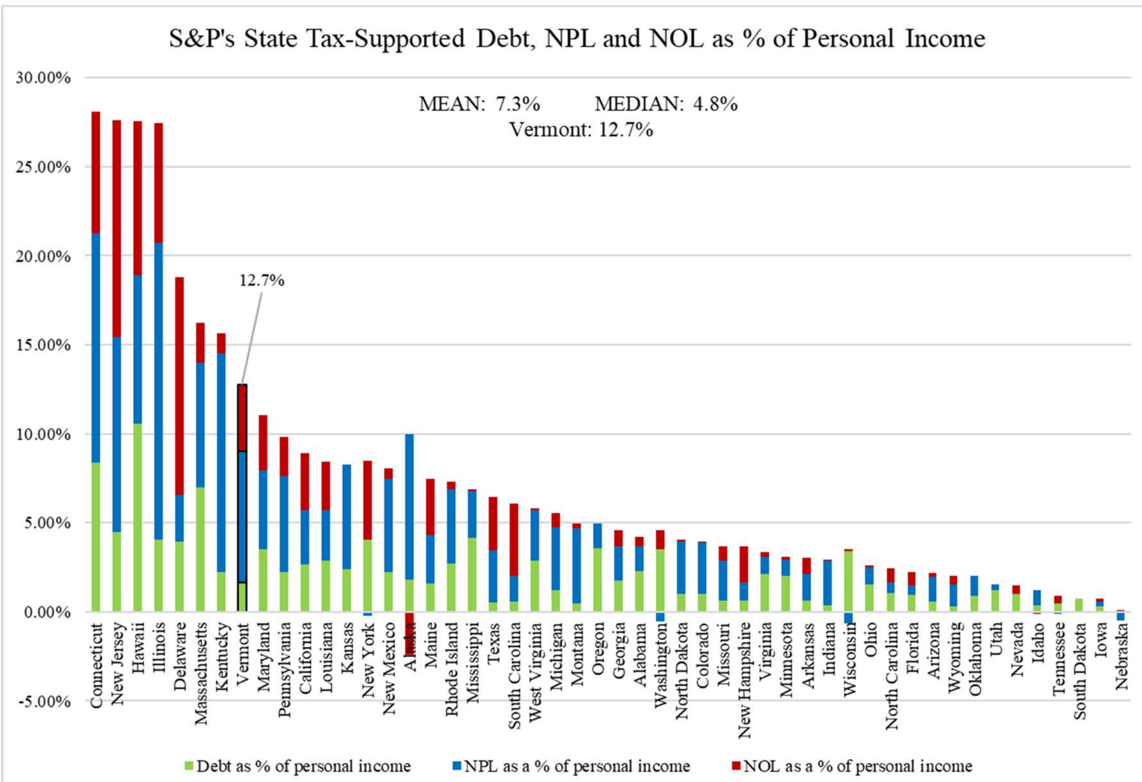
S&P State Liability Information

In September 2023, S&P published a report titled "U.S. State Pension And OPEBs: Funding Progress Is Likely To Pick Up In 2023 After Slipping In 2022." The report explained that while investment performance dropped in fiscal 2022, a marginal improvement was expected for fiscal 2023 which would blunt potential near-term pressures to states' debt and liability profiles. Without plan modifications, contribution rates could inch up further to address pension funding shortfalls, leading to longer-term budget pressure for some states. The chart below represents each state's ratio of direct debt, pension liabilities and OPEB liabilities to personal income. At the time, Vermont was ranked 8th out of the 50 states (note: higher ranked states have less debt, pension liabilities and OPEB liabilities).



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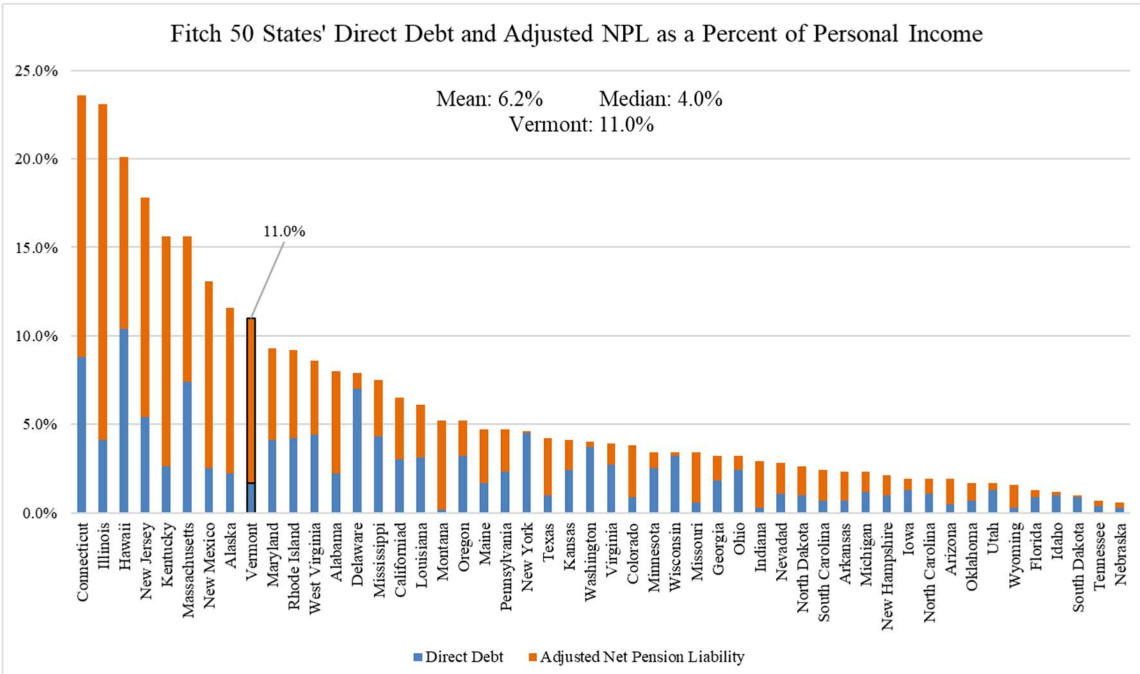
Fitch Annual State Liability Report

Fitch annually publishes a state liability report. In November 2023, Fitch released their "2023 State Liability Update," which recognized that the post-pandemic surge in assets lowered pension burdens. In the chart below, Fitch presents each state's ratio of direct debt and net pension liabilities to personal income. Vermont is currently ranked 9th out of the 50 states (note: lower numbered rankings correspond to higher debt and pension liabilities).



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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. Well-funded rainy-day funds were particularly important for states during the onset of the COVID-19 pandemic to maintain adequate liquidity in order to deliver essential services. Historically, a rainy-day fund target of 5% of general fund expenditures was considered conservative and a credit positive by the rating agencies, but rating agencies now consider higher reserve funds to be consistent with triple-A ratings. Moody's considers the level of states fund balance (funds that are classified as unassigned, assigned or committed in the total governmental funds section of a state or territory's audited financial statements) as one factor in its assessment of the Financial Performance score (see Section 4, "National Credit Rating Methodologies and Criteria"). In its US States Rating Methodology, Moody's provides expectations for fund balance levels by credit rating category, specifying that triple-A rated states' fund balances should approximate or exceed 15% of revenues and double-A rated states' levels should approximate or exceed 10% of revenues. With respect to the Vermont's rainy day fund balances, in the State's most recent Standard and Poor's report published in May 2024, S&P states that its stable outlook "reflects our expectation that Vermont will continue to realize structurally balanced operations with fully funded reserves and robust cash balances in the coming few years" despite the likelihood of a near-term economic slowdown. S&P's recent criteria update on September 9, 2024, relocated the reserves and liquidity by moving it out of budgetary performance and to a separate factor, which highlights the role reserves and liquidity play in paying debt service and supporting operations during economic downturns. The table below shows the fiscal year 2022 through 2025 rainy day fund balances of the other triple-A states.

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

Vermont has several reserve funds to dampen the effect of revenue volatility that are considered "available reserve funds." These are statutorily defined in 32 V.S.A. §§ 308-308e. The General Fund Stabilization Reserve and Transportation Fund Stabilization 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 Commissioner of Finance & Management and reported to the Joint Fiscal Committee after all codified transactions have been completed. . This reserve is capped at 5% of the prior year's General Fund appropriations. The use of this fund is restricted to 50% of the amounts added to the reserve in the prior year 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 table on the following page for a summary of the State's FY 2024 and budgeted FY 2025 operating reserves as a percentage of General Fund Appropriations.

State of Vermont Summary of Operating Reserves		
	Fiscal Year 2024 Final	Fiscal Year 2025 As Passed
Total General Fund Appropriations	$2,400.91	$2,275.60
Reserves:		
Stabilization Reserve	$104.88	$120.05
27/53 Reserve	9.10	14.58
Human Services Caseload Reserve	94.53	94.53
Rainy Day Reserve	98.11	98.83
Other Reserve	0.00	0.00
TOTAL	**$306.62**	**$327.98**
Operating Reserves as a Percentage of Total General Fund Appropriations and Carried Forward Amount:	12.8%	14.4%

Note: $'s in millions. Totals may not agree due to rounding.

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The chart below provides the State's FY2022 and 2023 actual, estimated FY2024, and recommended FY2025 rainy day funds 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 2022	Fiscal 2023	Fiscal 2024	Fiscal 2025	4-Year Average
Texas	17.3	23.2	18.0	35.3	23.5
Idaho	18.8	24.1	22.8	21.5	21.8
Georgia[1]	18.3	17.6	N/A	N/A	18.0
North Carolina	12.1	17.8	15.9	15.8	15.4
Utah	11.6	13.8	12.2	14.3	13.0
VERMONT	**11.4**	**13.8**	**12.2**	**14.3**	**12.9**
Virginia	10.0	12.1	14.6	N/A	12.2
South Dakota	15.0	10.7	10.2	10.0	11.5
South Carolina	19.3	7.2	8.8	9.4	11.2
Minnesota	13.2	12.5	8.6	10.0	11.1
Iowa	10.2	11.0	11.3	11.2	10.9
Ohio	10.0	10.0	10.7	12.6	10.8
Tennessee	9.8	10.5	7.6	9.5	9.4
Maryland	7.8	10.6	9.1	9.0	9.1
Indiana	8.8	9.7	8.2	9.3	9.0
Florida	7.2	6.4	6.9	9.6	7.5
Missouri	7.4	6.8	5.8	5.7	6.4
Delaware	5.5	5.4	5.2	4.9	5.3
Mean[2]	**11.9**	**12.3**	**11.0**	**12.5**	**11.9**
Median[2]	**10.2**	**10.7**	**9.7**	**10.0**	**10.1**

Source: "The Fiscal Survey of States, Spring 2024. A report by the National Governors Association and the National Association of State Budget Officers." Fiscal Year 2022 and 2023 are "Actuals," Fiscal Year 2024 are "Estimated" and Fiscal 2025 are 'Recommended."

[1] Information for Georgia's FY 2024 and Georgia's and Virginia's FY 2025 rainy day fund balance was not provided in the reports.

[2] Calculated by Public Resources Advisory Group, Inc. These calculations exclude all Vermont numbers and include only states rated triple-A by any two of the three rating agencies, as of September 30, 2024.

Capital Planning Program

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.

Moody's began publishing the Capital Asset Depreciation Ratio (Accumulated Depreciation divided by Gross Depreciable Assets) as part its annual medians in 2020. The higher the ratio, the more a state may have a pressing debt issuance need for infrastructure investment. The current peer state median is 47% versus Vermont's ratio of 49%.

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Triple-A Rated States	Moody's Capital Asset Depreciation Ratio 2019	2020	2021	2022	2023	5-Year Average
Indiana		64%	66%	58%	59%	62%
Ohio		57%*	57%*	57%*	58%	58%
Maryland		56%	57%	59%	58%	58%
Georgia		52%	53%	54%	53%	53%
Iowa		51%	51%	52%	53%	52%
Missouri		50%	51%	51%	51%	51%
Minnesota		48%	50%	51%	52%	50%
Florida		48%	49%	50%	52%	50%
Idaho		47%*	47%*	48%	47%	48%
Delaware		44%	45%	47%	47%	46%
VERMONT		**45%**	**45%**	**46%**	**49%**	**46%**
Utah		44%	44%	46%	44%	45%
Tennessee		44%	44%	44%	45%	44%
South Carolina		41%	41%	42%	43%	42%
South Dakota		41%	41%	42%	42%	42%
Virginia		39%	40%	41%	40%	40%
Texas		34%	35%	35%	36%	35%
North Carolina		34%	34%	34%	34%	34%
MEAN[1]		**46%**	**47%**	**47%**	**48%**	**47%**
MEDIAN[1]		**44%**	**45%**	**48%**	**47%**	**46%**

Next year's report will include a fifth year of peer state data, enabling a comparison to 5-year average medians and means similar to that shown for debt ratios.

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.

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6. 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 consensus official State population, personal income, and revenue projections provided by EPR. The numbers presented herein have not been audited and are, therefore, subject to change, possibly in a substantial manner.

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7. APPENDICES

A. Full Text of 32 V.S.A. Chapter 13, Subchapter 8, "Management of State Debt"

B. 2023 State Debt, Pension and OPEB Medians (Moody's Investors Service)

C. 2024 Fitch Ratings Credit Report

D. 2024 Moody's Investors Service Credit Report

E. 2024 S&P Global Credit Report

F. Proposed Updates to 32 V.S.A. § 1001(b) and (c)

APPENDIX A

Full Text of 32 V.S.A. Chapter 13, Subchapter 8, “Management of State Debt”

Title 32: Taxation and Finance

Chapter 13: Debts and Claims

Subchapter 8: Management of State Debt

§ 1000. Affordable amount of general obligation bond authorization

When the General Assembly authorizes the issuance of new long-term general obligation bonds, it shall consider the maximum amount of such bonds recommended as prudent for the fiscal year concerned by the Capital Debt Affordability Advisory Committee created for this purpose by this subchapter. This requirement shall apply to the authorizations of all State tax supported general obligation bonds, which are secured by the State General and Transportation Funds. (Added 1989, No. 258 (Adj. Sess.), § 1.)

§ 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) Committee duties.

(1) 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 General Assembly 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 that prudently may be authorized for the next fiscal year, together with a report explaining the basis for the estimate. The Committee's estimate shall not take into consideration the balance remaining at the end of each fiscal year in the subaccounts of the Cash Fund for Capital and Essential Investments, established pursuant to section 1001b of this title. The provisions of 2 V.S.A. § 20(d) (expiration of required reports) shall not apply to the report to be made under this subsection. 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 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 that 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 General Assembly is permitted to replenish reserve funds; and

(C) to the maximum extent obtainable, all long-term debt of municipal governments in Vermont that 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) 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.

(E) The Legislative Economist or other designee of the Joint Fiscal Office, who shall be a nonvoting ex officio member.

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

(e) Other attendants of committee meetings. Staff of the Legislative Counsel 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; 2013, No. 142 (Adj. Sess.), § 65; 2019, No. 42, § 26a, eff. May 30, 2019; 2021, No. 105 (Adj. Sess.), § 478, eff. July 1, 2022; 2023, No. 78, § C.107, eff. June 20, 2023.)

§ 1001a. Reports

(a) The Capital Debt Affordability Advisory Committee shall prepare and submit consistent with 2 V.S.A. § 20(a) a report on:

(1) general obligation debt, pursuant to subsection 1001(c) of this title; and

(2) how many, if any, Transportation Infrastructure Bonds have been issued and under what conditions.

(b) The provisions of 2 V.S.A. § 20(d) (expiration of required reports) shall not apply to the reports to be made under this section. (Added 2003, No. 122 (Adj. Sess.), § 294h; amended 2009, No. 50, § 32, eff. June 1, 2009; 2013, No. 142 (Adj. Sess.), § 66; 2017, No. 84, § 28, eff. June 16, 2017.)

APPENDIX B

2023 State Debt, Pension and OPEB Medians (Moody's Investors Service)

MOODY'S INVESTORS SERVICE

SECTOR PROFILE
26 September 2023

Send Your Feedback

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States – US

Ability to service long-term liabilities and fixed costs improves

States' ability to service long-term liabilities further improved in fiscal 2022 as the sector saw strong revenue growth and pension obligations, the largest liability for most states, declined due to record investment gains in fiscal 2021. Total net tax-supported debt (NTSD), the second-largest liability for most states, rose slightly in fiscal 2022. Other post-employment benefit (OPEB) liabilities generally remained small compared with pension liabilities, though a number of states with high pension liabilities also have above-average OPEB liabilities.

» **The sector's total long-term liabilities declined by 9.1%, mainly attributable to declines in adjusted net pension liabilities (ANPLs).** The median ratio of total long-term liabilities to own-source revenue was 131% in fiscal 2022,[1] down from 152% in fiscal 2021.

» **The median ratio of fixed costs to own-source revenue fell to 4.8% as pension tread water indicators declined and revenue growth remained strong.** However, pension tread water indicators are expected to rise in fiscal 2023 for most states because of investment losses in 2022.

» **Total net tax-supported debt rose by 0.6% to $616.5 billion in fiscal 2022, less than total own-source revenue growth (11.6%).** Fiscal 2022 total NTSD represented 37.5% of aggregate own-source revenue, down from 41.6% in fiscal 2021. The median ratio of fiscal 2022 NTSD to personal income was 2.2%.

» **Total ANPL across states' governmental activities decreased by 11.4% to $1.75 trillion, representing 106.6% of aggregate own-source revenue.** Extraordinary investment returns in 2021, the measurement date driving most states' fiscal 2022 pension reporting, largely contributed to the decline in ANPLs. The median ratio of ANPL to own-source revenue was 79.8%. ANPLs will decline further in fiscal 2023 reporting because of higher interest rates.

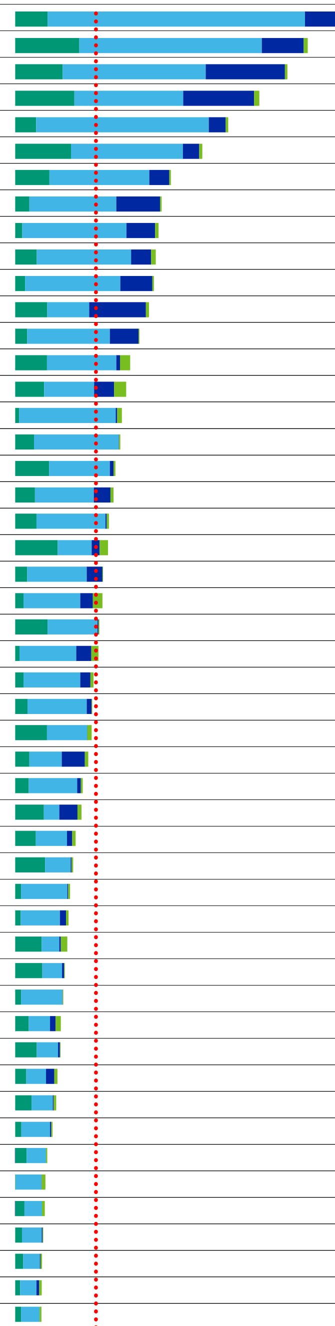
» **Total adjusted net OPEB liabilities (ANOL) decreased by 13.2% to $452.3 billion, representing 27.5% of aggregate own-source revenue.** Unfunded OPEB liabilities are typically smaller than NTSD and ANPL. The median ratio of ANOL to own-source revenue was 8.8% in fiscal 2022.

» **Other long-term liabilities are typically small.** These liabilities include claims and judgments, compensated absences and environmental remediation.

Exhibit 1

Illinois' fiscal 2022 total long-term liabilities relative to state revenue were the highest among states, with South Dakota the lowest

State	Issuer Rating	Fiscal 2022 total long-term liabilities NTSD (billions)	ANPL (billions)	ANOL (billions)	Other liabilities (billions)	(NTSD + ANPL + ANOL + other long-term liabilities) as % of own-source revenue
Illinois	A3	$36.5	$291.9	$39.4	$1.1	528.2%
Connecticut	Aa3	$29.0	$82.8	$18.9	$1.8	474.8%
New Jersey	A1	$46.6	$141.1	$78.3	$2.4	442.1%
Hawaii	Aa2	$9.9	$18.3	$11.9	$0.9	396.4%
Kentucky	Aa3	$6.6	$54.6	$5.3	$0.8	345.9%
Massachusetts	Aa1	$48.7	$98.4	$14.3	$2.6	303.7%
Maryland	Aaa	$19.4	$56.7	$11.3	$0.9	252.7%
Maine	Aa2	$1.6	$9.9	$5.0	$0.2	237.7%
South Carolina	Aaa	$2.3	$34.7	$9.6	$1.1	232.7%
Pennsylvania	Aa3	$20.3	$89.2	$18.7	$4.6	228.2%
Vermont	Aa1	$0.8	$7.4	$2.5	$0.1	225.2%
Delaware	Aaa	$4.3	$5.7	$7.7	$0.4	217.2%
Texas	Aaa	$20.4	$141.5	$49.6	$1.3	201.5%
West Virginia	Aa2	$4.7	$10.3	$0.5	$1.5	186.5%
Louisiana	Aa2	$8.3	$14.5	$5.8	$3.5	180.3%
Montana	Aa1	$0.3	$7.8	$0.1	$0.4	172.8%
Kansas	Aa2	$4.4	$19.9	$0.1	$0.3	170.3%
Rhode Island	Aa2	$3.4	$6.1	$0.4	$0.2	162.6%
California*	Aa2	$96.0	$285.8	$81.4	$15.0	159.4%
Colorado	Aa1	$6.1	$20.0	$0.3	$0.7	152.2%
Washington	Aaa	$25.5	$20.2	$4.8	$5.0	150.7%
Michigan	Aa1	$8.7	$43.1	$11.4	$0.5	142.7%
Missouri	Aaa	$2.3	$16.4	$3.6	$2.8	141.6%
Mississippi	Aa2	$5.9	$9.2	$0.1	$0.2	136.4%
Wyoming	NR	$0.1	$1.6	$0.4	$0.2	134.9%
Alaska	Aa3	$1.4	$9.8	$1.8	$0.5	127.0%
Nevada	Aa1	$2.1	$9.9	$0.8	$0.1	125.2%
Oregon	Aa1	$12.0	$15.2	$0.0	$1.7	124.2%
New Hampshire	Aa1	$1.1	$2.4	$1.7	$0.3	118.4%
New Mexico	Aa2	$3.3	$11.9	$0.9	$0.4	109.3%
New York	Aa1	$69.6	$37.3	$44.2	$10.4	107.6%
Alabama	Aa1	$6.0	$9.1	$1.5	$1.0	97.9%
Ohio	Aa1	$19.3	$16.6	$0.7	$0.9	93.9%
Iowa	Aaa	$1.3	$9.9	$0.2	$0.4	88.9%
Arkansas	Aa1	$1.1	$7.8	$1.3	$0.4	86.2%
Wisconsin	Aa1	$11.2	$7.5	$0.7	$2.7	84.2%
Virginia	Aaa	$17.8	$13.2	$1.4	$0.4	80.5%
Indiana	Aaa	$2.5	$17.7	$0.1	$0.3	78.0%
Florida	Aaa	$14.7	$23.3	$6.1	$6.0	74.2%
Georgia	Aaa	$12.5	$12.6	$1.1	$0.4	73.6%
North Carolina	Aaa	$7.5	$13.3	$5.6	$2.0	68.3%
Minnesota	Aaa	$9.4	$12.4	$0.6	$1.3	66.2%
Arizona	Aa1	$2.5	$11.6	$0.6	$0.5	60.5%
Utah	Aaa	$2.8	$4.8	$0.0	$0.3	51.7%
Nebraska	Aa1	$0.1	$3.2	$0.0	$0.5	49.0%
Idaho	Aaa	$1.1	$2.2	-$0.1	$0.4	47.0%
North Dakota	Aa1	$0.5	$1.6	$0.1	$0.1	45.5%
Oklahoma	Aa2	$2.0	$4.1	$0.2	$0.3	43.1%
Tennessee	Aaa	$2.1	$7.3	$1.3	$1.0	42.6%
South Dakota	Aaa	$0.5	$1.7	$0.0	$0.2	42.5%
Median		**$5.3**	**$12.5**	**$1.4**	**$0.6**	**131.0%**



See Exhibit 3 for definitions of key terms. NR stands for no rating.

*Fiscal 2022 debt, ANPL, other long-term liabilities and revenue figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report. OPEB data are based on fiscal 2021 state audited reporting.

Source: State and pension plan audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Exhibit 2

Illinois' fiscal 2022 total fixed costs relative to state revenue were the highest among states, with South Dakota the lowest

		Fiscal 2022 total fixed costs				
State	**Issuer Rating**	**Implied debt service (millions)**	**Pension tread water payment (millions)**	**OPEB contribution (millions)**	**Other long-term liabilities carrying cost (millions)**	**(Implied debt service + pension tread water payment + OPEB contribution + other long-term liabilities carrying cost) as % of own-source revenue**
Illinois	A3	$2,629.4	$11,312.7	$1,204.5	$74.4	21.8%
Connecticut	Aa3	$2,026.7	$2,956.0	$858.0	$134.5	21.4%
Hawaii	Aa2	$696.7	$862.3	$428.4	$39.7	19.6%
New Jersey	A1	$3,516.2	$5,741.4	$1,963.1	$148.6	18.7%
Kentucky	Aa3	$516.5	$1,877.3	$228.3	$44.5	13.7%
Massachusetts	Aa1	$3,343.4	$2,893.7	$648.0	$203.9	13.1%
Maryland	Aaa	$1,200.9	$1,538.6	$689.2	$63.5	10.0%
Pennsylvania	Aa3	$1,469.4	$3,315.5	$623.5	$326.0	9.9%
Rhode Island	Aa2	$238.7	$233.6	$43.4	$12.5	8.6%
Louisiana	Aa2	$591.8	$406.1	$209.6	$271.7	8.3%
Vermont	Aa1	$53.7	$225.3	$89.0	$8.9	7.9%
Delaware	Aaa	$291.6	$65.7	$231.8	$31.5	7.4%
West Virginia	Aa2	$330.1	$152.9	$91.2	$97.2	7.4%
South Carolina	Aaa	$158.4	$1,034.0	$181.1	$73.8	7.0%
Maine	Aa2	$105.0	$192.5	$120.5	$13.7	6.2%
California*	Aa2	$6,765.8	$7,777.5	$2,586.1	$1,094.9	6.1%
New York	Aa1	$4,768.0	$1,624.2	$1,896.0	$703.2	6.0%
Missouri	Aaa	$172.2	$600.6	$97.1	$188.4	6.0%
Kansas	Aa2	$290.7	$516.5	$5.1	$43.2	5.9%
Oregon	Aa1	$768.2	$452.6	$13.1	$114.0	5.8%
Mississippi	Aa2	$408.9	$224.4	$5.7	$12.3	5.8%
Michigan	Aa1	$587.5	$1,200.4	$656.3	$128.7	5.8%
Colorado	Aa1	$356.4	$602.8	$20.8	$46.1	5.8%
Texas	Aaa	$1,411.8	$3,101.8	$1,085.8	$103.1	5.4%
Washington	Aaa	$1,756.7	-$351.2	$91.8	$325.9	4.9%
New Hampshire	Aa1	$86.0	$72.3	$41.7	$18.0	4.7%
Ohio	Aa1	$1,419.9	$346.3	$0.0	$63.6	4.6%
Alabama	Aa1	$414.9	$299.8	$50.9	$32.1	4.4%
Montana	Aa1	$13.1	$174.2	$0.0	$27.8	4.3%
Wisconsin	Aa1	$799.5	$66.5	$25.9	$187.4	4.1%
Virginia	Aaa	$1,105.0	$346.7	$97.4	$27.2	3.9%
Alaska	Aa3	$89.3	$208.9	$50.9	$40.8	3.7%
Indiana	Aaa	$164.2	$747.3	$20.6	$20.6	3.6%
Wyoming	NR	$0.1	$43.8	$3.0	$14.5	3.5%
New Mexico	Aa2	$190.7	$293.2	$23.0	$26.2	3.5%
Georgia	Aaa	$823.7	$290.7	$128.7	$25.9	3.5%
Nevada	Aa1	$150.9	$164.0	$27.7	$9.2	3.4%
Florida	Aaa	$1,162.3	$503.3	$126.5	$335.3	3.1%
Minnesota	Aaa	$598.2	$249.8	$34.8	$89.3	2.7%
Arkansas	Aa1	$84.1	$147.2	$69.3	$32.8	2.7%
Utah	Aaa	$210.5	$97.4	$29.5	$22.2	2.4%
Idaho	Aaa	$79.4	$53.2	$0.9	$27.5	2.1%
Arizona	Aa1	$239.9	$233.3	$14.9	$30.3	2.1%
Iowa	Aaa	$91.3	$137.7	$12.3	$26.7	2.0%
North Carolina	Aaa	$507.6	-$90.5	$246.4	$143.3	1.9%
Tennessee	Aaa	$139.6	$114.6	$131.1	$43.8	1.6%
Oklahoma	Aa2	$110.3	$38.5	$25.0	$19.6	1.3%
North Dakota	Aa1	$9.3	$45.9	$4.7	$4.3	1.3%
Nebraska	Aa1	$2.7	$43.9	$1.6	$37.4	1.1%
South Dakota	Aaa	$35.3	$13.4	$0.0	$11.8	1.1%
Median		**$343.2**	**$270.2**	**$79.1**	**$42.0**	**4.8%**

See Exhibit 3 for definitions of key terms. NR stands for no rating.

*Fiscal 2022 implied debt service, other long-term liabilities carrying costs and revenue figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report. OPEB contribution and pension tread water data are based on fiscal 2021 state audited reporting.

Source: State and pension plan audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Glossary of key metrics

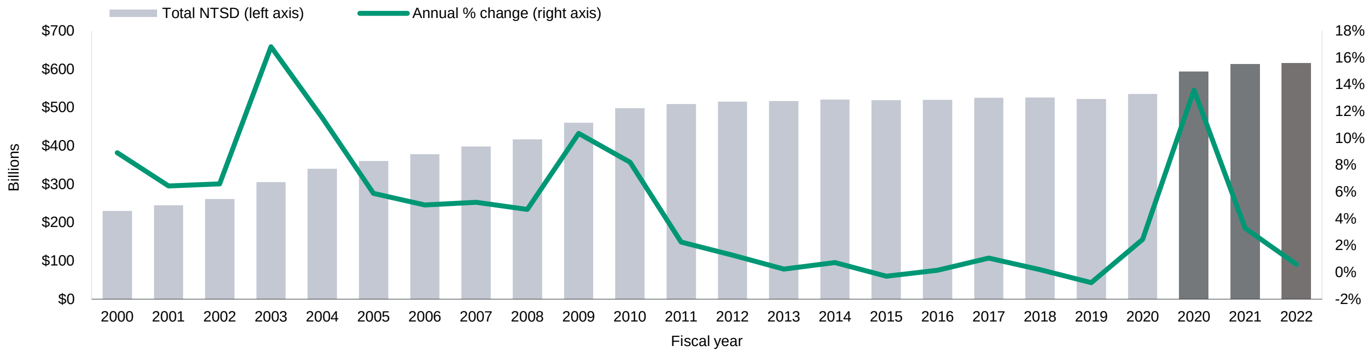
Exhibit 3
Key metrics and definitions

Metric	Definition
Revenue	
Own-source revenue	Total revenue, typically reported in the governmental funds section of the audited financial statements, minus revenue received from the federal government. Federal funding may include revenue under different categories, such as earmarked grants, annual disbursements and one-time payments.
Leverage	
Net tax-supported debt (NTSD)	Debt secured by statewide taxes and other general resources, net of obligations that are self-supporting from pledged sources other than state taxes or resources such as utility or local government revenue. NTSD typically includes public-private partnership (P3 or PPP) agreements that include contractual obligations of the government to make scheduled payments. We typically incorporate debt that the state is supporting from its taxes or general resources even if that debt is not reported in the state's or territory's governmental activities or in financial statements altogether. Our NTSD figure includes unamortized bond premiums and accreted interest because they represent long-term liabilities that must be repaid by states.
Adjusted net pension liabilities (ANPL)	Governmental net pension liabilities adjusted by Moody's to standardize the discount rate used to compute the present value of accrued benefits.
Adjusted net OPEB liabilities (ANOL)	Governmental net other post-employment benefit (OPEB) liabilities adjusted by Moody's to standardize the discount rate used to compute the present value of accrued benefits.
Other long-term liabilities	Miscellaneous long-term liabilities reported under the governmental activities entry in a state's financial statements for obligations such as claims and judgments, compensated absences and environmental remediation.
Long-term liabilities ratio	(NTSD + ANPL + ANOL + Other long-term liabilities) / Own-source revenue.
Fixed costs	
Implied debt service	Annual cost to amortize the state's net tax supported debt over 20 years with level payments.
Pension contribution	Actual governmental pension contribution as reported in a state's financial statement.
Pension tread water contribution	Moody's estimate of the pension contribution necessary to prevent reported unfunded pension liabilities from growing, year over year, in nominal dollars, if all actuarial assumptions are met. This indicator is the sum of the employer portion of the service cost and the implied interest on the net pension liability at the beginning of the plan's fiscal year.
OPEB contribution	Actual governmental OPEB contribution as reported in a state's financial statement.
Implied cost of other long-term liabilities	Annual cost to amortize the state's other long-term liabilities over 20 years with level payments.
Fixed costs ratio	(Implied debt service + Pension tread water contribution + OPEB contribution + Implied cost of other long-term liabilities) / Own-source revenue.
Other pension related	
Pension asset/benefit coverage ratio	Point-in-time measure of pension funding that provides a rough estimate of the number of years of benefits that assets can cover, assuming no further contributions, investment income or change in annual benefit outflows.
Pension asset shock indicator	The pension asset shock indicator estimates the probability of a pension investment loss amounting to 25% or more of a government's revenue. The indicator is a function of the size of pension assets relative to government revenue and estimated annual volatility of the asset portfolio. We use standard capital market assumptions to estimate the volatility for each pension plan based on its assumed investment rate of return. Higher assumed rates of return increase the probability of losses.
Non-investment cash flow	Contributions from governments and employees to a pension system in a given year, less benefits and expenses.
Asset/benefit coverage	Pension asset / annual benefit outflow; provides a rough estimate of the number of years of benefits that pension assets can cover annual benefit outflows, assuming no further contributions, investment income or change in benefit outlooks.

Notes: additional adjustments to own-source revenue have been made for Delaware, Alaska and Washington for more consistent treatment of revenue types across all states.
Source: Moody's Investors Service

Net tax-supported debt: Outstanding debt rose modestly in fiscal 2022

Exhibit 4
Total state net tax-supported debt (NTSD) rose modestly in fiscal 2022

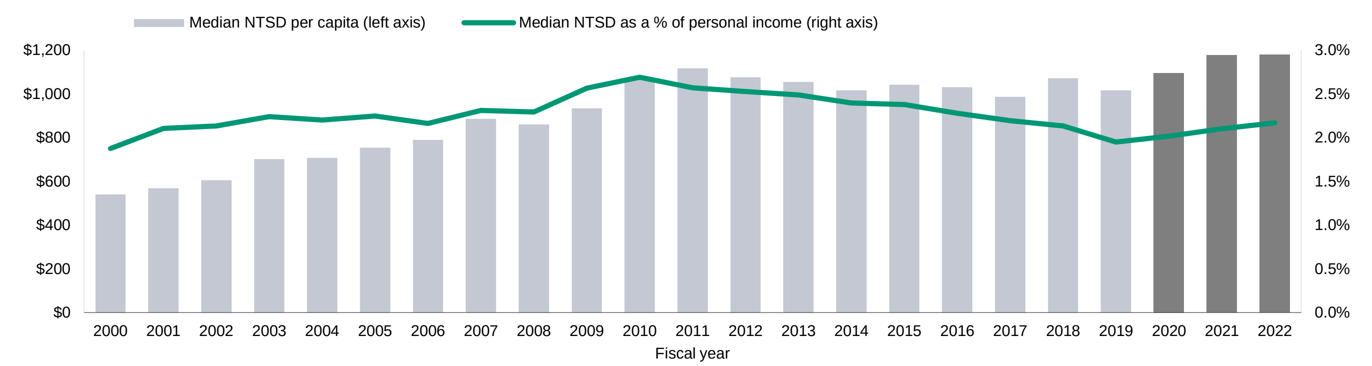


Note: Data from fiscal 2020 and after has been revised using our new method of calculating states' long-term liabilities, which provides more consistency when comparing liabilities across states. Fiscal 2022 debt figures for California are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report.
Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada), US Bureau of Economic Analysis and Moody's Investors Service

- Total state NTSD grew by 0.6% in fiscal 2022 to $616.5 billion, a much more moderate pace than growth in aggregate own-source revenue (over 11%).
- Colorado (Aa1 stable), Maryland (Aaa stable), Massachusetts (Aa1 stable), New York (Aa1 stable), Oregon (Aa1 stable), and Virginia (Aaa stable) each added over $1 billion in debt in fiscal 2022, ranging from a 2% increase for Massachusetts to a 20% increase for Colorado. The bulk of Colorado's debt additions were certificates of participation.
- NTSD declined in 19 states in fiscal 2022. At the end of fiscal 2022, Nebraska (Aa1 stable) had the least amount of debt outstanding of all states at only $78.0 million.

Capacity to pay debt: Median debt per capita essentially unchanged in fiscal 2022, while debt as % of personal income increased

Exhibit 5
Median NTSD per capita essentially unchanged, while median NTSD as a % of personal income grew in fiscal 2022



Note: Data starting with fiscal 2020 has been spread under our latest method of calculating states' long-term liabilities, which provides more consistency when comparing liabilities across states. Fiscal 2022 debt figures for California are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report.
Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada), US Bureau of Economic Analysis and Moody's Investors Service

- The median NTSD per capita was $1,178 in fiscal 2022, relatively unchanged from fiscal 2021 ($1,177).

» States' NTSD per capita ranged from just $40 in Nebraska, a state that has issued debt only sparingly, to $7,988 in Connecticut (Aa3 stable), the state with the highest per capita income in the US after adjusting for regional cost of living.

» Connecticut also has the highest NTSD as a percent of own-source revenue at 103.8%. Connecticut's debt burden is relatively higher in part because it takes on liabilities that in many states are the responsibility of other levels of government, such as school construction costs.

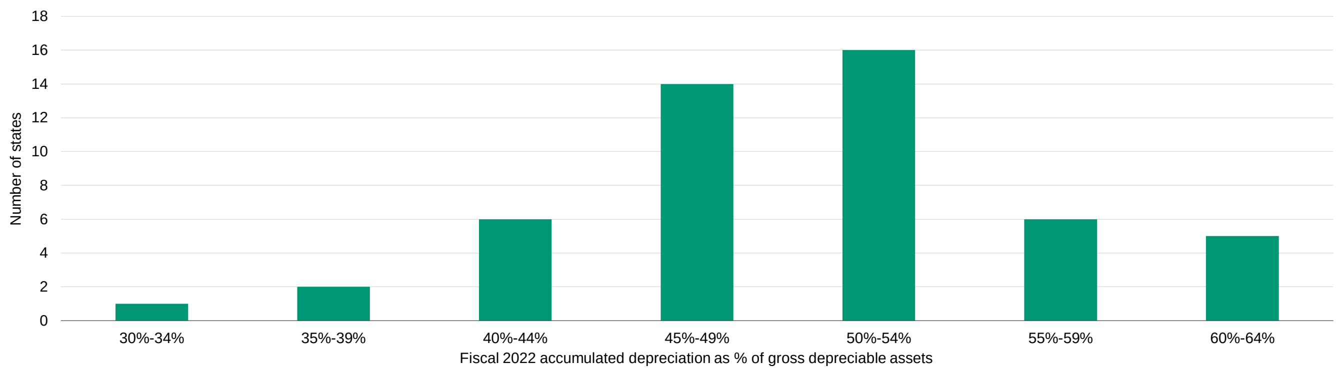
» The sector's median NTSD as a percent of personal income was 2.2% in fiscal 2022, up slightly from 2.1% in fiscal 2021.

» Hawaii (Aa2 stable) has the highest NTSD as a percent of personal income (11.2%) and GDP (10.1%) among states. Hawaii's debt burden is higher than peers because it is responsible for several functions such as public education, hospitals and jails that are typically supported by regional and local governments in other states.

Future issuance needs: 11 states may face more urgent needs to issue bonds for capital investments

Exhibit 6

States with high capital asset depreciation ratios have a more pressing need to issue debt in the near term for infrastructure investment



Only assets subject to depreciation are incorporated in the capital asset depreciation ratio.
For states without fiscal 2022 audited financials available (California), fiscal 2021 data was used.
Sources: State audited financial statements, unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

» The capital asset depreciation ratio compares accumulated depreciation to gross depreciable assets. Less than 55% of gross depreciable capital assets have been depreciated in 39 states. The 11 states with depreciation ratios greater than 55% may need to issue debt in the near term to replace aging assets or face increased operating costs.

» Louisiana (Aa2 stable), Connecticut, New Mexico (Aa2 stable), and Hawaii have the highest capital depreciation ratios, exceeding 60% as of fiscal 2022. North Carolina (Aaa stable), Texas (Aaa stable), and Mississippi (Aa2 stable) have the lowest capital depreciation ratios at less than 40%.

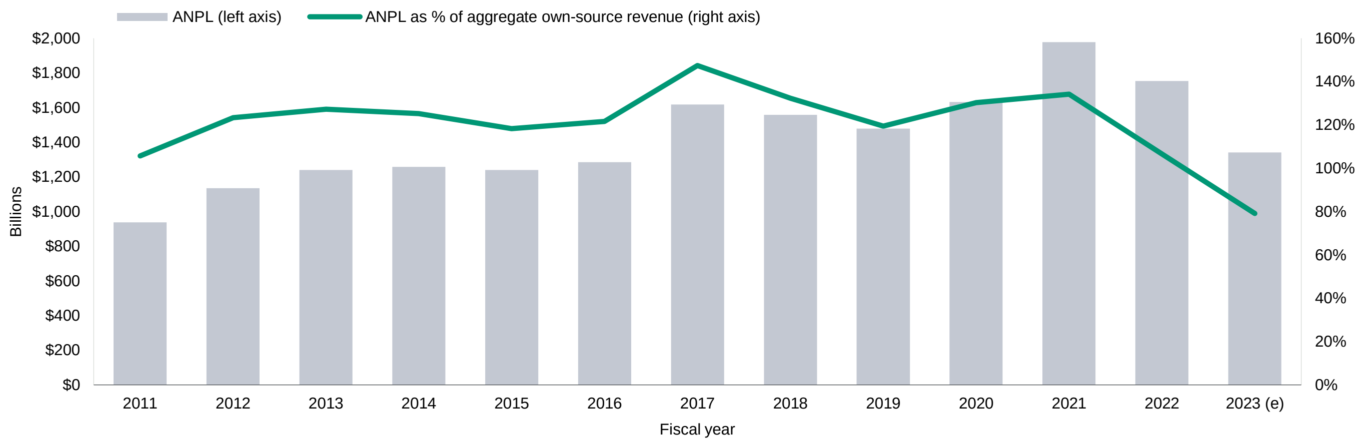
» Most states have used operating revenue to support infrastructure investment in recent years, providing capacity to issue debt for infrastructure in the future.

Adjusted net pension liabilities: Total state ANPL will further decrease in fiscal 2023 following fiscal 2022 declines

Exhibit 7

Total state pension liabilities will continue to decrease in fiscal 2023 given higher interest rates

Adjusted net pension liabilities (ANPL), fiscal 2023 is an estimate



With the adoption of GASB 68, most state pension data is reported with a 6-to-12 month lag. Only a small number of states report plan liabilities (9 of 235 plans) without a lag. California's fiscal 2022 ANPL and revenue figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report.
Where applicable, we estimate fiscal 2023 ANPLs based on data from fiscal 2022 pension plan financial statements and assume a 3% increase in aggregate own-source revenue. Fiscal 2022 estimates are used for California when determining the full 2023 estimate.
Sources: State audited financial statements, unaudited draft statements (for Arizona and Nevada), pension plan valuation reports and Moody's Investors Service

» Total ANPL across states' governmental activities decreased to $1.75 trillion in fiscal 2022, representing 7.0% of US GDP and 106.6% of aggregate state own-source revenue. Extraordinary investment returns in 2021, the measurement date driving most states' fiscal 2022 pension reporting, contributed to the decline in total state ANPL reported in fiscal 2022.

» Oklahoma (Aa2 stable), Washington (Aaa stable), Alaska (Aa3 stable), Delaware (Aaa stable), and Idaho (Aaa stable) had the largest ANPL decreases in fiscal 2022, all at over 30%.

» ANPLs in fiscal 2023 will decrease further because of higher interest rates in 2022, the measurement date for most states' fiscal 2023 reporting. We estimate aggregate state ANPL will decrease to $1.34 trillion, down 23.5% from fiscal 2022.[2] The FTSE Pension Liability Index (FTSE PLI), which we use for a discount rate to value liabilities in our standard adjustments, increased to 4.48% on June 30, 2022 from 2.84% on June 30, 2021. The increase in the discount rate will more than offset the double-digit investment losses in fiscal 2022, leading to a rise in GASB net pension liabilities (NPLs) in states' fiscal 2023 reporting.

Inclusion of unrecognized teacher liabilities substantially increases some states' liabilities

» We also review state liabilities including unrecognized teacher liabilities as part of a state's overall pension burden (see Exhibit 8) because states provide significant aid to school districts.

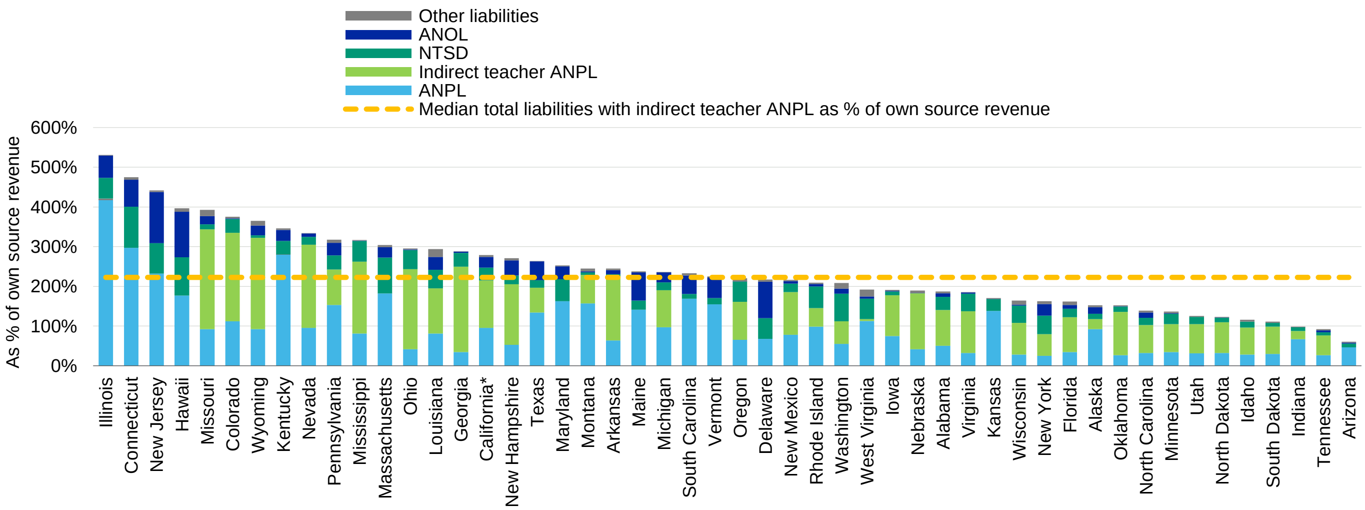
» For states that already report a 100% share of teacher liabilities in their financial statements, we add no additional teacher liability. For states that have a separate teacher pension system and currently report a proportionate share of the liability, we add the balance of teacher liabilities to ANPLs to determine the state's full liability.

» Some states do not have a separate teacher retirement system. Instead, teachers participate in the state's employees' retirement system. To determine the unrecognized teacher liability for these states, if not reported, we estimate the share of the employees' retirement system liability related to school districts based on the percentage of total plan members or the share of total covered payroll related to public schools.[3]

Exhibit 8

Total liabilities increase significantly for some states when adding all teacher liabilities

Fiscal 2022 total liabilities including currently unrecognized teacher liabilities as a % of state own-source revenue



*California's indirect teacher ANPL reflects fiscal 2021 figures because the state did not have fiscal 2022 audited financial statements available as of the publication of this report. California's fiscal 2022 ANPL and own-source revenue are estimated by Moody's based on available unaudited disclosures.

Sources: State and pension plan financial statements, unaudited financial statements (for Arizona and Nevada) and Moody's Investors Service

» Missouri's (Aaa stable) fiscal 2022 total long-term liabilities represented 393% of own- source revenue when unrecognized teacher liabilities are included, versus 142% of own-source revenue based on direct liabilities.

» Colorado's fiscal 2022 total long-term liabilities represented 375% of own-source revenue when unrecognized teacher liabilities are included, versus 152% of own-source revenue based on direct liabilities.

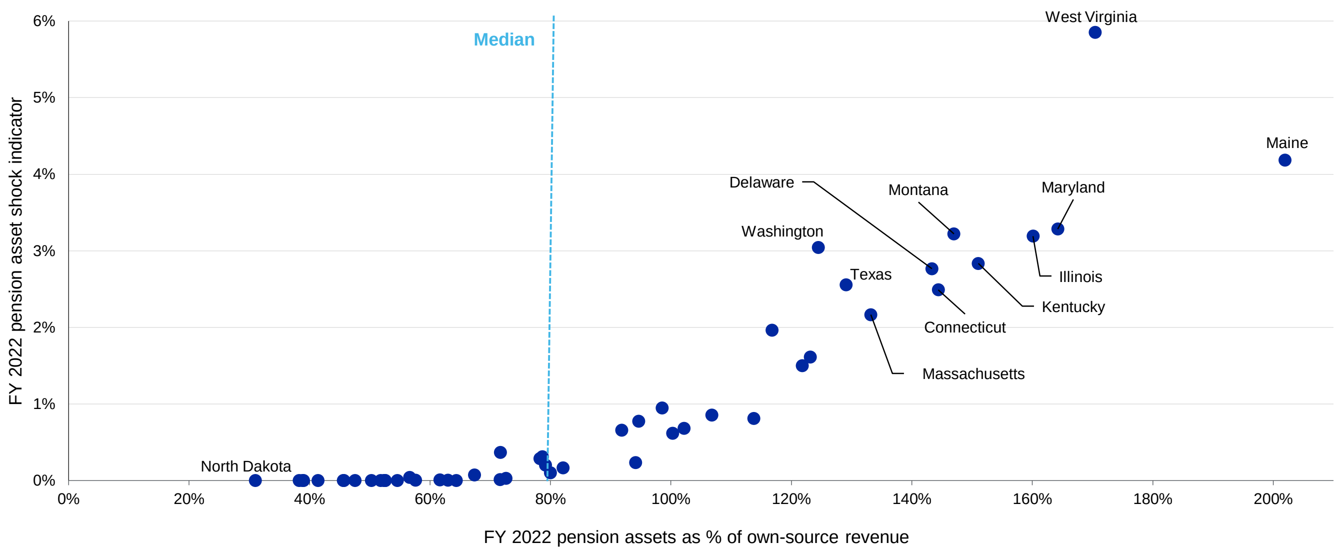
» Not all states make direct on-behalf payments to teacher pension systems, but K-12 public education is nevertheless a key service priority and all states provide significant aid to school districts. According to the National Association of State Budget Officers, elementary and secondary education accounted for 18.8% of total state expenditures in fiscal 2022.

» In most cases, we allocate pension liabilities based on states' reported shares, including for teacher retirement systems. About a dozen states already report the full teacher liability, or nearly the full liability, as part of their pension liabilities.

Pension assets: States continue to have relatively low risks of large pension investment losses relative to budget

Exhibit 9

States with a larger relative size of pension assets are more sensitive to investment losses



See Exhibit 3 for a definition of the pension asset shock indicator. Fiscal 2021 data for California is included because its fiscal 2022 audited financial statements were not available as of the publication of this report.

Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

» States' pension assets are often concentrated in volatile investments and in some cases are material in size relative to their budgets. Thus, investment shocks could saddle budgets with significant new costs to make up for lost pension assets.

» We gauge the risk of pension investment losses using our pension asset shock indicator (PASI), which estimates the probability of a pension investment loss amounting to 25% or more of a government's own-source revenue.

» The overall risk of pension investment losses amounting to a large share of budgets for the state sector remains very low compared to the local government sector. Only one state, West Virginia (Aa2 stable), had a fiscal 2022 PASI over 5% while some local governments had PASIs approaching 20%.

» The fiscal 2022 PASI was between 3% and 5% for only six states and less than 1% for most.

» Maine (Aa2 positive) had the highest ratio of pension assets to revenue in fiscal 2022 at almost 201.9%. West Virginia had the second-highest ratio of pension assets to revenue at 170.4%.

» Ten states have large pension systems with less than 10 years of asset/benefit coverage. Of these states, Alabama (Aa1 stable) and Georgia (Aaa stable) have negative non-investment cash flow (NICF) worse than -5% of assets (see Exhibit 17 in Appendix II).

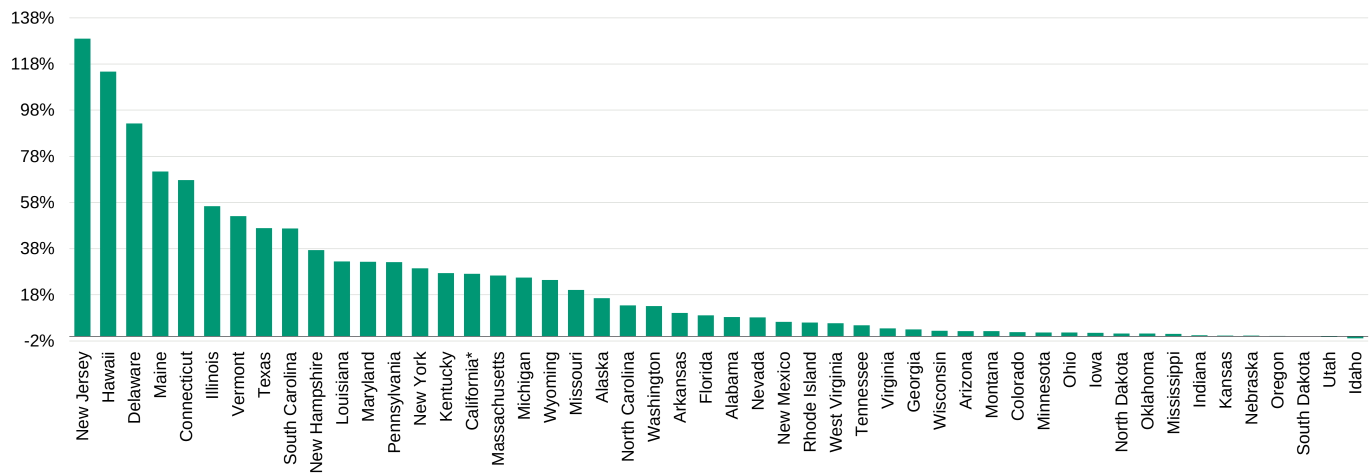
» Five states had positive NICF for their largest plans in fiscal 2022, including Indiana (Aaa stable) at 7.6%.

Adjusted net OPEB liabilities: States with high pension burdens also tend to have elevated OPEB burdens

Exhibit 10

Adjusted net OPEB liabilities (ANOL) vary widely across states

Fiscal 2022 ANOL as a % of own-source revenue



*California's ANOL reflects fiscal 2021 data based on fiscal 2021 state audited reporting because it did not have fiscal 2022 audited financial statements available as of the publication of this report.

Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

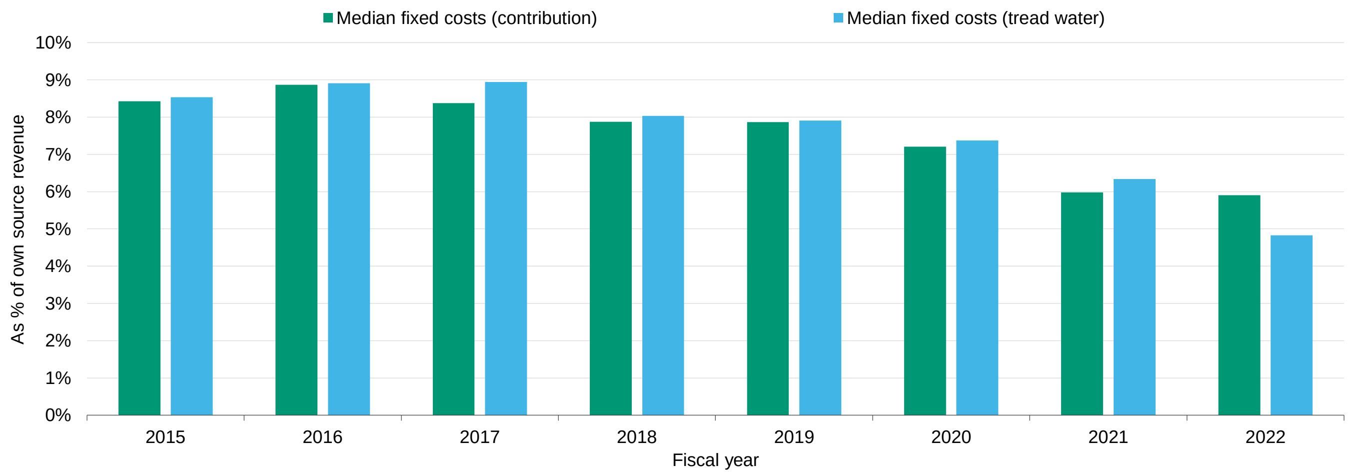
- Unfunded OPEB liabilities represent a large source of balance-sheet leverage for some states and a very small obligation for others.
- The fiscal 2022 50-state median adjusted net OPEB liability (ANOL) as a percent of own-source revenue was 8.8%, down from 11.1% last year, and much smaller than the 50-state median ANPL as a percent of own-source revenue of 79.8%.
- New Jersey continued to have the largest OPEB burden with its fiscal 2022 ANOL representing 129.0% of own-source revenue, although it was down from 180.5% of own- source revenue as of fiscal 2021. The decline is driven by actuarial savings due to healthcare claims costing less than expected in combination with very robust 18.7% annual growth in own-source revenue.
- Many states with high pension burdens, such as Hawaii, Connecticut and Illinois, also have high OPEB burdens.
- New York (Aa1 stable) and Delaware are the only states with unfunded OPEB liabilities larger than their respective unfunded pension liabilities. New York's fiscal 2022 ANOL was 29.5% of own-source revenue compared with ANPL at 24.8%. Delaware's fiscal 2022 ANOL was 92.2% of own-source revenue compared with ANPL at 67.7%.
- South Dakota (Aaa stable) has ended retiree healthcare benefits and has no OPEB liability. A number of other states have very low OPEB liabilities that primarily comprise implicit rate subsidies because they only provide retirees with the option to purchase health and other insurance under the states' group rates. States generally have more legal flexibility to change OPEB benefits than pensions, although significant changes to OPEB benefits may be politically difficult.

Total fixed costs: Bulk of states contributed above tread water indicator in fiscal 2022

Exhibit 11

Fixed costs continued to decline in fiscal 2022

Median fixed costs (debt, pension, OPEB and other long-term liabilities) as % of own-source revenue on a contribution and tread water basis



Note: beginning in fiscal 2020, fixed costs were calculated based on our updated method described in the US States and Territories Methodology. For California, fiscal 2022 implied debt service, other long-term liabilities carrying costs and revenue figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal2022 financial statements were not available as of the publication of this report. OPEB contribution and pension tread water data are based on fiscal 2021 state audited reporting.
Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

» Median fixed costs relative to revenue declined to 4.8% in fiscal 2022 from 6.3% in fiscal 2021. Many states saw sizable pension tread water indicator declines as a result of strong investment returns in 2021. In addition, states' abilities to pay for fixed costs benefited from strong revenue growth in fiscal 2022, as households and businesses spent down pandemic stimulus aid and given rising inflation. However, pension tread water indicators will rise again in fiscal 2023 reporting because investment returns fell in fiscal 2022.

» Illinois and Connecticut have the highest fixed costs among states, with fiscal 2022 fixed costs on a tread water basis exceeding 20% of own-source revenue.

» Hawaii's fixed costs for fiscal 2022 ranked the third highest among all states, at 19.6% of own-source revenue, down from 29.4% in fiscal 2021. The large decline was in part because the state made a one-time contribution to its OPEB trust above the annual required contribution (ARC) in fiscal 2021, allowing the fiscal 2022 OPEB contribution to be below ARC. Going forward, the state is committed to pre-funding its OPEB liabilities at the ARC with the passage of Act 268 in 2013.

» Oklahoma, North Dakota, Nebraska and South Dakota have the lowest fixed costs on a tread water basis at less than 1.5% of own-source revenue.

Appendix I: Debt

Basis for state debt data

When considering debt burdens, our focus is on net tax-supported debt (NTSD), which we characterize as debt secured by statewide taxes and other governmental revenue, net of obligations that are paid with revenue other than taxes and other governmental revenue, and that is accounted for in non-governmental activities (such as utility or higher education funds). Please see Exhibit 3 for more information on what is included in NTSD.

The debt ratios of some states, such as Hawaii and Connecticut, 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.

These ratios are calculated based on our definition of NTSD, implied debt service and own-source revenue and, in most cases, differ from a states' 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.

Exhibit 12

Fiscal 2022 state net tax-supported debt (NTSD) metrics

Ranking based on fiscal 2022 NTSD as % of own-source revenue

FY 2022 rank	State	FY 2022 NTSD ($ thousands)	FY 2022 NTSD as % of own-source revenue	FY 2022 NTSD per capita	FY 2022 NTSD as % of personal income	FY 2022 NTSD as % of state GDP
1	Connecticut	$28,967,901	103.8%	$7,988	9.4%	9.0%
2	Hawaii	$9,904,366	95.8%	$6,877	11.2%	10.1%
3	Massachusetts	$48,688,111	90.2%	$6,973	8.2%	7.1%
4	New Jersey	$46,581,821	76.7%	$5,030	6.4%	6.2%
5	Washington	$25,494,565	69.1%	$3,275	4.3%	3.5%
6	Maryland	$19,400,505	55.5%	$3,147	4.4%	4.1%
7	Rhode Island	$3,394,343	55.0%	$3,103	4.7%	4.8%
8	Illinois	$36,531,110	52.3%	$2,903	4.2%	3.5%
9	Mississippi	$5,866,806	52.2%	$1,995	4.3%	4.2%
10	Delaware	$4,344,115	52.1%	$4,266	6.9%	5.0%
11	West Virginia	$4,709,400	51.6%	$2,653	5.4%	4.9%
12	Oregon	$11,956,711	51.4%	$2,820	4.5%	4.0%
13	Ohio	$19,300,823	48.4%	$1,642	2.8%	2.3%
14	Louisiana	$8,305,730	46.6%	$1,809	3.3%	3.0%
15	New York	$69,641,000	46.4%	$3,539	4.5%	3.4%
16	Virginia	$17,774,641	43.7%	$2,047	3.0%	2.7%
17	Wisconsin	$11,231,419	42.8%	$1,906	3.1%	2.8%
18	Pennsylvania	$20,302,123	34.9%	$1,565	2.4%	2.2%
19	Georgia	$12,482,932	34.6%	$1,144	2.0%	1.7%
20	Colorado	$6,120,137	34.3%	$1,048	1.4%	1.3%
21	Kentucky	$6,615,245	33.9%	$1,466	2.8%	2.5%
22	Alabama	$6,005,964	33.3%	$1,184	2.3%	2.2%
23	California*	$96,000,000	32.0%	$2,460	3.2%	2.7%
24	Kansas	$4,368,456	30.2%	$1,487	2.5%	2.1%
25	Minnesota	$9,367,023	26.2%	$1,638	2.4%	2.1%
26	New Hampshire	$1,054,889	22.8%	$756	1.0%	1.0%
27	Maine	$1,597,295	22.8%	$1,153	1.9%	1.9%
28	New Mexico	$3,334,490	22.0%	$1,578	3.1%	2.7%
29	Florida	$14,698,465	21.8%	$661	1.0%	1.1%
30	Nevada	$2,063,386	20.0%	$649	1.1%	1.0%
31	Michigan	$8,684,100	19.5%	$865	1.5%	1.4%
32	Texas	$20,425,440	19.3%	$680	1.1%	0.9%
33	Utah	$2,795,056	18.4%	$827	1.4%	1.1%
34	North Carolina	$7,484,377	18.1%	$700	1.2%	1.0%
35	Vermont	$758,936	15.9%	$1,173	1.9%	1.9%
36	Idaho	$1,145,336	14.9%	$591	1.1%	1.0%
37	Alaska	$1,424,266	13.4%	$1,942	2.8%	2.2%
38	Missouri	$2,333,603	13.2%	$378	0.7%	0.6%
39	Oklahoma	$1,962,284	12.8%	$488	0.9%	0.8%
40	South Carolina	$2,347,078	11.4%	$444	0.8%	0.8%
41	North Dakota	$549,291	10.8%	$705	1.1%	0.7%
42	Arizona	$2,506,760	10.0%	$341	0.6%	0.5%
43	Iowa	$1,254,406	9.5%	$392	0.7%	0.5%
44	Indiana	$2,498,277	9.4%	$366	0.6%	0.5%
45	South Dakota	$506,431	9.1%	$557	0.8%	0.7%
46	Arkansas	$1,080,622	8.8%	$355	0.7%	0.7%
47	Tennessee	$2,076,326	7.6%	$294	0.5%	0.4%
48	Wyoming	$119,565	6.9%	$206	0.3%	0.3%
49	Montana	$322,421	6.5%	$287	0.5%	0.5%
50	Nebraska	$77,989	1.0%	$40	0.1%	0.0%
TOTAL		$616,456,336	37.5%	$1,853	2.8%	2.5%
MEAN		$12,329,127	32.8%	$1,808	2.7%	2.4%
MEDIAN		$5,288,103	24.5%	$1,178	2.2%	2.0%

*Fiscal 2022 debt and revenue figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report.

Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Exhibit 13

Fiscal 2022 capital assets and capital asset depreciation ratio

Ranking based on fiscal 2022 capital asset depreciation ratio

	Capital assets subject to depreciation				Capital assets not subject to depreciation		
State	Gross capital assets ($ million)	Gross capital assets (% of GDP)	Accumulated depreciation ($ million)	Capital asset depreciation ratio (%) [1]	Gross capital assets ($ million)	Gross capital assets (% GDP)	Share of capital assets not subject to depreciation
Louisiana[4]	35,420	4.6%	-22,395	63%	4,775	1.7%	11.9%
Connecticut	38,700	4.7%	-23,644	61%	8,864	2.8%	18.6%
New Mexico	21,917	7.1%	-13,234	60%	2,294	1.9%	9.5%
Hawaii[4]	25,312	10.2%	-15,269	60%	5,437	5.5%	17.7%
Alaska	23,576	14.9%	-14,111	60%	3,250	5.1%	12.1%
Indiana[3][4]	4,953	0.4%	-2,908	59%	17,308	3.8%	77.8%
Wyoming[3][4]	1,566	1.4%	-919	59%	734	1.5%	31.9%
Maryland[4]	50,361	4.5%	-29,415	58%	14,836	3.2%	22.8%
Ohio[3]	19,506	1.0%	-11,300	58%	29,387	3.6%	60.1%
Wisconsin[3][4]	16,865	1.8%	-9,572	57%	25,795	6.4%	60.5%
West Virginia	23,925	11.0%	-13,367	56%	4,328	4.5%	15.3%
Nebraska[3][4]	1,806	0.5%	-983	54%	9,217	5.7%	83.6%
Pennsylvania	88,698	4.4%	-47,953	54%	11,522	1.2%	11.5%
Arkansas	30,760	8.6%	-16,572	54%	4,591	2.8%	13.0%
Oklahoma	43,043	8.3%	-23,047	54%	4,170	1.7%	8.8%
New York[3][4]	47,942	1.1%	-25,515	53%	89,811	4.4%	65.2%
New Hampshire	9,766	4.4%	-5,181	53%	943	0.9%	8.8%
Georgia	65,259	4.1%	-34,536	53%	10,302	1.4%	13.6%
Iowa	34,175	7.0%	-17,971	53%	2,078	0.9%	5.7%
Rhode Island	12,259	8.3%	-6,366	52%	1,918	2.7%	13.5%
Florida[3]	45,837	1.6%	-23,780	52%	108,861	7.8%	70.4%
Minnesota[3]	25,218	2.7%	-13,045	52%	20,041	4.5%	44.3%
Maine[3][4]	1,709	1.0%	-882	52%	3,988	4.7%	70.0%
Missouri	70,732	8.8%	-36,372	51%	6,108	1.6%	7.9%
New Jersey[4]	42,802	2.8%	-21,637	51%	10,561	1.4%	19.8%
Washington[3][4]	33,892	2.3%	-16,911	50%	32,418	4.5%	48.9%
Massachusetts[4]	24,999	1.8%	-12,473	50%	2,818	0.4%	10.1%
Illinois	65,862	3.2%	-32,432	49%	8,435	0.8%	11.4%
Michigan[3]	16,131	1.3%	-7,940	49%	22,180	3.6%	57.9%
Vermont[4]	4,680	5.9%	-2,286	49%	932	2.3%	16.6%
Arizona[3][4]	16,969	1.9%	-8,254	49%	25,495	5.6%	60.0%
Nevada[3]	7,285	1.8%	-3,490	48%	10,068	4.7%	58.0%
California[2][3]	121,442	1.9%	-57,946	48%	133,742	4.0%	52.4%
Kentucky[3]	14,057	2.8%	-6,678	48%	26,934	10.3%	65.7%
Idaho[3]	6,678	3.2%	-3,146	47%	6,335	5.8%	48.7%
Delaware[3][4]	6,627	4.0%	-3,105	47%	5,889	6.7%	47.1%
Kansas[3]	10,102	2.6%	-4,726	47%	14,155	6.7%	58.4%
Alabama[3]	22,937	4.4%	-10,707	47%	22,497	8.1%	49.5%
Colorado[4]	35,632	4.0%	-16,099	45%	6,064	1.3%	14.5%
North Dakota	12,764	9.6%	-5,745	45%	975	1.3%	7.1%
Tennessee[3]	16,375	1.9%	-7,319	45%	31,709	6.7%	65.9%
Utah[3]	20,894	4.7%	-9,220	44%	22,698	9.1%	52.1%
South Carolina	39,656	7.7%	-16,998	43%	8,828	3.0%	18.2%
South Dakota	8,455	7.3%	-3,518	42%	1,159	1.7%	12.1%
Oregon	29,680	5.8%	-12,329	42%	4,010	1.3%	11.9%
Virginia	85,515	7.9%	-34,532	40%	14,226	2.2%	14.3%
Montana	9,685	8.9%	-3,897	40%	2,628	4.0%	21.3%
Mississippi	26,618	12.0%	-9,954	37%	6,150	4.4%	18.8%
Texas	196,855	5.3%	-71,066	36%	50,841	2.2%	20.5%
North Carolina	85,700	7.8%	-29,070	34%	29,538	4.0%	25.6%

[1] The capital asset depreciation ratio measures the ratio of accumulated depreciation to gross depreciable assets.
[2] Fiscal 2022 financial statements for California were not available as of publication. Fiscal 2021 data for California are included.
[3] These states use a modified approach, under GASB 34, for reporting certain capital assets, which allows the state to expense certain maintenance and preservation costs and not report depreciation on the respective assets.
[4] Capital assets for certain component units are excluded for these states owing to state financial reporting.
Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Appendix II: Pensions and OPEB

Explanation of analytical adjustments and measurement date alignment of key pension and OPEB metrics

GASB 67 and 68 enable analytical refinements for pensions

GASB 67 and 68 introduced significant changes in reporting of pension liabilities beginning in fiscal reporting year 2015, which increased transparency. Governments now disclose their proportionate share of cost-sharing liabilities, which we previously estimated using pro rata shares of plan contributions. The rules also require reporting the sensitivity of plan net pension liabilities to 100-basis-point changes in the discount rate, enabling more precise estimates on plan-specific liability adjustments. Governments and/or their plans now also report "service cost," also referred to as "normal cost," for actuarial funding. Other changes include the requirement that some poorly funded plans report liabilities based on a blended discount rate, and placement of the net pension liability on government-wide and business-type activities balance sheets.

GASB 74 and 75 enable analytical refinements for OPEB

GASB 74 and 75 provide disclosure for OPEB liabilities similar to the disclosure for pension liabilities beginning in fiscal reporting year 2018. Governments now disclose their proportionate share of the cost-sharing liabilities and the sensitivity of plan net OPEB liabilities to 100-basis-point changes in the discount rate, as required for pensions.

Pension and OPEB measurement dates often misaligned with government reporting years

GASB 68 and 75 allow governments to report net pension and OPEB liabilities measured up to one year prior to their own fiscal year-end. Our balance-sheet adjustments reflect liabilities as of the measurement date(s) reported in the government's financial statements. Nearly every state reported liabilities and assets in their 2022 financial statements based on a fiscal 2021 measurement date. Only nine pension plans were reported based on a 2022 measurement date, most of which were single-employer plans.

Measurement date misalignment with government fiscal years complicates income statement metrics. Pension and OPEB contributions are reported based on the government fiscal year. However, the elements of the tread water indicator may not be. For cost-sharing plans, our tread water indicator matches the government fiscal year with the plan fiscal year. In some circumstances, the plan fiscal year-end does not align with the government's. For single-employer and agent plans, reported service cost and interest may lag by up to 12 months.

Key adjustments to pension and OPEB data:

» For the tread water metric, if a state's fiscal 2022 pension plan financials were not available, we used the fiscal 2021 plan financials.

» California (Aa2 negative) did not have its fiscal 2022 audit available at the time of publication of this report. California's fiscal 2022 data included throughout this report is estimated by Moody's using available unaudited disclosures.

» California's fiscal 2021 audit provides all information required to calculate the ANOL, with the exception of the discount rate sensitivity for each OPEB plan. We have applied a duration estimate of 18 years in such cases to calculate the adjusted net OPEB liability. In addition, the plan information reported by the state consists of 53 OPEB plans, some of which apply blended and single discount rates within specified ranges. Using the various discount rates reported across these plans, we estimated a blended reported discount rate of 3.01% for these plans.

» States' fiscal 2023 estimated ANPL were based on information from fiscal 2022 pension plan financial statements. We based the estimates on states' proportionate share of cost-sharing liabilities reported in their fiscal 2022 audits. If the fiscal 2022 pension plan financial statements were not available, we used fiscal 2021 plan information and the FTSE PLI discount rate for the 2022 measurement date to estimate the ANPL.

The following tables summarize our calculations of key pension and OPEB metrics and rank the states accordingly. Pension and OPEB burdens are one of many factors we use to determine state credit quality. Our analysis of pension and OPEB risk also considers measures of the strength of annual funding contributions

Exhibit 14

Selected characteristics of state pension plans

State	Rating	# of pension plans	Measurement date for largest plan	Reported discount rate for largest plan	Aggregate reported net pension liability ($000)	Moody's adjusted discount rate for largest plan	State share for largest plan
Alabama	Aa1	3	9/30/2021	7.45%	$3,285,489	2.87%	96.8%
Alaska	Aa3	4	6/30/2021	7.38%	$2,277,192	2.84%	53.4%
Arizona	Aa1	7	6/30/2021	7.00%	$2,615,703	2.84%	12.4%
Arkansas	Aa1	5	6/30/2021	7.15%	$737,511	2.84%	64.9%
California*	Aa2	9	6/30/2020	7.10%	$84,713,135	2.70%	34.0%
Colorado	Aa1	4	12/31/2021	7.25%	$5,828,306	2.83%	62.7%
Connecticut	Aa3	3	6/30/2021	6.90%	$36,132,877	2.84%	100.0%
Delaware	Aaa	5	6/30/2021	7.00%	($774,824)	2.84%	86.3%
Florida	Aaa	3	6/30/2021	6.80%	$3,433,450	2.84%	15.9%
Georgia	Aaa	12	6/30/2021	7.00%	$1,861,967	2.84%	84.1%
Hawaii	Aa2	1	6/30/2021	7.00%	$6,145,230	2.84%	50.4%
Idaho	Aaa	2	6/30/2021	6.35%	$7,649	2.84%	18.0%
Illinois	A3	5	6/30/2021	7.00%	$139,632,474	2.84%	98.8%
Indiana	Aaa	9	6/30/2021	6.25%	$9,730,464	2.84%	100.0%
Iowa	Aaa	3	6/30/2021	7.00%	$161,853	2.84%	35.6%
Kansas	Aa2	3	6/30/2021	7.25%	$5,580,744	2.84%	97.6%
Kentucky	Aa3	6	6/30/2021	7.10%	$24,661,946	2.84%	97.7%
Louisiana	Aa2	7	6/30/2021	7.40%	$4,620,303	2.84%	76.8%
Maine	Aa2	3	6/30/2021	6.50%	$1,385,638	2.84%	94.2%
Maryland	Aaa	2	6/30/2021	6.80%	$13,366,859	2.84%	84.2%
Massachusetts	Aa1	3	6/30/2021	7.00%	$34,372,032	2.84%	100.0%
Michigan	Aa1	6	9/30/2021	6.80%	$14,411,339	2.87%	40.3%
Minnesota	Aaa	9	6/30/2021	6.50%	$1,537,031	2.84%	56.0%
Mississippi	Aa2	3	6/30/2021	7.55%	$2,579,163	2.84%	16.7%
Missouri	Aaa	3	6/30/2021	6.95%	$6,428,901	2.84%	83.6%
Montana	Aa1	9	6/30/2021	7.06%	$1,856,793	2.84%	55.4%
Nebraska	Aa1	6	6/30/2021	7.30%	($533,298)	2.84%	17.4%
Nevada	Aa1	3	6/30/2021	7.25%	$1,489,810	2.84%	16.4%
New Hampshire	Aa1	2	6/30/2021	6.75%	$811,598	2.84%	17.6%
New Jersey	A1	7	6/30/2021	7.00%	$75,073,670	2.84%	100.0%
New Mexico	Aa2	5	6/30/2021	7.25%	$3,012,177	2.84%	55.8%
New York	Aa1	2	3/31/2021	5.90%	$389,000	3.22%	40.2%
North Carolina	Aaa	6	6/30/2021	6.50%	$1,454,864	2.84%	23.1%
North Dakota	Aa1	4	6/30/2021	7.00%	$374,375	2.84%	36.3%
Ohio	Aa1	4	12/31/2021	6.90%	$1,996,344	2.83%	19.6%
Oklahoma	Aa2	6	6/30/2021	6.50%	($1,007,027)	2.84%	73.5%
Oregon	Aa1	1	6/30/2021	6.90%	$2,637,845	2.84%	22.0%
Pennsylvania	Aa3	2	6/30/2021	7.00%	$31,904,139	2.84%	50.6%
Rhode Island	Aa2	7	6/30/2021	7.00%	$2,813,794	2.84%	90.2%
South Carolina	Aaa	5	6/30/2021	7.00%	$13,285,641	2.84%	56.8%
South Dakota	Aaa	1	6/30/2021	6.50%	($152,903)	2.84%	20.0%
Tennessee	Aaa	2	6/30/2021	6.75%	($488,631)	2.84%	70.5%
Texas	Aaa	7	8/31/2021	7.25%	$26,617,874	2.75%	50.1%
Utah	Aaa	8	12/31/2021	6.85%	($285,782)	2.83%	23.4%
Vermont	Aa1	2	6/30/2021	7.00%	$2,506,524	2.84%	100.0%
Virginia	Aaa	4	6/30/2021	6.75%	$2,728,430	2.84%	53.9%
Washington	Aaa	11	6/30/2021	7.40%	($9,150,563)	2.84%	42.3%
West Virginia	Aa2	5	6/30/2021	7.25%	$754,050	2.84%	94.0%
Wisconsin	Aa1	1	12/31/2021	6.80%	($1,081,994)	2.83%	13.4%
Wyoming	NR	5	12/31/2021	6.80%	$335,923	2.83%	17.7%

*Fiscal 2021 data because the state's fiscal 2022 financial statements were not available as of the publication of this report.
Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Exhibit 15

Moody's state adjusted net pension liability (ANPL) rankings ($ thousands)

Ranking based on fiscal 2022 ANPL

FY 2022 rank	State	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023 (estimate)
1	Illinois	$240,759,774	$229,886,900	$262,979,819	$306,051,104	$291,886,567	$225,478,153
2	California*	$230,803,077	$214,491,523	$250,074,033	$317,795,247	$285,789,664	$211,949,504
3	Texas	$132,760,832	$131,402,045	$155,795,706	$175,815,294	$141,536,018	$107,883,927
4	New Jersey	$113,845,643	$112,546,910	$130,184,705	$154,507,238	$141,113,164	$116,136,290
5	Massachusetts	$81,227,853	$77,151,349	$88,288,538	$115,468,688	$98,366,741	$75,777,875
6	Pennsylvania	$79,779,435	$78,996,495	$80,784,192	$98,478,123	$89,242,310	$69,022,682
7	Connecticut	$62,059,644	$63,348,693	$73,888,395	$90,195,556	$82,822,211	$66,618,950
8	Maryland	$59,264,776	$53,509,910	$55,659,687	$69,126,445	$56,704,110	$40,496,343
9	Kentucky	$45,916,658	$41,328,094	$47,582,835	$55,331,067	$54,626,034	$44,059,105
10	Michigan	$37,993,798	$39,654,044	$46,672,055	$50,521,844	$43,062,523	$28,553,582
11	New York	$39,166,292	$38,812,223	$31,966,831	$53,050,021	$37,273,839	$30,598,490
12	South Carolina	$30,364,902	$27,954,094	$30,726,294	$37,378,714	$34,708,084	$26,745,222
13	Florida	$23,218,268	$21,972,968	$25,635,594	$31,524,843	$23,294,810	$17,970,024
14	Washington	$22,809,640	$19,184,264	$25,679,735	$30,692,064	$20,208,882	$12,119,335
15	Colorado	$30,107,806	$25,168,742	$19,326,540	$17,156,155	$20,044,001	$15,260,984
16	Kansas	$17,341,499	$16,308,038	$18,546,343	$21,971,761	$19,902,595	$15,302,557
17	Hawaii	$13,950,603	$13,558,845	$15,885,146	$19,556,196	$18,327,731	$13,022,007
18	Indiana	$20,346,062	$17,771,050	$19,139,496	$20,558,874	$17,735,622	$13,792,634
19	Ohio	$16,365,511	$16,229,714	$16,961,569	$20,237,901	$16,592,819	$12,552,656
20	Missouri	$13,764,307	$12,938,750	$14,409,936	$16,732,154	$16,405,560	$13,106,755
21	Oregon	$11,127,973	$10,618,750	$12,645,980	$16,781,969	$15,177,878	$10,265,455
22	Louisiana	$13,788,473	$12,812,243	$14,186,684	$17,200,918	$14,483,434	$12,077,176
23	North Carolina	$9,421,407	$9,145,550	$11,338,044	$14,916,536	$13,272,473	$9,961,257
24	Virginia	$18,318,199	$16,679,109	$11,918,366	$15,208,771	$13,211,827	$9,013,709
25	Georgia	$23,986,014	$21,986,315	$12,146,215	$14,555,816	$12,560,357	$12,987,341
26	Minnesota	$15,973,832	$12,273,462	$12,209,808	$14,510,699	$12,376,124	$9,077,582
27	New Mexico	$7,353,640	$7,890,987	$9,707,828	$11,833,788	$11,857,488	$9,211,766
28	Arizona	$11,903,465	$11,552,068	$9,845,661	$12,302,252	$11,609,322	$7,444,120
29	West Virginia	$10,602,503	$9,541,291	$10,328,407	$13,160,240	$10,266,428	$7,890,522
30	Iowa	$4,776,209	$4,552,905	$4,256,261	$5,120,150	$9,904,419	$5,354,826
31	Maine	$8,256,121	$7,192,450	$7,162,546	$8,997,607	$9,883,747	$6,624,337
32	Nevada	$7,292,773	$6,989,253	$8,280,931	$10,276,437	$9,874,680	$7,942,675
33	Alaska	$12,516,054	$10,964,439	$12,006,368	$14,629,857	$9,790,419	$7,550,316
34	Mississippi	$7,573,864	$7,124,379	$8,273,567	$10,149,456	$9,156,846	$7,519,453
35	Alabama	$8,642,954	$7,638,354	$8,648,742	$9,657,665	$9,134,181	$7,239,438
36	Montana	$6,212,965	$6,741,063	$7,042,203	$8,977,148	$7,823,394	$6,019,027
37	Arkansas	$7,318,307	$6,821,936	$7,620,552	$9,475,470	$7,819,332	$6,226,963
38	Wisconsin	$11,318,107	$9,874,769	$6,056,870	$7,853,511	$7,495,795	$5,245,344
39	Vermont	$4,882,266	$4,563,037	$5,721,521	$7,707,309	$7,381,323	$5,687,265
40	Tennessee	$6,446,554	$5,944,833	$7,308,026	$9,359,859	$7,329,235	$5,056,146
41	Rhode Island	$6,780,891	$6,491,384	$6,975,338	$7,184,929	$6,081,791	$5,191,309
42	Delaware	$5,831,614	$5,361,945	$6,794,336	$8,345,176	$5,650,036	$5,380,942
43	Utah	$4,497,709	$4,119,495	$5,026,392	$5,683,881	$4,807,068	$2,676,910
44	Oklahoma	$9,282,282	$8,158,141	$4,437,543	$6,676,706	$4,105,954	$3,437,235
45	Nebraska	$2,650,498	$2,636,775	$3,183,413	$4,085,341	$3,167,424	$1,971,681
46	New Hampshire	$2,247,106	$1,984,320	$2,215,991	$2,871,708	$2,434,245	$1,902,965
47	Idaho	$2,580,465	$2,237,549	$2,302,990	$3,211,385	$2,181,089	$1,838,270
48	South Dakota	$1,867,818	$1,713,172	$1,254,296	$1,600,990	$1,672,745	$864,609
49	North Dakota	$1,792,617	$1,681,686	$1,376,909	$2,065,554	$1,637,395	$1,331,986
50	Wyoming	$1,466,636	$1,403,893	$1,580,937	$1,885,302	$1,600,082	$1,052,529
	TOTAL	$1,558,555,695	$1,478,910,201	$1,632,040,175	$1,978,435,721	$1,753,389,816	$1,340,490,230
	MEAN	$31,171,114	$29,578,204	$32,640,803	$39,568,714	$35,067,796	$26,809,805
	MEDIAN	$12,209,760	$11,258,253	$11,962,367	$14,592,837	$12,468,241	$9,144,674

Some historical ANPL figures have been updated and may not match prior published reports. Beginning with fiscal 2020, the liability is aligned with states' governmental activities reported in audited financial statements.

*Fiscal 2022 figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report.

Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada), Moody's Investors Service

Exhibit 16

Fiscal 2022 state adjusted net pension liability (ANPL) metrics

Ranking based on ANPL as a % of own-source revenue

FY 2022 rank	State	ANPL as a % of own-source revenue	ANPL per capita	ANPL as a % of personal income	ANPL as a % of state GDP
1	Illinois	418.0%	$23,199	33.7%	28.2%
2	Connecticut	296.7%	$22,840	26.9%	25.7%
3	Kentucky	280.3%	$12,106	23.2%	21.0%
4	New Jersey	232.4%	$15,236	19.4%	18.9%
5	Massachusetts	182.2%	$14,089	16.6%	14.3%
6	Hawaii	177.2%	$12,726	20.8%	18.7%
7	South Carolina	169.0%	$6,570	12.3%	11.7%
8	Maryland	162.2%	$9,198	13.0%	12.1%
9	Montana	156.7%	$6,967	12.1%	12.0%
10	Vermont	154.5%	$11,407	18.0%	18.2%
11	Pennsylvania	153.3%	$6,880	10.6%	9.7%
12	Maine	141.1%	$7,135	12.0%	11.7%
13	Kansas	137.7%	$6,776	11.3%	9.4%
14	Texas	134.0%	$4,713	7.6%	6.0%
15	West Virginia	112.5%	$5,783	11.8%	10.7%
16	Colorado	112.3%	$3,432	4.6%	4.1%
17	Rhode Island	98.5%	$5,561	8.5%	8.5%
18	Michigan	96.7%	$4,292	7.6%	6.9%
19	Nevada	95.8%	$3,107	5.1%	4.6%
20	California*	95.3%	$7,322	9.5%	7.9%
21	Missouri	92.5%	$2,655	4.7%	4.2%
22	Wyoming	92.1%	$2,752	3.9%	3.4%
23	Alaska	92.0%	$13,346	19.4%	15.4%
24	Mississippi	81.4%	$3,115	6.7%	6.6%
25	Louisiana	81.3%	$3,155	5.8%	5.1%
26	New Mexico	78.3%	$5,611	10.9%	9.7%
27	Iowa	74.9%	$3,095	5.3%	4.3%
28	Delaware	67.7%	$5,548	9.0%	6.5%
29	Indiana	67.0%	$2,596	4.5%	3.9%
30	Oregon	65.3%	$3,580	5.7%	5.1%
31	Arkansas	63.6%	$2,567	5.0%	4.7%
32	Washington	54.8%	$2,596	3.4%	2.8%
33	New Hampshire	52.6%	$1,745	2.3%	2.3%
34	Alabama	50.7%	$1,800	3.6%	3.3%
35	Arizona	46.3%	$1,578	2.8%	2.5%
36	Ohio	41.6%	$1,411	2.4%	2.0%
37	Nebraska	41.3%	$1,610	2.5%	2.0%
38	Georgia	34.8%	$1,151	2.0%	1.7%
39	Minnesota	34.6%	$2,165	3.2%	2.8%
40	Florida	34.5%	$1,047	1.6%	1.7%
41	Virginia	32.5%	$1,521	2.2%	2.0%
42	North Dakota	32.3%	$2,101	3.2%	2.2%
43	North Carolina	32.0%	$1,241	2.2%	1.8%
44	Utah	31.6%	$1,422	2.5%	1.9%
45	South Dakota	30.1%	$1,839	2.8%	2.5%
46	Wisconsin	28.6%	$1,272	2.1%	1.9%
47	Idaho	28.3%	$1,125	2.1%	2.0%
48	Oklahoma	26.9%	$1,021	1.9%	1.7%
49	Tennessee	26.7%	$1,039	1.8%	1.5%
50	New York	24.8%	$1,894	2.4%	1.8%
	TOTAL	106.6%	$5,272	8.1%	7.0%
	MEAN	98.9%	$5,339	8.2%	7.4%
	MEDIAN	79.8%	$3,111	5.2%	4.7%

*Fiscal 2022 figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report.

Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada), US Census Bureau, US Bureau of Economic Analysis and Moody's Investors Service

Exhibit 17
Fiscal 2022 state pension assets
Ranking based on pension asset shock indicator

FY 2022 rank	State	Pension assets ($000)	Pension assets as a % of own-source revenue	Pension asset shock indicator	Assets / benefits for largest plan	NICF for largest plan
1	West Virginia	$15,546,472	170.4%	5.9%	11.1	-3.2%
2	Maine	$14,148,379	201.9%	4.2%	15.5	-1.7%
3	Maryland	$57,397,859	164.2%	3.3%	14.9	-2.0%
4	Montana	$7,338,173	147.0%	3.2%	13.5	-3.7%
5	Illinois	$111,799,841	160.1%	3.2%	8.3	-1.0%
6	Washington	$45,910,437	124.5%	3.0%	32.0	-0.6%
7	Kentucky	$29,438,031	151.0%	2.8%	11.1	-1.2%
8	Delaware	$11,961,830	143.3%	2.8%	17.0	-2.8%
9	Texas	$136,381,190	129.1%	2.6%	14.7	-2.1%
10	Connecticut	$40,302,194	144.4%	2.5%	10.4	2.0%
11	Massachusetts	$71,893,629	133.2%	2.2%	10.2	-0.9%
12	Kansas	$16,878,405	116.8%	2.0%	11.7	4.2%
13	Pennsylvania	$71,655,099	123.1%	1.6%	9.9	-1.6%
14	Iowa	$16,113,894	121.8%	1.5%	16.8	-2.6%
15	Colorado	$17,582,176	98.5%	0.9%	9.9	-3.9%
16	Hawaii	$11,046,165	106.8%	0.9%	10.3	-0.6%
17	Wyoming	$1,976,627	113.8%	0.8%	12.6	-3.8%
18	Nevada	$9,757,520	94.6%	0.8%	17.7	-1.7%
19	South Carolina	$20,986,760	102.2%	0.7%	9.8	-1.3%
20	Alaska	$9,773,000	91.8%	0.7%	12.3	-3.3%
21	Vermont	$4,793,088	100.3%	0.6%	10.5	5.8%
22	California*	$215,044,524	71.7%	0.4%	17.4	-0.9%
23	Louisiana	$14,003,177	78.6%	0.3%	9.8	-3.1%
24	Nebraska	$6,000,685	78.3%	0.3%	21.2	-1.7%
25	Michigan	$41,943,938	94.1%	0.2%	11.6	-1.9%
26	Arkansas	$9,727,070	79.2%	0.2%	16.8	-2.3%
27	Rhode Island	$5,070,017	82.1%	0.2%	8.6	-2.3%
28	Oregon	$18,589,638	80.0%	0.1%	15.2	-1.6%
29	New Mexico	$10,204,875	67.4%	0.1%	12.4	-4.0%
30	Mississippi	$6,364,156	56.6%	0.0%	10.8	-4.1%
31	Wisconsin	$19,041,285	72.6%	0.0%	19.4	-3.3%
32	Oklahoma	$10,941,837	71.7%	0.0%	17.4	-2.8%
33	New Jersey	$37,423,091	61.6%	0.0%	5.5	1.0%
34	Missouri	$11,173,176	63.0%	0.0%	9.8	-4.8%
35	Ohio	$22,969,061	57.6%	0.0%	13.4	-3.8%
36	Utah	$8,299,628	54.6%	0.0%	20.1	-2.1%
37	Georgia	$18,969,953	52.6%	0.0%	10.9	-5.2%
38	Tennessee	$13,805,056	50.3%	0.0%	18.0	-2.0%
39	Alabama	$6,894,675	38.3%	0.0%	8.0	-5.7%
40	New York	$96,549,510	64.4%	0.0%	17.4	-3.4%
41	South Dakota	$2,921,419	52.5%	0.0%	20.9	-2.8%
42	Florida	$32,122,740	47.5%	0.0%	16.0	-3.8%
43	North Carolina	$21,464,765	51.8%	0.0%	16.2	-1.8%
44	Idaho	$4,032,400	52.4%	0.0%	19.1	-1.6%
45	New Hampshire	$2,107,819	45.6%	0.0%	12.2	-1.1%
46	Arizona	$9,786,809	39.0%	0.0%	12.5	-2.1%
47	Minnesota	$16,335,876	45.7%	0.0%	17.5	-3.2%
48	Virginia	$15,818,767	38.9%	0.0%	14.6	-2.2%
49	Indiana	$10,972,266	41.4%	0.0%	4.3	7.6%
50	North Dakota	$1,572,898	31.0%	0.0%	15.2	-1.7%
	TOTAL	$1,412,831,880	85.9%	NA	NA	NA
	MEAN	$28,256,638	89.2%	1.0%	13.8	-1.9%
	MEDIAN	$14,847,426	78.9%	0.2%	13.0	-2.1%

See Exhibit 3 for definitions.
*Metrics based on fiscal 2021 because the state did not have fiscal 2022 audited financial statements available as of the publication of this report.
Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Exhibit 18

Allocation of pension plan liabilities by state

Alabama	Employees' Retirement System (State)	96.8%
	Teachers' Retirement System	1.9%
	Judicial Retirement Fund	100.0%
Alaska	National Guard/Naval Militia Retirement System	100.0%
	Judicial Retirement System	100.0%
	Public Employees' Retirement System	53.4%
	Teachers' Retirement System	46.3%
Arizona	Corrections Officer Retirement Plan	100.0%
	Elected Officials' Retirement Plan	33.7%
	Arizona State Retirement System	12.4%
	Public Safety Personnel Retirement System (Agent) - Other Entities	100.0%
	Public Safety Personnel Retirement System - Risk Pool	38.3%
	Correction Officers Retirement System - Dept. of Corrections	100.0%
	Public Safety Personnel Retirement System - Dept. of Public Safety	100.0%
Arkansas	Judicial Retirement System	100.0%
	State Highway Employees Retirement System	100.0%
	State Police Retirement System	100.0%
	Public Employees Retirement System	64.9%
	Teacher Retirement System	0.4%
California	Judges' Retirement Fund	100.0%
	Judges' Retirement Fund II	100.0%
	Legislators' Retirement Fund	100.0%
	California Public Employees' Retirement System - Peace Officers and Firefighters Plan	100.0%
	California Public Employees' Retirement System-Highway Patrol	100.0%
	California Public Employees' Retirement System-Industrial	100.0%
	California Public Employees' Retirement System-Miscellaneous	72.4%
	California Public Employees' Retirement System-Safety	100.0%
	California State Teachers' Retirement System	34.0%
Colorado	Judicial Division Trust Fund	92.7%
	State Division Trust Fund	62.7%
	Denver Public Schools Division Trust Fund	22.7%
	School Division Trust Fund	10.3%
Connecticut	Judicial Retirement System	100.0%
	State Employees' Retirement System	98.8%
	Teachers' Retirement System	100.0%
Delaware	Closed State Police Pension Plan	100.0%
	Judiciary Pension Plans (Closed and Revised)	100.0%
	New State Police Pension Plan	100.0%
	Special Fund	100.0%
	State Employees'	86.3%
Florida	National Guard Supplemental Retirement Benefit Plan	100.0%
	Florida Retirement System	15.9%
	Health Insurance Subsidy	13.3%
Georgia	Peace Officers' Annuity and Benefit Fund	100.0%
	Employees' Retirement System	84.1%
	Firefighters' Pension Fund	100.0%
	Judicial Retirement System	100.0%
	Public School Employees Retirement System	100.0%
	Teachers Retirement System	0.5%
	Legislative Retirement Fund	100.0%
	Magistrates Retirement Fund	100.0%
	Military Pension Fund	100.0%
	Judges of the Probate Courts Retirement Fund	100.0%
	Sheriffs' Retirement Fund	100.0%
	Superior Court Clerks' Retirement Fund	100.0%
Hawaii	Employees' Retirement System	50.4%
Idaho	Judges' Retirement Fund	100.0%
	Public Employee Retirement System of Idaho	18.0%

Exhibit 19

Allocation of pension plan liabilities by state (continued)

Illinois	General Assembly Retirement System	100.0%
	Judges' Retirement System	100.0%
	State Employees' Retirement System	96.8%
	State Universities Retirement System	100.0%
	Teachers' Retirement System	98.8%
Indiana	Judges' Retirement System	100.0%
	Legislators' Retirement System	100.0%
	Prosecuting Attorneys' Retirement System	100.0%
	State Police Retirement Fund	100.0%
	State Excise Police, Gaming Agent, Gaming Control Officer, and Conservation Officers' Retirement Plan	100.0%
	State Teachers' Retirement Fund Pre-1996	100.0%
	Public Employees Retirement System	26.4%
	State Police Supplemental Trust	100.0%
	State Teachers' Retirement Fund	0.3%
Iowa	Judicial Retirement System	100.0%
	Peace Officers' Retirement, Accident and Disability System	100.0%
	Iowa Public Employees Retirement System	35.6%
Kansas	Police and Fire Retirement System	7.7%
	Public Employees Retirement System - School and State	97.6%
	Retirement System for Judges	100.0%
Kentucky	Judicial Retirement Plan	100.0%
	Legislators' Retirement Plan	100.0%
	State Police Retirement System	100.0%
	Kentucky Employees' Retirement System (Hazardous)	97.7%
	Kentucky Employees' Retirement System (Non-Hazardous)	77.5%
	Teachers' Retirement System	97.7%
Louisiana	State Police Retirement System	100.0%
	District Attorneys' Retirement System	46.2%
	Louisiana Clerks of Court Retirement and Relief Fund	7.7%
	Louisiana State Employees' Retirement System	76.8%
	Registrars of Voters Employees' Retirement System	76.7%
	Louisiana School Employees' Retirement System	0.2%
	Teachers' Retirement System of Louisiana	4.1%
Maine	Legislative Pension Plan	100.0%
	Judicial Pension Plan	100.0%
	State Employees and Teachers Plan	94.2%
Maryland	Transit Administration Pension Plan	100.0%
	State Retirement and Pension System	84.2%
Massachusetts	Boston Retirement System (State)	99.7%
	State Employees' Retirement System	90.1%
	Teachers' Retirement System	100.0%
Michigan	Military Retirement Provisions	100.0%
	State Employees' Retirement System	97.4%
	State Police Retirement System	100.0%
	Legislative Retirement System	100.0%
	Judges' Retirement System	100.0%
	Public School Employees' Retirement System	40.3%
Minnesota	Legislators Retirement Fund	100.0%
	State Patrol Retirement Fund	100.0%
	Correctional Employees Retirement Fund	100.0%
	General Employees Retirement Fund	3.3%
	St Paul Teachers' Retirement Fund	30.9%
	State Employees Retirement Fund	56.0%
	Teachers Retirement Association of Minnesota	6.7%
	Public Employees Police and Fire Fund	4.6%
	Judicial Retirement Fund	100.0%
Mississippi	Highway Safety Patrol Retirement System	100.0%
	Supplemental Legislative Retirement Plan	100.0%
	Public Employees' Retirement System	16.7%

Exhibit 20

Allocation of pension plan liabilities by state (continued)

Missouri	Judicial Plan	100.0%
	Department of Transportation and Highway Patrol Employees' Retirement System	100.0%
	Missouri State Employees' Plan	83.6%
Montana	Highway Patrol Officers' Retirement System	100.0%
	Judges' Retirement System	100.0%
	Game Wardens' and Peace Officers' Retirement System	95.6%
	Firefighters' Unified Retirement System	70.2%
	Montana Teachers' Retirement System	36.8%
	Public Employees' Retirement System-Defined Benefit Retirement Plan	55.4%
	Municipal Police Officers' Retirement System	67.0%
	Sheriffs Retirement System	5.1%
	Volunteer Firefighters' Compensation Act	100.0%
Nebraska	Omaha School Employees' Retirement System	11.3%
	Service Annuity Plan	100.0%
	Judges Retirement System	100.0%
	State Employees' Retirement Plan	100.0%
	State Patrol Retirement System	100.0%
	School Employees' Retirement System	17.4%
Nevada	Legislators' Retirement System	100.0%
	Judicial Retirement System	89.6%
	Public Employees' Retirement System	16.4%
New Hampshire	Judicial Retirement Plan	100.0%
	New Hampshire Retirement System	17.6%
New Jersey	New Jersey Public Employees' Retirement System - State	93.5%
	New Jersey Police and Firefighters' Retirement System - State	100.0%
	New Jersey Consolidated Police and Firemen's Pension Fund	100.0%
	New Jersey State Police Retirement System	100.0%
	New Jersey Judicial Retirement System	100.0%
	New Jersey Prison Officers' Pension Fund	100.0%
	Teachers' Pension and Annuity Fund	100.0%
New Mexico	Judicial Retirement Fund	100.0%
	Magistrate Retirement Fund	100.0%
	Volunteer Firefighters Retirement Fund	100.0%
	Educational Employees' Retirement System	0.3%
	Public Employees Retirement Fund	55.8%
New York	New York State and Local Employees' Retirement System	40.2%
	New York State and Local Police and Fire Retirement System	20.1%
North Carolina	Consolidated Judicial Retirement System	100.0%
	Firefighters' and Rescue Squad Workers' Pension Fund	100.0%
	Legislative Retirement System	100.0%
	Law Enforcement Officer Special Separation Allowance	100.0%
	North Carolina National Guard Pension Fund	100.0%
	Teachers' and State Employees' Retirement System	23.1%
North Dakota	Retirement Plan for the Employees of Job Service North Dakota	100.0%
	The North Dakota Highway Patrolmen's Retirement System	100.0%
	North Dakota Public Employees Retirement System - Main System	36.3%
	North Dakota Teachers Fund for Retirement	0.4%
Ohio	State Highway Patrol Retirement System	100.0%
	Public Employees' Retirement System - Combined Benefit Plan	18.8%
	Public Employees' Retirement System - Traditional Plan	19.6%
	State Teachers' Retirement System	0.4%
Oklahoma	Oklahoma Law Enforcement Retirement System	98.4%
	Uniform Retirement System for Justices and Judges	100.0%
	Wildlife Conservation Retirement Plan	100.0%
	Oklahoma Police Pension and Retirement Plan	0.3%
	Oklahoma Public Employees Retirement System	73.5%
	Teachers' Retirement System of Oklahoma	1.2%
Oregon	Oregon Public Employees Retirement System	22.0%
Pennsylvania	State Employees' Retirement System	87.6%

Exhibit 21
Allocation of pension plan liabilities by state (continued)

Pennsylvania	Public School Employees' Retirement System	50.6%
Rhode Island	Judicial Non-Contributory Retirement Plan	100.0%
	Judicial Retirement Benefits Trust	100.0%
	Judicial Retirement Fund	100.0%
	State Police Non Contributory Retirement Plan	100.0%
	State Police Retirement Benefits Trust	100.0%
	Employees' Retirement System - State	90.2%
	Employees' Retirement System - Teachers	42.6%
South Carolina	General Assembly Retirement System	100.0%
	Judges' and Solicitors' Retirement System	100.0%
	National Guard Supplemental Retirement Plan	100.0%
	Police Officers' Retirement System	27.1%
	South Carolina Retirement System	56.8%
South Dakota	South Dakota Retirement System	20.0%
Tennessee	TCRS-Closed State and Higher Education Employee Pension Plan	70.5%
	TCRS-State and Higher Education Employee Retirement Plan	67.6%
Texas	Texas Employees Retirement System	100.0%
	Law Enforcement and Custodial Officer Supplemental Retirement Plan	100.0%
	Judicial Retirement System of Texas Plan One	100.0%
	Judicial Retirement System of Texas Plan Two	100.0%
	Teacher Retirement System	50.1%
	Texas Emergency Services Retirement System Plan	27.6%
	Supplemental Retirement Plan (SRP) and the Retirement Benefit Plan (RBP)	100.0%
Utah	Contributory Retirement System - State and School	35.9%
	Non-Contributory Retirement System - State and School	23.4%
	Public Safety Retirement System - State	96.9%
	Judges Retirement System	100.0%
	Governors and Legislators Retirement Plan	100.0%
	Firefighters Retirement System - Other Division A	3.2%
	Tier 2 Public Employees Retirement System	6.0%
	Tier 2 Public Safety and Firefighter Contributory Retirement System	20.6%
Vermont	State Retirement System	97.7%
	State Teachers' Retirement System	100.0%
Virginia	Judicial Retirement System	100.0%
	State Police Officers Retirement System	100.0%
	Virginia Law Officers Retirement System	88.0%
	Virginia Retirement System - State	53.9%
Washington	Judges' Retirement Fund	100.0%
	Judicial Retirement System	100.0%
	State Patrol Retirement System 1/2	100.0%
	Law Enforcement Officers and fire fighters retirement system 1	87.1%
	Law Enforcement Officers and fire fighters retirement system 2	40.0%
	Higher Education Retirement Plan	86.4%
	Public Employees' Retirement System Plan 1	37.4%
	Public Employees' Retirement System Plan 2/3	42.3%
	Public Safety Employees' Retirement System 2	66.6%
	Teachers' Retirement System Plan 1	1.1%
	Teachers' Retirement System Plan 2/3	1.1%
West Virginia	West Virginia Judges Retirement System	100.0%
	West Virginia Police Retirement System	100.0%
	State Police Death, Disability, and Retirement System	100.0%
	Public Employees Retirement System	54.5%
	Teachers' Retirement System	94.0%
Wisconsin	Wisconsin Retirement System	13.4%
Wyoming	Air Guard Firefighters Pension Plan	100.0%
	Judicial Pension Plan	100.0%
	State Patrol, Game & Fish Warden & Criminal Investigator Pension Plan	37.8%
	Public Employee Pension Plan	17.7%
	Law Enforcement Pension Plan	21.8%

Metrics for California based on fiscal 2021 because the state did not have fiscal 2022 audited financial statements available as of the publication of this report.
Sources: State audited financial statements, draft financial statements, actuarial reports and Moody's Investors Service

Exhibit 22

Fiscal 2022 state adjusted net OPEB liability (ANOL) metrics

Ranking based on ANOL as a % of own-source revenue

FY 2022 rank	State	Reported net OPEB liability ($ thousands)	Adjusted net OPEB liability ($ thousands)	ANOL as a % of own-source revenue	ANOL per capita	ANOL as a % of personal income	ANOL as a % of state GDP
1	New Jersey	$88,854,450	$78,334,309	129.0%	$8,458	10.7%	10.5%
2	Hawaii	$5,207,792	$11,869,841	114.8%	$8,242	13.5%	12.1%
3	Delaware	$8,755,620	$7,696,263	92.2%	$7,557	12.3%	8.8%
4	Maine	$2,567,085	$5,004,066	71.4%	$3,612	6.1%	5.9%
5	Connecticut	$20,916,477	$18,923,981	67.8%	$5,219	6.1%	5.9%
6	Illinois	$46,502,507	$39,383,175	56.4%	$3,130	4.5%	3.8%
7	Vermont	$2,734,591	$2,488,392	52.1%	$3,846	6.1%	6.1%
8	Texas	$56,855,704	$49,616,905	47.0%	$1,652	2.7%	2.1%
9	South Carolina	$11,557,794	$9,606,281	46.8%	$1,818	3.4%	3.2%
10	New Hampshire	$1,924,811	$1,731,070	37.4%	$1,241	1.7%	1.6%
11	Louisiana	$6,491,962	$5,775,814	32.4%	$1,258	2.3%	2.1%
12	Maryland	$13,434,828	$11,288,811	32.3%	$1,831	2.6%	2.4%
13	Pennsylvania	$18,889,327	$18,715,377	32.2%	$1,443	2.2%	2.0%
14	New York	$52,062,000	$44,206,540	29.5%	$2,247	2.9%	2.2%
15	Kentucky	$2,699,082	$5,335,872	27.4%	$1,183	2.3%	2.0%
16	California*	$76,991,716	$81,428,054	27.1%	$2,086	2.7%	2.3%
17	Massachusetts	$14,459,035	$14,273,684	26.4%	$2,044	2.4%	2.1%
18	Michigan	$5,506,217	$11,375,708	25.5%	$1,134	2.0%	1.8%
19	Wyoming	$499,095	$425,215	24.5%	$731	1.0%	0.9%
20	Missouri	$3,165,973	$3,571,262	20.1%	$578	1.0%	0.9%
21	Alaska	($1,937,603)	$1,764,659	16.6%	$2,406	3.5%	2.8%
22	North Carolina	$6,306,642	$5,562,279	13.4%	$520	0.9%	0.8%
23	Washington	$5,556,460	$4,833,011	13.1%	$621	0.8%	0.7%
24	Arkansas	$1,428,766	$1,256,646	10.2%	$413	0.8%	0.8%
25	Florida	$7,085,962	$6,133,018	9.1%	$276	0.4%	0.4%
26	Alabama	$807,846	$1,520,690	8.4%	$300	0.6%	0.5%
27	Nevada	$895,099	$849,578	8.2%	$267	0.4%	0.4%
28	New Mexico	$782,224	$946,273	6.2%	$448	0.9%	0.8%
29	Rhode Island	$190,830	$373,780	6.1%	$342	0.5%	0.5%
30	West Virginia	($18,894)	$525,365	5.8%	$296	0.6%	0.5%
31	Tennessee	$1,176,637	$1,311,694	4.8%	$186	0.3%	0.3%
32	Virginia	$826,023	$1,431,856	3.5%	$165	0.2%	0.2%
33	Georgia	($302,526)	$1,097,530	3.0%	$101	0.2%	0.1%
34	Wisconsin	$550,427	$655,053	2.5%	$111	0.2%	0.2%
35	Arizona	$655,213	$584,845	2.3%	$79	0.1%	0.1%
36	Montana	$118,518	$112,357	2.3%	$100	0.2%	0.2%
37	Colorado	$182,721	$336,391	1.9%	$58	0.1%	0.1%
38	Minnesota	$629,756	$600,312	1.7%	$105	0.2%	0.1%
39	Ohio	($243,755)	$654,734	1.6%	$56	0.1%	0.1%
40	Iowa	$216,773	$204,057	1.5%	$64	0.1%	0.1%
41	North Dakota	$21,743	$64,741	1.3%	$83	0.1%	0.1%
42	Oklahoma	$19,923	$187,784	1.2%	$47	0.1%	0.1%
43	Mississippi	$141,983	$131,909	1.2%	$45	0.1%	0.1%
44	Indiana	$37,442	$139,774	0.5%	$20	0.0%	0.0%
45	Kansas	$51,722	$50,866	0.4%	$17	0.0%	0.0%
46	Nebraska	$24,606	$23,454	0.3%	$12	0.0%	0.0%
47	Oregon	($32,872)	$24,592	0.1%	$6	0.0%	0.0%
48	South Dakota	NA	$0	0.0%	$0	0.0%	0.0%
49	Utah	($27,785)	($41,611)	-0.3%	($12)	0.0%	0.0%
50	Idaho	($72,500)	($65,101)	-0.8%	($34)	-0.1%	-0.1%
	TOTAL	$465,147,446	$452,321,158	27.5%	$1,360	2.1%	1.8%
	MEAN	$9,492,805	$9,046,423	22.4%	$1,328	2.0%	1.8%
	MEDIAN	$895,099	$1,371,775	8.8%	$377	0.7%	0.6%

*Reflects fiscal 2021 OPEB data based on 2021 audited financial statements and fiscal 2022 revenue estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report.
ANOL stands for adjusted net OPEB liability.
Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Appendix III: Fixed costs

Exhibit 23

Fiscal 2022 fixed costs as % of own-source revenue

Ranking based on fixed costs (tread water) as a % of own-source revenue

State	Implied debt service	OPEB contribution	Implied other long-term liabilities carrying cost	Pension contribution	Pension tread water	Pension contributions as a % of pension tread water	Tread water shortfall as a % of own-source revenue	Total fixed costs (contribution)	Total fixed costs (tread water)
Illinois	3.8%	1.7%	0.1%	15.5%	16.2%	95.6%	0.7%	21.1%	21.8%
Connecticut	7.3%	3.1%	0.5%	26.8%	10.6%	253.1%	-16.2%	37.6%	21.4%
Hawaii	6.7%	4.1%	0.4%	7.7%	8.3%	92.3%	0.6%	19.0%	19.6%
New Jersey	5.8%	3.2%	0.2%	10.9%	9.5%	115.1%	-1.4%	20.1%	18.7%
Kentucky	2.7%	1.2%	0.2%	14.6%	9.6%	151.8%	-5.0%	18.7%	13.7%
Massachusetts	6.2%	1.2%	0.4%	7.3%	5.4%	136.6%	-2.0%	15.1%	13.1%
Maryland	3.4%	2.0%	0.2%	5.7%	4.4%	129.4%	-1.3%	11.3%	10.0%
Pennsylvania	2.5%	1.1%	0.6%	8.7%	5.7%	152.1%	-3.0%	12.8%	9.9%
Rhode Island	3.9%	0.7%	0.2%	6.2%	3.8%	164.2%	-2.4%	11.0%	8.6%
Louisiana	3.3%	1.2%	1.5%	4.4%	2.3%	190.9%	-2.1%	10.4%	8.3%
Vermont	1.1%	1.9%	0.2%	10.6%	4.7%	225.4%	-5.9%	13.8%	7.9%
Delaware	3.5%	2.8%	0.4%	3.8%	0.8%	479.7%	-3.0%	10.4%	7.4%
West Virginia	3.6%	1.0%	1.1%	6.3%	1.7%	375.2%	-4.6%	12.0%	7.4%
South Carolina	0.8%	0.9%	0.4%	6.0%	5.0%	119.7%	-1.0%	8.0%	7.0%
Maine	1.5%	1.7%	0.2%	7.3%	2.7%	266.5%	-4.6%	10.7%	6.2%
California*	2.3%	0.9%	0.4%	4.1%	2.6%	158.9%	-1.5%	7.6%	6.1%
New York	3.2%	1.3%	0.5%	1.4%	1.1%	125.6%	-0.3%	6.3%	6.0%
Missouri	1.0%	0.5%	1.1%	3.6%	3.4%	107.6%	-0.3%	6.2%	6.0%
Kansas	2.0%	0.0%	0.3%	12.3%	3.6%	343.5%	-8.7%	14.6%	5.9%
Oregon	3.3%	0.1%	0.5%	3.8%	1.9%	196.3%	-1.9%	7.7%	5.8%
Mississippi	3.6%	0.1%	0.1%	2.0%	2.0%	99.0%	0.0%	5.8%	5.8%
Michigan	1.3%	1.5%	0.3%	5.2%	2.7%	192.4%	-2.5%	8.3%	5.8%
Colorado	2.0%	0.1%	0.3%	3.5%	3.4%	103.1%	-0.1%	5.9%	5.8%
Texas	1.3%	1.0%	0.1%	3.5%	2.9%	119.1%	-0.6%	6.0%	5.4%
Washington	4.8%	0.2%	0.9%	2.0%	-1.0%	-207.4%	-2.9%	7.9%	4.9%
New Hampshire	1.9%	0.9%	0.4%	2.4%	1.6%	150.8%	-0.8%	5.5%	4.7%
Ohio	3.6%	0.0%	0.2%	1.1%	0.9%	129.7%	-0.3%	4.8%	4.6%
Alabama	2.3%	0.3%	0.2%	1.5%	1.7%	92.2%	0.1%	4.3%	4.4%
Montana	0.3%	0.0%	0.6%	4.0%	3.5%	115.7%	-0.5%	4.9%	4.3%
Wisconsin	3.0%	0.1%	0.7%	0.6%	0.3%	235.0%	-0.3%	4.5%	4.1%
Virginia	2.7%	0.2%	0.1%	1.5%	0.9%	178.8%	-0.7%	4.5%	3.9%
Alaska	0.8%	0.5%	0.4%	3.4%	2.0%	174.6%	-1.5%	5.1%	3.7%
Indiana	0.6%	0.1%	0.1%	6.8%	2.8%	239.4%	-3.9%	7.5%	3.6%
Wyoming	0.0%	0.2%	0.8%	2.1%	2.5%	82.1%	0.5%	3.1%	3.5%
New Mexico	1.3%	0.2%	0.2%	1.7%	1.9%	86.0%	0.3%	3.2%	3.5%
Georgia	2.3%	0.4%	0.1%	1.8%	0.8%	225.7%	-1.0%	4.5%	3.5%
Nevada	1.5%	0.3%	0.1%	1.8%	1.6%	113.4%	-0.2%	3.6%	3.4%
Florida	1.7%	0.2%	0.5%	1.1%	0.7%	153.6%	-0.4%	3.5%	3.1%
Minnesota	1.7%	0.1%	0.2%	0.9%	0.7%	125.5%	-0.2%	2.9%	2.7%
Arkansas	0.7%	0.6%	0.3%	2.2%	1.2%	182.9%	-1.0%	3.7%	2.7%
Utah	1.4%	0.2%	0.1%	1.7%	0.6%	262.6%	-1.0%	3.4%	2.4%
Idaho	1.0%	0.0%	0.4%	1.2%	0.7%	171.4%	-0.5%	2.6%	2.1%
Arizona	1.0%	0.1%	0.1%	6.0%	0.9%	650.5%	-5.1%	7.2%	2.1%
Iowa	0.7%	0.1%	0.2%	2.5%	1.0%	243.9%	-1.5%	3.5%	2.0%
North Carolina	1.2%	0.6%	0.3%	0.8%	-0.2%	-355.8%	-1.0%	2.9%	1.9%
Tennessee	0.5%	0.5%	0.2%	1.8%	0.4%	432.9%	-1.4%	3.0%	1.6%
Oklahoma	0.7%	0.2%	0.1%	1.7%	0.3%	691.7%	-1.5%	2.8%	1.3%
North Dakota	0.2%	0.1%	0.1%	0.7%	0.9%	75.9%	0.2%	1.0%	1.3%
Nebraska	0.0%	0.0%	0.5%	1.6%	0.6%	275.8%	-1.0%	2.1%	1.1%
South Dakota	0.6%	0.0%	0.2%	0.5%	0.2%	212.9%	-0.3%	1.4%	1.1%
TOTAL	2.6%	0.9%	0.3%	4.8%	3.2%	148.6%	1.6%	8.7%	7.1%
MEAN	2.2%	0.8%	0.4%	4.7%	2.8%	182.7%	-1.9%	8.1%	6.2%
MEDIAN	1.8%	0.4%	0.3%	3.5%	1.9%	156.3%	-1.0%	5.9%	4.8%

*Fiscal 2022 fixed costs based on fiscal 2021 OPEB contribution and pension tread water, and fiscal 2022 implied debt service, other long-term liabilities carrying costs and revenue estimated by Moody's based on available unaudited disclosure because its fiscal 2022 financial statements were not available as of the publication of this report.

Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Appendix IV: Total long-term liabilities

Exhibit 24

Fiscal 2022 state other long-term liabilities metrics

Ranking based on other long-term liabilities as a % of own-source revenue

FY 2022 rank	State	Other Long-Term Liabilities	Other Long-Term Liabilities as a % of Revenue	Other long-term liabilities per capita	Other long-term liabilities as a % of personal income	Other long-term liabilities as a % of state GDP
1	Louisiana	$3,530,728	19.8%	$769	1.4%	1.3%
2	West Virginia	$1,515,424	16.6%	$854	1.7%	1.6%
3	Missouri	$2,814,010	15.9%	$455	0.8%	0.7%
4	Washington	$5,044,628	13.7%	$648	0.9%	0.7%
5	Wyoming	$199,268	11.5%	$343	0.5%	0.4%
6	Wisconsin	$2,701,349	10.3%	$458	0.7%	0.7%
7	Florida	$5,969,721	8.8%	$268	0.4%	0.4%
8	Hawaii	$900,977	8.7%	$626	1.0%	0.9%
9	Pennsylvania	$4,568,951	7.9%	$352	0.5%	0.5%
10	Montana	$370,817	7.4%	$330	0.6%	0.6%
11	Oregon	$1,710,984	7.4%	$404	0.6%	0.6%
12	New York	$10,383,000	6.9%	$528	0.7%	0.5%
13	Connecticut	$1,818,198	6.5%	$501	0.6%	0.6%
14	Nebraska	$484,285	6.3%	$246	0.4%	0.3%
15	New Hampshire	$255,621	5.5%	$183	0.2%	0.2%
16	South Carolina	$1,126,677	5.5%	$213	0.4%	0.4%
17	Alabama	$983,243	5.5%	$194	0.4%	0.4%
18	Delaware	$438,119	5.2%	$430	0.7%	0.5%
19	Alaska	$541,117	5.1%	$738	1.1%	0.9%
20	California*	$15,000,000	5.0%	$384	0.5%	0.4%
21	Massachusetts	$2,627,100	4.9%	$376	0.4%	0.4%
22	North Carolina	$1,963,602	4.7%	$184	0.3%	0.3%
23	Idaho	$354,805	4.6%	$183	0.3%	0.3%
24	Kentucky	$843,376	4.3%	$187	0.4%	0.3%
25	New Jersey	$2,435,800	4.0%	$263	0.3%	0.3%
26	Minnesota	$1,307,376	3.7%	$229	0.3%	0.3%
27	Colorado	$651,297	3.6%	$112	0.2%	0.1%
28	Arkansas	$439,949	3.6%	$144	0.3%	0.3%
29	Tennessee	$981,914	3.6%	$139	0.2%	0.2%
30	South Dakota	$185,412	3.3%	$204	0.3%	0.3%
31	Rhode Island	$194,034	3.1%	$177	0.3%	0.3%
32	Iowa	$399,058	3.0%	$125	0.2%	0.2%
33	New Mexico	$417,336	2.8%	$197	0.4%	0.3%
34	Vermont	$131,138	2.7%	$203	0.3%	0.3%
35	Maryland	$930,516	2.7%	$151	0.2%	0.2%
36	Maine	$170,411	2.4%	$123	0.2%	0.2%
37	Ohio	$877,490	2.2%	$75	0.1%	0.1%
38	Oklahoma	$332,177	2.2%	$83	0.2%	0.1%
39	Kansas	$294,346	2.0%	$100	0.2%	0.1%
40	Utah	$303,590	2.0%	$90	0.2%	0.1%
41	Arizona	$469,803	1.9%	$64	0.1%	0.1%
42	Mississippi	$181,619	1.6%	$62	0.1%	0.1%
43	Illinois	$1,056,210	1.5%	$84	0.1%	0.1%
44	Texas	$1,327,799	1.3%	$44	0.1%	0.1%
45	Nevada	$119,879	1.2%	$38	0.1%	0.1%
46	North Dakota	$58,792	1.2%	$75	0.1%	0.1%
47	Georgia	$408,982	1.1%	$37	0.1%	0.1%
48	Michigan	$464,400	1.0%	$46	0.1%	0.1%
49	Indiana	$274,402	1.0%	$40	0.1%	0.1%
50	Virginia	$367,084	0.9%	$42	0.1%	0.1%
	TOTAL	$80,926,814	4.9%	$243	0.4%	0.3%
	MEAN	$1,618,536	5.2%	$256	0.4%	0.4%
	MEDIAN	$596,207	3.8%	$190	0.3%	0.3%

*Fiscal 2022 figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report.

Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Exhibit 25

Fiscal 2022 total long-term liabilities as a % of own-source revenue

Ranking based on total long-term liabilities as a % of own-source revenue

FY 2022 rank	State	Net tax-supported debt	Adjusted net pension liability	Adjusted net OPEB liability	Other long-term liabilities	Total long-term liabilities
1	Illinois	52.3%	418.0%	56.4%	1.5%	528.2%
2	Connecticut	103.8%	296.7%	67.8%	6.5%	474.8%
3	New Jersey	76.7%	232.4%	129.0%	4.0%	442.1%
4	Hawaii	95.8%	177.2%	114.8%	8.7%	396.4%
5	Kentucky	33.9%	280.3%	27.4%	4.3%	345.9%
6	Massachusetts	90.2%	182.2%	26.4%	4.9%	303.7%
7	Maryland	55.5%	162.2%	32.3%	2.7%	252.7%
8	Maine	22.8%	141.1%	71.4%	2.4%	237.7%
9	South Carolina	11.4%	169.0%	46.8%	5.5%	232.7%
10	Pennsylvania	34.9%	153.3%	32.2%	7.9%	228.2%
11	Vermont	15.9%	154.5%	52.1%	2.7%	225.2%
12	Delaware	52.1%	67.7%	92.2%	5.2%	217.2%
13	Texas	19.3%	134.0%	47.0%	1.3%	201.5%
14	West Virginia	51.6%	112.5%	5.8%	16.6%	186.5%
15	Louisiana	46.6%	81.3%	32.4%	19.8%	180.3%
16	Montana	6.5%	156.7%	2.3%	7.4%	172.8%
17	Kansas	30.2%	137.7%	0.4%	2.0%	170.3%
18	Rhode Island	55.0%	98.5%	6.1%	3.1%	162.6%
19	California*	32.0%	95.3%	27.1%	5.0%	159.4%
20	Colorado	34.3%	112.3%	1.9%	3.6%	152.2%
21	Washington	69.1%	54.8%	13.1%	13.7%	150.7%
22	Michigan	19.5%	96.7%	25.5%	1.0%	142.7%
23	Missouri	13.2%	92.5%	20.1%	15.9%	141.6%
24	Mississippi	52.2%	81.4%	1.2%	1.6%	136.4%
25	Wyoming	6.9%	92.1%	24.5%	11.5%	134.9%
26	Alaska	13.4%	92.0%	16.6%	5.1%	127.0%
27	Nevada	20.0%	95.8%	8.2%	1.2%	125.2%
28	Oregon	51.4%	65.3%	0.1%	7.4%	124.2%
29	New Hampshire	22.8%	52.6%	37.4%	5.5%	118.4%
30	New Mexico	22.0%	78.3%	6.2%	2.8%	109.3%
31	New York	46.4%	24.8%	29.5%	6.9%	107.6%
32	Alabama	33.3%	50.7%	8.4%	5.5%	97.9%
33	Ohio	48.4%	41.6%	1.6%	2.2%	93.9%
34	Iowa	9.5%	74.9%	1.5%	3.0%	88.9%
35	Arkansas	8.8%	63.6%	10.2%	3.6%	86.2%
36	Wisconsin	42.8%	28.6%	2.5%	10.3%	84.2%
37	Virginia	43.7%	32.5%	3.5%	0.9%	80.5%
38	Indiana	9.4%	67.0%	0.5%	1.0%	78.0%
39	Florida	21.8%	34.5%	9.1%	8.8%	74.2%
40	Georgia	34.6%	34.8%	3.0%	1.1%	73.6%
41	North Carolina	18.1%	32.0%	13.4%	4.7%	68.3%
42	Minnesota	26.2%	34.6%	1.7%	3.7%	66.2%
43	Arizona	10.0%	46.3%	2.3%	1.9%	60.5%
44	Utah	18.4%	31.6%	-0.3%	2.0%	51.7%
45	Nebraska	1.0%	41.3%	0.3%	6.3%	49.0%
46	Idaho	14.9%	28.3%	-0.8%	4.6%	47.0%
47	North Dakota	10.8%	32.3%	1.3%	1.2%	45.5%
48	Oklahoma	12.8%	26.9%	1.2%	2.2%	43.1%
49	Tennessee	7.6%	26.7%	4.8%	3.6%	42.6%
50	South Dakota	9.1%	30.1%	0.0%	3.3%	42.5%
	TOTAL	37.5%	106.6%	27.5%	4.9%	176.5%
	MEAN	32.8%	98.9%	22.4%	5.2%	159.2%
	MEDIAN	24.5%	79.8%	8.8%	3.8%	131.0%

*Fiscal 2022 debt, ANPL, other long-term liabilities and revenue figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report. OPEB data are based on fiscal 2021 state audited reporting.

Sources: State audited financial statements and unaudited draft statements (for Arizona and Nevada) and Moody's Investors Service

Moody's related publications

Sector Research

» State and local governments - US: adjusted net pension liabilities on track to fall again in fiscal 2023, asset risk remains, June 27, 2023

» State government - US: Pension risks down, not out; asset volatility, contributions and inflation to loom large, April 12, 2023

» State and Local Government - US: Pension de-risking opportunities will grow with higher interest rates in 2023, February 28, 2023

» State and Local Government - US: Inflation-led pension COLAs will partially offset liability reduction from higher interest rates, December 7, 2022

» Rising interest rates create opportunities to lower pension risks, October 05, 2022

» State Government - US: Debt, pension and OPEB liabilities all up in fiscal 2022, September 7, 2022

Outlook

» States - US: 2023 outlook still stable as prudent budgeting, strong reserves mitigate revenue headwinds, June 14, 2023

» States - US: 2023 outlook stable as strong reserves, governance counter economic volatility, December 05, 2022

Methodology

» US States and Territories Methodology, March 22, 2022

» Adjustments to Pension and OPEB Data Reported by GASB Issuers, Including US States and Local Governments, October 7, 2019

Endnotes

1 Fiscal 2022 total and median leverage and fixed costs data throughout this report is preliminary, because some states have not published fiscal 2022 audited financial statements. For California, fiscal 2022 debt, ANPL, other long-term liabilities and revenue figures are estimated by Moody's based on available unaudited disclosure because the state's fiscal 2022 financial statements were not available as of the publication of this report; OPEB and pension tread water data are based on fiscal 2021 state audited reporting. For Arizona and Nevada, fiscal 2022 data are based on draft 2022 financial statements.

2 The estimate for aggregate state ANPL in fiscal 2023 includes fiscal 2022 ANPL estimates for California as its 2022 audited financial statements were not available as of the publication of this report.

3 The Arizona State Retirement System's annual comprehensive financial report (ACFR) does not provide a breakdown of all plan members. To approximate the percentage of plan members related to school districts, we used the share of school district employees from the top-10 participating employers, excluding the state.

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APPENDIX C

2024 Fitch Ratings Credit Report

FitchRatings

Public Finance
State G.O. Bonds
United States

State of Vermont

The State of Vermont's 'AA+' Long-Term Issuer Default Rating (IDR) and GO bond rating reflect a track record of disciplined financial management and cautious revenue forecasting that, when coupled with the state's healthy fiscal reserves and ample expenditure-cutting capacity, position Vermont well to absorb budgetary challenges associated with future economic downturns. Vermont's 'AA+' rating also reflects a moderate long-term liability (LTL) burden consisting of direct debt and net pension liabilities (NPLs) supported by the state's economic resource base. Fitch expects Vermont's liability burden to remain stable for the near term.

The 'AA–' rating on the Vermont Municipal Bond Bank's (VMBB) 1988 General Resolution bonds reflects a direct linkage to the state's IDR, as the rating is based on the credit enhancement provided to bonds issued by the VMBB from Vermont's moral obligation pledge. The state has pledged to replenish any draws made on the VMBB's reserve fund within one fiscal year. The two-notch rating distinction between the IDR and the VMBB rating factors in the broad state purposes served by VMBB financings, as well as the state's direct involvement with the bank as evidenced by the makeup of VMBB's board of directors, which includes the state treasurer and several gubernatorial appointees, along with a related state aid intercept mechanism.

Ratings

Long-Term Issuer Default Rating	AA+

Rating Outlook

Long-Term Issuer Default Rating	Stable

New Issues

$70,560,000 State of Vermont General Obligation Bonds, 2024 Series A	AA+
$85,965,000 State of Vermont General Obligation Bonds, 2024 Series B	AA+

Sale Date

The bonds will be sold competitively on or around June 6, 2024.

Outstanding Debt

1988 General Resolution Bonds	AA–
General Obligation Bonds	AA+
General Obligation Vermont Citizen Bonds	AA+

Applicable Criteria

U.S. Public Finance State Governments and Territories Rating Criteria (April 2024)

Related Research

Fitch Rates Vermont's $157MM GO Bonds 'AA+'; Outlook Stable (May 2024)

2023 State Liability Report (Post-Pandemic Asset Surge Lowers Pension Burdens) (November 2023)

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Key Rating Drivers

Revenue Framework — 'aa'

Fitch anticipates Vermont's state-source revenues, including statewide income and consumption taxes, will grow at a modest pace in line with U.S. inflation, consistent with our long-term expectations for Vermont's economy. The state has complete legal control over its revenues, including the ability to broaden the tax base, levy new taxes and raise or modify tax rates.

Expenditure Framework — 'aaa'

The state maintains ample expenditure flexibility with a low burden of fixed carrying costs for long-term 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. Fitch expects Vermont's major spending items to grow in line with, or slightly faster than, the state's natural pace of revenue expansion.

Long-Term Liability Burden — 'aa'

Vermont's long-term liability burden is above the U.S. state median but remains moderate compared to the state's economic resource base. Vermont's elected leaders maintain close oversight and management of debt issuance and have engaged in multiple efforts to improve the sustainability of retirement liabilities over time.

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 took steps during the pre-pandemic expansion to improve fiscal flexibility and has added to its statutory reserves and governmentwide cash since 2020. In Fitch's view, Vermont possesses ample fiscal reserves.

Rating Sensitivities

Factors that could, individually or collectively, lead to negative rating action/downgrade

- Expansion of the long-term liability burden to levels approaching, or above, 20% of personal income would pressure the rating.
- A reduction in gap-closing capacity due to weaker budgetary discipline or stagnant revenue growth leading to recurring structural imbalances and draws on fiscal reserves down to 5% of revenue statutory limits.

Factors that could, individually or collectively, lead to positive rating action/upgrade

- Stronger revenue growth prospects spurred by greater economic diversification and sustained improvements in the state's demographic profile and population growth could support a higher revenue framework assessment and potentially an upgrade of the rating.
- A sustained reduction in the long-term liability burden metric to below 10% of statewide personal income would result in a higher LTL assessment and could lead to a rating upgrade.

Economic Resource Base

Vermont's small and modestly growing economy has above average reliance on the health and education sectors, as well as manufacturing and tourism, and remains exposed to the fortunes of several large employers. The state's population is older and significantly more rural than those of most other states with 65% of residents residing in small towns and/or rural areas. Population growth prior to the pandemic was limited.

As with other New England states, high educational attainment levels provide the potential for future economic gains, but Vermont has not yet realized that potential. Gradual growth in knowledge-based industries, including high tech, aerospace and biomedical sciences, could allow for eventual acceleration in the state's growth rate.

IDR Current Developments

Vermont Economic Update

Vermont's nonfarm payrolls contracted by 21% between February and April 2020, a more severe decline than the nation's 15% fall in employment during that period. Vermont's payroll recovery has been slower than the national average with March 2024 employment still trailing its pre-pandemic level by 1%, compared to 3.8% national growth in payroll employment since April 2020. This makes Vermont's payroll recovery the fourth weakest among U.S. states, after Hawaii, Louisiana and Maryland. Vermont's spring 2024 household survey of employed residents suggests a jobs recovery that places state employment 1% above February 2020 levels. This in turn suggests that federal data may be slightly undercounting Vermont's payroll growth.

A decline in labor force participation was a factor in Vermont's slow employment recovery from the pandemic, reflecting its smaller population and older labor force. Vermont's labor force was declining prior to 2020 and shrank further during the pandemic. Conversely, its population realized short-term benefits due to pandemic in-migration. Vermont added 6,000 new residents between 2020 and 2022, as per the U.S. Census Bureau. State officials attest that many newcomers originated as remote workers yet many have opted to remain in the state. Vermont's labor force recently exceeded pre-pandemic levels (1Q24).

Vermont's seasonally adjusted unemployment rate was 2.2% for March 2024, well below the nation's 3.8% rate. Fitch also considers the employment-to-population ratio (EPOP) when evaluating state labor markets, as EPOP helps Fitch to gauge what proportion of a labor force is actively employed. Vermont's EPOP indicates an improved labor market. Vermont's EPOP of 64% in March 2024 was well above the 60.3% national level but remains below the 64.6% EPOP reported for February 2020, most likely resulting from labor force departures by older workers.

Vermont's Revenue Performance Has Remained Solidly Above Forecast

Vermont's state-source revenues have consistently outperformed forecasts since fiscal 2021. Vermont recorded a $237 million surplus across its three major operating funds in fiscal 2022. Fiscal 2023 revenues then grew by about $251 million over the initial forecast, expanding to $2.22 billion, or by 1.6% yoy. Collections beat forecasts across all three major operating funds with general fund collections rising $226 million (14.3%) above forecast. Education fund revenues rose 7.4% yoy with property taxes netted out, and transportation fund revenues expanded 2.5% yoy net of federal reimbursements. Vermont achieved a $438 million surplus across all major funds set against $4.3 billion in spending in fiscal 2023, suggesting a strong underlying economy despite a weak labor market recovery.

Fiscal 2024 collections YTD have also outpaced initial forecasts by significant margins. The fiscal 2024 budget assumed a $158 million (7.2%) decline in general fund revenues from the prior year, to just over $2.0 billion, from $2.2 billion in fiscal 2023, with smaller declines forecast for the other two main funds. However, for fiscal 2024 YTD, collections through March 31 were running at $11 million, or 0.7%, above prior-year levels, indicating an 8%, or approximately $170 million, positive swing in collections compared to the initial budget. Education fund revenues are running about $28 million (4.4%) ahead of prior-year actuals, while transportation fund revenues are tracking closely to last years. Most major revenues are performing above forecast, suggesting an operating surplus for fiscal 2024.

Fiscal Reserves Are at Statutory Maximums; Liquidity is Exceptional

The state has not drawn on its operating reserves to support operations for several years. Each major operating fund maintains its own budget stabilization reserve (BSR) sized at 5% of prior-year appropriations. For the general fund, the BSR is projected to total $104.9 million at June 30, 2024. The education and transportation funds' BSRs will total another $61.2 million. A separate general fund “rainy day” reserve will continue to hold $80.4 million (or 3.7% of spending) as of the same date.

The state keeps substantial resources on deposit in its general and education funds that include $35 million of unallocated moneys in the education fund and $97 million (4.5% of spending) in the human services caseload reserve as a buffer against higher Medicaid costs. Total general fund reserves are projected to equal $311 million (14.3% of spending) at fiscal YE25. Governmentwide cash approximated $2.0 billion as of Jan. 1, 2024, compared to an all-funds budget of $8.6 billion, or more than eight times its pre-pandemic level; cash averaged around $300 million annually in the 2010–2019 decade.

Fiscal 2024 Budget Boosted Social and Nonrecurring Infrastructure Spending

Vermont's fiscal 2024 budget was built around a projected sharp revenue deceleration, with general fund revenues forecast to decline by 7.2% yoy (later revised to a 5.5% decline) due to the exhaustion of federal stimulus, higher inflation, a return of consumer spending to pre-pandemic patterns and continued phasing in of state tax cuts adopted in 2022. As a result, the fiscal 2024 all-funds budget represented a 2.3% drop in spending compared to the prior year, inclusive of supplemental spending. The spending decline reflected the depletion of federal stimulus moneys after the inclusion of $565 million in American Rescue Plan Act (ARPA) moneys in the fiscal 2023 budget.

The general fund portion of the fiscal 2024 budget boosted spending by $279 million (or 13.2%) yoy, mainly due to $186 million of accumulated surpluses used to fund nonrecurring spending, largely on capital needs. The general fund budget included $78 million of new recurring spending to boost affordable housing and childcare. Housing spending incorporated a major residential energy efficiency initiative.

Fiscal 2025 Adopted Budget Reverts to Pre-Pandemic Growth Patterns; Less One-Time Spending

Vermont's adopted fiscal 2025 budget assumes essentially stagnant revenues yoy with minimal (less than 1%) growth in recurring revenue and a $340 million (12.9%) decline in total general fund sources. The latter number factors in the prior use of $337 million of carryover funds expended in fiscal 2024 that are not available for fiscal 2025. Base appropriations will rise by 3% yoy. Nonrecurring spending in the fiscal 2025 budget is much lower than in fiscal 2024, totaling $74 million, compared to $281 million the year prior, following the state's spending down of prior-year surpluses. Modest growth in the 2% range is forecast for the transportation fund. Base appropriations are expanding by similar amounts. The governor has not yet signed the education fund budget and may veto the bill.

With less one-time funding available for nonrecurring projects in fiscal 2025, the state will use its available resources to provide enhanced grant funding primarily for essential housing needs ($40 million of one-time spending) and pay increases for state employees ($30.6 million). The all-funds budget, which totals $8.6 billion, also includes state matches for Federal Emergency Management Agency (FEMA) grants to reimburse damages sustained by Vermont during the July 2023 flood events, along with matching funds for federal infrastructure and clean energy grants.

The fiscal 2025 budget includes full actuarial contributions for state pension systems, consistent with prior years. Fiscal 2025 actuarial contributions will rise by 4.5% from prior-year levels due to weak investment performance in the plans' 2022 fiscal years, which reflected market corrections that occurred in the wake of the start of the war in Ukraine. Fitch expects contribution levels to fall in fiscal 2026 as better 2023 returns are factored into plan funded levels. Fitch anticipates future contribution increases will be in line with to slightly above annual budgetary growth.

State non-property tax revenues allocated to the education fund are forecast to expand by 5% in fiscal 2025. The Vermont General Assembly's education funding bill (H. 887) would raise statewide property tax rates by 12.5% to fund education spending in fiscal 2025 and establish a commission to discuss controlling future education costs. The governor has indicated he will veto the bill in its current form, as he believes the size of the property tax increase is inadvisable and recommends a lower increase in education spending, aligned more closely with the consensus forecast. The general assembly will return to session on June 17 to address the education bill and other legislation.

Credit Profile

Revenue Framework

Revenues used for state operations consist primarily of individual and corporate income taxes, sales and use taxes and a meals and rooms tax meant to shift a portion of the tax burden onto visitors. Vermont levies a statewide property tax to fund K–12 education, a relatively unusual feature for a state government, which accounts for the largest share of state revenues. Since Vermont essentially passes property taxes on to local school districts, Fitch discounts the importance of this revenue stream in its revenue framework assessment.

Fitch anticipates slow growth in state-source revenues, in line with our medium-term expectations for U.S. inflation due to the state's modest near-term economic and population growth prospects. Tax revenue growth, adjusted for policy changes, has lagged the pace of U.S. GDP on a real basis over the past decade while exceeding inflation. Recent above-inflation revenue growth is partly due to the effects of federal stimulus measures on state tax collections, and partly the result of policy-driven growth in the statewide property tax, which is largely a passthrough to local school districts. Fitch anticipates that Vermont's pace of revenue growth will remain in line with U.S. inflation over the longer term, reflecting constraints on its economy related to a stagnant state labor force and aging population.

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

Vermont's population growth trajectory will partly determine its pace of revenue expansion in the coming decade. The state's population grew by 3.4% between 2010 and 2022, compared to the nation's 7.9% growth rate for the same period. This was an improvement from Vermont's growth rate in the decade to 2010, which was 2.8%. Faster population growth spurred by greater in-migration or other causes would likely improve revenue growth prospects. Statistical evidence of in-migration since 2020, if sustained, could support such a trend.

The state has identified Vermont's relatively low housing affordability and lack of housing density, particularly in its urban areas, as an impediment to faster economic growth. To increase the stock of new and renovated housing, Vermont amended Act 250, its housing regulatory framework, during its 2023 legislative session. The amendments make it easier for developers to renovate older homes to convert them into multifamily housing, remove restrictions on the heights of new buildings, reform approval processes and ease the requirements for constructing apartments and other multifamily housing options in the state.

Expenditure Framework

Education is the largest expenditure area backed by state-source revenues, driven by a unique funding system under which the state covers the full operating costs for locally administered K–12 schools primarily by way of a local property tax collected by the state. The statewide sales and use tax also provides a portion of school funding. Health and human services, mainly consisting of Medicaid, is the second-largest expenditure area.

Fitch expects Vermont's pace of spending growth, absent policy actions, to be slightly ahead of revenue growth, driven primarily by Medicaid spending. This will require the state to make frequent budgetary adjustments to ensure ongoing structural 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, limits the states' options in managing the pace of spending growth. Federal action to revise Medicaid's programmatic and financial structure does not appear to be a near-term priority of the current federal administration or congressional leadership. As with all federal initiatives, Medicaid remains subject to regulatory changes that could affect various aspects of the program.

Medicaid 'All-Payer' Model

Vermont has addressed rising healthcare costs by shifting its Medicaid program toward outcome-based care under an “all-payer” system, in contrast to the traditional fee-for-service model, starting in 2017. Under the terms of agreements with the federal government allowing for the transition, Vermont shifted its Medicare and Medicaid programs to an outcome-based accountable care organization model with the goal of gaining participation from private insurers and providers.

Vermont's Medicaid spending growth slowed considerably between 2017 and 2019 (pre-pandemic). However, Medicaid enrollment also declined sharply during this period (by 21%), which likewise translated to deceleration in Medicaid spending. During the pandemic, the pace of Medicaid spending increased moderately. The state's Agency for Health Services noted that pandemic-driven enrollment growth was partially offset by a decline in utilization resulting from the pandemic's limiting effect on public interactions.

Vermont's Medicaid spending (combined state and federal) declined during the first year of the pandemic before resuming upward growth. Fiscal 2022 spending grew by 11%, as the largest share of pandemic-related spending (supported by increased federal transfers) occurred during that time. Fiscal 2023 expenditures then rose by 9.3% yoy. The state budgeted for 4.2% Medicaid spending growth in fiscal 2024. State officials expect fiscal 2025 Medicaid spending to decline slightly (–1%), primarily due to lower enrollments.

Vermont's fixed cost burden is low (6.4% of governmental expenditures in fiscal 2023). Fitch anticipates fixed costs will remain stable given the state's commitment since the mid-2010s to make contributions above actuarial levels to its pension systems. The state has regularly contributed amounts in excess of the actuarially determined contribution (ADC) in an effort to manage and reduce NPLs. Overall, the state retains ample flexibility to adjust its main spending items given its control over program design and service delivery.

State Policies Trigger Annual Pension Contributions Over the ADC

Policy actions in recent years attest to active state management of its pensions' funded status. Over the long term, this could have beneficial effects on funding progress assuming the plans achieve their rate of return assumptions. The ADCs for both main plans, the Vermont State Employer Retirement System (VSERS) and Vermont State Teachers Retirement System (VSTRS), have been based on closed amortization periods ending in 2038, with actual contributions consistently higher than the ADC and targeting a percentage increase over the prior year.

Updated experience studies and lowering plan discount rates to 7.0%, from 7.5% as of the 2020 valuation combined, increased the ADCs by 44% in fiscal 2022, with actual contributions remaining ahead of this level. From Fitch's perspective, the $100 million increase was not a material concern in the context of the state's fiscal 2022 governmental funds expenditures of $7.8 billion.

In 2022, Vermont achieved a consensus on legal changes necessary to maintain annual state contributions above the ADC, raise employee contributions and narrow cost-of-living assumptions in an effort to reduce projected growth in the liability. Act 114 of 2022 included a one-time extra state contribution of $200 million, raised employee contributions, reduced the COLA formula ceiling for certain members and increased end-of-year surplus provisions to use 50% of any general fund surplus to make supplemental contributions equally to VSERS and VSTRS (after statutorily required funding of the state's budget reserves).

Long-Term Liability Burden

On a combined basis, Vermont's debt and NPLs as of Fitch's "2023 State Liability Report (Post-Pandemic Asset Surge Lowers Pension Burdens)," dated Nov. 15, 2023, totaled 11% of 2022 personal income compared with the U.S. states median of 4.0%. Based on updated information provided in the state's fiscal 2023 audited financial statements, this number remains consistent as a percentage of 2022 personal income. The ratio includes Vermont Housing Finance Agency (VHFA) bonds paid from the state's real property transfer tax.

Debt levels remain modest at approximately 1.7% of personal income and are closely monitored through the state's Capital Debt Affordability Advisory Committee (CDAAC). The governor and the Vermont Legislature consistently stay within CDAAC's recommendations for annual bond issuance. In 2022, Vermont used $20 million of its fiscal 2022 surplus to redeem the state's remaining outstanding transportation infrastructure bonds (TIBs).

Vermont's NPLs are more significant than its bonded debt, with Fitch-adjusted NPLs representing 9.5% of personal income. Pension liability calculations include essentially 100% of the liability in VSERS and VSTRS, for which the state makes full actuarial contributions.

State Addressing OPEB Liabilities

Vermont's other post-employment benefits (OPEB) liabilities have historically been quite significant, with the reported net OPEB liability equaling 7.2% of the state's personal income as recently as fiscal 2020. Prior to the passage of Act 114 of 2022, the state had taken modest steps toward prefunding OPEB liabilities and made some progress in reducing them through collective bargaining actions. Positively, Act 114 included provisions to commence the actuarial prefunding of Vermont's OPEB, which began in fiscal 2023.

The state now contributes the full ADC for its OPEB. Assets held in the OPEB accounts are invested using the same asset allocation and discount rate assumptions (7%) as for VSERS and VSTRS. The adoption of an identical amortization schedule as the pension plans and a $25 million rise in the VSTRS plan's cash position reduced the net OPEB liability to 3.9% of personal income by fiscal YE23.

Operating Performance

Vermont's superior gap-closing capacity derives from institutional and statutory mechanisms and a demonstrated ability to manage through economic downturns. Official revenue forecasts are updated at a minimum of twice a year through the E-Board, a consensus process involving the administration and legislature. In 2020, Vermont implemented more frequent revenue forecasts.

The governor can implement a spending reduction plan unilaterally if a revenue forecast reduces revenues by less than 1% from the prior forecast, or with approval of the legislature's Joint Fiscal Committee (a bipartisan and bicameral committee of legislative leaders) in the event of larger revenue shortfalls. The state has been able to engage key stakeholders, including labor, to implement expenditure reductions during economic downturns. The state has typically focused on spending cuts, such as negotiated salary or programmatic cuts, rather than on revenue increases.

Vermont's multiple reserves also support robust resilience. These include BSRs funded at 5% of prior-year appropriations in each of its three primary operating funds and separate, fund-specific reserves or unreserved balances. The various general fund reserves totaled $285 million at fiscal YE23, equaling 13.5% of budgeted fiscal 2023 general fund appropriations, net of the statewide property tax. State officials anticipate combined reserves will remain at similar levels as of fiscal YE24 (June 30, 2024).

Prudent Management Prepares State for Downturns

The state's budgeting practices tend to be conservative in forecasting and proactive through the fiscal year, with most fiscal years ending with at least a modest general fund surplus despite the lack of a statutory or constitutional balanced budget requirement. In the years prior to the pandemic, the state took steps to build in added fiscal resilience by creating additional reserves, including the general fund balance reserve, a human services caseload reserve (primarily for Medicaid) and the 27/53 reserve (established to address extra costs in years with a 27th biweekly payroll or a 53rd week of Medicaid disbursements).

Fitch regards Vermont's establishment of new funds focused on pay-as-you-go capital and IT upgrades, funded with accumulated surpluses, as a positive development. Base funding of $80 million provided in the state's fiscal 2024 budget will reduce long-term spending pressure in capital and IT by securing an immediate source of funds to address long-term capital needs.

Peer Analysis

Vermont's peer group includes other U.S. states in the 10th decile of states as ranked by GSP (gross state product). These include Maine (AA/Positive), Montana (AA+/Stable), Rhode Island (AA/Positive) and South Dakota (AAA/Stable). Vermont has the lowest 10-year revenue growth CAGR in this peer group and the slowest revenue growth prospects save for Rhode Island. Its carrying costs are firmly in the middle of the group, although its LTL burden is the highest at roughly 11% of personal income, slightly greater than Rhode Island's LTL burden of approximately 9.6% of personal income. Vermont's financial operations and budgetary performance have consistently been the strongest in this group with the exception of South Dakota.

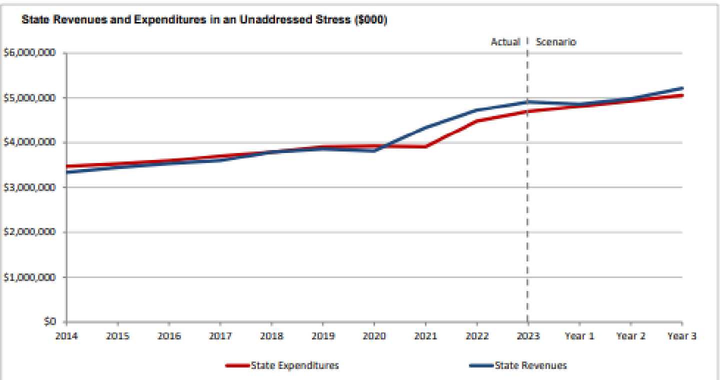
ESG Considerations

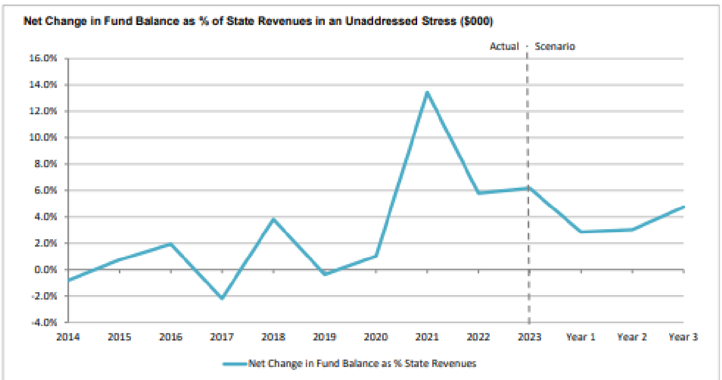
The highest level of ESG credit relevance is a score of '3', unless otherwise disclosed in this section. A score of '3' means ESG issues are credit-neutral or have only a minimal credit impact on the entity, due to either their nature or the way in which they are being managed by the entity. Fitch's ESG Relevance Scores are not inputs into the rating process; they are an observation on the relevance and materiality of ESG factors in the rating decision. For more information on Fitch's ESG Relevance Scores, visit https://www.fitchratings.com/topics/esg/products#esg-relevance-scores.

Vermont, State of (VT)

Scenario Analysis

Ver 42





Analyst Interpretation of Scenario Results

The Fitch Analytical Stress Test (FAST) scenario analysis tool relates historical tax revenue volatility to GDP to support the assessment of operating performance under Fitch's criteria. FAST is not a forecast, but represents Fitch's estimate of possible revenue behavior in a downturn based on historical revenue performance. Hence, actual revenue declines will vary from FAST results. FAST does provide a relative sense of the risk exposure of a particular state compared to other states.

Vermont has robust financial resilience that should allow it to absorb the budgetary effects of ongoing economic uncertainty. Fitch's standard FAST scenario of a 1% decline in U.S. GDP in year 1 results in a 1% decline in Vermont's revenue compared to an approximately 3% median decline for U.S. states. Vermont appears to be less vulnerable to cyclical revenue declines tied to economic downturns than most other states.

Scenario Parameters:			Year 1	Year 2	Year 3
GDP Assumption (% Change)			(1.0%)	0.5%	2.0%
Expenditure Assumption (% Change)			2.5%	2.5%	2.5%
Revenue Output (% Change)	*Minimum Y1 Stress:* -1%	*Case Used:* **Moderate**	(1.0%)	2.5%	4.6%

Revenues, Expenditures, and Net Change in Fund Balance	Actuals										Scenario Output		
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Year 1	Year 2	Year 3
Expenditures													
Total Expenditures	5,408,365	5,611,911	5,614,127	5,695,460	5,787,926	5,912,667	6,198,921	7,514,404	7,825,558	8,165,321	8,369,454	8,578,690	8,793,157
% Change in Total Expenditures	4.9%	3.8%	0.0%	1.4%	1.6%	2.2%	4.8%	21.2%	4.1%	4.3%	2.5%	2.5%	2.5%
State Expenditures	3,470,157	3,524,751	3,592,491	3,703,795	3,791,118	3,906,257	3,925,660	3,909,419	4,482,425	4,694,875	4,812,247	4,932,553	5,055,867
% Change in State Expenditures	5.4%	1.6%	1.9%	3.1%	2.4%	3.0%	0.5%	(0.4%)	14.7%	4.7%	2.5%	2.5%	2.5%
Revenues													
Total Revenues	5,276,849	5,532,771	5,554,187	5,589,659	5,790,446	5,868,514	6,091,766	7,942,720	8,065,472	8,379,963	8,417,629	8,627,197	8,946,567
% Change in Total Revenues	3.7%	4.8%	0.4%	0.6%	3.6%	1.3%	3.8%	30.4%	1.5%	3.9%	0.4%	2.5%	3.7%
Federal Revenues	1,938,208	2,087,160	2,021,636	1,991,665	1,996,808	2,006,409	2,273,261	3,604,985	3,343,133	3,470,446	3,557,207	3,646,137	3,737,290
% Change in Federal Revenues	3.9%	7.7%	(3.1%)	(1.5%)	0.3%	0.5%	13.3%	58.6%	(7.3%)	3.8%	2.5%	2.5%	2.5%
State Revenues	3,338,641	3,445,611	3,532,550	3,597,994	3,793,638	3,862,104	3,818,505	4,337,736	4,722,338	4,909,517	4,860,422	4,981,060	5,209,276
% Change in State Revenues	3.6%	3.2%	2.5%	1.9%	5.4%	1.8%	(1.1%)	13.6%	8.9%	4.0%	(1.0%)	2.5%	4.6%
Excess of Revenues Over Expenditures	(131,516)	(79,140)	(59,941)	(105,801)	2,519	(44,153)	(107,154)	428,316	239,913	214,642	48,175	48,506	153,409
Total Other Financing Sources	104,926	104,723	128,397	26,941	142,304	30,416	145,866	154,995	33,450	88,076	90,561	102,589	93,934
Net Change in Fund Balance	(26,590)	25,583	68,456	(78,859)	144,823	(13,737)	38,712	583,311	273,363	302,718	138,735	151,096	247,343
% Total Expenditures	(0.5%)	0.5%	1.2%	(1.4%)	2.5%	(0.2%)	0.6%	7.8%	3.5%	3.7%	1.7%	1.8%	2.8%
% State Expenditures	(0.8%)	0.7%	1.9%	(2.1%)	3.8%	(0.4%)	1.0%	14.9%	6.1%	6.4%	2.9%	3.1%	4.9%
% Total Revenues	(0.5%)	0.5%	1.2%	(1.4%)	2.5%	(0.2%)	0.6%	7.3%	3.4%	3.6%	1.6%	1.8%	2.8%
% State Revenues	(0.8%)	0.7%	1.9%	(2.2%)	3.8%	(0.4%)	1.0%	13.4%	5.8%	6.2%	2.9%	3.0%	4.7%

Notes: Scenario analysis represents an unaddressed stress on issuer finances. Fitch's scenario analysis assumes the GDP and expenditure growth sequence shown in the 'Scenario Parameters' section. For further details, please see Fitch's US Tax-Supported Rating Criteria.

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APPENDIX D

2024 Moody's Investors Service Credit Report

CREDIT OPINION
31 May 2024

Send Your Feedback

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Vermont (State of)

Update to credit analysis

Summary

The State of Vermont's (Aa1 stable) strong credit quality remains supported by stable and healthy finances, and strong governance. Despite economic growth trends that lag most states, Vermont's revenue collections continue to increase and the state maintains solid fund balances and liquidity. The state's prudent fiscal management has contributed to rising reserves and the state has implemented legislation in recent years aimed at reducing long-term pension and other post employment benefits liabilities.

Vermont has the smallest US state economy, as measured by gross domestic product, and the second smallest population. Lower than average growth over the past couple decades is linked to the state's slowly growing population. The state realized small gains in its prime-working age population over recent years, likely a result of remote workers choosing to relocate to Vermont. If sustained, this has the potential to boost economic growth in the coming years. Vermont maintains other healthy economic indicators, such as near average personal income, high educational attainment and low unemployment.

Vermont's long-term liabilities ratio exceeds state medians, and the state's long-term liabilities consist mostly of unfunded pension and OPEB liabilities. As a US state, Vermont has broad flexibility to adjust its finances in response to operating challenges and recently enacted pension and OPEB legislation could bring those liabilities down in coming years.

Exhibit 1
Overview of Vermont's debt and bond ratings
As of fiscal year end 2023

Type of debt	Principal outstanding ($m)	Moody's rating
General obligation	$528	Aa1
Special tax - property transfer tax	$29	Aa2
Appropriation - mental health services	$15	A1
Leases	$101	N/A

Principal includes bond premium. Exhibit does not include forthcoming Series 2024 bonds and does not reflect maturities since 6/30/23.
Source: Vermont's audited financial statements and Moody's Ratings

Credit strengths

» Although Vermont's economy is the smallest of all US states, resident income is above average, educational attainment is high and unemployment is low

» Financial operations and budget reserves are sound and stable, and liquidity is very healthy

Credit challenges

» The state's economic growth lags that of the US and many state peers, and an aging population may be a drag on future growth

» Relative to state revenue, Vermont's leverage (combined debt and unfunded post-employment liabilities) is higher than most states

Rating outlook

The stable outlook reflects the expectation that Vermont's economic fundamentals, financial position and fiscal management will remain strong and support the current rating.

Factors that could lead to an upgrade

» Improved demographic and economic trends that more closely track those of the nation and other highly rated states

» Moderated leverage, especially unfunded pension and retiree healthcare liabilities, relative to state revenue

Factors that could lead to a downgrade

» Substantial growth in debt or unfunded post-employment liabilities

» A slowdown in economic expansion or revenue growth

» A departure from strong fiscal management practices

Key indicators

	2021	2022	2023	State Medians (2022)
Economy				
Nominal GDP ($billions)	37.6	40.8	43.1	288.7
Real GDP, annual growth	4.8%	2.2%	1.3%	1.7%
RPP-adjusted per capita income as % of US	96%	95.2%		96.6%
Nonfarm employment, annual growth	3%	3.2%	1.7%	4.3%
Financial performance				
Available balance as % of own-source revenue	24.5%	29.3%	31.8%	38.6%
Net unrestricted cash as % of own-source revenue	38.2%	57.2%	57.4%	73.4%
Leverage				
Total long-term liabilities as % of own-source revenue	251%	225.2%	174.7%	127.0%
Adjusted fixed costs as % of own-source revenue	10.4%	7.9%	9.0%	4.7%

Source: Audited financial statements, Moody's Ratings, US Bureau of Economic Analysis and US Bureau of Labor Statistic

Profile

The State of Vermont is located in the northeast US. Its population of just under 650,000 is the second lowest in the country. It has the smallest economy among US states, as measured by a gross domestic product of approximately $43 billion.

Detailed credit considerations

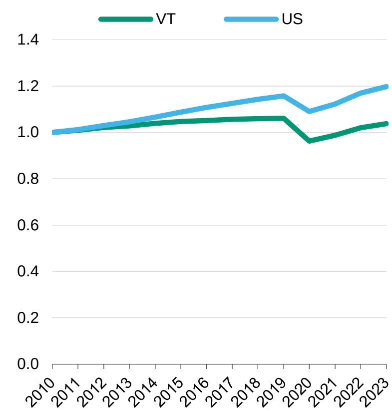
Economy

Vermont's economy has for many years grown at a slower pace than the US. This is linked to the state's aging and slowly growing population, which itself is a driver of our S-2 assessment of Vermont's social risks. The state has seen steady job growth through the first few months of 2024, nearly recovering to pre-pandemic levels of employment: as of April 2024, monthly employment is 99.5% of pre-pandemic levels.

Annual growth in Vermont's prime working age population slowed in 2022, following two years of relatively significant growth. It's likely that the increases occurring in 2020 and 2021 were due to the state being a favorable location for remote work, but with only a 0.1% increase in 2022, it's unclear that remote work will sustain a long-term growth trend moving forward.

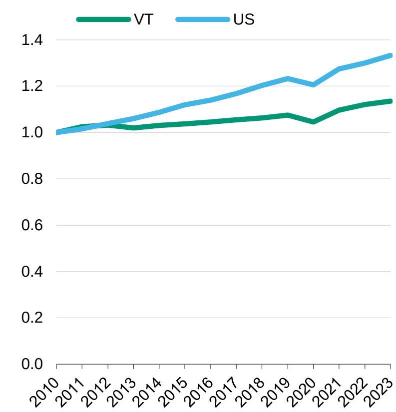
At the same time, the growing population over the past two years has driven a sharp increase in demand for housing, pushing housing prices upwards. Vermont's homeowner vacancy rate is tied for the lowest in the nation, and rental vacancy rates are the fourth lowest in the US. Last year, the state enacted Act 47 to encourage new housing construction by allowing for increased dwelling unit density in designated downtowns and other areas.

Exhibit 3
Annual nonfarm employment relative to 2010



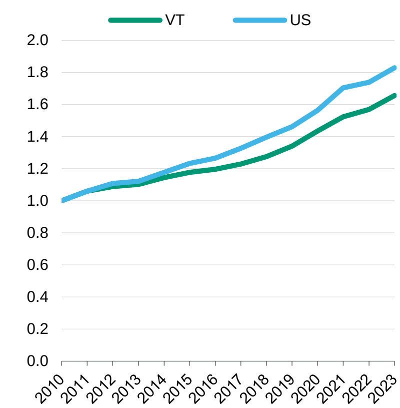
Source: US Bureau of Labor Statistics

Exhibit 4
Annual real GDP relative to 2010



Source: US Bureau of Economic Analysis

Exhibit 5
Annual total personal income relative to 2010



Source: US Bureau of Economic Analysis

Vermont's natural beauty and outdoor recreational opportunities make it a popular destination for tourists, and the state's tourism industry is a major economic driver. Outdoor recreation alone accounted for 4.6% of the state's GDP in 2022, the second highest share (behind only Hawaii) among US States. The state's tourism industry continues to grow, as indicated by receipts of state meals and room taxes. Fiscal year 2023 saw a 10% annual increase in meals and room tax revenue, and as of April fiscal year 2024 revenue is up 3.5% from the same period in the prior year.

Vermont's greatest physical climate risk remains intense rainfall and flooding. We expect the state and most of its local governments to have the resources and capacity to address flood events. This was demonstrated recently in July of 2023 by the state's ability, through its partnership with the federal government, to respond to significant flood damages without a material disruption to economic activity.

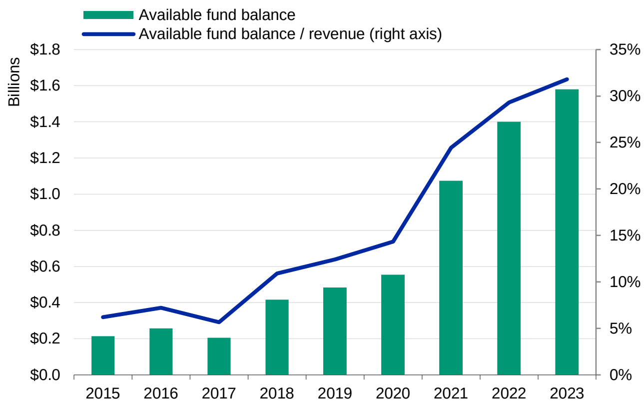
Finances

Vermont's financial performance remains strong. Available fund balance has continued to rise over the past several years and we expect it to remain stable (see Exhibit 6). A portion of the state's audited fund balance consists of its statutory budget reserves, which are held across its three main operating funds - general, transportation and education funds. The state's fiscal 2024 budget maintained all statutory reserves at required levels. Reserves are similarly maintained in the state's recently enacted fiscal 2025 budget.

Fiscal 2023 (closed on June 30, 2023) tax revenue in the state's three main funds was up about 5% over 2022. As of April, fiscal 2024 revenue is up 2.3% compared to the same period in fiscal 2023. Vermont relies most heavily on personal income and sales taxes (see Exhibit 7). The state also accounts for school district property taxes in its financial statements because the taxes are pooled in the state's education fund. However, the property taxes are restricted for education and levied, per statute, as an education tax. The state cannot use the property taxes to cover state spending other than education.

Exhibit 6

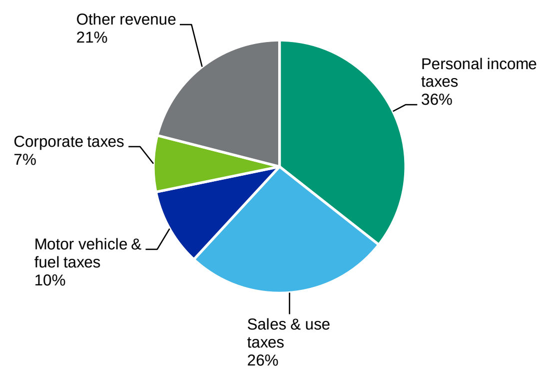
Vermont's trend in available fund balance
fiscal year ending in June 30



Source: Vermont's audited financial statements and Moody's Ratings

Exhibit 7

Composition of forecasted fiscal 2025 revenue



Source: State of Vermont Emergency Board Economists' Consensus Revenue Reports

Liquidity

Across government activities, Vermont's cash balances also remain healthy (see Exhibit 2 above). Monthly cash reports released by the state indicate further improvement in overall liquidity in fiscal 2024, as of April.

Leverage

Vermont's debt burden will remain moderate, but the state will continue to carry a heavier post-employment liability burden. Vermont's debt primarily consists of general obligation bonds (see Exhibit 8) and its debt ratios are very close to the state medians. Vermont's post-employment liability burden, measured by the combination of our adjusted net pension liability and adjusted net OPEB liability, is the principal component of its leverage (see Exhibit 9), and contributes to a total long-term liability burden that exceeds the state median. Vermont's pension and OPEB burdens incorporate all liabilities associated with statewide school districts because the state accounts for all primary and secondary education financial activities, unlike many other states. Despite this broad inclusion of liabilities, Vermont's total long-term liability burden remains much lower than those of the most highly leveraged states.

Exhibit 8
Composition of Vermont's debt
as of fiscal year end 2023

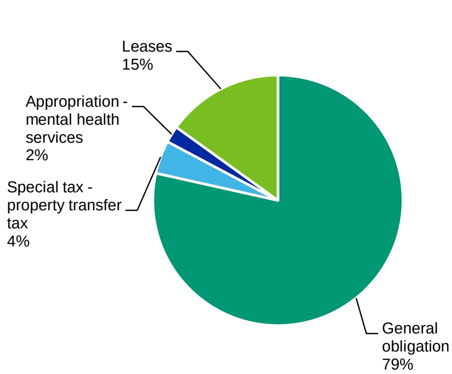
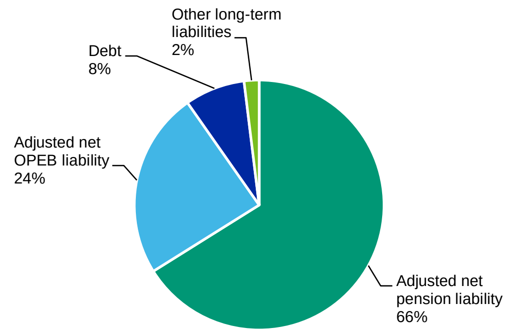


Exhibit does not include forthcoming Series 2024 bonds and does not reflect maturities since 6/30/23.
Source: Vermont's audited financial statements

Exhibit 9
Composition of Vermont's total long-term liabilities
as of fiscal year end 2023



Source: Vermont's audited financial statement and Moody's Ratings

Legal security

Exhibit 1 above details the different types of bonds outstanding that we consider to be direct debt of Vermont. Exhibit 10 below details the legal security associated with each type of bond.

Exhibit 10
Legal security of Vermont's debt

Type of debt	Legal security
General obligation	Full faith and credit obligation of the state backed by the state's authority to levy taxes without limitation as to rate or amount.
Special tax - property transfer tax	Statutory transfer of the first $2.5 million of property transfer tax receipts from the state to the Vermont Housing Finance Agency (HFA). Act 85 of 2017 specifically allocates the first $2.5 million of collections to the HFA to pay debt service on the authorized bonds. The bonds have been issued by the HFA.
Appropriation - mental health services	Payments appropriated by the state to providers of developmental disability services; the bonds have been issued by the Vermont Economic Development Authority and Vermont Educational and Health Buildings Finance Agency.
Vermont State Aid Intercept Program	The legal security for the state aid intercept program is a state law, Act 77, that requires the treasurer to intercept funds payable to an issuer that has defaulted on a loan payment to the Vermont Municipal Bond Bank.

Source: State of Vermont

Debt structure

All of Vermont's debt is fixed rate.

Debt-related derivatives

Vermont is not party to any debt-related derivatives.

Pensions and OPEB

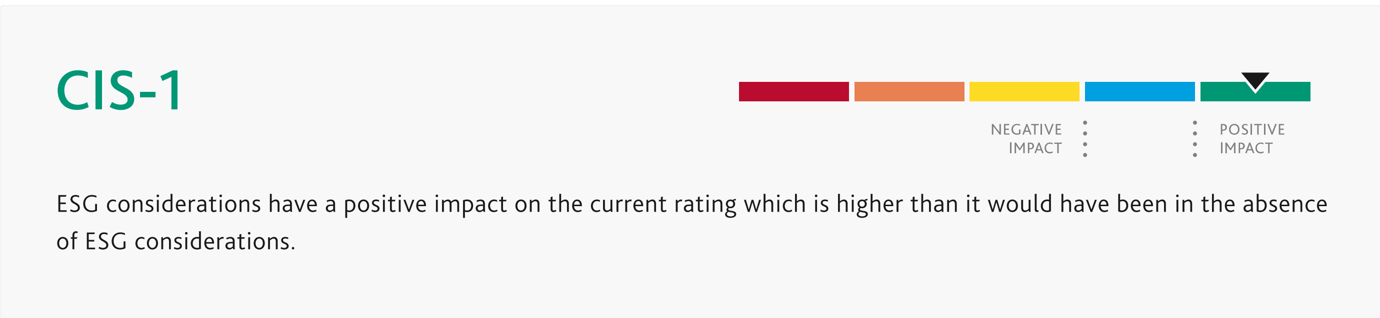
Across both of its retirement plans (the Vermont State Retirement System and State Teachers' Retirement System), Vermont's pension contribution was $303 million in fiscal 2023. This contribution exceeded the $263 million we calculate as the state's aggregate pension "tread water" indicator, the contribution necessary to forestall growth in reported net pension liabilities assuming realization of actuarial assumptions. In recent years, Vermont's pension contributions have approximated or exceeded this level. The "tread water" indicator is the pension-related component of the fixed cost burden reported in Exhibit 2 above.

In May 2022, the Vermont legislature enacted numerous changes to pension and OPEB benefits and funding. The act included making large, lump sum contributions to its retirement plans in fiscal 2022; it also requires active employees to gradually increase their own contributions, which began in fiscal 2023. Fiscal 2024 will see the beginning of annual funding of an additional payment to the actuarially determined employer contribution for both of the state's retirement systems. Further, the legislation implements a host of benefit formula changes and extends the amount of time that many retirees must wait to begin receiving pension cost-of-living adjustments. All of these measures will have a positive impact on the state's long-term pension liabilities. The 2022 legislation also committed the state to greater prefunding of other post-employment benefits, which over time will also lower the state's net OPEB liabilities. For more details on this legislation, please see this report.

ESG considerations

Vermont (State of)'s ESG credit impact score is CIS-1

Exhibit 11
ESG credit impact score



Source: Moody's Ratings

Vermont's ESG Credit Impact Score is positive (**CIS-1**), reflecting neutral to low exposures to environmental and social risks and a positive governance profile.

Exhibit 12
ESG issuer profile scores

Source: Moody's Ratings

Environmental

Among US states, Vermont's environmental risks are low. With no coastal exposure, Vermont local governments are primarily exposed to extreme rainfall risk. Increased rainfall could result in more frequent local or regional flooding, but we expect the state and most of its local governments have the resources and capacity to address flood events.

Social

Vermont has one of the slowest growing populations in the US and, before a shift in trend in 2020 and 2021, the most rapid decline in prime working age population (residents aged 25-54). Despite recent growth in working age population, since 2000, the state's working age population fell nearly 14% and is down about 7% since 2010. Support for health services by the federal government, mainly through Medicaid grants, represents a vulnerability for states and Vermont is no exception. According to data of the federal government, approximately 27% of Vermont residents are currently enrolled in Medicaid and the Children's Health Insurance Program

(CHIP), a ratio higher than the 24% of the national population enrolled. This indicates that Vermont is a bit more vulnerable to a change in federal policy or funding than other states.

Governance

Vermont's governance is strong. The state updates its consensus revenue forecast twice per year, in January and July. The January update covers the remainder of the current fiscal year as well as the two upcoming fiscal years. The July update then revises the forecast for the newly begun fiscal year and the immediately following fiscal year. The two forecast updates are required by statute. During economic downturns, such as the 2007-09 recession, the state has updated its revenue forecast more frequently to aid responses to weakened revenue performance.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click here to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Rating methodology and scorecard factors

The US States and Territories Rating Methodology includes a scorecard, which summarizes the rating factors generally most important to state and territory credit profiles. Because the scorecard is a summary, and may not include every consideration in the credit analysis for a specific issuer, a scorecard-indicated outcome may or may not map closely to the actual rat ing assigned.

Vermont (State of)

	Measure	Weight	Score
Economy			
Resident Income (PCI Adjusted for RPP / US PCI)	95.9%	15%	Aa
Economic Growth (5-year CAGR real GDP - 5-year CAGR US real GDP)	-0.7%	15%	Aa
Financial performance			
Financial performance	Aaa	20%	Aaa
Governance/Institutional Framework			
Governance/Institutional Framework	Aaa	20%	Aaa
Leverage			
Long-term liabilities ratio (adjusted long-term liabilities / own-source revenue)	174.7%	20%	Aa
Fixed-costs ratio (adjusted fixed costs / own-source revenue)	9.0%	10%	Aaa
Notching factors			
Very limited and concentrated economy			
Scorecard-Indicated Outcome			Aa1
Assigned rating			Aa1

Source: Audited financial statements, Moody's Ratings and US Bureau of Economic Analysis

REPORT NUMBER 1409633

CLIENT SERVICES

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

APPENDIX E

2024 S&P Global Credit Report

S&P Global Ratings

RatingsDirect®

Vermont; General Obligation; School State Program

Primary Credit Analyst:
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Credit Profile		
US$86.04 mil GO rfdg bnds (Competitive) ser 2024B due 08/15/2034		
Long Term Rating	AA+/Stable	New
US$70.61 mil GO bnds (Competitive) ser 2024A due 02/15/2044		
Long Term Rating	AA+/Stable	New
Vermont GO		
Long Term Rating	AA+/Stable	Affirmed
Vermont Bond Bank, Vermont		
Vermont		
Vermont Mun Bnd Bank (Vermont) SCHSTPR		
Long Term Rating	AA/Stable	Affirmed

Credit Highlights

- S&P Global Ratings assigned its 'AA+' long-term rating to the State of Vermont's $70.6 million series 2024A general obligation (GO) bonds and $86.0 million series 2024B GO refunding bonds.
- At the same time, S&P Global Ratings affirmed its 'AA+' rating on the state's GO debt outstanding and its 'AA' rating on the Vermont Municipal Bond Bank's Vermont State College System bonds, which are supported by a state aid intercept mechanism.
- The outlook is stable.

Security

The 2024A and B bonds are secured by Vermont's full faith and credit GO pledge. Officials will use 2024A proceeds to fund or reimburse capital bill projects, while 2024B proceeds will go toward refunding a portion of the state's series 2012, 2013, and 2014 GO bonds outstanding for estimated interest savings.

Credit overview

At the beginning of fiscal 2025, Vermont finds itself in a strong financial position as it continues to emerge from the pandemic, with coffers that have been bolstered by various rounds of federal fiscal stimulus and a budget that over the past four years has seen some of the largest surpluses in the state's history. At the same time, the state saw an uptick in domestic in-migration of high-income earners in 2020 and 2021, as the wider acceptance of remote work alongside Vermont's largely rural location, with access to ample outdoor recreation, continues to draw out-of-staters.

Whether the state can capitalize on this recent momentum to promote stronger long-term demographic and economic growth remains to be seen, in our view. Both of these factors have historically underperformed relative to the U.S. But Vermont is devoting significant policy attention and investment to targeting these legacy issues--for example, through housing policy reform and the use of federal stimulus dollars to target areas such as housing, broadband, and workforce development. As we have stated in the past, Vermont's economic performance relative to that of higher-rated peers is a key upside rating constraint, and we expect it will remain so until the state can establish a clear trend of stronger growth.

The impact of the July 2023 floods on the state's economy, infrastructure, and private property caused over $1 billion in statewide damages, with about half to state-owned infrastructure. As with similar natural disasters including the flooding wrought in Vermont by Tropical Storm Irene in 2011, we expected that the availability of Federal Emergency Management Agency (FEMA) disaster relief funds and private insurance would aid in recovery, and it did, with approximately $611 million in FEMA-eligible damages and an expected federal share of $550 million representing 90% of eligible costs, and another $48 million in insurance payments received by the state. While the state capital and state offices were flooded, Vermont officials indicate that the damage on other public infrastructure was more limited than in 2011 largely because of measures taken after Tropical Storm Irene to fortify infrastructure and enhance flood resiliency.

The fiscal 2025 budget anticipates weaker revenue performance than in 2024, as the broader macroeconomic slowdown is forecast to push unemployment up and weigh on personal income and corporate earnings through the next fiscal year. The state has generally forecast revenues conservatively and structures its base budget around conservative revenue estimates, which provides some inherent cushion should revenues decline more than currently expected. Vermont also regularly updates its revenue forecast during the year and typically makes midyear adjustments to accommodate changes in the forecast. We therefore expect that operations will remain balanced through the next year even as economic growth slows, which S&P Global Economics is also forecasting in its latest outlook (see "Economic Outlook U.S. Q2 2024: Heading For An Encore," published March 26, 2024, on RatingsDirect). We expect that key priorities in the next fiscal year will largely revolve around the state's ongoing recovery from the July floods along with the expansive investment of federal dollars from various federal stimulus bills received in the past few years.

Vermont's tax-supported debt liabilities are modest relative to those of state peers and are projected to decline over the next decade, particularly as the state created and seeded a designated pay-as-you-go capital fund in 2023 to reduce reliance on bonded debt. Its pension and other postemployment benefits (OPEB) liabilities remain elevated compared with those of peers, even after the passage of pension reform two years ago. We believe that the changes introduced in the pension reform legislation--which included reduced benefits, higher contributions, and prefunding OPEB--place the state's retirement liabilities on a more stable long-term footing, but that it will take some time before the liabilities are paid down to levels that better align with those of most other states.

The 'AA+' rating reflects our view of Vermont's:

- Economy, which is experiencing a slower jobs recovery than the rest of the nation, although with historically low unemployment and some signs coming out of the pandemic that the state could be in the early stages of a path toward stronger demographic and economic performance than in years past, albeit with significant uncertainty around the sustainability of pandemic-era trends;
- Strong budgetary performance, with the past three fiscal years ending with some of the largest budget surpluses in the state's history, most recently driven by higher-than-forecast corporate income tax receipts and investment

income in fiscal 2023;

- Historically high cash balances that have ballooned to more than $2 billion compared with a typical pre-pandemic average of $200 million-$500 million, with reserve balances that continue to be fully funded at the statutory maximums;
- Robust financial management and governance framework because the state has substantial autonomy to raise revenues without limits, regularly monitors and adjusts its budget during the year, and uses a consensus revenue forecast that is updated twice annually to track revenue performance;
- Well-defined debt affordability and capital-planning processes that we believe have limited leverage and contribute to a modest tax-supported debt burden with rapid principal amortization; and
- Significant pension and OPEB liabilities that remain sizable relative to those of state peers, although retirement reforms passed in 2022 will moderate these liabilities over time.

Based on the analytic factors we evaluate for states, on a four-point scale in which '1.0' is the strongest, we have assigned a composite score of '1.8' for Vermont, which is associated with a 'AA+' indicative credit level.

Environmental, social, and governance

Vermont is susceptible to flooding, so events comparable to the July 2023 floods could become more frequent as warmer temperatures contribute to more regular extreme precipitation events. Following Tropical Storm Irene in 2011, the state implemented a range of measures designed to fortify infrastructure and enhance flood resiliency; consequently, based on the state's preliminary assessment, the amount of infrastructure damage last July was considerably less than in 2011. Physical climate risks remain neutral within our analysis because Vermont has not seen significant long-term economic or revenue disruption related to flooding, and we expect that it will continue to take active measures to reduce future risk as it recovers from the recent flood and updates its hazard mitigation plan later this year.

Our view of the state's risk management for pension governance has improved following the passage of pension reform legislation in 2022, which we believe places Vermont's pension and OPEB on a more sustainable long-term cost trajectory. Social capital risks are elevated relative to those of state peers because despite the significant policy attention and funding the state is directing toward addressing its long-term demographic challenges, we have yet to see an unequivocal, sustained trend in favor of stronger population growth and stronger economic output than was typical in the decade preceding the pandemic.

Outlook

The stable outlook reflects our expectation that Vermont will continue to realize structurally balanced operations with fully funded reserves and robust cash balances in the coming few years, despite the likelihood of a near-term economic slowdown. Recent pension reform, the state's historically high cash levels and large structural budget surplus, and the availability of substantial federal funds that Vermont plans to deploy strategically to target legacy economic and demographic vulnerabilities, together have created positive momentum that we believe will limit downside credit pressure through the two-year rating outlook horizon.

Downside scenario

Downside rating pressure would most likely emerge outside the two-year outlook period if, despite the state's efforts, Vermont's economy and demographics significantly underperform relative to those of similarly rated peers, particularly if slow revenue growth or elevated fixed costs were to strain the state's ability to sustain structural balance in outyear budgets.

Upside scenario

We could raise the rating with clear evidence that the state's economic and demographic trajectory is on a path of accelerating long-term growth that aligns with what we typically see among 'AAA' rated peers, and if the state also makes inroads in paying down its still-sizable retirement liabilities.

Credit Opinion

Economy

Vermont is trailing the national level in jobs recovery, with year-over-year job growth of 0.2% by the second quarter of 2025, ranking 32nd in the U.S., according to S&P Global Market Intelligence. As with other New England states, Vermont's comparatively weak labor force growth will weigh on long-term economic growth, underscoring the state's need to attract and retain qualified workers to achieve stronger economic performance.

The good news is that unemployment is also quite low. The March 2024 release from the Bureau of Labor Statistics has Vermont tied for the lowest unemployment rate in the country at only 2.0%. S&P Global Market Intelligence forecasts Vermont underperforming the U.S. over the next year, with state gross state product (GSP) estimated to grow by 0.7% compared to 1.6% for the nation, and with the baseline forecast showing the state unemployment rate rising to 2.6% by the middle of next year. The state's employment diversity by sector is generally in line with that of the U.S. with no material concentration and/or unusual cyclicality. Per capita personal income improved relative to the U.S. level in 2023 to 97%, up from 95% in 2021.

We continue to expect that long-term lackluster demographic trends will remain a key constraint on economic growth, although, as noted, Vermont is positioning itself to capitalize on the now-widespread acceptance of remote work to attract new residents and leverage private sector investment for in-state job creation. The state's 10-year annual population growth rate through 2023 was less than half the U.S. rate (0.23% compared to 0.56%) and its median age of 43.2 is considerably higher than the U.S. median of 39.0. Net in-migration in 2020 and 2021 accelerated, in particular among prime working-aged individuals (25-54) with adjusted gross incomes of greater than $100,000. However, this was followed by growth of just 92 residents in 2022 (0.01%) and 400 in 2023 (0.06%), and S&P Global Market Intelligence currently forecasts a return to flat growth trends through 2027.

Vermont will use a significant share of its remaining American Rescue Plan Act allocation for investments in areas such as housing, broadband, and workforce development, and will similarly leverage funds from the Infrastructure Investment and Jobs Act to upgrade its broadband and transportation infrastructure. State officials indicate that Vermont's housing shortage has been a major impediment to attracting new residents and note that the state has seen a historic run-up in home prices over the past few years. Last year the legislature passed housing regulatory reform via Act 47 that, among other things, eliminates single-family zoning, allows for greater density in designated areas, and allows for the construction of accessory dwelling units. In general, we expect that the policy attention and the significant investment designed to address long-standing vulnerabilities (such as the lack of housing) have the potential to meaningfully alter the state's demographic trajectory, especially given the prevalence of remote work. But we also expect that it might take some time for these investments to result in a clear, sustainable record of stronger growth, and we also note that in the near term slower economic growth with rising unemployment could stymie progress.

The state's economy is driven by tourism, higher education, electronics, consumer goods manufacturing, and agriculture (including dairy farming). Economic growth has historically been slower than that of the U.S. but has basically aligned with the U.S. since 2020. Real GSP has grown by less than half the national growth rate over the past 10 years and, before 2020, fell below the U.S. GDP growth rate in every year going back to 2011. Growth in 2020 and 2021 was comparable to that of the U.S., and Vermont's 2022 real GSP exceeded national growth at 2.8%, compared with 2.1% GDP for the U.S. but slowed to 1.3% in 2023 compared to 2.5% for the U.S. Additionally, the state's GSP per capita still lags the national level considerably at 82% of the U.S. GDP.

Vermont has a highly educated workforce, with 52% of the population holding an associate's, bachelor's, or advanced degree, compared with 44% nationally. The largest employers include the University of Vermont Medical Center, the University of Vermont, Global Foundries (which produces semiconductors), and several regional medical centers. The state saw the largest percentage increase of any state in venture capital investment during the pandemic, although it lags in other areas such as research and development spending. Vermont is also a high tax state, which the Tax Foundation ranks as the 10th worst in terms of its business tax climate.

On a four-point scale, with '1.0' being the strongest, we have assigned a '2.4' to Vermont's economy.

Budgetary Performance

The January 2024 consensus revenue forecast update shows fiscal 2024 revenue for the general, education, and transportation funds closing at 1.1% ($33.8 million), higher than the July forecast of $3.14 billion, with general fund revenues 1.4% above target and the education fund up 1.3%. The general fund's fiscal 2024 year-to-date results have experienced some softening in corporate income tax receipts, which fell by 9.0% ($14 million), but this was more than offset by personal income taxes coming in at 2.2% ($15 million) above target and other revenues (primarily interest income) 17.3% higher ($20 million), for a total increase of 2.3% above target. Vermont received record-setting corporate income taxes in 2023 in part due to a shift to market-based taxation that expanded the base of taxable activity following legislation passed in 2019, alongside the high inflation environment of the past fiscal year, which conferred stronger pricing power to businesses. The state's interest income has far outpaced historical averages because Vermont's cash balances have swelled since 2021 due to high interest rates and the influx of federal funds that the state has deposited to interest-bearing accounts. All told, fiscal 2024 ended with a large unallocated general fund surplus of $44.2 million (2.2% of base appropriations), with surplus results likewise reported in the transportation and education funds and budget stabilization reserve accounts funded at statutory maximum levels.

Looking to fiscal 2025, general revenues are forecast to decline by 2.2% to $2.25 billion and base appropriations--including for the Act 76 child care bill passed in the 2023 legislative session--will increase by 3.3% to $2.19 billion. The state's economic forecast anticipates a slow growth trend (1.1%-1.2%) through 2025, although not a recession. Vermont also plans to use $74 million of its 2024 carry-forward balance on one-time appropriations in 2025, as it has done in the past few fiscal years, and expects to fully fund its reserve accounts. In general, we expect the state will continue to realize structurally balanced operations, as the economic assumptions underlying its revenue forecast more or less align with those in S&P Global Market Intelligence's macroeconomic forecast, and we note the state's record of making regular midyear budget updates via budget adjustment acts to sustain structural budgetary balance, which we expect will continue.

The operating budget (which we define as the combined general and education funds) has a diverse revenue mix, with the largest sources including personal income taxes (32% of combined revenues), a statewide education tax (a property tax, 30%), and sales and use taxes (14%). Additionally, the state legislature and governor are considering various proposals to potentially reform education funding by reducing the education tax for taxpayer relief, defer education payments to schools, or raising new sources of revenue for education expenses. Our forward-looking analysis will focus on the state's ability to continue funding its education budget, and any proposal that would result in expenditures outpacing revenues could worsen our view of the state's budgetary performance. The state has fully funded its budget stabilization reserve accounts in the general, education, and transportation funds since the Great Recession, which provides some flexibility to offset fund deficits should they emerge. Vermont pools its cash across major funds and has seen its cash levels increase considerably since 2021, to an average monthly balance of about $2.3 billion in 2023 and $2.1 billion year to date in 2024 compared with a typical balance of several hundred million in the years leading up to the pandemic. Given that much of the increase has come from federal stimulus dollars that will be spent over the next several years, we expect that cash balances will normalize eventually but will likely remain exceptionally strong in the interim.

On a four-point scale, with '1.0' being the strongest, we have assigned a '1.4' to Vermont's budgetary performance.

Debt And Retirement Liabilities

Debt

Vermont's debt liabilities are low to moderate relative to those of state peers and are projected to decline over the next decade. The state's pension and OPEB liabilities, however, remain elevated even following the passage of pension reform legislation in 2022, and we expect will remain significantly higher than those of similarly rated peers for some time.

We calculate direct debt at $1,190 per capita, 1.8% of personal income, and 1.7% of GSP, when including the new-money portion of the 2024 issuance. Debt service carrying charges were 2.1% of general government spending in fiscal 2023 and we expect will be around 2.0% on a forward-looking basis as debt amortizes. The state's debt portfolio consists entirely of fixed-rate GO debt--it has no variable-rate debt, interest rate swaps, or direct placement debt.

In fiscal 2023, a joint initiative of the treasurer and governor led to the creation of a new fund designated for pay-as-you-go capital financing (the cash fund), with the express goal of reducing future reliance on bonded debt. The cash fund was initially seeded with $25 million and received additional transfers totaling $45.8 million at the close of fiscal 2023, and the fiscal 2024 budget transfer of $17.7 million. The cash fund will be supported through an ongoing funding mechanism based on general fund transfers calculated as 4% of prior-year appropriations, less debt service. With this new source of capital financing in place, we expect that the state's tax-supported debt burden will likely lessen over time.

Pensions and OPEB

The 2022 pension reform legislation included several measures to shore up the state's retirement accounts and place pension and OPEB costs on a more sustainable trajectory. These measures included raising state contributions above actuarially determined levels and creating a long-term funding mechanism for higher contributions, raising employee contributions, and lowering cost-of-living adjustments, as well as changing employee eligibility, prefunding OPEB, and providing a one-time state contribution of $200 million to the pension funds. With the changes, we believe that retirement liabilities are less of a source of credit pressure than they were before pension reform but are still sizable relative to those of state peers.

The state provides pension benefits through two defined-benefit pension plans: the Vermont State Employees' Retirement System (VSERS) and the Vermont State Teachers' Retirement System (VSTRS). As of June 30, 2023, VSTRS was 57% funded, with a net pension liability of $1.9 billion, and VSERS was 68% funded, with a $1.1 billion liability. The three-year average pension funded ratio is 63%, with net pension liabilities totaling $4,659 per capita and 7.0% of personal income, placing Vermont in the bottom fifth of all states in terms of the size of its pension liabilities.

The $200 million one-time contribution in fiscal 2022 allowed total plan contributions to exceed our minimum funding progress calculation, but we expect contributions will continue to fall short of minimum funding progress in a typical year for some time. In particular, the level percentage of payroll amortization method used for both plans results in lower up-front employer contributions that rise progressively along with assumed payroll growth, and the plans' 7% investment rate of return assumption results in lower employer contributions in favor of investment returns than would an assumption that more closely aligns with our 6% guideline. State contributions have exceeded the actuarially determined contribution (ADC) for the past decade, and the ongoing payment of the ADC plus additional contributions pursuant to the reforms will result in gradual funding improvement over time. However, as noted, the plans rely on a funding structure that, while improved, still results in meaningful cost deferrals that increase outyear risk.

The 2022 pension reform legislation created prefunding schedules for both VSERS and VSTRS, which contributed to a significant decline in the calculated liability for the most recent plan valuations because the state is now permitted to discount liabilities by the 7% expected long-term rate of return for both plans. As of June 30, 2023, the net OPEB liability for VSERS was $891.7 million (previously $1.5 billion in 2021) and for VSTRS it was $779.5 million (previously $1.3 billion in 2021), and the plans were 13.4% and 8.5% funded, respectively. As with the favorable changes to Vermont's pension liabilities, we believe the improvements represent meaningful gains, but note that the per capita OPEB liability of $2,350 is still large and well above what is typical among other states. (For more information, see "Market Swings Could Signal Contribution Volatility For U.S. State Pensions And OPEBs," published Aug. 3, 2022.)

On a scale of '1.0' (strongest) to '4.0' (weakest), we have assigned a '2.6' to Vermont's debt and liability profile.

Government Framework

Although Vermont is the only state without a constitutional or statutory balanced budget requirement, this has not had a significant effect historically, as in practice the state has demonstrated a commitment to structurally balanced budgets regardless. Vermont has significant revenue autonomy and can generally levy taxes and alter taxing structures (including modifying tax rates and bases) without constitutional constraint or having to meet an extraordinary legislative threshold. The state has significant legal authority to alter disbursements and assistance to local governments but could face practical limits in exercising this ability due to a comparatively high level of essential service provision and support for local governments. Vermont is not a voter-initiative state. While there are no express statutory provisions giving priority to bondholders over other claimants to state resources, Vermont has no limits on its ability to impose taxes to pay debt service on GO debt and can pay debt service without a budget.

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

Financial Management

Vermont uses a consensus revenue forecast that is based on recommendations from the state's two economists (representing the legislature and the administration) and is required to be approved each January and July by the state's Emergency Board (the E-Board), which includes the governor and chairpersons from each of the legislature's finance-related committees. The state monitors and reports revenues and spending monthly, while the E-Board meets at least twice a year to adopt the updated consensus forecast and make budgetary adjustments. The E-Board can hold interim meetings to evaluate the budget and has done so in the past during periods of heightened economic uncertainty, such as during the Great Recession and the pandemic.

The Capital Debt Affordability Advisory Committee oversees the state's long-term capital planning and debt levels. It publishes an annual report each September with recommendations on future bonding limits to enable the administration to complete its annual capital budgeting proposal as part of its long-term capital planning process. Although the committee's recommendation is nonbinding, the state has never authorized GO debt in excess of its recommendations. The state treasurer's office oversees Vermont's state investment portfolio in accordance with statutory limits on allowable investments, and it publishes monthly reports detailing investment holdings and unrestricted cash balances.

The three major operating funds--the general, transportation, and education funds--have budget stabilization reserve accounts that have been funded at the statutory maximums each year since the Great Recession. The general and transportation stabilization reserve maximums are calculated as 5% of prior-year appropriations, and the education fund reserve is calculated as 5% of nonproperty tax revenues. In 2013, the state created a second general fund reserve called the general fund balance reserve, and it has various other reserve accounts that are restricted for specific purposes.

Vermont has a strong and largely formalized budget management framework with a history of effective budget tracking and adjustment to maintain structural balance. In addition to the monitoring and reporting mechanisms already mentioned, the state can and does adjust its budget in response to variances through a variety of mechanisms that include administrative action at the departmental level, through the E-Board, or through the legislature via a budget adjustment act.

On a four-point scale, with '1.0' being the strongest score, we have assigned a '1.0' to Vermont's financial management.

Related Research

Through The ESG Lens 3.0: The Intersection Of ESG Credit Factors And U.S. Public Finance Credit Factors, March 2, 2022

Ratings Detail (As Of May 30, 2024)		
Vermont GO		
Long Term Rating	AA+/Stable	Affirmed
Vermont GO		
Long Term Rating	AA+/Stable	Affirmed
Vermont GO		
Long Term Rating	AA+/Stable	Affirmed

APPENDIX F

Proposed Updates to CDAAC Statute

Subchapter 008 : Management of State Debt

(Cite as: 32 V.S.A. § 1001)

- **§ 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) Committee duties.

(1) 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 General Assembly 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 that prudently may be authorized for the next fiscal year, together with a report explaining the basis for the estimate. The Committee's estimate shall not take into consideration the balance remaining at the end of each fiscal year in the subaccounts of the Cash Fund for Capital and Essential Investments, established pursuant to section 1001b of this title. The provisions of 2 V.S.A. § 20(d) (expiration of required reports) shall not apply to the report to be made under this subsection. 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 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 that 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;~~.~~

(C) existing and projected pension and other postemployment benefit (OPEB) liability metrics; and

(D) other metrics adopted by recognized bond rating agencies.

(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 General Assembly is permitted to replenish reserve funds; and

(C) to the maximum extent obtainable, all long-term debt of municipal governments in Vermont that 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) Measures reflecting the remaining useful life of state infrastructure and the potential for future capital maintenance and replacement costs.

(~~9~~10) 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~~11) The effect of authorizations of new State debt on each of the considerations of this section.

(d) Committee composition.

(1) 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.

(E) The Legislative Economist or other designee of the Joint Fiscal Office, who shall be a nonvoting ex officio member.

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

(e) Other attendants of committee meetings. Staff of the Legislative Counsel 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.