BOND RATINGS: DEMOGRAPHICS, REVENUE BASE, AND POST-EMPLOYMENT LIABILITIES

SENATE INSTITUTIONS COMMITTEE – FEBRUARY 18, 2020

Bond Ratings and Review of Credits/Strengths and Challenges

Vermont Bond Rating History

As of June 30	Long-Term Credit Ratings Moody's	Fitch	S&P
1994	Aa	AA	AA-
1995	Aa	AA	AA-
1996	Aa	AA	AA-
1997	Aa2	AA	AA-
1998	Aa2	AA	AA-
1999	Aa2	AA	AA
2000	Aa1	AA	AA
2001	Aa1	AA+	AA+
2002	Aa1	AA+	AA+
2003	Aa1	AA+	AA+
2004	Aa1	AA+	AA+
2005	Aa1	AA+	AA+
2006	Aa1	AA+	AA+
2007	Aa1	AA+	AA+
2008	Aaa	AA+	AA+
2009	Aaa	AA+	AA+
2010	Aaa	AAA	AA+
2011	Aaa	AAA	AA+
2012	Aaa	AAA	AA+
2013	Aaa	AAA	AA+
2014	Aaa	AAA	AA+
2015	Aaa	AAA	AA+
2016	Aaa	AAA	AA+
2017	Aaa	AAA	AA+
2018	Aaa	AAA	AA+
2019	Aa1	AA+	AA+

Bond Ratings of New England States

	Moody's		S & P		Fitch	
State	Rating	Outlook	Rating	Outlook	Rating	Outlook
Connecticut	A1	Stable	A	Stable	A+	Stable
Maine	Aa2	Stable	AA	Stable	AA	Stable
Massachusetts	Aa1	Stable	AA	Stable	AA+	Stable
New Hampshire	Aa1	Stable	AA	Stable	AA+	Stable
Rhode Island	Aa2	Stable	AA	Stable	AA	Stable
Vermont	Aa1	Stable	AA+	Stable	AA+	Stable

Moody's Investors Service Overview of Credit Rating 2019

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.
- Liquidity is healthy and stable

Credit Challenges

- The state's economic performance lags that of the US and many state peers, and an aging population may be a drag on future growth
- Relative to state GDP, Vermont's leverage (combined debt and unfunded pensions) 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 pensions and retiree health care liabilities, relative to state GDP

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

Moody's Investors Service Calculated Rating as of April 2018

MOODY'S
INVESTORS SERVICE

Rating methodology and scorecard factors

States rating methodology scorecard

Vermont (State of)

Rating Factors	Measure	Score
Factor 1: Economy (25%)		
a) Per Capita Income Relative to US Average [1]	101.3%	Aaa
b) Nominal Gross Domestic Product ($ billions) [1]	$31.1	A
Factor 2: Finances (30%)		
a) Structural Balance	Aa	Aa
b) Fixed Costs / State Own-Source Revenue [2]	7.6%	Aa
c) Liquidity and Fund Balance	Aaa	Aaa
Factor 3: Governance (20%)		
a) Governance / Constitutional Framework	Aaa	Aaa
Factor 4: Debt and Pensions (25%)		
a) (Moody's ANPL + Net Tax-Supported Debt) / State GDP [2] [3]	15.1%	Aa
Factors 5 - 10: Notching Factors [4]		
Adjustments for: Financial Stability	1	
Rating:		
a) Scorecard-Indicated Outcome		Aaa
b) Actual Rating Assigned		Aaa

[1] Economy measures are based on data from the most recent year available.
[2] Fixed costs and debt and pensions measures are based on data from the most recent debt and pensions medians report published by Moody's.
[3] ANPL stands for adjusted net pension liability.
[4] Notching factors 5-10 are specifically defined in the US States and Territories Rating Methodology.
Sources: US Bureau of Economic Analysis, State CAFRs, Moody's Investors Service

Moody's Investors Service Published Rating as of 2019

US state and territories rating methodology scorecard

Vermont (State of)

Rating Factors	Measure	Score
Factor 1: Economy (25%)		
a) Per Capita Income Relative to US Average [1]	99.8%	Aa
b) Nominal Gross Domestic Product ($ billions) [1]	$33.7	A
Factor 2: Finances (30%)		
a) Structural Balance	Aa	Aa
b) Fixed Costs / State Own-Source Revenue [2]	8.2%	Aa
c) Liquidity and Fund Balance	Aa	Aa
Factor 3: Governance (20%)		
a) Governance / Constitutional Framework	Aaa	Aaa
Factor 4: Debt and Pensions (25%)		
a) (Moody's ANPL + Net Tax-Supported Debt) / State GDP [2] [3]	16.6%	Aa
Factors 5 - 10: Notching Factors [4]		
Adjustments Up: Financial Stability	0.5	
Adjustments Down: None	0	
Rating:		
a) Scorecard-Indicated Outcome		Aa1
b) Actual Rating Assigned		Aa1

[1] Economy measures are based on data from the most recent year available.
[2] Fixed costs and debt and pensions measures are based on data from the most recent debt and pensions medians report published by Moody's.
[3] ANPL stands for adjusted net pension liability.
[4] Notching factors 5-10 are specifically defined in the US States and Territories Rating Methodology.
Source: US Bureau of Economic Analysis, Vermont's audited financial statements and Moody's Investors Service

Endnotes

1 The state's pension reporting lags the financial reporting of VSERS and VSTRS by one year. The total pension liability and plan fiduciary statement included in the available fiscal 2018 audited financial statements of VSERS and VSTRS will be incorporated in the state's fiscal 2019 audited financial statements. We use the VSERS and VSTRS fiscal 2018 reports to calculate the state's fiscal 2019 ANPL.

Change from:

Aaa

Aaa

1.0

Aaa

Debt and Pensions:

"Vermont's debt burden will remain moderate, but it carries a heavy post-employment liability burden and slower economic expansion could weaken the state's leverage ratios over time.

Vermont's net tax supported debt (NTSD) ratios are very close to state medians. However, as a share of state nominal GDP, Vermont's fiscal 2017 adjusted net pension liability (ANPL) was the 8th highest of the 50 states. As of fiscal 2017, Vermont ranked 10th in combined ANPL and NTSD as a percentage of GDP. The ANPL is our measure of a state or local government's pension burden that uses a market-based interest rate to value accrued liabilities.

Vermont's pension ratios improved a bit in fiscal 2018 and we estimate further improvement in fiscal 2019. This likely mirrors the trajectory in other states given stronger investment returns, in general, achieved by most states during their most recent fiscal year. On a comparative basis, Vermont's standing among the states may not change much with fiscal 2018 and fiscal 2019 data.

Still, Vermont's debt and pension burden is much lower than those of the most highly leveraged states. Importantly, Vermont's pension burden incorporates all liabilities associated with statewide school districts because the state accounts for all primary and secondary education financial activities in its own financial statements. This is a big driver of Vermont's high pension burden relative to other states."

- Source: Moody's Investors Service, 2019

Standard & Poor's Ratings Have Not Changed Although There are Some Revisions to Indicators

2017:

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

The ratings reflect our opinion of the state's:

- Strong financial and budget management policies that have contributed to consistent reserve and liquidity levels over time;
- Employment composition reflective of the U.S. economy that is characterized by average income levels and low unemployment rates, but a recent slower-than-average pace of growth by most measures and population declines in the past three calendar years;
- Well-defined debt affordability and capital planning processes, in our view, that have limited leverage and contributed to a modest tax-supported debt burden with rapid amortization of tax-supported debt; and
- Significant pension and other postemployment benefits (OPEB), which remain sizable relative to those of state peers despite some recent reform efforts.
- The state's full faith and credit pledge secures the series 2017A and series 2017B bonds. Issuance proceeds will finance various capital projects within the state."

-Source: S&P, 2017

2019

“S&P Global Ratings has assigned its 'AA+' long-term rating to the State of Vermont's 2019 series A general obligation (GO) bonds and 2019 series B GO refunding bonds (Vermont Citizens Bonds). At the same time, S&P Global Ratings affirmed its 'AA+' rating on the state's GO debt outstanding and it's 'A+' rating on the state's moral obligation bonds. The outlook on all ratings is stable.

The ratings reflect our opinion of the state’s:

- Strong financial and budget management policies that have contributed to consistent reserve and liquidity levels;

- Employment composition reflective of the U.S. economy that is characterized by average income levels and low unemployment rates, although economic growth has been slow in recent years and demographic challenges persist;

- Well-defined debt affordability and capital-planning processes, in our view, that have limited leverage and contributed to a modest tax-supported debt burden with rapid amortization of tax-supported debt; and

- <u>Significant pension and other postemployment benefits (OPEB), which remain sizable relative to those of state peers despite some recent reform efforts.”</u>

\- Source S&P, 2019

S&P Scoring

Category	2017 Scoring	2019 Scoring
Government Framework	1.6	1.6
Financial Management	1.0	1.0
Economy	2.1	2.4
Budgetary Performance	1.4	1.4
Debt and Liability Profile	2.7	2.8
State's Rating	**AA+**	**AA+**

1 = strongest rating

Pensions and OPEB

"The governor signed a Budget Adjustment Act for fiscal 2019 that directed additional funds to the state's pension and OPEB plans. Specifically, $22.2 million was provided to extinguish an interfund loan to the Retired Teachers Health and Medical Benefit Fund, and an additional $3.3 million above the actuarially determined contribution (ADC) was contributed to the Vermont State Teachers Retirement Fund. The bill also calls for 50% of general fund surpluses going forward to be transferred to the Vermont State Employees Retirement System OPEB plan.

Vermont's pension profile is weak, in our view, with what we consider a relatively low three-year-average funded ratio of 62% across the two pension plans for which the state has a reported liability. Furthermore, we consider the funding discipline of Vermont's pension plans to be average. State contributions to Vermont's pension plans are based on ADC, but contribution levels lag actuarial valuation by two years. Vermont has historically funded its pension liabilities at ADC levels, and has recently contributed above the ADC. Despite these excess contributions, unfunded pension liabilities have grown. We calculate that total annual plan contributions in fiscal years 2016-2018 did not cover a level equal to service cost and interest cost plus some amortization of the unfunded liability, which we believe could weaken the state's pension liability profile over time."

-Source: S&P, 2019, underline added

OPEB

“In our opinion, OPEB liabilities also remain high with an unfunded liability of $2.17 billion or $3,469 per capita according to our calculations. On a per capita basis, Vermont's unfunded OPEB liability is nearly as large as its unfunded pension liability. The state created an irrevocable trust for the Vermont State Employees' Retirement System (VSRS) OPEB plan in fiscal 2007, however, there is limited asset accumulation in the fund. The state has paid down a loan for VSTRS (of which $28.3 million remained at the close of fiscal 2018) <u>and will now generate dollars for prefunding going forward--starting with an expected end of fiscal year 2020 fund balance of $2.4 million.</u> Before fiscal 2014, health care expenses related to the State Teachers Retirement System (STRS) were not explicitly budgeted or funded, but were treated as an amortized actuarial loss. In fiscal 2014, the legislature created the Retired Teachers’ Health and Medical Benefits Fund to separate health care expenses from the pension fund.”

-source S&P, 2019, underline added

Fitch Ratings

2017:
"Analytical Conclusion: Vermont's 'AAA' IDR primarily reflects conservative financial management, including prompt action to address projected budget gaps and sound reserves. Vermont's economic growth has been steady but slow. The moderate long-term liability burden should remain relatively stable given changes to improve pension sustainability over time."

2019:
"Analytical Conclusion: The downgrade of Vermont's Issuer Default Rating (IDR) and GO rating to 'AA+' from 'AAA' reflects Fitch Ratings' lowered assessment of the state's revenue framework; in particular, it reflects an expectation of slower growth prospects. Fitch considers Vermont's growth prospects to be more consistent with most of its New England peers, which generally face similar economic and demographic headwinds.

The 'AA+' IDR and GO rating also reflect conservative financial management, including prompt action to address projected budget gaps as they emerge and maintenance of sound reserves. The moderate long-term liability burden, measured as a percentage of personal income, is above the states' median but should remain relatively stable given Vermont's close oversight and management of debt issuance and policy changes to improve pension sustainability over time."

Source: Fitch Ratings, 2017,2019, underline added

Fitch Ratings Scoring

Category	2017 Scoring	2019 Scoring
Revenue Framework	aaa	aa
Expenditure framework	aaa	aaa
Long-Term Liability Burden	aa	aa
Operating Performance	aaa	aaa
State's Rating	**AAA**	**AA+**

Long-Term Liability Burden

“On a combined basis, Vermont's debt and net pension liabilities as of Fitch’s “2018 State Pension Update," dated November 2018, totaled 11.9% of 2017 personal income, compared with a statewide median of 6.0%. Based on the most recently available data, Fitch calculates a long-term liability burden of 11.5%. This ratio includes special obligation transportation infrastructure bonds (TIBs) supported by a dedicated share of Vermont’s gasoline and diesel taxes. Vermont considers the TIBs as self-supporting from the dedicated tax revenues as part of its legal and policy calculations for tax-supported debt.

Debt levels remain modest at just 2% and are closely monitored through the state’s Capital Debt Affordability Advisory Committee (CDAAC). The governor and legislature consistently stay within CDAAC's recommendations for annual bond issuance.

Net pension liabilities are more significant, with Fitch-adjusted net pension liabilities representing approximately 10% of personal income. The pension liability calculations include essentially 100% of the liability in the Vermont State Retirement System and the State Teachers' Retirement System, for which the state makes the full actuarial contribution. Market losses during the last two recessions contributed to recent growth in net liabilities for both systems.

<u>Since the Great Recession, the state has negotiated with employee groups and implemented multiple changes to benefits, contributions, and actuarial methods to improve pension sustainability over time</u>. Given recent shifts to somewhat more conservative actuarial assumptions, including a decrease in the investment return assumption from 7.95% to 7.5%, <u>Fitch anticipates Vermont's long-term liability burden will remain consistent with a 'aa’ assessment over the long term.”</u>

-source: Fitch Ratings, 2019 (underline added)

Rating Agency Research/Publications

"Aging populations can lead to a stagnant economy and weak tax revenue growth for state and local governments. Maine (Aa2 stable), New Hampshire (Aa1 stable), Vermont (Aaa stable)* and West Virginia (Aa2 stable) — the four oldest states by median age — have below average employment growth and will experience slower revenue growth than younger states over the next decade.

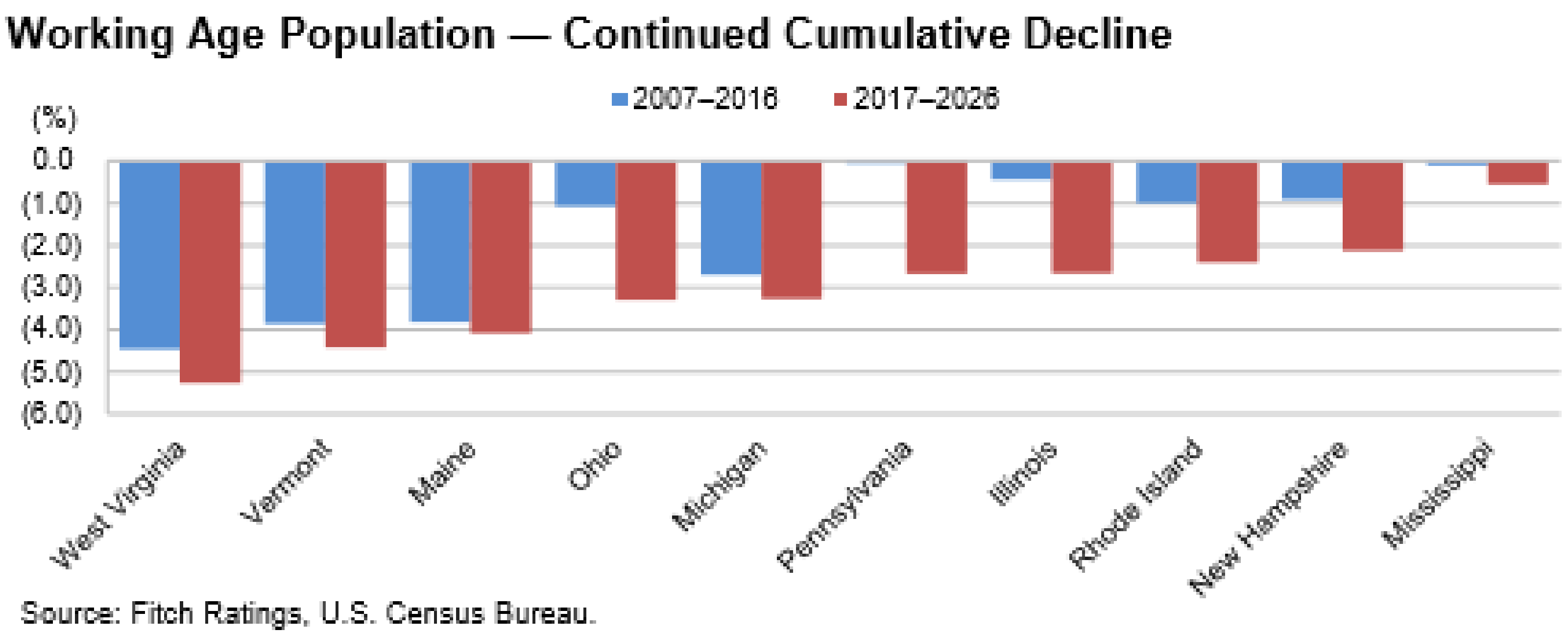
Aging populations lead to less dynamic economies. A decline in working-age people deters companies from relocating to aging states, which in turn discourages working age people from moving to the state. As a result, state and local governments with fewer working-age people have less desirable business environments and experience slower rates of employment growth.

Aging populations can strain state and local government finances. Many retired people have lower taxable incomes and spend less, which slows states' main revenue sources of income and sales taxes. For local governments, property tax revenue growth can stagnate because people over the age of 65 tend not to buy new homes and new companies are usually not moving to the area to drive population growth and home purchases.

*This publication was published prior to Moody's downgrade of the State.

Source: Moody's Investors Survive,"Aging states face less dynamic economies, lower revenue growth", April 3, 2018 (bold and underline added)

"…<u>three states, including West Virginia, Vermont and Maine, recorded annual declines in their working age populations of approximately 0.5% between 2007 and 2016 and are projected to continue the same trend between 2017 and 2026</u>. <u>This implies a 0.5% average annual drag on economic growth for these states between 2017 and 2026 with knock-on implications for their revenue growth prospects</u>. The chart below shows all the states that saw no growth in population or declines in 2007 to 2016 and are projected to show a persistent trend of declining working age populations over the next 10 years, expressed cumulatively.



Source: Fitch Ratings, "U.S. States and the Growth Implications of an Aging Population", October 24, 2018 (underline added)

Pension Data

(in Millions) AVA	VSTRS	VSERS	VSTRS OPEB (RTHMB)	VSERS OPEB
Assets	$ 1,950.90	$ 1,964.50	$ 0.31	$ 51.70
Liabilities	$ (3,505.30)	$ (2,780.00)	$ (1,041.06)	$ (1,279.30)
Net Liability	$ (1,554.46)	$ (815.46)	$ (1,040.75)	$ (1,227.60)
Funded Percentage	55.65%	70.67%	-0.03%	4.04%
Current Plan	- Amortization Schedule moves us to full funding by 2038. - Alterntiave Amortization scheduled to preserve $77M in interest on $26.2M contribution in 2018 - Performed Risk Assessment identifying opportunities for savings/reduced volatility. - Experience Study currently in progress (results post session)	- Amortization Schedule moves us to full funding by 2038. - Performed Risk Assessment identifying opportunities for savings/reduced volatility. - Experience Study currently in progress (results post session)	- RTHMB Plan adopted by legislature last year. - Funding Sources from Federal, State, Local and Teachers.	- Assets are invested in the Trust Investment Account (TIA). Resulted from 2019 Surplus and RDS Subsidies in prior years.
Potential Changes/Updates	- Risk Assessment identified possibility of increased member contributions, rolling amortization, and one time cash infusions - Results of experience study may yield additional opportunities - Discussion ongoing about revisions/changes	- Risk Assessment identified possibility of increased member contributions, rolling amortization, and one time cash infusions - Results of experience study may yield additional opportunities - Discussion ongoing about revisions/changes	- Funding Plan through end of GASB 74 Amortization Period (2048) - Negotiate NTHCA Sunset Date - Funding Policy commitment in Statute, pursue VPIC like Investment Opportunities - Review Formulary for opportunities	- Funding Plan through end of GASB 74 Amortization Period (2048), ~$8M GF need (assuming 35% GF Funding of Total), reduced exposure to volatility in front end due to balance - Funding Policy commitment in Statute, pursue VPIC like Investment Opportunities - Review Formulary for opportunities

Funding Valuations

VSERS		2017		2018		2019
Actuarial Accrued Liability	$	2,511,372,455	$	2,661,608,857	$	2,779,965,523
Actuarial Value of Assets	$	1,793,794,733	$	1,881,804,847	$	1,964,500,825
Unfunded Liability	$	717,577,722	$	779,804,010	$	815,464,698
Funding Percentage		71.43%		70.70%		70.67%

VSTRS		2017		2018		2019
Actuarial Accrued Liability	$	3,282,045,614	$	3,379,553,748	$	3,505,319,267
Actuarial Value of Assets	$	1,779,592,227	$	1,866,120,413	$	1,950,859,980
Unfunded Liability	$	1,502,453,387	$	1,513,433,335	$	1,554,459,287
Funding Percentage		54.22%		55.22%		55.65%

Funding History

(in thousands)

	Year ending June 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b) (in thousands)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)
VSERS	2019	$ 1,964,501	$ 2,779,966	815,465	70.7%
	2018	1,881,805	2,661,609	779,804	70.7%
	2017	1,793,795	2,511,373	717,578	71.4%
	2016	1,707,268	2,289,452	582,184	74.6%
	2015	1,636,268	2,178,827	542,559	75.1%
	2014	1,566,076	2,010,090	444,014	77.9%
	2013	1,469,170	1,914,300	445,130	76.8%
	2012	1,400,779	1,802,604	401,825	77.7%
	2011	1,348,763	1,695,301	346,538	79.6%
	2010	1,265,404	1,559,324	293,920	81.2%
	2009	1,217,638	1,544,144	326,506	78.9%
	2008	1,377,101	1,464,202	87,101	94.1%
	2007	1,318,687	1,307,643	(11,044)	100.8%
	2006	1,223,323	1,232,367	9,044	99.3%
	2005	1,148,908	1,174,796	25,888	97.8%
	2004	1,081,359	1,107,634	26,275	97.6%
	2003	1,025,469	1,052,004	26,535	97.5%
	2002	990,450	1,017,129	26,679	97.4%
	2001	954,821	1,026,993	72,172	93.0%
	2000	895,151	967,064	71,913	92.6%
	1999	804,970	876,412	71,442	91.8%
	1998	733,716	804,501	70,785	91.2%
	1997	639,128	753,883	114,755	84.8%

	Year ending June 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b) (in thousands)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)
VSTRS	2019	$ 1,950,860	3,505,319	1,554,459	55.7%
	2018	1,866,121	3,379,554	1,513,433	55.2%
	2017	1,779,592	3,282,045	1,502,453	54.2%
	2016	1,716,296	2,942,024	1,225,728	58.3%
	2015	1,662,346	2,837,375	1,175,029	58.6%
	2014	1,610,286	2,687,049	1,076,764	59.9%
	2013	1,552,924	2,566,834	1,013,910	60.5%
	2012	1,517,410	2,462,913	945,503	61.6%
	2011	1,486,698	2,331,806	845,108	63.8%
	2010	1,410,368	2,122,191	711,823	66.5%
	2009	1,374,079	2,101,838	727,759	65.4%
	2008	1,605,462	1,984,967	379,505	80.9%
	2007	1,541,860	1,816,650	274,790	84.9%
	2006	1,427,393	1,686,502	259,109	84.6%
	2005	1,354,006	1,492,150	138,144	90.7%
	2004	1,284,833	1,424,661	139,828	90.2%
	2003	1,218,001	1,358,822	140,821	89.6%
	2002	1,169,294	1,307,202	137,908	89.5%
	2001	1,116,846	1,254,341	137,495	89.0%
	2000	1,037,466	1,174,087	136,621	88.4%
	1999	931,056	1,065,754	134,698	87.4%
	1998	821,977	955,694	133,717	86.0%
	1997	717,396	849,179	131,783	84.5%

There is No Silver Bullet to Reducing These Liabilities

- Learn from history: The same arguments made in 1990s and early 2000 (for instance, budget constraints and impacts on important programs) **should not be used to justify abandoning funding discipline at the expense of future taxpayers.**

- The changes we make now, or in the future, should be based on an effective means of providing retirement benefits at the best value to the taxpayer (maintaining balance and shared sacrifice).

- Defined benefit plans provide the best value per retirement benefit for both the employee and other taxpayers for Vermont.

- Disciplined, forward thinking approach must be maintained.

Fundamental Changes to VSTRS Health Care Funding Effective 7/1/2014

- The State has established and funded a separate trust to account for the assets and liabilities of the retiree medical benefit plan

- Annual contributions to the Retiree Medical Plan are separately identified in the State budget and not commingled with Retirement Plan contributions

- A series of funding sources were put in place, replacing the "retroactive" funding approach

- Projected to save $480 million in avoided interest costs through 2038

Distribution of State ARC/ADEC Payment by Entities and Funds

- VSERS Pension and Health Care Premiums—Included across various state funds as part of a payroll benefit charge. Approximately 35%-40% of VSERS ARC/ADEC is paid by the General Fund, depending on year
- 22.8% of the total ARC/ADEC for VSERS is reimbursed by Federal reimbursements
- VSTRS Pension—While most of the ARC paid with general fund dollars, beginning in FY2015, a portion paid through federal grants via local school systems; for 2019 this is calculated to be 5.4%
- Approximately $8 million of VSTRS normal cost funded through the Education Fund
- 27% of the Teachers' OPEB pay-go payments through FY2023 are projected to be reimbursed with Non-State Revenues (EGWP & Teacher Healthcare Assessment)

Employee Contributions Have Increased

Teachers (VSTRS):
In 2009, a teacher paid 3.54% of salary for their pension. Employees agreed to an increase to 5% effective 7/1/10. Employees also agreed to work longer to receive a full benefit – the result was a reduction for taxpayers of $15 million per year in the ARC, increasing over time.
For new employees after 7/1/15, that increased to 6%, generating $1 million initial annual savings, increasing each year

State Employees (VSERS):
In 2010, Group A, D and F employees were paying 5.1% of pay for their retirement, scheduled to go to 4.85% in FY16
Employees agreed to increase this to 6.4% effective 7/1/10. In 2016, employees agreed to increase to 6.65%. Group C employees agreed to similar increases and are paying 8.53% of payroll today. For FY17, this is estimated to result in at least $8.4 million in additional contributions from state employees.

FY 2019 Valuation Results and Development of ADEC for 2021

VSERS

- Incorporates an FY 2021 ARC/ADEC recommendation of **$83,876,570**
  - Normal 18,339,489
  - Amortization $65,537,081
- Increase from prior year of **$4.9 million**
- 2019 to 2020 increase was $16.0 million
- Normal Cost: 3.22% of projected payroll
- 78.1% of the ARC/ADEC is to pay down a portion of the unfunded liability
- Includes planned change in amortization schedule effective 2020

VSTRS

- Incorporates an FY 2021 ARC/ADEC recommendation of **$135,649,428***
  - Normal 7,213,271
  - Amortization $128,436,157
- Increase from prior year of **$6.2 million**
- 2019 to 2020 increase was $23.9 million
- Normal Cost: 1.07% of projected payroll
- 94.7% of the ARC is to pay down a portion of the unfunded liability
- Includes planned change in amortization schedule effective 2020

Pressures on Retirement Funds

- Historical lack of funding of ARC/ADEC (VSTRS)
- Underfunding retired teacher health care included in pension fund (VSTRS)
- Workforce changes
- Demographics/turnover/retirement changes
- Retirement Incentives
- Assumptions
    - Investment Assumptions
    - Mortality Assumptions
    - Other (economic, demographic, experience)
- Risk mitigation
    - Risk Assessment per ASOP 51 including stress testing (completed; review of results with working group in process)
    - Experience Study to be completed prior to next scheduled valuation

Defined Benefit VS. Defined Contribution Plans

- A DC system will cost MORE money than the current defined benefit system

- Based on 2019 valuations and payroll levels projected by the actuary, if a new DC system were implemented and applied to all employees, this would INCREASE the cost of pensions by $21.5 million in 2021, expected to grow each subsequent year*

- At 5% instead of 7% (lower state contribution rate than for existing DC plan), this would result in an increased cost of $10.1 million in 2021, growing each subsequent year

- Even limiting conversion of new employees would be a substantial cost, growing every year as new employees are hired.

- It will NOT eliminate the unfunded liability. Evidence exists that without funding discipline using conservative assumptions, the unfunded liability would continue to grow.

*Example using the state's current DC system limited to exempt employees. A move to current state DC plan would require a higher contribution than the current normal cost of payroll for every employee in DC system every year. This is a preliminary estimate and assumes continued utilization of the current DC plan and not a new configuration. Would need to look at actuarial value of a proposed DC plan as compared to the pension plan, normal cost for new entrants, cash flows, and other factors to complete the estimate.

Unfunded Liabilities and Residual Plan Management

- The unfunded pension liability in the Vermont systems cover benefits already earned by current employees and retirees

- Changing pension systems for new employees will not reduce the unfunded liability

- It will cost more dollars as the employer contribution rates of existing state and municipal DC plans exceed the current "normal cost" component.

- Introducing or expanding a DC option will not eliminate the necessity of continued maintenance of the DB plan

- Allocation of Unfunded Liabilities: Shorter time frame for amortizing unfunded liabilities as you approach the amortization end date could create a spike in costs, at least in short-term

- Investment of Plan Assets
  - If DB plan is closed, the age profile of the plan will change, necessitating revisions to the asset investment horizon at some point in the future (not likely a near term event)
  - More liquidity required to meet short-term obligations
  - Changes to asset allocation plan would be necessitated, to a more conservative profile, likely adversely impacting investment return at some point in the future

In conclusion we need to….

- Avoid a perceived quick fix and address the fundamental weaknesses in our revenue structure and spending patterns, including the paydown of long-term liabilities over the long term
- Maintain continued polices for full actuarial funding of the pension funds
- Utilize periodic valuations with reasonable assumptions to assure that the pension systems are achieving the dual goals of benefit security and fiscal responsibility to both members and taxpayers
- Review changes to the benefit system to assess their impact
- Remain disciplined investors
- Exercise prudence, assess current risk management framework and develop productive strategies