STATE OF VERMONT
OFFICE OF THE STATE TREASURER

2018 ANNUAL REPORT

January 7, 2019

TO: Members of the General Assembly
Honorable Phil Scott, Governor
Citizens of Vermont

I am pleased to submit my eighth annual report as your State Treasurer. This report provides a summary of operations, activities, and initiatives administered by the Office of the Vermont State Treasurer. Highlighted below are some key accomplishments from the past year (which are elaborated upon in this report), as well as the Office's priorities for the year ahead. I am proud of the work that we have been able to accomplish so far and am committed to our continued efforts.

Key Accomplishments

The Treasurer's Office continues to grow and expand participation, outreach, and education of the VermontABLE program, which is intended to ease financial strains faced by individuals with disabilities. We have seen these efforts come to fruition in enrollment numbers that have more than doubled over the previous year. As of January 2nd, 2019, enrollments totaled 245 accounts.

The Local Investment Advisory Committee (LIAC) continues to build upon the success of the past five years and remains committed to prudent investment of up to 10% of the State's average daily cash position in local projects across Vermont. In 2018, The LIAC approved a $1.5 million credit facility for NeighborWorks of Western Vermont. The proposal will advance funding for energy efficiency and home rehabilitation loans during 2019 and 2020 through the HEAT Squad program as well as allow 208 households earning less than 120% of median income the ability to access financing to make their homes safer, healthier, and more affordable to heat.

In the pensions systems, the FY2019 State budget authorized $26.2 million of additional payments above the Actuarially Determined Employer Contribution (ADEC) to paydown the unfunded liability. This was a prudent financial decision and was the result of the hard work and long-term vision of the General Assembly, the Administration, employee groups, and this Office. The Treasurer's Office concurs with a recommendation made by the VSTRS Board of Trustees to defer recognizing the $26.2 million and continue to pay the expected State contributions both now and in the future. Under this scenario, the State will have the opportunity to realize savings of $77.4 million in interest costs. The Treasurer's Office has and will continue to be an advocate for full funding of the pensions and for maintaining defined benefit pension plans that provide needed retirement security and are affordable for all taxpayers.

The Treasurer's Office continues to build on the success of its K-12 financial literacy efforts and during 2018, the Treasurer's Office and Vermont Afterschool, Inc., agreed to a pilot partnership to reach a broader range of Vermont youth across Vermont. 12 afterschool programs at 27 sites across 10 counties have been selected to participate.

The Unclaimed Property Division continued its proactive claims process of reaching out to 150 new owners per week and paid out both a record number of claims (17,665) and a record dollar amount, totaling just over $6.7 million with an average claim of $379.28. In addition to money being returned to their rightful owners, the division also received $13 million remitted by holders, the second largest amount ever received by the division.

During 2018, we initiated a comprehensive asset allocation study aimed at strategically aligning the investment portfolio with the pension plans' demographic and economic characteristics, significantly reducing external investment management fees, simplifying the portfolio's structure, and enhancing oversight of its components. Over time, we expect these initiatives to improve investment returns and reduce the taxpayers' burden of funding teacher, state, and municipal employee retirement benefits.

Priorities:

Clean Water

Over the past four years we have seen a concentrated statewide effort to understand the clean water challenges we face, identify the range of possible solutions, and develop funding mechanisms to pay for those solutions. The studies have spanned multiple Administrations and include a collaborative effort with policymakers, advocacy organizations, experts, and most importantly—Vermont citizens. The time to identify a more permanent and sustainable funding source is now. I urge the General Assembly and the Administration to act now to make the following decisions: (1) how do we allocate existing clean water funding dollars; (2) how do we deliver the services needed to improve water quality; and (3) how do we generate any dollars that cannot be met with existing revenues.

When assessing the financing plan for any State asset, the Treasurer's Office routinely considers what is the best value to the taxpayer. Cleaning our waters now is the best value to the taxpayer. Deferring actions down the road will only further impair this critical asset, requiring increased remediation at a greater cost to the taxpayer. Our lakes, rivers and waterways are an asset that support our way of life, our property values, health and safety, and our economy. We need to invest in this asset. Like any investment, early, proactive, and disciplined practices are the key to success. We need to accelerate our decision making in this year to create a true plan of action for all our citizens.

Pensions

The Treasurer's Office continues to work to achieve full funding of pensions and post-employment benefits and to lower the cost for the taxpayer. Savings and financing initiatives implemented since 2010 have saved tens of millions of dollars each year and will ultimately save taxpayers over $1.3 billion while preserving retirement security through the existing defined benefit programs. This effort, while not easy, is essential to the long-term health of the State. By working together, we can pay off the unfunded liability by 2038. We must remember that there are no quick fixes or short-cuts. Consistent funding, prudent fiscal practices, and a collaborative approach is the sure-path to a fully-funded system.

Revised Uniform Unclaimed Property Act

The Uniform Law Commission (ULC), working with all stakeholders, including the business community and National Association of State Treasurers (NAST), is responsible for developing the uniform act for unclaimed property. Vermont's current unclaimed statute is based on the ULC 1996 Act. Since that time there have been considerable changes in the types of financial property, revisions to IRS code, and many changes to the financial industry technology, practices and protections. NAST supported the ULC's effort to bring the uniform act current and the Vermont Treasurer's Office was one of three offices that acted as an advisor to the ULC, representing the fifty states as well as all U.S. Territories that oversee unclaimed property. The Vermont Treasurer's Office also supports key provisions that assure that the unclaimed property act remains consistent with the basic tenets of consumer protection. In July 2016, a Revised Uniform Unclaimed Property Act (RUUPA) was adopted at the national level , and the Treasurer's Office will be working with the General Assembly to bring Vermont's unclaimed property law current with this act while preserving some provisions specific to Vermont.

Green Mountain Secure Retirement Plan

The Treasurer's Office and the Green Mountain Secure Retirement Board have been charged with developing a multiple employer plan (MEP) to provide access to retirement for small businesses that do not currently have a retirement plan. We have been successful in developing the design of a program and selecting a vendor subject to final negotiation. While we look forward to implementation, originally scheduled for January, we are reluctantly deferring final action pending clarification and/or resolution of a proposed federal regulation that could potentially impact the ability of states to implement such programs. We have been working with the national Department of Labor to address these issues and very much appreciate their support but will need to evaluate any changes that may need to be made to state statute prior to moving forward. This is a bit of a speed bump in the road, but we are confident that we will be able to implement a program this year that will address retirement security for a large sector of Vermonters who currently do not have access to affordable retirement plans.

Debt Management, Fiscal Discipline, and Bond Ratings

While Vermont has the highest general obligation bond rating in New England, demographic headwinds in the Northeast underscore the importance that the State of Vermont continue its commitment to proactive financial management and fiscal discipline. The Treasurer's Office will continue to work collaboratively to address shared challenges such as Vermont's aging population, economic growth, and above average long-term pension and post retirement liabilities relative to State GDP. While we must stay focused on how we can improve our economic standing, the State of Vermont has many core strengths that will be part of the solution as we seek to restore our triple-A bond rating. One of those strengths is the process by which we set the state's net tax-supported debt authorization.

Regarding our capacity for debt, in 2018, the Capital Debt Affordability Advisory Committee (CDAAC) recommended a two-year maximum net tax-supported debt authorization of $123.18 million, a reduction of 7.0% from the previous biennium recommendation of $132.46 million. This follows reductions of 8.01% and 9.9% reductions in the prior biennium. In total, these recommendations represent a cumulative 6-year reduction of 23.0%. These reductions are critical to reducing the portion of the budget devoted to debt service, which is approximately 25 cents for every dollar of debt issued.

Conclusion:

I want to thank the Treasurer's Office staff for all the hard work they have done to successfully attain a record of excellence and accomplishment for all Vermonters. I want to especially thank my Deputy Treasurer, Michael Clasen, for his hard work and support.

The above accomplishments and priorities, along with others detailed within the report, cover a wide range of activities. In all our activities, we have and must continue to provide the best service and value to the Vermont taxpayer by remaining vigilant in our efforts to support fiscal discipline, retirement security, local investment, economic prosperity, protection of our environment, and the health and safety of all Vermonters. We can only achieve this by working together to meet the needs of our citizens.

I am privileged to serve as Vermont's State Treasurer and look forward to working with you on behalf of all Vermonters in the year ahead.

Sincerely,

Beth Pearce

Beth Pearce
State Treasurer

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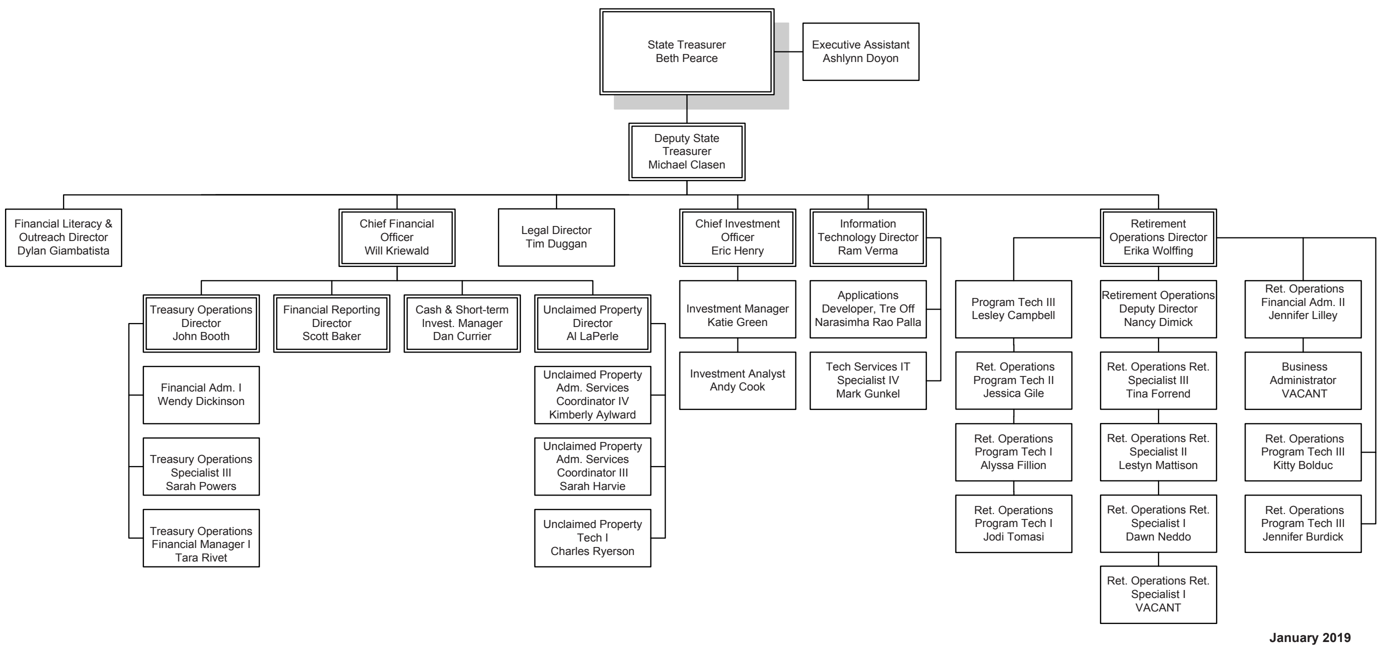
Our Commitment to Vermonters

The State Treasurer's Office manages money that belongs to all citizens of Vermont. The Treasurer and staff are committed to doing this efficiently, responsibly, and professionally. The Treasurer's office operates as a business, serving the needs of Vermonters while working to save the taxpayers money and earn the highest possible investment returns in its funds within acceptable risk parameters.

Figure 1: Vermont State Treasurer's Office Organizational Chart



The Treasurer's Office is comprised of a team of 36 professionals. The organizational chart and staff listing above are effective as of January 3, 2019.

Specific administrative and service duties of the Treasurer's Office as prescribed by State statutes include:

- **Investment of State funds;**
- **Issuing all State bonds authorized by the General Assembly;**
- **Serving as the central bank for State agencies;**
- **Management of the State's cash balances, processing of checks, and the reconciliation of payroll and vendor checks;**
- **Safeguarding and return of unclaimed or abandoned financial property, which is held in trust by the State until the rightful owner can be located; and**
- **Administration of the State, Teachers' and Municipal defined benefit plans, the deferred compensation plan, and the defined contribution plans for State employees and participating municipalities.**

Vermont Retirement Systems

Overview

The Treasurer's Office administers three statutorily defined retirement plans that are the core of the Vermont Retirement System. These plans serve members of the Vermont State Employees' Retirement System (VSERS), Vermont State Teachers' Retirement System (VSTRS), and the Vermont Municipal Employees' Retirement System (VMERS). Each system is overseen by a Board of Trustees. By statute, the State Treasurer is a member of all three boards.

The Work of the Boards of Trustees

The Boards of Trustees are responsible for the administration of the system and benefit management. The boards delegate the day-to-day administration of the plans to the Retirement Division staff, utilizing the governing statutes as guidelines. If questions arise, or if a member or retiree does not agree with a benefit decision made by staff, they may appeal to their system's board for re-consideration. The Attorney General's Office provides legal counsel to the boards when necessary. Each Board of Trustees acts as a fiduciary of the funds held on behalf of its members and retirees. Each Board designates an actuary to make an annual valuation of the assets and liabilities of the funds of the system. The valuation results are used to request the necessary employer contribution from the Administration and General Assembly for the coming fiscal year to achieve and preserve the financial integrity of the funds. All three Boards use the same actuary, Segal Consulting, which has created cost efficiencies.

Each Board of Trustees meets monthly and is required to keep a record of its proceedings, which are open to the public. Minutes from each meeting are posted on the Treasurer's Office website.

Overview of the Three Retirement Systems

The Retirement Division serves the needs of 54,040 active, vested and retired members of VSERS, VSTRS, and VMERS. The largest expenditure for all three defined benefit plans are the retirement benefits paid in the form of a monthly allowance. The three systems paid out just under $337.7 million in monthly benefit allowances in FY2018. VSERS and VSTRS also offer health insurance to their retired members and pick up a portion of the premium based on the member's number of years of service at the time of retirement. The health care expenses for the two retirement systems totaled $63.9 million. VMERS does not offer a health insurance plan, but instead established a health retirement savings plan in FY2008. All three systems offer retirees a dental plan, the cost of which is 100% paid for by the retiree.

Figure 2: Retirement Division Activity - FY 2018

Activity	2018	2017	2016	2015	2014	2013	2012	2011
Benefit Estimates	8,078	7,177	7,934	8,318	6,196	6,334	6,028	7,019
Individual Counseling	1,129	908	919	1,132	824	751	889	1,054
Retirement	1,250	967	1,054	1,118	1,081	1,082	1,068	1,008
Withdrawals	1,257	1,257	1,267	1,382	1,198	1,257	1,393	1,312
Deaths	478	349	335	463	329	377	349	376
Seminars	35	32	37	31	33	42	26	45
Seminar Attendance	797	776	809	872	752	1,243	783	1,000

These numbers are for fiscal year, not calendar year

There are 14 members of the Retirement Division, which is a ratio of one staff member for every 3,860 customers. During the year, staff pay benefits and also provide an array of services, such as calculation of benefits and retirement counseling. In a defined benefit system, there is a promise to provide members with a monthly retirement allowance, providing they serve a minimum number of years of service in the system. The benefit is defined through a statutory formula that takes into account the member's age, average final compensation and years of service. Benefits are guaranteed to be paid for the remainder of the member's life after retirement and may be passed along to another individual after the member's death, with a corresponding reduction in benefit, under certain options that may be elected at retirement. In order to fulfill the promise of paying members' future retirement benefits, each system has developed a funding plan. The primary objective of funding is to equitably allocate costs between generations of taxpayers and provide retirement security to members and retirees who have the assurance their current and future benefits will be paid. The funds come from three sources: employee contributions, employer contributions, and investment income interest. Interest earned on investments from the retirement fund is the largest source of funds used to pay benefits. As more members approach retirement, employee life span lengthens, and health care expenses rise, it is anticipated that significant increases in benefit payouts will occur. These assumptions have been factored into the actuarially developed funding plan. All three boards select an independent actuary to review and develop a funding plan. Segal Consulting was selected in 2017 to determine the amount of funding that must be set aside each year for current and future benefits. Segal Consulting uses several factors that impact the funding needs of the system, based on the direction adopted by the boards. Each board determines the actuarial method that will be used, and the assumptions relating to demographic, economic, and actual experience of the system. The interest rate assumption is set jointly by the respective board of trustees and the Vermont Pension Investment Committee (VPIC), based on advice by the actuary and the VPIC investment consultant.

Figure 3: Funding Valuations

The Treasurer's office worked with the actuary to complete both the GASB 67 and funding valuations of the pension system. The funding valuations results are below.

VSERS		2017		2018
Actuarial Accrued Liability	$	2,511,372,455	$	2,661,608,857
Actuarial Value of Assets	$	1,793,794,733	$	1,881,804,847
Unfunded Liability	$	717,577,722	$	779,804,010
Funding Percentage		71.43%		70.70%

VSTRS		2017		2018
Actuarial Accrued Liability	$	3,282,045,614	$	3,379,553,748
Actuarial Value of Assets	$	1,779,592,227	$	1,866,120,413
Unfunded Liability	$	1,502,453,387	$	1,513,433,335
Funding Percentage		54.22%		55.22%

VMERS		2017		2018
Actuarial Accrued Liability	$	754,876,508	$	827,556,305
Actuarial Value of Assets	$	634,690,493	$	680,005,147
Unfunded Liability	$	120,186,015	$	147,551,158
Funding Percentage		84.08%		82.17%

For VSERS and VSTRS, Segal Consulting makes a recommendation to the retirement boards in October of each year as to the amount that the state must contribute to keep the system on a funding plan. The recommendation is adopted by the Boards in the form of a recommendation to the Governor and the General Assembly for the amount that must be appropriated for the upcoming fiscal year. This recommendation is known as the Actuarially Determined Employer Contribution (ADEC). The State's contributions for VSERS is based on percentage rates of each member's annual earnable compensation. In the case of VSERS, this is further adjusted for state expenses to operate the system, excluding investment expenses. The various state cost centers/funds are assessed an employer contribution based on the payroll associated with the cost center/fund.

VSERS funding requirements are then calculated as a percentage of the state payroll and are remitted to the pension fund as an employer contribution with each bi-weekly payroll. As actual payroll for the year may vary from estimated totals and from pay period to pay period, the State completes reconciliation during the course of each year to assure that the entire recommended amount is paid to the system. In the case of VSTRS, most of the appropriation is made from the General Fund. Beginning in FY2016, the General Fund appropriation was offset by expected employer contributions from local educational entities for teachers paid for by federal grants. Beginning in FY2017, the normal contribution, the actuarially determined amount to pay for ongoing pension costs, is paid through the Education Fund.

For VMERS, Segal Consulting makes a recommendation to the Board as to the amount each employer should contribute to keep the funding of the four group plans on track. Employers in each participating municipality are required to contribute at the rate established by the Board, pursuant to the actuarial recommendation. Since 2012, the development of both employer and employee rate recommendations has been done through a collaborative process involving employee groups and employee representatives. In the fall of 2017, the VMERS Board worked with employee and employer groups to establish a 4-year plan in which employee and employer contribution rates increase equally by an amount of 1/8th a percent in year 1, 1/8th a percent in year 2, 1/4th a percent in year 3, and a 1/4th percent in year 4. The employer rates were adopted by the VMERS Board, and the employee rate increases, through FY2022, were passed by the General Assembly during the 2018 legislative session in Act 165.

Actuarial Results and Funding

Separate annual valuations are done for funding purposes, based on the specific state funding plan and for standardized accounting purposes (GASB 67/68). When the Governmental Accounting Standards Board (GASB) established its accounting standards in 2012 (for Vermont's plans effective June 30, 2104 and 2015 for GASB 67 and 78 respectively), they made a clear distinction between funding and accounting: "The new pension Statements relate only to accounting and financial reporting, or how pension costs and obligations are measured and reported in external financial reports… The new Statements mark a definitive separation of accounting and financial reporting from funding." (source: GASB Fact Sheet)

In the previous standard, the Annual Required Contribution (ARC) was the basis of a funding strategy. Under the GASB 67/68 standard, the focus is on the size and growth of the net pension liability (NPL). While the actuarial method used in the GASB standards do not differ significantly from that used in the funding method for VSERS and VSTRS (VMERS uses a different funding method), there are still variances between the two valuations. Changes in liabilities will be recognized over a shorter period of time under the GASB standard. It also uses fair market values that fluctuate greatly from year to year, as opposed to a "smoothed" actuarial value of assets in the funding valuation. The reality of market fluctuations makes the GASB standard a poor model for funding purposes. For these reasons, and the fact that recommended appropriations are based on the funding valuation, this report will emphasize the former methodology, although the GASB 67/68 data is presented for information purposes.

The present value of pension benefits is the total cost of benefits accrued through each employee's career, including assumptions about benefits to be earned in the future, expressed in today's dollars. It has two components: 1) the actuarial accrued liability (AAL), which represents the value of benefits which is not provided for by future normal costs and therefore is the value of benefits already earned; and, 2) the normal cost, which represents the value of benefits to be accrued or allocated in the current valuation year by active employees. On the asset side of the balance sheet, they include the net amount of assets accumulated (investments), the present value of future member contributions, and the present value of future employer normal cost contributions, with the remaining difference as the unfunded actuarial accrued liability (UAAL). After adjusting for normal costs on both sides of the balance sheet, the unfunded liability represents the difference between the value of assets and the AAL. The value of assets may be the fair market value of assets, but as noted earlier, this results in volatility that makes funding through the base budget difficult from year to year. As a result, most plans, including Vermont's, use a smoothed value to reduce that volatility. These are referred to as the actuarial value of assets (AVA). The funded ratio is the ratio between the plan's AVA and AAL, and is a common method of measuring a plans health.

VSERS is currently 70.7% funded on an actuarial funding basis It was fully funded prior to the Great Recession, which adversely impacted the plan. Changes in demographic (mortality assumptions) and interest rate assumptions, as well as workforce decisions (including two retirement incentives intended to lower operating budget costs, which had the effect

Figure 4: FY2017/FY2018 GASB 67

FY 2017	(Dollar Amount in Thousands)		
	VSERS	VSTRS	VMERS
Total Pension Liability	2,428,779	3,220,961	740,666
Plan Fiduciary Net Position	(1,748,442)	(1,738,557)	(619,510)
Net Pension Liability	680,337	1,482,404	121,156
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	71.99%	53.98%	83.64%

FY 2018	(Dollar Amount in Thousands)		
	VSERS	VSTRS	VMERS
Total Pension Liability	2,608,559	3,343,078	808,525
Plan Fiduciary Net Position	(1,841,500)	(1,832,373)	(667,849)
Net Pension Liability	767,059	1,510,705	140,676
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	70.59%	54.81%	82.60%

of increasing pension costs) have adversely impacted the fund in recent years through FY2017. In FY2018, the primary cost drivers were experience related to turnover and retirement, some investment loss, and salary increases for continuing active employees.

VSTRS is currently 55.22% funded with liabilities totaling $1.5 billion (see Figure 3 on page 8). The VSTRS pension plan entered the Great Recession in a less favorable condition and was severely impacted by the national economic downturn. The funding level prior to the Great Recession was caused by several factors, including long-term underfunding of the plan, where considerably less than the actuary's recommended contribution was appropriated. Figure 5 on page 11 clearly indicates a history of less than adequate funding from 1990 to 2007. For instance, in 1996 only 38% of what the actuary recommended was appropriated. Adding to the challenge was a practice through FY2014 by which health care premium payments were made from the teachers plan, resulting in realized losses that further deteriorated its funded ratio. This situation was resolved in FY2015 when health care was moved to a separate fund, but recovery will take time. Finally, as workforce changes are made through reorganization at the local level, those decisions have put additional pressures on the pension system. VSTRS is suffering from the weight of poor funding decisions in the past and recent workforce trends. FY2017 saw significant increases in liabilities related to lowering the assumed investment rate of return and changes to mortality assumptions. In FY2018 net turnover of teachers and increased retirements were the primary factors for actuarial losses. The unfunded liability increase over the previous period was 0.73%. This increase notwithstanding, there was an improvement in the funded status from 54.22% to 55.22% due to increased investments available to pay benefits.

Commitment to Funding Pension Obligations

Another indicator of pension funding progress is the development of a funding policy to pay down the unfunded liability. For both the VSTRS and VSERS, the Treasurer's Office is now utilizing a funding plan, set forth in State law, to achieve full funding by FY2038. This requires payment of the Actuarially Determined Employer Contributions (ADEC) formerly referred to as the actuarially required contribution (ARC). The ADEC is the method by which the UAAL is eventually paid off, assuming it is fully appropriated. It is a measure of needed plan funding that is made up of two parts: 1) the normal costs (see Figure 7 on page 12) which is value of benefits to be accrued or allocated in the current valuation year by active employees (The employer normal cost equals the total normal cost of the plan reduced by employee contributions); and, 2) the amortization payment to retire the UAAL, the amount scheduled this year to retire a portion of the unfunded liability

Figure 5: History of Pension Funding

Year	Total VSTRS Payroll	Recommended Contribution For Budget Based on Actuarial Projection	Actual Contribution	$ Difference: Act vs. Rec. (Uses Budget Beginning 1996)	Percentage of Request
1979	96,725,620	7,806,825	4,825,155	2,981,670	61.8%
1980	104,521,888	8,944,090	8,471,960	472,130	94.7%
1981	112,811,389	9,862,861	8,830,900	1,031,961	89.5%
1982	126,748,398	10,200,209	7,822,760	2,377,449	76.7%
1983	139,085,342	10,721,814	10,929,355	(207,541)	101.9%
1984	153,329,729	12,341,069	11,592,100	748,969	93.9%
1985	169,219,652	13,475,181	12,567,866	907,315	93.3%
1986	187,834,677	14,668,095	14,461,148	206,947	98.6%
1987	206,728,650	15,925,452	16,239,416	(313,964)	102.0%
1988	230,430,153	16,294,346	17,186,259	(891,913)	105.5%
1989	261,596,990	18,072,172	19,000,000	(927,828)	105.1%
1990	273,951,188	21,320,155	19,561,000	1,759,155	91.7%
1991	298,104,184	25,013,437	15,000,000	10,013,437	**60.0%**
1992	312,346,750	28,595,220	14,618,992	13,976,228	**51.1%**
1993	324,536,824	28,819,875	19,890,048	8,929,827	**69.0%**
1994	335,155,405	25,805,408	20,580,000	5,225,408	**79.8%**
1995	346,975,007	27,451,926	18,080,000	9,371,926	**65.9%**
1996	355,894,809	29,884,559	11,480,000	18,404,559	**38.4%**
1997	364,695,370	30,954,237	18,080,000	12,874,237	**58.4%**
1998	357,899,112	33,519,949	18,106,581	15,413,368	**54.0%**
1999	372,298,852	27,232,542	18,080,000	9,152,542	**66.4%**
2000	387,998,959	23,573,184	18,586,240	4,986,944	**78.8%**
2001	403,258,305	20,882,521	19,143,827	1,738,694	91.7%
2002	418,904,021	21,965,322	20,446,282	1,519,040	93.1%
2003	437,238,543	23,197,088	20,446,282	2,750,806	**88.1%**
2004	453,517,153	29,608,892	24,446,282	5,162,610	**82.6%**
2005	486,857,658	43,592,332	24,446,282	19,146,050	**56.1%**
2006	499,044,327	49,923,599	24,985,506	24,938,093	**50.0%**
2007	515,572,694	38,200,000	38,496,410	(296,410)	100.8%
2008	535,807,012	40,749,097	40,955,566	(206,469)	100.5%
2009	561,588,013	37,077,050	37,349,818	(272,768)	100.7%
2010	562,149,916	41,503,002	41,920,603	(417,601)	101.0%
2011	547,748,405	48,233,006	50,268,131	(2,035,125)	104.2%
2012	561,179,272	51,241,932	56,152,011	(4,910,079)	109.6%
2013	563,623,421	60,182,755	65,086,320	(4,903,565)	108.1%
2014	567,073,601	68,352,825	72,668,412	(4,315,587)	106.3%
2015	557,708,310	72,857,863	72,908,805	(50,942)	100.1%
2016	586,397,072	76,102,909	76,947,869	(844,960)	101.1%
2017	607,354,756	82,659,576	82,887,174	(227,598)	100.3%
2018	612,899,069	88,409,437	114,598,921	(26,189,484)	129.6%

Figure 6: Vermont Continues its Efforts to Contribute in Excess of the ARC

FY2016: VSERS - 117.5%, VSTRS - 101.1%
FY2017: VSERS - 124.3%, VSTRS - 100.3%
FY2018: VSERS - 124.0%, VSTRS - 129.6%

ARC/ADEC Paid and Amortization Summary

System Name	2011	2012	2013	2014	2015	Five Year Average	Period (Years)	Basis	Method
Vermont State RS	84.5	140.2	130.4	132	125.1	122.44	22	Closed	Level %
Indiana 1977 Police Off. & FF PDF	113.5	102.3	121.8	135.5	123.2	119.26	27	Closed	Level $
Indiana STRS (1996)	123.4	117	108	109.6	115.4	114.68	26	Closed	Level %
South Dakota RS	100	100	100	121.9	115.1	107.4	—	Closed	Level $
Vermont State Teachers RS	104.2	109.6	108.1	106.3	100.1	105.66	22	Closed	Level $
Georgia ERS	100	100	100	100.2	100.2	100.08	19.4	Closed	Level %
Delaware SEPP	100	100	100	100	100	100	20	Open	Level %
Georgia TRS	100	100	100	100	100	100	30	Layered	Level $
Indiana STRS (Pre-1996)	100	100	100	100	100	100	26	Closed	Level $
Missouri DOT & Hwy. Patrol ERS	100	100	100	100	100	100	16	Closed	Level $
Missouri SEP	100	100	100	100	100	100	29	Closed	N.A.
South Carolina Police Officers' RS	100	100	100	100	100	100	27	Open	Level %
South Carolina RS	100	100	100	100	100	100	30	Open	Level %
Tennessee Closed State & Teachers c	100	100	100	100	100	100	8	Closed	Level %
Utah PERS — Noncontributory	100	100	100	100	100	100	20	Open	Level %
Utah Public Safety RS	100	100	100	100	100	100	20	Open	Level $
Indiana PERF	97.7	88.5	98.2	98.3	103.6	97.26	27	Closed	N.A.
Iowa PERS	82.3	98.2	98	100	101.9	96.08	29	Closed	N.A.
North Carolina Teachers' & State ERS	73	100	104	100	100	95.4	12	Closed	Level $
Florida RS	83	60	66	100	100	81.8	30	Layered	Level $
Texas TRS	86	74	74	79.1	93.6	81.34	33	Open	Level %
Maryland Teachers RPS	75.1	71.2	77.5	73.6	89.4	77.36	23	Layered	Level %
Maryland Employees RPS	68.8	65.9	66.9	72.9	83.9	71.68	23	Layered	Level %
Virginia RS	46.7	59.6	75.8	75.8	83.5	68.28	29	Closed	Level %
Texas ERS	58.5	49.2	50.7	66.3	67.9	58.52	31	Open	Level %

Source: Adapted from Fitch Ratings, 2016 State Pension Update: New Accounting, Old Challenges, November 15, 2016

Figure 7: FY2020 Actuarially Determined Employer Contribution (ADEC)

VSERS	VSTRS
• Incorporates an FY2020 ARC/ADEC recommendation of $**78,943,914** - Normal: $17,587,034 - Amortization: $61,356,880	• Incorporates an FY2020 ARC/ADEC recommendation of $**129,491,206** - Normal: $7,116,765 - Amortization: $122,374,441

and fully pay down the liability by 2038.

As noted in Figure 6 on page 12, Vermont has been making additional payments to the ARC/ADEC, especially in the VSERS system where the rate is developed as a percentage of payroll. As payrolls have risen, the contributions increased as well (liabilities also increased). In VSTRS the ARC/ADEC payments have modestly exceeded the minimum level. These additional contributions did not account for the additional health care requirements prior to FY2014. With respect to the sources of funding of the ADEC, the following facts are significant:

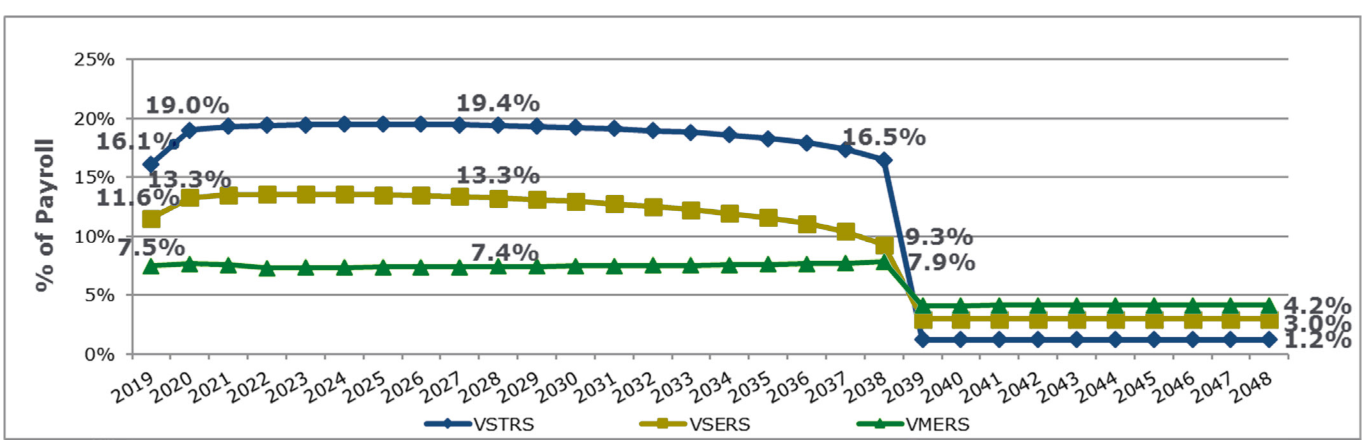
- Moody's most recent credit review noted that Vermont's pension contribution in FY2017 consumed just under 4% of own-source revenue.
- VSERS: Approximately 35%-40% of VSERS ADEC is paid by the General Fund, depending on year
- VSERS: 22.8% of the total ADEC for VSERS is reimbursed by Federal reimbursements
- VSTRS: While most of the ADEC is paid with General Fund dollars, beginning in FY2015 a portion is paid through federal grants via local school systems (5.4% in FY2019)
- VSTRS: Approximately $7.4 to 8 million of normal cost is funded through the Education Fund

The Treasurer's Office supports a policy of more rapid paydown of liabilities. In FY2016 changes to State law updated the amortization schedule, requiring a less "backloaded" payment schedule, to be implemented in FY2020. The State sought to save taxpayers' money by paying more upfront and reducing the amortization rate to 3 percent (16 V.S.A. § 1944(c)(4)(A) & (B)). Just like with a home mortgage, by reducing the backloading of payments on the unfunded liability and paying more upfront, significant interest savings can be achieved over time. The expected savings associated with this change are significant. The total impact on VSERS and the VSTRS is projected to save between $165 and $200 million through 2038.

Figure 8 demonstrates the effect of paying down the ADEC. As noted in the chart, employer contributions, as a percentage of payroll will increase in FY2020 as a result of the statutory change to the amortization table (this will not impact VMERS). Once the unfunded liabilities are paid, the ADEC will be reduced to the "normal contribution." In FY2017 the normal contribution was calculated at 3.01% of payroll for VSERS and 1.23% for VSTRS. These numbers have been adjusted slightly for FY2018, with 3.12% for VSERS and 1.08 for VSTRS. The retirement of the unfunded liability will free up budgetary resources. Currently, 77.7% of the FY2020 VSERS ADEC is required to pay down a portion of the unfunded liability. The unfunded liability payment accounts for 94.5% of the VSTRS ADEC.

The most recent State budget authorized $26.2 million of additional payments above the ADEC to paydown the

Figure 8: Long-term Employer Contributions



VSTRS unfunded liability. This was a prudent financial decision. The additional contribution will save on long-term interest costs, depending on how the $26.2 million payment is treated now and in the future. There are various options to treat these payments: 1) to recognize the $26.2 million gain this year and reduce subsequent annual payments by a small amount each year; or, (2) to defer recognizing the gain this year, continuing to pay the expected annual contributions, and achieve a significant reduction in interest costs for the taxpayer over the long-term. To illustrate this point, imagine making an extra payment on a credit card balance after receiving an unexpected source of funds. Once you make that payment, you essentially have the same two options – you can either slightly reduce the payments you make every month, or you can continue to make the same payment you made before you received the unexpected funds and reduce the overall interest you pay. Most financial advisers would tell a client to pay more than the minimum balance of their credit card. The same principle applies to pensions, and the Treasurer's Office concurs with the recommendation of the VSTRS Board of Trustees to defer recognizing the $26.2 million and continue to pay the expected State contributions both now and in the future. Under this scenario, the State will have the opportunity to realize savings of $77.4 million in interest costs.

Payment of the ADEC, with additional contributions when feasible, is good for the pension plan and is also a cost-effective strategy, as it reduces the interest paid (or opportunity cost on investments) that are paid by future taxpayers. A structurally balanced budget is one that where recurring revenues are equal to or exceed recurring expenditures. Moreover, as noted by the Government Finance Officers Association (GFOA), "In the eyes of credit ratings agencies, 'regularly occurring expenditures' extend beyond the daily expenses of salaries and supplies to include long-term liabilities like retiree healthcare and benefits payments."

Pension Risk Assessment

In keeping with a strategy that emphasizes a structurally balanced budget and maintaining retirement security for system members in the most cost-effective manner for the taxpayer, the Treasurer's Office continues to make the following recommendations:

- Avoid quick fixes and address the fundamental weaknesses in our revenue structure and spending patterns, in cluding the paydown of long-term liabilities over time
- 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
- Exercise prudence, assess current risk management framework, and develop productive strategies
- Remain disciplined investors

With respect to the last recommendation, the Boards of Trustees for the three retirement systems have contracted with our actuaries and investment advisor to complete a comprehensive risk assessment of the pension plans in 2019. The recently released Actuarial Standard of practice, ASOP No. 51, Assessment and Disclosures of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, will require actuaries to identify and assess the risks that may significantly impact a plan's future financial condition. The Trustees have opted to request a full qualitative and quantitative assessment. The quantitative risk assessment will include one or more of the following: scenario test, sensitivity test, stochastic modeling, stress tests, and a comparison of the plan's liabilities based on a discount rate derived from minimal-risk investments to the plan's liabilities, calculated for funding purposes. In completing the risk assessment, the actuary will employ both stochastic and deterministic models. The first step will be to employ stochastic projections to produce a distribution of results on the basis of distributions of the underlying assumptions. Deterministic models are simpler, but develop single point estimates largely built on the premise "if this happens, then this is the result," without any reference to the likelihood of it occurring. While these can be helpful, the planned risk assessment approach will use stochastic modeling to provide insight into which deterministic scenarios would benefit from further study.

The risk assessment will be overseen by the Boards of Trustees, the designated fiduciary oversight bodies for the plans through our independent actuaries. Full access to data and input will be provided to Treasurer's Office, the Administration and the employee groups participating in the plan. We expect to provide updates and opportunity for input to the General Assembly.

Funding of OPEB Liabilities

In FY2017, the State implemented GASB 74, which provides similar treatment of other post-employment benefits (OPEB). OPEB is primarily made up of health care. GASB 75, modeled similarly to GASB 68, will be included in the FY2018 financial statements issued by the Department of Finance & Management. These standards will change the way plans and employers report OPEB liabilities. The intent of the standards is to improve the usefulness of the reporting information and increase transparency. As with the pension standards issued in previous years, it is important to remember that the standards focus on accounting for the costs and obligations of OPEB and avoid establishing guidance on funding. Like GASB 68, GASB 75 will require the State to place a net OPEB liability on its government-wide financial statements beginning in FY2018. Unlike pensions, where full funding of the actuarially required contribution is currently taking place, we are currently not prefunding the OPEB, which will create additional liabilities on the State's financial statements beginning with FY2018. These will not impact the General Fund but will result in significant additional liabilities on the government-wide financial statements. The vast majority of states, who do not have any or significant prefunding, will see similar impacts on their financial statements.

As described above, these liabilities, like GASB 67, will not create any additional financial impacts on the General Fund. Nonetheless, it is important that the State develop funding plans to pay for these liabilities. To date most of the State's efforts have been focused on lowering liabilities rather than prefunding. A tiered eligibility for health care premium payments is in place for state employees hired after July 1, 2008, and for most active teachers. The state implemented a change in the way it relates to the federal government on prescription services (Employer Group Waiver Plan or EGWP) that has reduced costs for both VSERS and VSTRS health care while maintaining nearly identical prescription benefits. In the VSTRS system, premium payments have been lowered through wellness programs and other measures that have resulted in improved claim experience. Recently, the Administration and State employee collective bargaining process for VSERS resulted in a number of cost savings through increased member co-pays and deductibles in the medical and drug plans, increased utilization controls on the drug plan, and a move to national standard formulary

Figure 9: FY2017/FY2018 GASB 74 Results

FY 2017	(Dollar Amount in Thousands)	
	VSERS	VSTRS
Total OPEB Liability	1,484,522	905,633
Plan Fiduciary Net Position (Assets)	(22,502)	26,658
Net OPEB Liability	1,462,020	932,291
Plan Fiduciary Net Position as a Percentage of Total OPEB Liability	1.52%	-2.94%

FY 2018	(Dollar Amount in Thousands)	
	VSERS	VSTRS
Total OPEB Liability	1,240,275	927,843
Plan Fiduciary Net Position (Assets)	(21,771)	26,443
Net OPEB Liability	1,218,504	954,286
Plan Fiduciary Net Position as a Percentage of Total OPEB Liability	1.76%	-2.85%

Cumulative Change from 2017 to 2018	(Dollar Amount in Thousands)	
	VSERS	VSTRS
Change	(243,516)	21,995
% Change	-16.66%	2.31%

from a custom formulary. Combined with the current experience in medical and pharmacy for VSERS, these had a substantial impact on OPEB liabilities (see Figure 9 on page 15), which decreased by over $240 million. This is net of all gains and losses. The Treasurer's Office has requested more detailed analysis of the aforementioned health care decisions so it can evaluate the impact of the collective bargaining changes. Preliminary analysis suggests that the savings are substantial. Funding reports are used to develop the ADEC. In the case of FY2018, data for projection purposes was not reset for actual results. Therefore the GASB74 figure is currently the most accurate value for assessing the impact of the benefit structure changes.

While we have been successful at some changes to lower the liability side of the equation, the simple fact is nothing can replace the value of prefunding and compound interest. Interest from setting aside dollars now will result in lowering these long-term liabilities by almost $900 million (roughly 40%).

In the case of VSTRS, substantial changes to the funding of health care including the development of a long-term plan that can create some initial prefunding by 2023. The Treasurer's Office will be proposing plan to develop a long-term prefunding plan for VSTRS in 2019. It is important that we maintain discipline as we move forward with the VSTRS funding plan. It is equally important that we explore additional steps to manage both the funding and liabilities sides of the equation for both VSERS and VSTRS. Prefunding is ultimately in the best interest of the taxpayer and the Treasurer's Office will continue to advocate for full funding of OPEB.

Vermont State Employees' Retirement System (VSERS)

Employees retiring directly from active State service for any reason may carry coverage in effect at that time into retirement for themselves and their covered dependents. As of June 30, 2018, 4,958 retired members and beneficiaries were enrolled in the medical plan in the single, spouse, and family plan options. The retirees contributed $9.5 million in premiums for the fiscal year ending June 30, 2018. The State's FY2018 contributions to this trust fund totaled $33 million. The trust fund then paid premium payments of $34.6 million (calculated on a pay-as-you-go basis) to the State's medical insurance fund. At June 30, 2018, the trust fund had total net assets of $21.8 million being held in trust for post-employment benefits other than pension benefits.

For employees hired on or before July 1, 2008, currently only 20 percent of the cost of the premium is paid by the retiree during their lifetime. Based on legislation enacted during FY2008, the majority of state employees hired after July 1, 2008 will receive a tiered retiree health care reimbursement – a pro-rated percentage of paid premium based on years of service at retirement. Once retirees become eligible for Medicare coverage (at age 65) it is mandatory that they enroll in both Medicare Part A and B, making Medicare the primary insurer.

Retiring employees are eligible for a $10,000 life insurance policy with no further premiums due providing they have life insurance coverage at the time of retirement and have a minimum of 20 years of state service. Retirees are also eligible to enroll in a dental plan for themselves and eligible dependents at the time of retirement with the full amount of the premium withheld from their monthly retirement allowance.

Vermont State Teachers' Retirement System

VSTRS retirees participate in multi-employer health coverage plans operated by the Vermont Education Health Initiative (VEHI), which is managed jointly by the Vermont School Boards Insurance Trust and the Vermont National Education Association. As of June 30, 2018, 6,577 retired members and beneficiaries were enrolled in the single, spouse, and family medical plan options. For FY2018, the Retired Teachers' Health and Medical Benefits Fund (RTHMB) received non-employer contributions of $22.3 million. The State Treasurer is authorized to use interfund borrowings of up to $28.5 million to finance any funding shortfalls, and it is the General Assembly's intent to repay any such borrowings by the end of FY2023. At June 30, 2018, the balance on the loan, after excluding short-term receivables and ongoing financial accruals, was $26.4 million. The RTHMB paid $29.3 million in premiums to VEHI on a pay-as-you-go basis during FY2018. The retirees contributed $16 million in premiums. VEHI partners with Blue Cross Blue Shield to provide health insurance to retired and active teachers. The system pays 80 percent of the retiree's premium only, for members with a minimum of 10 years of service as of June 30, 2010. Payment is based on the cost of the "standard plan" as defined by statute. The retiree pays the full cost of the premium for all covered dependents.

The actual valuation reflects plan changes in health care coverage effective July 1, 2010 for future retirements only. Eligibility criteria and premium sharing levels were revised for active employees who did not attain 10 years of service as of June 30, 2010. Future retirees will have the ability to access health care for themselves and their spouses with a tiered subsidy applied based on the total number of years of service at retirement. Once a retiree or covered dependent becomes eligible for Medicare coverage at age 65, it is mandatory that they enroll in both Medicare Part A and Part B. Medicare becomes the primary insurer and the VSTRS medical plans become the secondary insurer. The premium for all plans is reduced in accordance with the decrease in liability once Medicare becomes the primary insurer. VSTRS retirees also have access to dental coverage for themselves and their eligible dependents with the full premium from their monthly retirement benefit.

Vermont Municipal Employees' Retirement System (VMERS)

VMERS retirees have access to dental coverage after retirement under the same rules as VSERS and VSTRS retirees. All costs are paid by retirees.

Supplemental Retirement Plans

The State of Vermont currently offers its members access to a number of supplemental retirement plans. These plans are optional and provide members the ability to save toward their retirement needs outside of the traditional pension plans. In February 2018, all supplemental retirement plans were transitioned to Prudential Retirement as the third-party administrator. The transition to Prudential provided many advantages to participants in the supplemental retirement plans. Most participants saw a reduction in administrative fees for the plans, lower investment management fees across the fund line-ups, and participants now have access to GoalMaker. GoalMaker is a proprietary asset allocation tool provided to participants at no additional cost. GoalMaker uses a participant's investor style and years to retirement to provide a portfolio of investments. Additionally, participants across the seven plans now have access to four in-state retirement counselors located regionally throughout the State. The counselors provide more personalized assistance and help participants navigate new web-based tools to help them in their financial planning.

Defined Contribution Plan

In lieu of participating in a defined benefit plan, exempt State employees and some municipal employees may opt to participate in a defined contribution plan. In a defined contribution plan, what is "defined" is the percentage of contribution that will be made by both the employee and employer each pay period. These contributions are then allocated to investment funds as designated by the participant. The investment line-up of available investment fund options is selected by the State Treasurer (State DC Plan) or the VMERS Board of Trustees (Municipal DC Plan). There is no guarantee that the contribution or investment earnings will generate adequate and reliable income in retirement. only guarantee offered in this plan is the percentage of contributions that will be made. The defined contribution plans for state and municipal employees were administered by Fidelity in FY2017. As of February 1, 2018, the third-party administrator for these plans is Prudential Retirement.

State Defined Contribution Plan

In lieu of participating in a defined benefit plan, exempt State employees and some municipal employees may opt to participate in a defined contribution plan. In a defined contribution plan, what is "defined" is the percentage of contribution that will be made by both the employee and employer each pay period. Whereas defined benefit plans provide a lifetime benefit stream based on participant age, years of service, and compensation, defined contribution plans provide a guarantee only for the amount of contributions set forth in statute. Defined contributions plans cannot guarantee adequate and reliable funds for retirement due to variations in an individual's investment decisions and market volatility. The investment line-up of available investment fund options is selected by the State Treasurer. As of February 1, 2018, the third-party administrator for these plans is Prudential Retirement.

Established in 1999, the State's defined contribution plan had 601 participants and net assets of $67.72 million as of June 30, 2018. Employees contribute 2.85 percent of their annual salary to their individual accounts. The State makes a fixed contribution of 7 percent to each employee's account. Employees are responsible for making all investment decisions. Fund line-ups are negotiated by the Treasurer's Office and included in the contract with the plan administrator, Prudential Retirement. At retirement or termination, employees receive the amount of contributions in their accounts, plus investment earnings. The defined contribution plan provides portability for an increasingly mobile workforce. The plan offers eleven mutual funds in equity, balanced, and fixed income asset classes, and age-based "life-cycle" funds that re-balance a multi-asset class portfolio of mutual funds appropriate to the age of the plan participant. There is also a stable value fund for participants who are risk-adverse.

Municipal Defined Contribution Plan

The Vermont Municipal Employees' Retirement System was given statutory authority in 1999 to approve a defined contribution plan for its members. The board implemented a defined contribution plan on July 1, 2000. As of June 30, 2018, there were 88 municipalities offering the DC plan, with 481 participants and net assets of $23.88 million. The VMERS defined contribution plan must be offered first by a municipality, then becomes an option in lieu of participating in a defined benefit plan for the employee. The VMERS Board of Trustees selects the funds that are available, which closely mirror those offered in the VSERS defined contribution plan.

Deferred Compensation 457 and 403(b) Plans

The deferred compensation program has been available as a savings option to State employees, State agency employees, and some municipal and school district employees since 1979. Since the deferred compensation plan qualifies as a section 457(b) plan under the Internal Revenue Code, the portion of salary that is deferred is not taxed at the time of deferral. The slate of investment options is selected by the VSERS Board of Trustees, who are responsible for oversight of the plan. The program is currently administered by Prudential Retirement. As of June 30, 2018, there were 7,363 participants in the 457(b) program. Total assets in the plan were valued at $483 million.

A 403(b) investment program for public school districts was implemented on January 1, 2009. There are currently 30 supervisory unions that have adopted the program. As of June 30, 2018, 2,575 school employees were participating in the program and assets had grown to $104.8 million. The program allows school employees to deduct money from their wages on a tax-deferred basis that may be invested in a variety of mutual funds during the employee's working years. The 403(b) contributions reduce taxable wages during employment and the money accumulates tax-free until the funds are withdrawn after retirement. At that time, all of the money is taxable as regular income to the participant. Oversight for this program rests with the VSTRS Board of Trustees, and it is also currently administered by Prudential Retirement.

Figure 10: Characteristics of VSERS, VSTRS, and VMERS System Members

Vermont State Employees' Retirement System (VSERS)

Active Members	June 30, 2018	June 30, 2017	% Change
Vested	5,370	5,367	0.06%
Not Vested	3,160	3,253	-2.86%
Total Active members	8,530	8,620	-1.04%
Average Age	45.9	46.0	-0.22%
Average Service	11.0	11.1	-0.90%
Average Compensation	$ 61,157	$ 58,533	4.48%
Retired Members and Beneficiaries			
Number	6,974	6,727	3.67%
Annual Retirement Allowances	$ 134,073,423	$ 125,628,642	6.72%
Inactive Members	1,266	1,098	15.30%
Terminated Vested Members	753	742	1.48%

Vermont State Teachers' Retirement System (VSTRS)

Active Members	June 30, 2018	June 30, 2017	% Change
Vested	7,413	7,508	-1.27%
Not Vested	2,479	2,520	-1.63%
Total Active members	9,892	10,028	-1.36%
Average Age	45.7	45.8	-0.22%
Average Service	12.6	12.6	0.00%
Average Compensation	$ 61,959	$ 60,566	2.30%
Retired Members and Beneficiaries			
Number	9,269	9,021	2.75%
Annual Retirement Allowances	$ 188,721,417	$ 179,082,530	5.38%
Inactive Members	2,613	2,381	9.74%
Terminated Vested Members	787	763	3.15%

Vermont Municipal Employees' Retirement System (VMERS)

Active Members	June 30, 2018	June 30, 2017	% Change
Vested	4,051	4,113	-1.51%
Not Vested	3,401	3,189	6.65%
Total Active members	7,452	7,302	2.05%
Average Age	48.3	48.4	-0.21%
Average Service	8.6	8.8	-2.27%
Average Compensation	$ 38,894	$ 37,635	3.35%
Retired Members and Beneficiaries			
Number	3,189	2,942	8.40%
Annual Retirement Allowances	$ 30,830,833	$ 26,963,962	14.34%
Inactive Members	2,516	2,221	13.28%
Terminated Vested Members	798	797	0.13%

Figure 11: Funding Progress of the Retirement Systems (Amounts in Thousands)

	Year ending June 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
VSERS	2018	$ 1,881,805	$ 2,661,609	779,804	70.7%	$ 521,671	149.5%
	2017	1,793,795	2,511,373	717,578	71.4%	504,553	142.2%
	2016	1,707,268	2,289,452	582,184	74.6%	471,268	123.5%
	2015	1,636,268	2,178,827	542,559	75.1%	462,057	117.4%
	2014	1,566,076	2,010,090	444,014	77.9%	437,676	101.4%
	2013	1,469,170	1,914,300	445,130	76.8%	416,766	106.8%
	2012	1,400,779	1,802,604	401,825	77.7%	385,526	104.2%
	2011	1,348,763	1,695,301	346,538	79.6%	398,264	87.0%
	2010	1,265,404	1,559,324	293,920	81.2%	393,829	74.6%
	2009	1,217,638	1,544,144	326,506	78.9%	404,516	80.7%
	2008	1,377,101	1,464,202	87,101	94.1%	404,593	21.5%
	2007	1,318,687	1,307,643	(11,044)	100.8%	386,917	-2.9%
	2006	1,223,323	1,232,367	9,044	99.3%	369,310	2.4%
	2005	1,148,908	1,174,796	25,888	97.8%	349,258	7.4%
	2004	1,081,359	1,107,634	26,275	97.6%	336,615	7.8%
	2003	1,025,469	1,052,004	26,535	97.5%	319,855	8.3%
	2002	990,450	1,017,129	26,679	97.4%	300,994	8.9%
	2001	954,821	1,026,993	72,172	93.0%	278,507	25.9%
	2000	895,151	967,064	71,913	92.6%	266,519	27.0%
	1999	804,970	876,412	71,442	91.8%	238,281	30.0%
	1998	733,716	804,501	70,785	91.2%	235,956	30.0%
	1997	639,128	753,883	114,755	84.8%	227,000	50.6%
VSTRS	2018	$ 1,866,121	$ 3,379,554	1,513,433	55.2%	$ 612,899	246.9%
	2017	1,779,592	3,282,045	1,502,453	54.2%	607,355	247.4%
	2016	1,716,296	2,942,024	1,225,728	58.3%	586,397	209.0%
	2015	1,662,346	2,837,375	1,175,029	58.6%	557,708	210.7%
	2014	1,610,286	2,687,049	1,076,764	59.9%	567,074	189.9%
	2013	1,552,924	2,566,834	1,013,910	60.5%	563,623	179.9%
	2012	1,517,410	2,462,913	945,503	61.6%	561,179	168.5%
	2011	1,486,698	2,331,806	845,108	63.8%	547,748	154.3%
	2010	1,410,368	2,122,191	711,823	66.5%	562,150	126.6%
	2009	1,374,079	2,101,838	727,759	65.4%	561,588	129.6%
	2008	1,605,462	1,984,967	379,505	80.9%	535,807	70.8%
	2007	1,541,860	1,816,650	274,790	84.9%	515,573	53.3%
	2006	1,427,393	1,686,502	259,109	84.6%	499,044	51.9%
	2005	1,354,006	1,492,150	138,144	90.7%	468,858	29.5%
	2004	1,284,833	1,424,661	139,828	90.2%	453,517	30.8%
	2003	1,218,001	1,358,822	140,821	89.6%	437,239	32.2%
	2002	1,169,294	1,307,202	137,908	89.5%	418,904	32.9%
	2001	1,116,846	1,254,341	137,495	89.0%	403,258	34.1%
	2000	1,037,466	1,174,087	136,621	88.4%	387,999	35.2%
	1999	931,056	1,065,754	134,698	87.4%	372,299	36.2%
	1998	821,977	955,694	133,717	86.0%	357,899	37.4%
	1997	717,396	849,179	131,783	84.5%	364,695	36.1%
VMERS	2018	$ 680,005	$ 827,556	147,551	82.2%	$ 289,839	50.9%
	2017	634,690	754,877	120,187	84.1%	274,814	43.7%
	2016	581,611	744,960	163,349	78.1%	256,730	63.6%
	2015	543,768	699,293	155,525	77.8%	249,811	62.3%
	2014	500,558	580,972	80,414	86.2%	230,969	34.8%
	2013	446,236	528,426	82,190	84.4%	220,372	37.3%
	2012	417,443	488,572	71,129	85.4%	215,075	33.1%
	2011	402,550	436,229	33,679	92.3%	205,589	16.4%
	2010	376,153	409,022	32,869	92.0%	202,405	16.2%
	2009	331,407	366,973	35,566	90.3%	191,521	18.6%
	2008	348,740	343,685	(5,055)	101.5%	175,894	-2.9%
	2007	325,774	309,853	(15,921)	105.1%	162,321	-9.8%
	2006	288,347	276,552	(11,795)	104.3%	148,815	-7.9%
	2005	259,076	248,140	(10,936)	104.4%	146,190	-7.5%
	2004	232,890	225,092	(7,798)	103.5%	135,351	-5.8%
	2003	222,854	218,533	(4,321)	102.0%	126,216	-3.4%
	2002	193,278	176,109	(17,169)	109.7%	106,986	-16.0%
	2001	177,928	158,786	(19,142)	112.1%	101,873	-18.8%
	2000	161,900	138,697	(23,203)	116.7%	87,147	-26.6%
	1999	137,454	114,481	(22,973)	120.1%	70,808	-32.4%
	1998	113,678	102,005	(11,673)	111.4%	87,328	-13.4%
	1997	96,196	85,686	(10,510)	112.3%	70,800	-14.8%

Figure 12: History of Disciplined Incremental Steps to Reduce Pension and Retiree Health Care Liabilities

2005: Teacher Study made changes to the State's actuarial methods and put full funding of the ARC on track. The Legislature has consistently adopted a budget with full funding of the ARC since 2007

2008: Committee restructured state system (VSERS) Group F benefits, lengthening age of retirement, effective in FY 2009, in concert with health care changes

2009: Pension and Health Care Study completed providing basis for negotiated savings over the next few years for both VSERS and the teachers' (VSTRS) system

2010 VSTRS: Lengthened age for normal retirement, contribution increases, and other changes, effective in FY 2011, resulting in $15 million in annual pension savings. In addition to pension costs, additional health care savings accrued

2011 VSERS: Employee contribution rate increases beginning FY 2012, initially generating $5 million in savings per year, increasing each year

2011-2012 VSTRS: Secured one-time revenues in excess of $5 million for VSERS and VSTRS under the Federal Early Retirement Reinsurance Program

2012-2015 : Incremental increases in employee and employer contributions to municipal system (VMERS), demonstrating shared responsibility by all parties. These changes put VMERS on a stronger financial track

2014 VSTRS: additional contribution increases for new and non-vested members, effective FY 2015, generating $1 million initial annual savings, increasing each year

2014 VSTRS: Statute change permitting that teacher pension costs be charged to federal grants, effective FY 2016, creating an estimated $3 to $4 million of savings per year

2015: Created Retired Teachers' Health and Medical Benefits Fund starting FY 2015

Since the 1980s, health care premiums for teachers were paid out of a sub-trust of teachers pension fund: by 2014 this arrangement was costing over $20 million per year in interest costs

Collaborative solution: Successfully convened over a dozen stakeholders, including employee group, to address the problem with combined pension/health care changes

In addition to pension and health care changes previously stated, a new health care assessment for LEAs was implemented, linking local employment decisions to the benefit costs

Projected to save taxpayers $480 million in unfunded liability interest costs through FY 2038

2016: Changes to the amortization financing schedule for VSERS and VSTRS will result in saving $165 million in interest from present to 2038

2016: Increased employee contributions resulting in $1.2 million in annual savings, with savings growing larger in future years

2018: Paid additional $26.2 million above ADEC for VSTRS and $12.5 million for VSERS

2018: Risk Assessment per ASOP 51 - Early Implementation by State

2019-2020: Amortization Plan enacted in 2016 takes effect

At the same time creating additional Transparency and Accountability:

2013: Pension forfeiture statute adopted for all three systems (VSERS, VSTRS, VMERS)

2015: VSERS Disability retirement reform permitting wage verification of disability pensioners

Collaborative Approach Key to Success:

All benefit changes made though collaborative efforts involving Administration, Treasurer's Office, Legislature and employee groups

No court litigation/disruptions in planned implementations

Recent Actuarial Assumption Changes:

Lowered investment rate of return assumption to 7.5% based on independent analysis by actuary and pension consultant

Currently updating mortality table assumptions

Debt Management

Overview

The State of Vermont's approach to debt management is characterized by conservative debt issuance and debt management policies that adhere to rigorous disclosure practices. These policies include moderate levels of bond issuance, careful consideration of debt affordability, strict adherence to credit rating agency guidelines, and strong fiscal budget policies to ensure that the State has funds readily available for bond principal and interest payments. Attention to rating agency and investor interest and concerns has earned the State a high debt rating and correspondingly very low borrowing costs. Vermont has steered clear of financial and regulatory concerns thanks to the State's disciplined practices and uncomplicated debt profile. With the exception of transportation infrastructure bonds, Vermont issues general obligation debt. All of the State's debt is fixed-rate debt.

In looking at the capital budget and the use of bonds, a distinction should be made between financing and funding. Bond financing leverages the value of a stream of revenue and then pays over time for the current use of those future revenues. In cases where there are significant inflationary costs, this can also result in increased net resources, but as a general rule they add little or no new resources to the funding gap and are not solutions to meet budgetary shortfalls.

Funding refers to the generation of revenue, through various means such as taxes and fees, that provides needed services or capital infrastructure. The bonds to finance these must be repaid through future revenue flows. The Treasurer's Office urges prudence when issuing bonds. Borrowing makes sense when:

- The costs saved through accelerated construction (inflation and preventative maintenance) exceed the interest paid on the funds; and/or
- a quantifiable economic benefit exceeds the cost of borrowing; and
- a future identifiable and available revenue source exists to pay for the bonds.

Vermont's Bond Ratings

Vermont has the highest general obligation bond rating in New England (see Figure 13). However, demographic headwinds in the Northeast underscore the importance that the State of Vermont continue its commitment to proactive financial management and fiscal discipline.

The State's general obligation bond rating was downgraded in October 2018 by Moody's (Aa1, second highest rating), and remain unchanged by Fitch Ratings (AAA, highest rating), and S&P Global Ratings (AA+, second highest rating). All three ratings include stable outlooks. Moody's decision to downgrade the State's bond rating came after the agency updated the criteria they use to review the financial health of US states and territories. The agency's methodology change made maintaining a triple-A rating more challenging for small, rural states, like Vermont.

Figure 13: New England General Obligation Bond Ratings
(As of September 30th of FY2018)

STATE	FITCH	MOODY'S	S&P
Vermont	AAA	Aa1	AA+
Connecticut	A+	A1	A
Maine	AA	Aa2	AA
Massachusetts	AA+	Aa1	AA
New Hampshire	AA+	Aa1	AA
Rhode Island	AA	Aa2	AA

Moody's report identified several key areas for improvement. The Treasurer's Office welcomes the opportunity to work collaboratively to address shared challenges such as Vermont's aging population, slow economic growth, and above average long-term pension and post retirement liabilities relative to State GDP. The Moody's report identified valid challenges, but they are accompanied by many positive strengths that have been identified by all three rating agencies.

The State of Vermont has many attributes that will be part of the solution as we seek to restore our triple-A bond rating. In addition to working together to address our demographic and workforce challenges, the Administration and General Assembly must continue to focus on fundamentals including:

- Passing structurally sound budgets where revenues meet ongoing expenses;
- Paying at least the full ADEC;
- Addressing pension and OPEB funding challenges collaboratively and working to prefund long-term liabilities as the State continues its plan to retire the unfunded liability in 2038;
- Reducing reliance on debt and shift to more pay-as-you-go options to fund capital needs; and
- Increasing reserves in the General Fund, Education Fund, and Transportation Fund.

The potential cost impact of Moody's October 2018 decision may be mitigated by the fact that Vermont's reputation is still strong. A preliminary analysis found that the cost will vary based on interest rates and credit spreads between bonds rated at various levels. The Treasurer's Office typically measures cost impacts based on a $150 million bond issue over the life of a 20-year bond. Using this assumption, the estimated cost is $1 million over the life of a 20-year bond. Forecasts issued by the Capital Debt Affordability Advisory Committee (CDAAC) project roughly $61.59 million of issuance per year over the next several years, which would result in an approximate cost of $400,000 over the life of a 20-year bond.

Vermont's bond ratings are critical to Vermont because they allow access to capital at low rates. This not only supports the State's bonding needs, but it also lowers borrowing costs for municipalities that issue debt through the Vermont Municipal Bond Bank (VMBB) or other borrowers that rely on the State's bond rating. Additional costs to entities that utilize the State's "moral obligation" will vary by entity. These include entities that support affordable housing (Vermont Housing Finance Agency or VHFA), economic development (Vermont Economic Development Agency or VEDA), and selected issuance for student loans (Vermont Student Assistance Corporation or VSAC). Maintenance of the State's bond rating is important for every citizen, each community, and Vermont non-profits and businesses.

Debt Affordability

The Capital Debt Affordability Advisory Committee (CDAAC) is made up of the State Treasurer (Chair), three ex officio members, two appointees of the Governor, one appointee of the State Treasurer, and an appointee of the Vermont Municipal Bond Bank (VMBB). CDAAC completes an annual review of the size and affordability of the State tax-supported general obligation debt and submits to the Governor and to the General Assembly an estimate of the maximum amount of new long-term general obligation debt that may be prudently authorized for the next fiscal year. The estimate of the committee is advisory, but has historically been adopted by the State as a bonding limit.

In 2018, CDAAC recommended a two-year maximum net tax-supported debt authorization of $123.18 million, a reduction of 7.0% from the previous biennium recommendation of $132.46 million. This follows reductions of 8.01% and 9.9% reductions in the prior bienniums. In total, these recommendations represent a cumulative 6 year reduction of 23.0%. These reductions are critical to reducing the portion of the budget devoted to debt service, which is approximately 25 cents for ever dollar of debt issued.

Debt Ratios

The State of Vermont needs to reduce its appetite for debt. Lower debt issuance by US states has weakened Vermont's debt ratio ranking relative to peers. This is particularly true of peer triple-A rated states. Furthermore, Vermont's projected debt issuance exceeds scheduled debt retirements, so the State's overall debt outstanding will continue to rise. In the sections that follow, the mean and median for all 50 states, as a part of an annual series most recently released by Moody's Investor Service in April 2018, is noted. This provides detail on Vermont's relative position.

CDAAC's 2018 report acknowledged rating agency concerns about the status of US local and state infrastructure needs. Decisions to defer maintenance and/or replacement of capital infrastructure require additional focus and proactive capital planning. There is an urgent need to develop pay-as-you-go funding structures that would be beneficial to the capital and asset management process. CDAAC and the Treasurer's Office plan to provide the Administration and General Assembly with suggestions to proactively manage these capital needs.

In addition, CDAAC calculates debt per capita and debt as a percentage of personal income based on the annual Moody's Report, using a five-year median and mean for states with at least two triple-A ratings. In the case of debt service as a percentage of revenues, Vermont uses an absolute guideline rather than a comparison to the peer triple-A states. This forms the basis for guidelines for the State in shaping its CDAAC recommendations. The State did not conduct its annual general obligation issuance in FY2018, so the decrease in debt levels and improvement in debt ratios is temporary as the Moody's data is based on FY2017 figures.

The State has recently made strides to reduce the amount of annual debt issuance. As mentioned above, the amount of debt authorization has decreased by 18% from four years ago, and recommendations for further reductions are possible. These facts notwithstanding, the State of Vermont will need to continue to curtail its appetite for debt as we face demographic challenges in the Northeast. The Treasurer's Office and CDAAC look forward to partnering with the Administration and General Assembly to work to address our capital financing goals in a way that protects our bottom line.

Figure 14: Moody's Investors Service -- Debt Per Capita -- State of Vermont

Triple-A Rated States--5-Year Average Mean and 5-Year Median Excluding Vermont

MEAN: $948 MEDIAN: $759 5-Year Average - VERMONT: $978

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

¹ Carry at least two triple A ratings.
² Ratings as of June 30, 2018
³ The calculations exclude all Vermont numbers.
* Indicates that the state was not rated triple-A thereby two or more of this rating agencies during the year shown. Amount not used in calculating the mean or median for the year.

Figure 15: State of Vermont Net Tax Supported Debt Per Capita

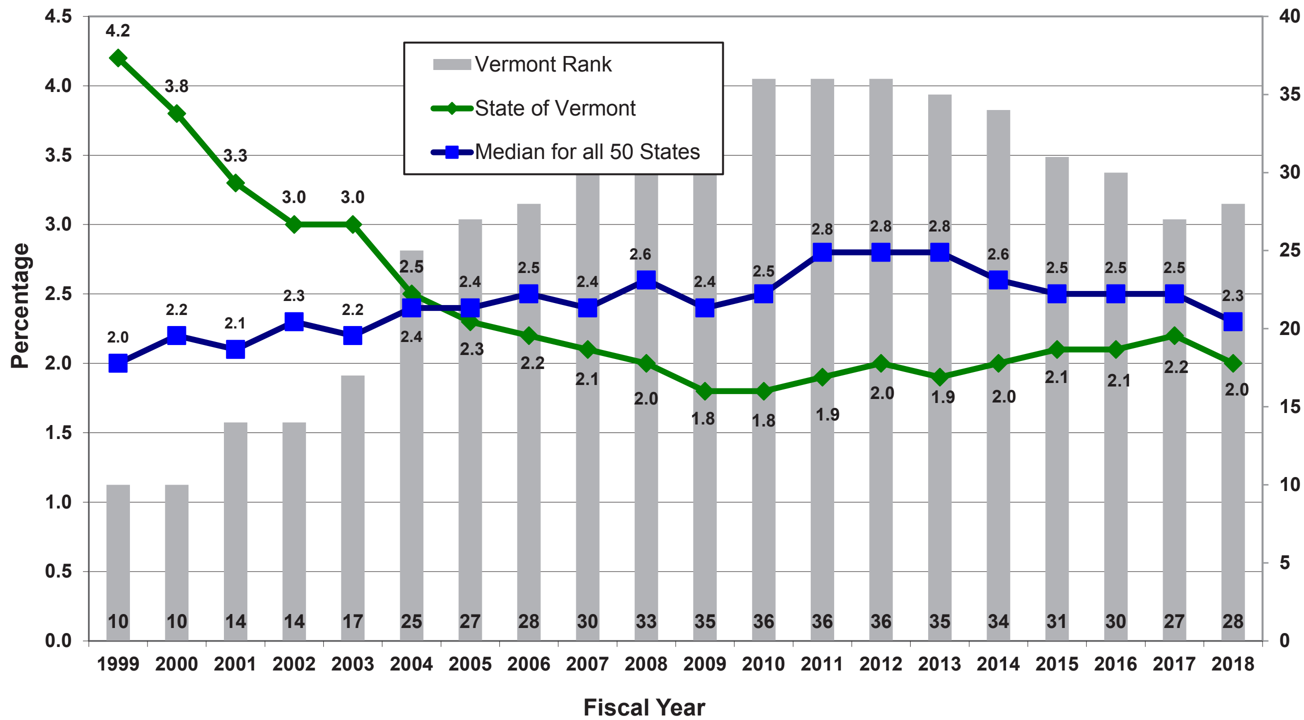
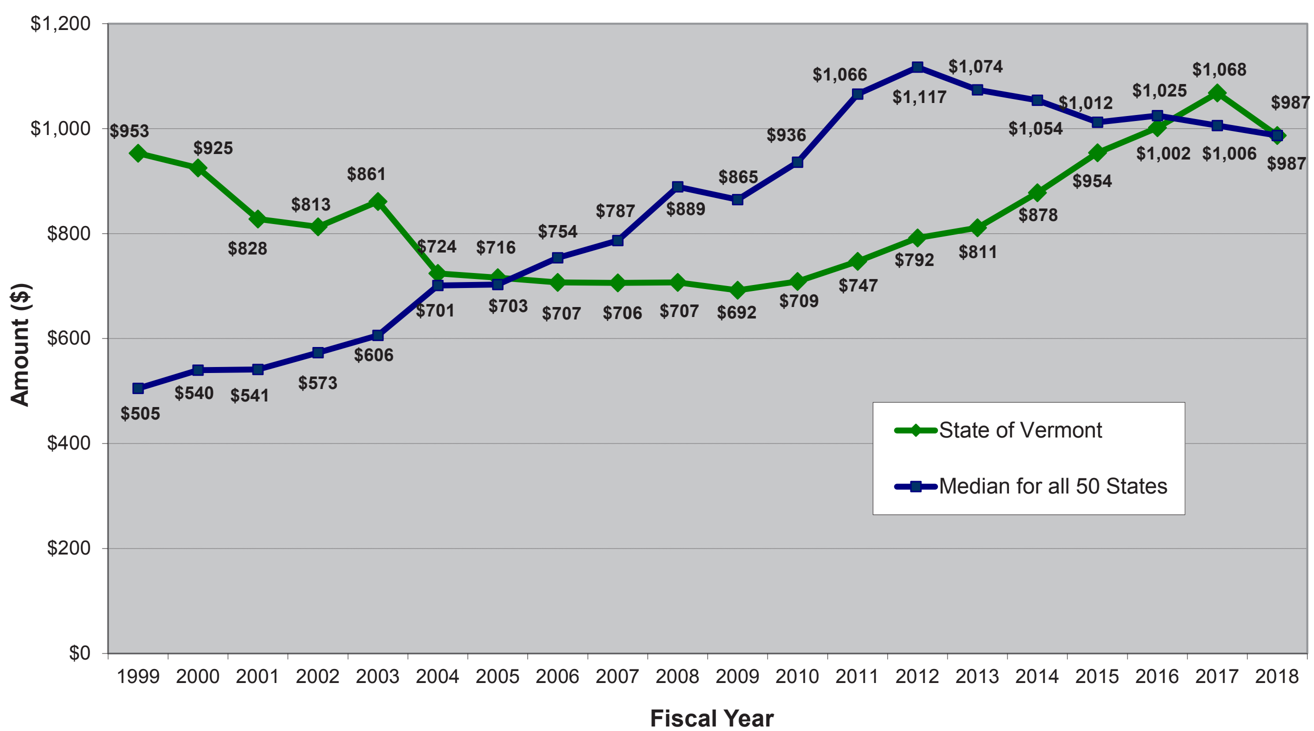


Figure 16: State of Vermont Net Tax Supported Debt as a Percent of Personal Income



Debt Per Capita

Debt as a percentage of personal income and debt service as a percentage of revenues are generally understood to be the better credit indicators of the State's ability to pay; however, the rating agencies continue to calculate and monitor the State's debt per capita as an indicator and it is included as a factor in CDAAC's deliberations. In 2018, the State's debt per capita was $987 (see Figure 16 on page 25), right at the 50-state median, and a decrease from $1,006 the previous year. Vermont improved its ranking by one slot among the 50 states, to 25th.

CDAAC uses a five-year average of our peer triple-A states. Vermont has a five-year average of $987 versus a mean of $1,477, and a median of $987 for the same five-year period for our peer triple-A states. The State's net tax-supported debt per capita is forecast to increase to $1,138 by 2022, before trending back down. That forecast assumes a steady level of debt authorization and issuance of $108.835 million in FY2019, and $61.59 million per year from FY2020 through FY2029. Under this scenario, the debt per capita would exceed the projected state guideline. Given the weight placed on this ratio versus the other debt ratios noted below, CDAAC limited the constraining impact of this in its recommendations.

Debt as a Percentage of Personal Income

Another credit factor for assessing a state's relative ability to pay its general obligation debt is the ratio of net tax-supported debt as a percent of personal income. Vermont has a ratio of 2.0 percent as compared to a 50 state mean of 2.9 percent and a median of 2.3 percent. The State improved its ranking slightly in 2018 to 28th among the 50 States. The CDAAC guideline is to perform better than the Moody's five-year mean (2.0 percent) and median (1.8 percent) for states with at least two triple-A ratings. Using the current CDAAC projection, this ratio will improve to 1.5 percent by FY2028.

Figure 17: Moody's Investors Service, Vermont Debt as % of Personal Income

Triple-A Rated States--5-Year Average Mean and 5-Year Median Excluding Vermont
MEAN: 2.1% MEDIAN: 1.9% 5-Year Average VERMONT: 2.0%

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

(1) These calculation exclude all Vermont numbers and include only states rated triple-A by two or more rating agencies during the periods shown, year ended June 30th.
* Indicates that the state was not rated triple-A by two or more of the rating agencies during the year shown. Amount not used in calculating the mean or median for the year.

Debt as a Percentage of Revenue

The guideline used for determining debt service as a percentage of revenue states that projected annual State debt service on general obligation bonds should not be more than 6.0 percent of projected revenues in the combined General and Transportation funds. The debt service as a percentage of revenues ratio was 4.0 percent for FY2018. This percentage is expected to rise to 4.6 percent by fiscal year 2025. Given the potential for wide variances in State revenues at various points in the economic cycle, CDAAC proposed a significant buffer between the recommended level and the guideline. During the Great Recession, this ratio jumped from 5 percent in 2008 to 5.5 percent in 2009 and 5.7 percent in 2010.

Budget Stabilization Reserves

The State has budget stabilization reserve levels required by statute for each of the State's General Fund, Transportation Fund, and Education Fund. Required reserves for the General Fund and Transportation Fund are 5 percent. The Education Fund's required reserve levels are between 3.5 percent and 5 percent of the previous year's appropriations. In FY2018, General Fund reserves were increased by $26.2 million, and currently, all three funds are at their statutory requirements. The combined effect of full budget stabilization reserves, plus the caseload reserves, is positive for the State's ratings. Additionally, the State Treasurer has recommended a long-term goal of increasing the General Fund reserve to 8 percent. The Treasurer's Office also recommends building to a target of 3 percent for the rainy day fund, which, combined with the budget stabilization reserves, would match the rating agencies' preferred 8 percent total reserves level.

Other Factors and Summary

The rating agencies also consider the breadth of the economy; the level and condition of the State's transportation, utilities and other infrastructure; personal income levels; fiscal responsibility; employment levels; workforce size and training; population demographics and trends; internal controls and auditing standards; need for short-term borrowings; and other factors.

In looking at our bond rating profile, Vermont's strong fiscal discipline, a record of surpluses, modest debt burden, and progress on funding liabilities despite a net pension liability are generally seen as strengths. Maintaining our reserves is also a strength, although additional increases to reserves would be a credit plus. On the credit challenge side, our demographics, particularly our aging workforce and population and slow revenue growth, are seen as challenges.

There are many external national and international economic factors that put stress on state ratings. In order to maintain and foster economic health, the State of Vermont must continue a collaborative, disciplined approach to financial management, punctuated by timely, balanced budgets; proactive budget management using consensus revenue forecasting; full funding of the required actuarial contributions; and continuous improvement of State stabilization and rainy day reserves.

Investments

Overview

The Treasurer's Office is responsible for the investment of funds that can be generally divided into three groups: 1) operating and restricted funds; 2) non-retirement related trust funds; and 3) post-retirement funds including pensions, heath care/other post-employment benefits and supplemental retirement programs.

For operating funds and restricted funds (those funds identified as having certain federal restrictions, grant restrictions, or funds that must be segregated by statute), the State has an investment policy with an overriding goal of minimizing exposure to risk and maintaining liquidity necessary for future cash needs, while maximizing the return on investments. Types of investments allowed include obligations of the United States and its agencies and instrumentalities; certificates of deposit issued by banks and savings and loan associations approved by the State Treasurer; domestic money market funds; and other money market instruments. The Treasurer's Office issues additional formal guidance that is reviewed periodically to assure that the three investment objectives – safety, liquidity, and yield – are met.

A portion of these funds is permitted by State statute to be invested for longer maturity periods to provide the ability to obtain additional return consistent with liquidity needs. Beginning in 2013, local investment initiatives were implemented to develop a diversified portfolio of varying maturities.

Certain trust funds are contained in 32 V.S.A. § 434, referred to collectively as the Trust Investment Account. These funds include the Tobacco Trust Fund, the Higher Education Trust Fund, the ANR Stewardship Fund, two Veterans' Home trusts, the Fish and Wildlife Trust, Vermont State Retirement OPEB Fund, and various small trusts. The State Treasurer may invest funds in accordance with the standard of care established by the Prudent Investor rule and apply the same investment objectives and policies adopted by the Vermont State Employees' Retirement System, where appropriate, to the investment of funds in the Trust Investment Account.

As noted in the retirement operations section of this report, certain optional retirement plans (deferred compensation, SDIA) and defined benefit plans are managed through third-party contracts with investment authority resting with the retirement boards, or in the case of the State defined contribution plan, the State Treasurer.

The funds of the defined benefit pensions plans are invested under the authority of the Vermont Pension Investment Committee (VPIC), of which the State Treasurer is Vice Chair. The Treasurer's Office also provides administrative support to the plans.

Vermont Pension Investment Committee (VPIC)

The mission of VPIC is to manage investments for the participating retirement plans with integrity, prudence, and skill to meet or exceed the financial objectives of the beneficiaries of the participating retirement systems. VPIC acts as the trustee for the defined benefit plan investments, while the Board of Trustees for each retirement system maintains its fiduciary role in the area of benefits administration and actuarial recommendations. The State Treasurer serves on the retirement boards, VPIC, and is the custodian of the funds, providing administrative support and oversight. Investment services within the Treasurer's Office provide cash and investment management for the State of Vermont and conduct day-to-day activities with investment managers, custodians, and other service providers.

VPIC was created in 2005, and amended in 2007 and in 2009, to combine the assets of VSERS, VSTRS, and VMERS for the purpose of 1) investment in a manner that is more cost- and resource-efficient; 2) improving the effectiveness of the oversight and management of the assets of the Retirement Systems; and 3) maintaining the actuarial, accounting, and asset allocation integrity of the Retirement Systems.

VPIC maintains a governance framework that ensures that all its fiduciary and legal responsibilities are addressed on an ongoing basis. VPIC focuses its time on its four core responsibilities: asset allocation, risk management, governance, and member education. Other VPIC responsibilities are largely delegated to investment managers. These include a proxy voting vendor, VPIC's master custodian, and VPIC's investment consultant. The Vermont Attorney General's office provides legal counsel and support to VPIC and the retirement boards. VPIC has operating policies in place to manage these delegated responsibilities.

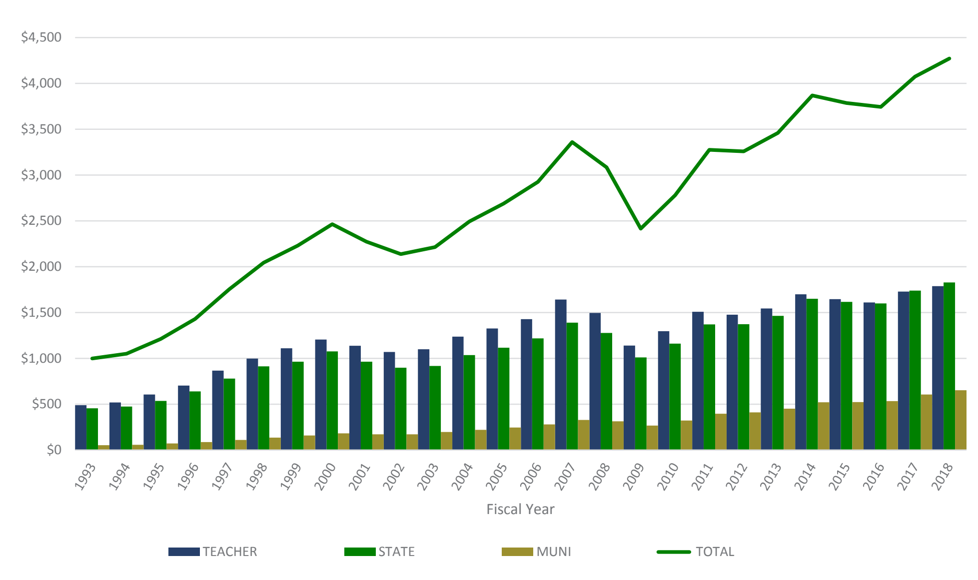
The 11-member VPIC consists of six voting members, a Chair, and four alternates. Each retirement system Board of Trustees has representation, along with the Governor's Office, and the Treasurer's Office. At the end of fiscal year 2018, individuals appointed to the Committee are: Chair, Thomas Golonka; Vice-Chair and Treasurer Beth Pearce; VSERS member, Robert Hooper; VSERS alternate, Jeff Briggs; VMERS member, Peter Amons; VMERS alternate, Kimberly Gleason; VSTRS member, Joseph Mackey; VSTRS alternate, Linda Deliduka; Governor's members, Karen Paul and Vaughn Altemus; and Governor's alternate, David Starr. As of June 30, 2018, the total assets under management of VPIC portfolio were $4.3 billion.

VPIC Investments

VPIC seeks to measure its performance on a long-term basis versus the following benchmarks in order of importance: 1) a net return, over rolling 5-year periods, which meets or exceeds the actuarially-established rate of return; 2) on a risk-adjusted basis, net of fees, and over a rolling 5-year period, an overall benchmark comprising 60% in global equities and 40% in global bonds (as represented by the MSCI ACWI and Citigroup WGBI indices, respectively); 3) generate a total portfolio return, which exceeds the allocation index return; and, 4) achieve comparable investment results to a peer group of public defined benefit retirement systems with like investment characteristics and risk parameters. Our investment approach seeks to strategically align the investment portfolio with each pension fund's demographic and financial characteristics by maximizing return within prudent levels of risk and liquidity. Supporting this process is our belief that less complicated strategies are supportive of stronger risk management, that we should understand what risks we are taking in the portfolio and how we are being compensated for those risks, and that investment manager fees should be optimized so that we understand the value we receive for those fees.

Through June 30, 2018, the VPIC portfolio had a composite 5-year net return of 6.3%, compared to the actuarial rate of return of 7.5%. The 5-year return for the global stock/bond benchmark mentioned above was 6.2%, which the VPIC portfolio outperformed by 0.10%. In FY2018, the VPIC performance was 6.7% compared to a median public fund peer universe return of 7.5%. For FY2018 (InvestorForce Public peer database of defined benefit plans < $5 billion net median) the VPIC underperformed peers by 0.80%. Return numbers are "end-point sensitive," as noted in the change in performance figures on page 30 of this report. Financial data can have large swings that do not "average out" as one might expect. Nonetheless, we believe that markets have and will continue to exhibit lower rates of return over the short-term versus historical averages. In fact, in developing the current long-term assumed rate of return of 7.5%, both our

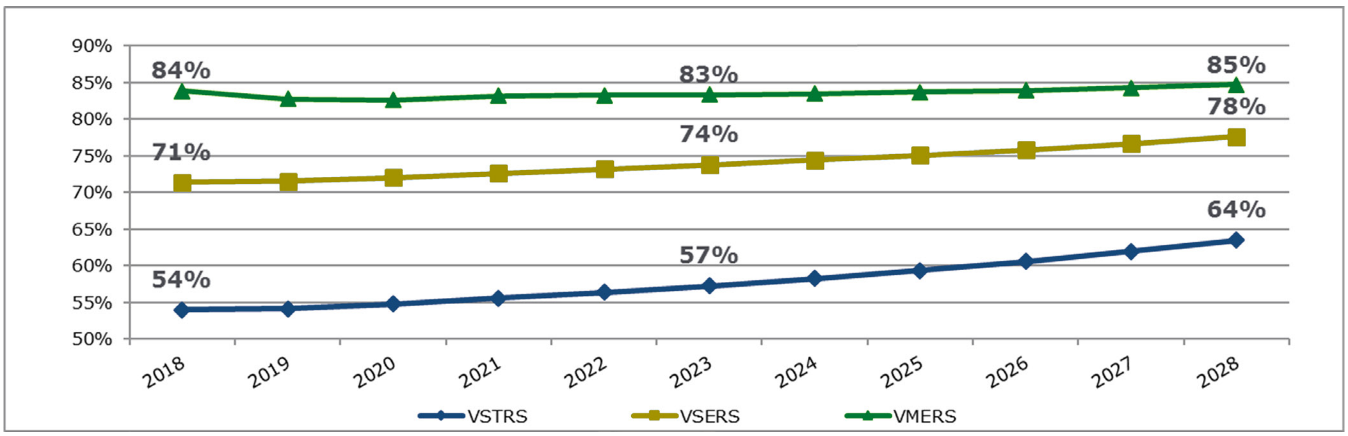
Figure 18: Pension Asset Levels



independent actuary (Segal Consulting) and investment consultant (NEPC) assumed a 5-7 year rate in the 6.4% range. As noted in Figure 18 below, based on an independent actuarial review, the funded ratio of VSERS and VSTRS is expected to increase over the next 10 years, with all other experience assumed to approximate actuarial assumptions. While we benchmark our investment performance over shorter periods, we design the investment portfolio to fund pension liabilities over periods of 30 years or more. Even assuming lower investment return in the intermediate term based on current valuations, this approach is expected to continuously improve the pension funds' funding status through 2038, at which point we expect to have fully amortized existing pension liabilities (see Figure 19 below).

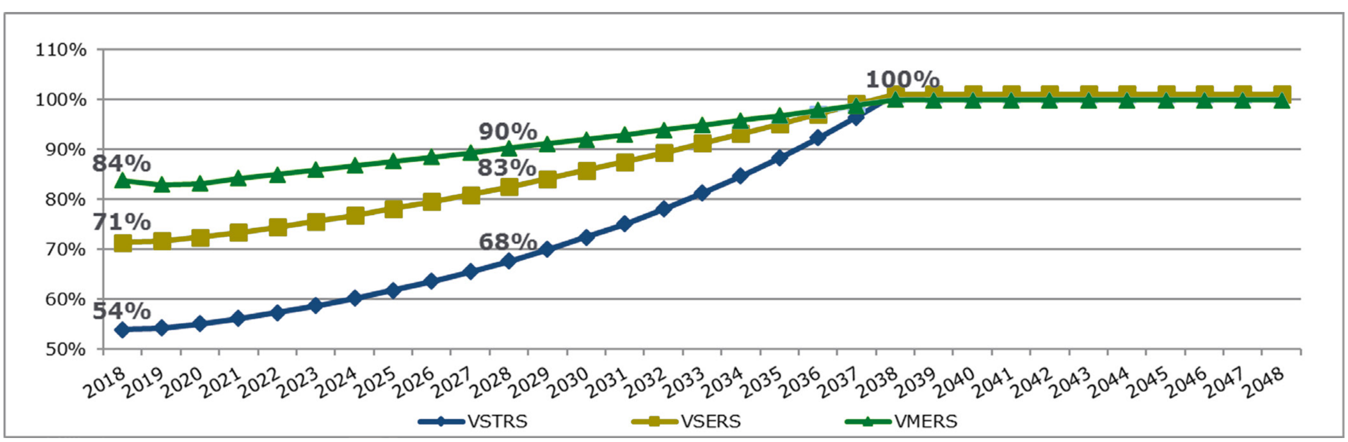
In the bull market post the Great Recession, public pension plans built up meaningful positions in private markets to take advantage of an illiquidity premium versus public market equivalents. VPIC and Treasury Staff have worked to find a balance between risk and return across the VPIC target asset allocation, and as such started in 2012 to prudently invest in

Figure 19: Investment Rate of Return Effect on Medium-term Funded Ratio



*Long-term projections use the 30 year return assumption of 6.4% per year.

Figure 20: Investment Rate of Return Effect on Long-term Funded Ratio



*Long-term projections use the 30 year return assumption of 7.5% per year.

Figure 21: Investment Performance of Vermont's Retirement Systems

As of June 30th of FY2018

Retirement System	Last 1 Year	Last 3 Years*	Last 7 Years *
Teachers Composite	6.7%	6.1%	5.9%
State Composite	6.7%	6.1%	5.9%
Municipal Composite	6.8%	6.1%	6.0%

*Annualized
** All figures are net of fees
Source: NEPC, LLC

As of September 30th of FY2018

Retirement System	Last 1 Year	Last 3 Years*	Last 7 Years *
Teachers Composite	6.1%	8.9%	7.4%
State Composite	6.0%	8.9%	7.5%
Municipal Composite	6.0%	9.0%	7.5%

*Annualized
** All figures are net of fees
Source: NEPC, LLC

private markets. VPIC reassessed the asset allocation strategy and implemented changes to obtain a higher expected risk-adjusted return profile in 2017, with a larger allocation to private markets as the Committee gained comfort with the asset classes. VPIC's portfolio return in 2018 lagged peers due to a lower percentage of the VPIC portfolio being invested in private markets, which have significantly outperformed their public market equivalents. A well-diversified, private market investment takes several years to build. Treasury staff anticipates in the coming years this gap will close as the new asset allocation approved in 2017 of 10% private equity and 5% private debt is fully implemented. In addition, the Committee has prioritized structural changes within the portfolio to increase transparency and lower fees. While alternatives assets are essential to a diversified portfolio, many alternative products on the market can be overly complex, difficult to value, and expensive. VPIC and the Treasurer's office have worked diligently to improve the expense structure of the portfolio through increased use of passive investment vehicles, where prudent and appropriate, and by annually evaluating the net risk-return attributes of actively managed investment strategies. Since 2015, the VPIC has reduced total investment management fees from 0.62% of assets under management to 0.42%, which is a 30% reduction of more than $6.6 million in savings.

At fiscal year end, the target asset allocation of the portfolio was 53 percent equities, 31 percent fixed income, 8 percent absolute return strategies, and 8 percent real assets. The VPIC conducts an annual asset allocation review each year. The

Figure 22: Asset Allocation Target of VPIC as of June 30, 2018

Investment Category	Allocation
Equity	
Domestic Large Cap Equities	14.0%
Domestic Small/Mid Cap Equities	4.0%
International Equity (Unhedged)	10.0%
International Small Cap	2.0%
Emerging Market Equity	4.0%
Global Equity	9.0%
Private Equity	10.0%
Total Equity	**53.0%**
Fixed Income	
TIPS	6.0%
Emerging Market Debt (External/Local)	4.0%
Diversified Fixed Income	12.0%
Unconstrained Fixed Income	4.0%
Private Debt	5.0%
Total Fixed Income	**31.0%**
Alternatives	
Real Estate	8.0%
Total Alternatives	**8.0%**
Multi-Strategy	
Absolute Return [1]	8.0%
Total Multi-Strategy	**8.0%**
Cash	**0.0%**
Grand Total	**100.0%**

[1] *Absolute Return category includes Hedge Fund-of-Funds, Equity Options Strategy, and a Dynamic Growth Strategy*

investment consultant, NEPC, presents their capital market assumptions and recommends best ideas for VPIC portfolio over a five to seven-year time horizon, reflecting changes in the market environment from the prior year. In the 2018 review, the Committee voted to liquidate the Risk Parity strategy and allocate the funds across US equities, Core Bonds, and an Absolute Return strategy given the Committee's concerns over the interest-rate environment.

The fiscal year was marked by volatile markets. Fixed income securities contended with three Federal Reserve funds rate hikes, which increased the yields associated with short term securities and decreased the price on existing short-term fixed income instruments in the market. The yield curve continued to flatten with the long end rising only modestly throughout the year compared to the front end. Equity markets faced a headwind of headline risk associated with escalating tensions over a trade war between the United States and China. Emerging market equities and international equities saw sharp declines in the second half of the fiscal year and global equities in March printed their first negative quarter in two years. US equities saw a rebound in the fourth fiscal quarter due to a strengthening dollar and "flight to quality" among investors amid rising geopolitical uncertainty. Through this volatile year, VPIC was well served by its diversified portfolio, which continues to exhibit lower risk characteristics versus its peers and is in the top 28th percentile for risk over a 5-year period.

The Treasurer's Office wishes to acknowledge to the work of all the VPIC members and VPIC Chair, Tom Golonka, as we complete a retooling of our portfolio, emphasizing transparency, reduced complexity and lower fees. Mr. Golonka has been an engaged chair working diligently on these issues.

Environmental, Social and Corporate Governance (ESG) Initiatives

As noted in the VPIC investment policy, "The VPIC recognizes that environmental, social and governance (ESG) issues are among core factors when assessing the risks and opportunities of an asset and should be fully integrated into the investment process by the VPIC and its managers. ESG should be weighed with all other risks and opportunities and not considered in isolation. Engagement on ESG issues can result in more informed decision-making and VPIC recognizes the importance of shareholder engagement."

A few recent efforts and accomplishments by VPIC and Treasurer's Office to encourage integration of ESG considerations and advocate for corporate policies and responsibilities are noted below.

- VPIC surveys investment managers, prior to hiring and on an annual basis, to disclose policies and procedures for integrating ESG into investment decisions, including ESG-related value drivers and management of material ESG-related risks. The Treasurer's Office aggregates the survey and reports the findings to VPIC.

- To emphasize the importance of strong corporate governance policies at oil and gas companies the VPIC took part in shareholder resolutions at Exxon and Chevron requesting that the roles of CEO and Chairman of the Board be separated during the next CEO transition. These resolutions received 38.7% and 24.0% support from shareholders, respectively. The corporation's Board of Directors purpose is to provide decision making and oversight to company management on behalf of shareholders. It is VPIC's belief that for a Board to meet this purpose, its directors must be independent from company management, including the Board's chairman.

- Political engagement by companies presents both risks and opportunities for corporations, and therefore must be properly managed. VPIC supports shareholder resolutions advocating for standardized disclosure by public companies on political spending and activities. The Treasurer's Office, on behalf of VPIC, worked alongside the Rhode Island Employees' Retirement System Pooled Trust to receive a commitment from Devon Energy to report annually on their political spending and activities. We are working together again this year to get the same commitment from Exxon Mobil Corporation.

- Well-developed regulatory policies on climate issues help to keep domestic companies competitive in the global market while preserving the health of the environment. To advance this belief, VPIC and Treasurer's Office signed the 2018 Global Investor Statement to Governments on Climate Change letter sent to world Governments ahead of the G20 Summit in Buenos Ares and COP24 in Katowice calling on global leaders to commit to the goals of the Paris Climate Agreement and support the transition to a low-carbon economy.

The letter was signed by over 345 investors representing over $30 trillion in assets. In addition, the State Treasurer worked with a group of State Comptrollers and Treasurers to the EPA and US Department of Transportation to note their opposition to the proposed revisions to the Corporate Average Fleet Efficiency (CAFE) amendments, which would freeze the implementation of scheduled fuel economy standards changes.

• Progress through advocacy takes time and, as a long-term investor, VPIC can persistently engage with companies. In 2018, after a period of more than three years of engagement with Exxon Mobil Corporation, shareholder support on the proxy resolution increased from 9.6% to 62.1% under the leadership of the New York State Common Retirement Fund. The firm responded by publishinged an assessment of portfolio risks assuming a 2-degree global warming scenario and appointed an environmental expert to the Board of Directors. While more needs to be accomplished, these were positive steps by the company toward assessing their risks associated with climate change.

• VPIC and Treasurer's Office participate in many organizations and efforts alongside other institutional investors to encourage integration of ESG considerations into companies' business models and to advocate for corporate policies and regulations that enhance long-term profitability. The organizations include, but are not limited to the examples that follow below.

• The Treasurer's Office is a founding member of the Investment Network for Climate Risk (INCR), operating through Ceres, a non-profit organization advocating for sustainability. INCR has since grown to a network of 130 institutional investors representing more than $20 trillion in assets under management, pooling their collective efforts for joint action on climate risk.

• The Treasurer's Office participates in the Carbon Asset Risk project, an effort to advocate for business planning for a transition to a low carbon economy.

• VPIC and Treasurer's Office became members of the Sustainability Accounting Standards Board (SASB), an organization which develops and maintains evidence-based, industry specific, and materiality focused sustainability disclosure guidelines.

• VPIC joined Investors for Opioid Accountability (IOA), a coalition of Treasurers, asset managers, and retirement funds engaging with companies in the pharmaceutical industry on risks related to the opioid epidemic.

• The Treasurer's Office received approval from the VPIC to join Principles for Responsible Investment (PRI), the world's leading proponent of responsible investment, supported by the United Nations.

• To better engage on social issues, the VPIC and Treasurer's Office joined the Investor Alliance for Human Rights, run by ICCR and launched in early 2018.

• On January 31, 2018, Treasurer Pearce served as a convener for the Investor Summit on Climate Risk at the United Nations, a role she also held in 2014 and 2016.

VPIC believes that constructive engagement provides a better foundation for advocacy and utilizes the Committee's shareholder rights to advance ESG initiatives alongside peers. Over the next year the Treasurer's Office, on behalf of VPIC, will advocate for issues regarding political accountability, ethical labor practices, environmental sustainability, and opioid accountability.

Short-term, Local Investments, and Other Investments

The State Treasurer and the Treasurer's Office are responsible for the management of the State's operating funds and certain other funds. The Treasurer's Office is committed to meeting the cash needs of State operations in the short-term, as well as prudently investing the other funds while they are held in the state treasury, according to office policies. The Treasurer's Office approaches these responsibilities using a prudent and deliberative process. The funds under management include the following categories. In addition to these funds, the State Treasurer is responsible for administering the Trust Investment Account (TIA).

Operating Funds

These funds are used for the ongoing cash flow needs of State government, for which preservation of principal and daily liquidity are the critical objectives, followed by yield. These funds are typically held in bank deposits, money market funds, and certificates of deposit. At times when cash levels are higher, portions of these funds may be invested in US Treasury and Agency Securities and other short-term investments with maturities from one to twelve months. Certificates of deposit are offered through the Bank in Vermont CD program, which provides opportunities to invest State funds in banks with branches in Vermont on a predictable basis via a competitive bidding process.

FY2018 saw continued challenges in the short-term investments market place. Despite rate increases in FY2018, yields on high quality, short-term fixed income securities maturing in three years or less remained relatively flat. This limits the returns available on operating funds - including the General, Transportation, and Education Funds. In June of 2018, the Federal Reserve raised the federal funds rate 0.25% to 2.00%. This was the third rate increase of .25% during FY2018.

Local Investments

In November 2012, the Treasurer's Office convened a capital gaps/local investment working group to identify areas where capital was not matched to needs and then take steps to address these barriers with substantial proposals. Several successful proposals were developed as a result. These successes led to an expansion of the program with the mandate stating that "the Vermont State Treasurer shall have the authority to establish a credit facility of up to 10 percent of the State's average cash balance on terms acceptable to the State Treasurer consistent with the provisions of the Uniform Prudent Investor Act, 14A V.S.A. chapter 9." (2014 Act 199. Sec. 23.) Through this program, investments have been made with entities such as: Neighborworks of Western Vermont, the Vermont Community Loan Fund, the Vermont Economic Development Authority, Vermont Housing Finance Agency, and Champlain Housing Trust. The Treasurer's Office is authorized to loan up to $33.7 million. Presently, $25.1 million has been loaned out. See Figure 27 on page 42 of this report for additional detail on local investments.

Interfund Loans

In 2014, the Retired Teachers Health and Medical Benefits fund (RTHMB) was enacted for the purpose of paying retired teacher health and medical benefits. Pursuant to this statute, the State Treasurer may use interfund loans from the General Fund up to an aggregate amount of $28.5 million for this purpose. Pursuant to 16 V.S.A. § 1944b., "the State Treasurer shall assess a rate of interest on the outstanding balance of the interfund loan comparable to the rate paid by private depositories of the State's monies, or to the yield available on investments made pursuant to 32 V.S.A. § 433." As of June 30, 2018, the balance of such interfund loans was $26.4 million.

Investment Results

For FY2018 these short-term, local investments and other investments, and the Trust Investment Account had a combined average balance of $458.280 million with combined earnings of $8.611 million, resulting in a gross rate of return of 1.879%. This rate gradually increased over FY2018, mainly due to the aforementioned Fed rate hikes. The rate of return as of November 30, 2018 was 3.54%.

Single Deposit Investment Account

The Single Deposit Investment Account (SDIA) is a non-contributory defined contribution plan. The fund was formed in 1981 and is closed to new membership with no new monies invested since 1990. The portfolio is invested in a commingled stable value fund managed by ICMA-RC and administered by Prudential Retirement. The fund's objective is to provide a high level of income consistency with low market risk. The primary importance is the preservation capital, with a secondary need to generate a composite yield in excess of comparable short-term money market yields. The balance as of June 30, 2018 was $42.6 million.

Unclaimed Property Division

Overview

The Unclaimed Property Division is responsible for safeguarding assets turned over to the Treasurer's Office until the rightful owners are located. The primary objective of the program is consumer protection. Property is remitted to the Treasurer's Office by business entities (holders) after they lose contact with their customer for a certain period of time, usually three years. The Vermont Unclaimed Property Law does not include real estate, but unclaimed property can include: savings or checking accounts, uncashed checks, matured certificates of deposit, stocks, bonds or mutual funds, travelers' checks or money orders, and proceeds of life insurance policies. Uncashed checks continue to be the most reported property type, followed closely by pay related items and credits, then insurance property. We act as the steward for over $88.5 million in unclaimed financial property and actively work to return those funds to the rightful owner.

Efforts to promote awareness of the program and to locate owners and heirs of unclaimed property include the semi-annual advertising campaigns include print, web-based, radio, and television ads. Annual lists are offered to legislators, as well as sent to all cities and towns. The Division attends outreach events, such as fairs and conferences. These efforts assisted the division in returning over $6.7 million to current and former Vermonters.

In FY2018 the Division continued its proactive claims process of reaching out to 150 new owners per week. This process was instrumental in paying both a record number of claims (17,665) and a record dollar amount, totaling just over $6.7 million. The average claim was $379.28. Both the number of claims and the total dollar amount exceeded our goals and we are looking forward to building upon those successes. At the time of publication, FY2019 trends suggest we will exceed the previous record in both number of claims and dollar amount returned to claimants.

Figure 23: Property Type Reported

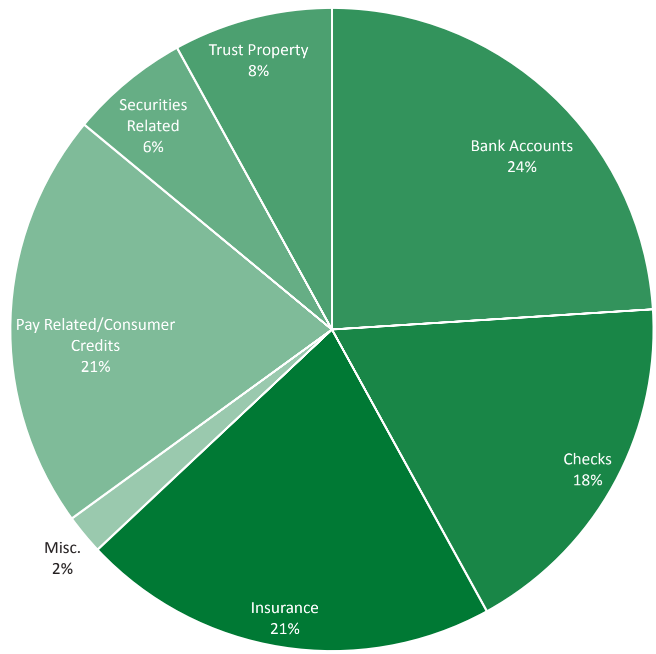
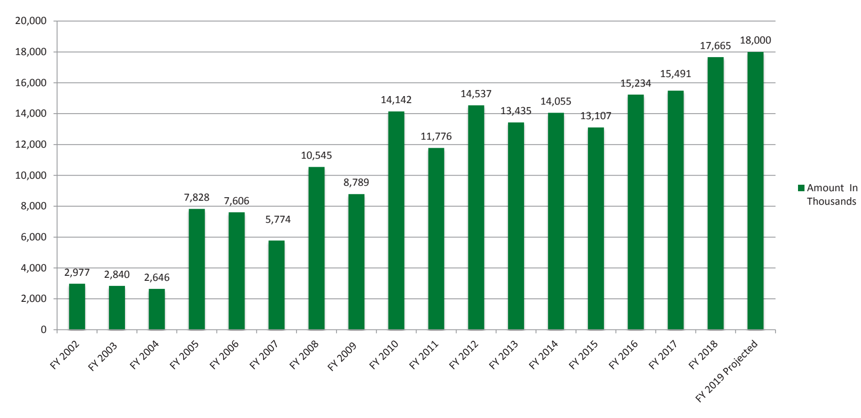


Figure 24: Number of Claimants Paid

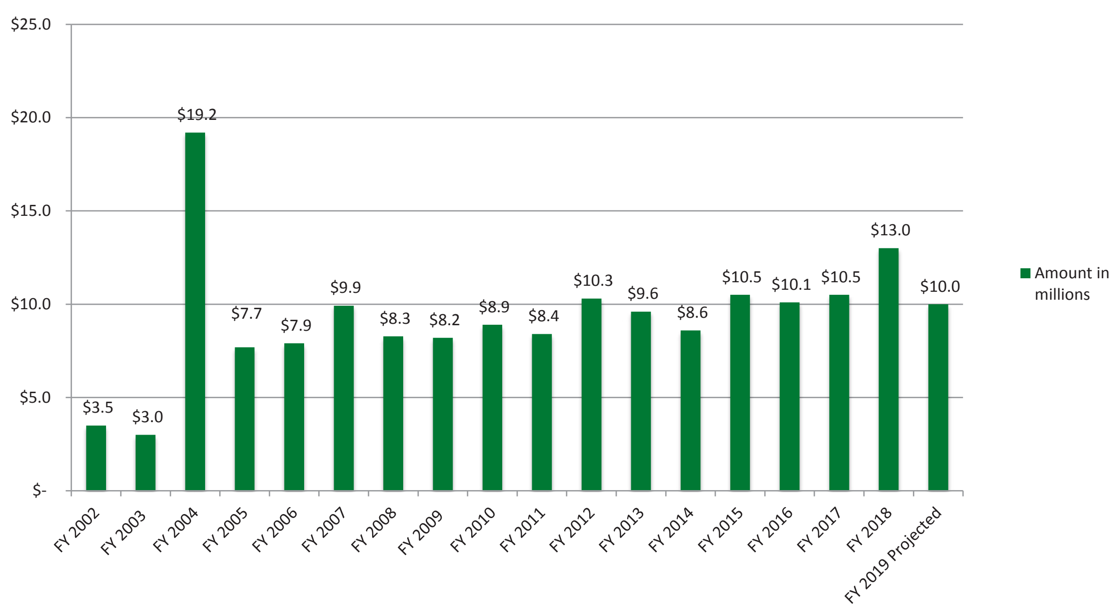


In addition, the Division received $13 million remitted by holders, the second largest amount ever received by the Treasurer's Office. To ensure holders of property are following Vermont law, Treasurer’s Office staff conduct examinations of holders’ records. Just before the State receives the property, holders are required to notify the individual by mail, at the last known address on record, for all property valued at $50 or more. This year, 849 holders remitted their information electronically, totaling over $1.6 million. The increase in electronic filings increased efficiency and eliminated manual entry of 849 paper reports. Overall, an additional 276 holders filed electronically over FY2017.

The future of unclaimed property includes the development of an online applications that will consist of a system for owners to file claims electronically without the need for them to mail documents to the office. The Division continues to seek more effective ways to reunite owners and heirs with their property.

Figure 25: Unclaimed Property Amount Returned to Vermonters

Figure 26: Unclaimed Property Turned Over to the State Treasurer



*The amount returned to Vermonters only includes cash and liquidated securities and does not include the value of securities/mutual funds returned to owners in share format.
Note: FY2004 saw a one-time increase due to changes in the insurance industry, including demutualization.

Financial Literacy

Overview

The Treasurer's Office has actively worked to promote financial literacy for 10 years. The goals of the program are (1) advocacy - working to promote the adoption of fiscally sound money management practices by Vermonters of all ages; (2) collaboration - working with local, state and national groups to build support for and participation in activities that promote and teach personal finance; and (3) development - creating new financial education programs and resources for Vermont citizens where gaps exist.

Vermont Financial Literacy Commission

The Vermont Financial Literacy Commission was created in 2015 to "measurably improve the financial literacy and financial capability of Vermont's citizens." Treasurer Pearce served as the Commission's co-chair and Treasurer's Office staff provided techinical support. The Financial Literacy Commission was enacted with a statutory sunset of June 30, 2018. The Commission was not extended by the General Assembly during the 2018 legislative session.

The Financial Literacy Commission issued a report and met twice in 2018, prior to its statutory repeal. At its May 22, 2018 meeting, the Commission voted to obligate the $12,202.84 balance of the Vermont Financial Literacy Commission Fund (9 V.S.A. § 6004) to the Financial Literacy Trust Fund (32 V.S.A. § 111). The fund transfer was authorized for the creation of "new Treasury programs consistent with the January 2018 Financial Literacy Commission report." The funds were transferred as directed by the Commission.

New State Financial Literacy Working Group

In September 2017, the Treasurer's Office and Department of Financial Regulation convened an intergovernmental Financial Literacy Working Group to review how State government shares personal finance education resources with citizens. State agencies and departments were surveyed. The Treasurer's Office and Department of Financial Regulation subsequently held several meetings with these agencies and departments, as well as other quasi-governmental or external stakeholders. Once breakout meetings were complete, the full Working Group was convened. State participants included: the Agency of Education; Agency of Human Services; Department of Corrections; Department of Aging and Independent Living; Department of Financial Regulation; Department of Human Resources; Department of Labor; Department of Libraries; Department of Taxes; Office of the Attorney General; Office of the Chief Marketing Officer,; and the Treasurer's Office.

The Financial Literacy Working Group used these collaborative settings to develop a series of recommendations for how State government can better align its resources and refer Vermonters to reputable personal finance education resources available around the state. The Director of Outreach & Financial Literacy will work with other State partners to implement these recommendations in calendar year 2019. Recommendations include:

- Continue a collaborative dialogue between State agencies, departments, and offices by holding future meetings.
- Identify and create issue briefs and educational resources for the general public on important financial education topics such as asset building, credit, insurance, investing, scams, and other relevant, in-demand topics.
- Create and maintain an up-to-date, externally facing financial education website with embedded resources that direct to State and reputable private and community-based groups that demonstrate expertise in financial literacy.
- Implement a public awareness initiative that utilizes the expertise of State personnel to offer informational speakers, letters to the editor, and general financial education in forums accessible to citizens across Vermont.

Reading is an Investment

The ninth year of the Reading is an Investment program is currently underway. In the 2017-2018 school year, Vermont educators in 136 schools helped 5,038 Vermont students complete the program requirements. Continued interest amongst Vermont educators and elementary-age learners has prompted the Treasurer's Office to continue building partnerships to offer Reading is an Investment to Vermont schools free-of-charge.

Reading is an Investment is built around financial and reading literacy. Participating schools are provided three money-themed books for their library, a curriculum guide and promotional materials for teaching students personal finance concepts. Students who complete required reading requirements log their progress for the chance to enter a statewide drawing for one of twenty $250 college savings accounts. All college savings accounts are donated by the Vermont Student Assistance Corporation. With 140 schools enrolled in the 2018-2019 program, including many that have a high percentage of students receiving free and reduced lunch, the Treasurer's Office has continued to look for creative ways to target its services to reach students with the greatest needs.

Afterschool Pilot

Recent changes to Vermont's education system provide an exciting opportunity to look at other spaces to expand the reach of Reading is an Investment. With the Vermont State Board of Education's adoption of new financial literacy education standards, Treasurer's Office staff reviewed how its voluntary financial education curriculum could fit into Vermont's changing education landscape. The afterschool space stood out as a new venue to teach Vermont students financial concepts.

In 2018, the Treasurer's Office formed a partnership with Vermont Afterschool Inc. to develop a new financial literacy education program that will be piloted in early 2019. Building on key elements of the Reading is an Investment program, this project will pilot a hands-on, active learning afterschool program that teaches key concepts of financial literacy to children in grades 2-5. 12 pilot sites around the state will each receive a grant, curriculum, training and support to deliver the program at afterschool centers. In turn, pilot sites will provide us with feedback about the success of the program, and suggestions for improvement in the program's structure, content, and format. The Treasurer's Office will review the results of the pilot to gauge whether it is an effective model to expand financial education opportunities for Vermont learners.

Vermont Treasury Cup Challenge

The tenth annual Vermont Treasury Cup Challenge was held in Montpelier on March 9, 2018. The Treasurer's Office holds the statewide competition in Montpelier to promote student interest in and knowledge of personal finance, economics and consumer affairs topics. 43 students representing 8 teams competed. Mount Mansfield Union High School's team won the competition to win the Treasury Cup trophy and first place prize. Each member of the championship team received a $500 college savings account and members of the second-place team were awarded $250 accounts, donated by the Vermont Student Assistance Corporation.

Financial Literacy Poster Contest

For the eleventh year in a row, the Treasurer's Office, in partnership with the Vermont Bankers Association, sponsored the Be Money Wi$e financial literacy poster competition for students in grades 3-12. 101 student posters were submitted. The first place winners in the elementary school division was Ziva Baker of Mater Christi School. Winning first place in the middle school division was Bryce Ruohonen of Craftsbury Academy. With the launch of new personal finance education initiatives, it was decided that 2018 would be the final year of the competition. The Treasurer's Office thanks the many students and educators who helped make the contest a success throughout the years.

Treasury Operations Division

Overview

The Treasury Operations Division is responsible for the banking and cash management of approximately $5.8 billion annually in both receipts and disbursements; the establishment and maintenance of the State's banking services network; the disbursement of the State's warranted payments and debt service; the collection of certain receipts; and the recording of associated accounting transactions. Monitoring and reconciliation of internal and external accounts comprise a major portion of staff time, in addition to the proper reporting and recording on the State's books. The Treasury Operations Division also is responsible for preparing financial statement schedules and disclosures for the annual audit of the State's books for cash, investments, and pension systems managed in the Treasurer's Office, and administering various special funds.

In January of 2018, as the result of a request for proposal and subsequent contract, the Treasurer's Office transitioned to People's United Bank, N.A. for core deposit and disbursement banking services for State government. TD Bank, N.A. continues to provide lockbox processing and merchant card processing services to the State, which were affirmed by the aforementioned request for proposal process.

Reconciliations

Treasury Operations Division staff reconcile approximately 30 State core bank accounts. In fiscal year 2018, more than 160,000 deposits were processed to State accounts through a network designed to accelerate cash collection for operating needs or for efficient placement in short-term investments. On the disbursement side, 2.01 million payments were processed, either through electronic funds transfers (EFT) or check. Working cooperatively with the Treasury Operations Division's business partners, the Treasurer's Office has maintained prompt recording of the bank deposits in the State's accounting systems, while assuring that the number and duration of reconciling items from user department entries remain low.

Electronic Payments

Electronic payments are more efficient, safer, less costly, and require significantly less follow-up than checks. Electronic payments are more convenient for payees and eliminate the labor and other costs associated with researching and replacing checks that are lost or destroyed. The Treasurer's Office has an ongoing initiative to encourage State agencies and departments to use electronic payments whenever feasible. Of the more than 2.01 million payments processed during fiscal year 2018, approximately 82 percent were electronic funds transfers. The "2015 AFP Payments Cost Benchmarking Survey Report Of Survey Results" report found that the median cost of producing a paper check at $3.00 and a median total cost of originating an electronic funds payment by ACH at $0.56, resulting in an average savings of $2.44 per electronic payment (estimate based on banking fees, printing, postage, reconciliation and additional staff time). While the State of Vermont may or may not conform with national averages, these improvements have generated significant savings.

During FY2017, the Treasurer's Office implemented an updated version of a secure online reporting tool, called the Vendor Payment Portal, which vendors use to access information about payments received from the State by ACH direct deposit. The updated version contains an option for generating a payment advice, which eliminated the need for mailing paper advices to these vendors. This change allows the vendors to see the payment information on the day funds are deposited in their accounts, eliminates the cost of generating and mailing paper advices, and significantly reduces the number of payment information requests received by the Treasury Operations Division.

In October of 2018, over 98 percent of monthly benefit payments to retired State employees, retired teachers and municipal employees were made via ACH direct deposit.

Technology Update

Overview

This has been a very productive year for the Technology Services Division. FY2018 started with two major system conversion projects that overlapped. The first was the transition of banking services from TD Bank to People's United Bank. The second was the convergence of all of the supplemental retirement plans from multi-vendors to Prudential Retirement.

Staff transitioned banking services from TD Bank to People's United Bank on January 4, 2018. All electronic interfaces for payments via ACH, checks and wire transfers had to be developed, tested and in production prior to launch. These interfaces represent approximately $4.5 billion in annual payments to benefit recipients of the three retirement systems, DCF payment recipients, State of Vermont payroll for employees, and payments to State of Vermont vendors. The technology transition was successfully completed with no interruption to payments or banking services.

The transition of supplemental retirement plans to Prudential Retirement occured at the same time as the banking services project. The project called for a February 2018 transition of the State and Municipal Defined Contribution plans from Fidelity, the Deferred Contribution plans from Empower Retirement, and the VMERS Retirement Health Savings plan from ICMA-RC to Connect Your Care (a Prudential partner). The technology transition facilitated a successful fund management change.

Technology is constantly evolving. Regular infrastructure upgrades are necessary. During the summer of 2018, new hardware was ordered to replace aging hardware as part of a 3-5 year cycle. Existing production hardware at our primary data center was replaced and redeployed to our backup data center. Office hardware "refreshes" are necessary to mitigate any hardware failures from aging equipment and to ensure sustained vendor support.

The Technology Services team is currently developing several new projects. Staff is actively testing a self-service portal for active and retired participants of the State Retirement systems. Additionally, system improvements to the Unclaimed Property system to expedite claims and payments for certain dollar amounts are under development.

Legislative Reporting Requirements

Financial Literacy Trust Fund

The General Assembly established a trust fund in 2008 to support financial literacy in Vermont. As enacted, "the purpose of the fund is to promote the adoption of fiscally sound money management practices by Vermonters through education and outreach efforts that raise awareness of the need for and benefits of practicing such skills; and to create opportunities to build and encourage the development of new financial literacy activities and educational products for Vermont citizens." The State Treasurer is authorized to collect money from a variety of sources to fund these activities. For FY2018, $250.00 was deposited into the fund. $190.38 of interest was earned. $9,643.69 was expended from the trust fund during FY2018. Funds were expended in support of the Reading is an Investment program; to pay for expenses related to the 2018 Vermont Treasury Cup Challenge; and for programmatic costs for the annual financial literacy poster competition or de minimis administrative expenses. The June 30, 2018 trust fund balance was $20,940.43.

Local Investment Advisory Committee (LIAC)

Pursuant to Act 199 of 2014, Act 51 of 2015, and Act 157 of 2016, the Local Investment Advisory Committee (LIAC), chaired by the State Treasurer, is tasked with increasing economic development in Vermont and creating jobs by committing up to 10 percent of the state's average available cash balance to local investments. These financing projects redirect funds that were invested primarily in out-of-state government agency securities and money market accounts at large financial institutions, to local investments. To date, the State Treasurer has overseen the commitment of over $33 million for local investment projects in energy improvements in residential housing, commercial energy projects, higher education, and the rehabilitation of State office buildings for energy efficiencies. See Figure 27 on page 42 of this report for an overview of existing loans.

Pursuant to Act 188 of 2018, the Treasurer, in consultation with the LIAC, is authorized to invest up to $5,000,000 in weatherization and housing improvement. On August 29, 2018, the LIAC approved a solicitation to receive investment financing proposals on a rolling basis. These proposals will focus on decreasing greenhouse gas emissions, increasing job opportunities in the field of weatherization, enabling Vermonters to live in safer, healthier housing, increasing energy cost savings, and improving the quality of housing. On October 22, 2018, the LIAC met to discuss a proposal from NeighborWorks of Western Vermont (NWWVT) for $2.5 million in debt investment to fund energy efficiency and home rehabilitation loans during 2019 and 2020 through the HEAT Squad program. The proposal would allow 208 households earning less than 120% of median income to be able to access financing to make their homes safer, healthier, and more affordable to heat. It would also reduce carbon emissions by over 1 million pounds and provide annual energy savings of over $200,000. Additionally, NWWVT estimates that the project would generate 48 jobs and $1.8 million in labor income.

On October 30, 2018, the LIAC, in response to this proposal, voted in favor of a new, $1.5 million credit facility for NWWVT. The committee agreed there is a possibility of increasing the credit facility to $2.5 million, based on the successful lending of the initial amount.

In addition to the State Treasurer, the membership of the committee currently includes: Sarah Carpenter, Executive Director, Vermont Housing Finance Agency; Dave Corliss, Efficiency Vermont Designee; Cassie Polhemus, Chief Operating Officer, Vermont Economic Development Authority Designee; Michael Gaughan, Executive Director, Vermont Municipal Bond Bank; Tom Little, Vice President and General Counsel, Vermont Student Assistance Corporation Designee. Please visit the Local Investment Advisory Committee webpage for more details.

State Building Energy Loans

Act 11 of the 2018 Special Session authorized an additional $500,000 in supplemental funding to offset costs of interest and principal available to State building weatherization projects that were longer-term than previously funded through

Figure 27: Summary of Credit Facilities and Local Investment Initiatives
Status as of September 30, 2018

Authorizing Legislation and Agency	Statutory Description	Amount Authorized	Remaining Capacity	Balance	Issue Date	Original Amount	Maturity Date	Rate
Act No. 179 of 2014, Sec. E.131 (2014 Appropriations Bill):	**Investment**	**$1,000,000**	**$0**	**$1,000,000**				
1. Vermont Community Loan Fund [3]				$1,000,000	7/15/2018	$1,000,000	7/15/2019[1]	1.50%
Act No. 87 of 2013, Sec. 8, as amended by Act No. 199 of 2014, Sec. 22:	**Credit Facility**	**$10,000,000**	**$0**	**$10,000,000**				
2. Vermont Economic Development Authority (Note VEDA-003)				$10,000,000	2/1/2015	$10,000,000	1/31/2025[2]	2.43%
Act No. 87 of 2013, Sec. 8a:	**Credit Facility**	**$6,500,000**	**$2,078,075**	**$4,421,925**				
3. NeighborWorks of Western Vermont (Note A-001)				$0	10/22/2013	$250,000	10/15/2023	2.00%
4. NeighborWorks of Western Vermont (Note A-002)				$0	5/19/2014	$250,000	4/15/2024	2.27%
5. NeighborWorks of Western Vermont (Note A-003)				$133,708	10/15/2014	$250,000	10/15/2024	2.35%
6. NeighborWorks of Western Vermont (Note A-004)				$238,217	1/26/2015	$250,000	1/15/2025	2.00%
7. NeighborWorks of Western Vermont (Note A-005)				$250,000	10/15/2015	$250,000	10/15/2025	2.00%
8. NeighborWorks of Western Vermont (Note A-006)				$250,000	11/30/2015	$250,000	10/15/2025	2.26%
9. NeighborWorks of Western Vermont (Note A-007)				$250,000	10/27/2016	$250,000	10/15/2026	2.00%
10. NeighborWorks of Western Vermont (Note A-008)				$250,000	12/27/2016	$250,000	10/15/2026	2.63%
11. NeighborWorks of Western Vermont (Note A-009)				$250,000	7/21/2017	$250,000	7/15/2027	2.49%
12. Vermont Housing Finance Agency (Note VHFA-001)				$2,800,000	2/18/2014	$2,800,000	2/15/2024	2.76%
Act No. 199 of 2014, Sec. 23: [4] [5]	**Credit Facility**	**$8,200,000**	**$2,250,000**	**$5,950,000**				
13. NeighborWorks of Western Vermont (Note B-001)				$400,000	9/2/2015	$400,000	7/15/2025	2.10%
14. NeighborWorks of Western Vermont (Note B-002)				$250,000	6/20/2016	$250,000	7/15/2026	2.00%
15. NeighborWorks of Western Vermont (Note B-003)				$250,000	9/6/2016	$250,000	10/15/2026	2.00%
16. NeighborWorks of Western Vermont (Note B-004)				$250,000	1/11/2017	$250,000	1/15/2027	2.52%
17. NeighborWorks of Western Vermont (Note B-005)				$400,000	2/17/2017	$400,000	4/15/2027	2.45%
18. Champlain Housing Trust (Note A-001)				$1,000,000	3/31/2016	$1,000,000	3/31/2026	2.48%
19. Champlain Housing Trust (Note A-002)				$321,547	2/28/2017	$321,547	3/31/2027	3.02%
20. Champlain Housing Trust (Note A-003)				$50,000	5/7/2018	$50,000	6/30/2028	3.42%
21. Champlain Housing Trust (Note A-004)				$59,315	6/18/2018	$59,315	6/30/2028	3.58%
22. Champlain Housing Trust (Note A-005)				$49,297	6/18/2018	$49,297	6/30/2028	3.58%
23. Champlain Housing Trust (Note A-006)				$519,841	7/30/2018	$519,841	6/30/2028	3.50%
24. VSAC- higher education loan cost reduction				$2,400,000	6/8/2016	$4,000,000	6/15/2021	2.00%
Act No. 178 of 2014, Sec. 41 [6]	**Credit Facility**	**$8,000,000**	**$6,610,579**	**$1,389,421**				
25. 32 Cherry St. Exhaust Air Heat Recovery				$376,985	1/31/2015	$524,172	6/30/2026	2.00%
26. 108 Cherry St. Lighting & Controls				$508,202	2/15/2017	$508,202	6/30/2030	2.00%
27. Springfield State Office Building				$322,887	8/14/2017	$322,887	6/30/2025	2.00%
28. Derby Public Safety Facility Energy Retrofit				$139,863	9/28/2017	$139,863	6/30/2027	2.00%
29. Historic Sites Lighting Retrofits, Chimney Point & Mt. Independence				$41,484	3/26/2018	$43,452	6/30/2024	2.00%
	TOTALS:	**$33,700,000**	**$10,938,654**	**$22,761,346**		**$25,138,576**		

Notes:
1. Subject to annual review and renewal.
2. Subject to a "put" provision enabling the Treasurer's Office to demand full or partial repayment within 60 days if the State's unrestricted cash balance falls below $75,000,000.
3. Additional capacity added to VCLF (up to 1,000,000 - Act 157 of 2016)
4. Neighborworks had remaining authorization of $200,906 as of 09/30/2017
5. Champlain Housing Trust had remaining authorization of $678,453 as of 09/30/17
6. Establishes an Energy Revolving Fund under 29 V.S.A. § 168(c)

the program. During calendar year 2018, $28,000 of this funding was utilized.

State PACE Reserve Fund

24 V.S.A. § 3270 specifies that the State Treasurer shall administer the State PACE Reserve Fund. The purpose of the fund is to reduce, for certain Property-Assessed Clean Energy districts, the risk faced by an investor making an agreement

with a Vermont municipality to finance such a district. Monies deposited in this fund may be invested by the State Treasurer. The balance of this fund may be expended for the sole purpose of paying claims resulting from certain losses related to a Property-Assessed Clean Energy district. During FY2018, there were no new funds deposited into this fund. There was $701.45 earned on the balance in the fund. There were no claims submitted and, therefore, no expenditures, other than de minimis administrative expenses, from the fund during FY2018. The fund balance as of June 30, 2018 was $51,274.63.

Vermont Achieving a Better Life Experience (ABLE)

VermontABLE's launch on February 22, 2017 was the culmination of over two years of work with the VermontABLE Task Force, the Vermont Congressional Delegation, disability advocacy groups, and key Legislative leaders. During the 2015 State legislative session, the Office of the State Treasurer worked with Vermont stakeholders, State agencies and departments, and legislators to draft and pass Vermont's enabling legislation of the federal ABLE Act. The savings program is intended to ease financial strains faced by individuals with disabilities by making federal tax-free investment accounts available to cover qualified expenses such as education, housing, and transportation. A 529-ABLE account allows for an account within section 529 of the Internal Revenue Code of 1986, and is a tax-free savings vehicle operated by a state for disability-related expenses. VermontABLE accounts are made possible through a multi-state partnership headed by the Ohio State Treasurer's Office STABLE Account program.

VermontABLE reports on several types of account data in order to track enrollment numbers and understand how participants use their accounts. The following data are current as of October 2018 Month End Reporting:

- Enrollment. As of January 2, 2019, VermontABLE enrollments totaled 245 accounts. This is more than double the previous year's enrollment.
- Average Account Balance: As of October 31st, 2018, the average account balance in a VermontABLE account is $3,914.09, which is approximately $1,900 over the previous benefit cliff level for individuals on means-tested programs.
- Assets Under Management: As of October 31st, 2018, VermontABLE participants hold total assets under management of $697,917.34, with the majority of funds invested in the STABLE program's BankSafe, principal-protected investment option.
- Approximately 39% of participants administer their own VermontABLE accounts, which serves as an indication of the portal's accessibility

The Treasurer's Office collaborates with the Vermont Developmental Disabilities Council (VDCC) to advertise and conduct outreach efforts for the VermontABLE program across the state. This year, VDCC and Treasurer's Office staff offered informational training seminars to service providers, individuals experiencing disabilities, and their families. These events were held at the Vermont Psychiatric Care Hospital, the Vermont Family Network, the Green Mountain Support Services Annual Cerebral Palsy Conference, the Vermont State Housing Authority, and the Vermont Association for the Blind and Visually Impaired "Great Expectations" Workshop.

In the Fall, the Treasurer's Office launched a digital advertising campaign for VermontABLE with statewide media outlets. The campaign resulted in an estimated 383,000 digital impressions promoting program awareness. For the second year, information about VermontABLE has been included in the Vermont Parent's Home Companion & Resource Directory, a free publication with a circulation of 15,000 that is placed throughout Vermont Parent Child Centers, pediatrician's offices, early learning centers, and other places where parents of children with disabilities are likely to seek services. The Treasurer's Office also worked with VDCC to coordinate a targeted mailing to 3,500 Vermonters including an informational magnet that will take place in January 2019.

Please visit VermontABLE.com and the Vermont ABLE Task Force webpage for more information.

Trust Investment Account

In 2000, the General Assembly authorized the establishment of a Trust Investment Account (TIA) administered by the State Treasurer for the purpose of investing restricted funds with non-expendable principal balances and other long-term funds. As of June 30, 2018, the fund had a principal balance of $65.9 million, of which 47% was allocated to the Higher Education Endowment Trust Fund, 33% to the VSERS OPEB, 14% to various Agency of Natural Resources Funds, and the remainder to various smaller trust funds. Of those smaller trust funds, the Vermont Veteran's Home had a June 30, 2018 balance of $1,396,761.41 and the Tobacco Trust Fund had a balance of $105,601.27.

The current target allocation of the Trust Investment Account is 60% Fixed Income, 20% Domestic Large Cap Equities, 15% International Equities, and 5% Emerging Market Equities. In FY2018, the fund returned 4.1%. In 2014, the Treasurer's Office transitioned the fund's allocation to a passive strategy mix of index funds. This change in allocation helped decrease management fees from 0.38% to 0.06% and allowed the Treasurer's staff to construct a portfolio with a higher expected return-risk profile relative to the fund's return objectives by improved diversification.

Vermont Higher Education Endowment Trust Fund

16 V.S.A. § 2885 provides that in August of each fiscal year, the State Treasurer is to withdraw up to 5% of the 12-quarter moving average of the Fund's assets and divide the amount equally among UVM, the Vermont State Colleges (VSC), and the Vermont Student Assistance Corporation (VSAC). The amount appropriated, however, cannot bring the Fund Balance below total contributed principal. Through June 30, 2018 principal contributions were $29,181,264 (See Figure 34). The 5% distribution available this year is $1,506,799 in total or $502,266 for UVM, VSC and VSAC.

16 V.S.A. § 2885 further provides that during the first quarter of each fiscal year, the Secretary of Administration and the Subcommittee may authorize the State Treasurer to make an additional distribution of up to 2% of the Fund's average assets available to UVM and the Vermont State Colleges for the purpose of creating or increasing a permanent endowment fund. Similar to the 5% distribution, the amount appropriated cannot bring the Fund balance below total contributions to principal. Further, each institution is required to raise private donations of at least twice the appropriated amount. At its meeting last year, the Secretary of Administration and the Subcommittee voted to forgo the 2% appropriation for distribution to UVM and the Vermont State Colleges, based upon a recognition that lower expected returns in the near term do not support a total distribution of 7% from the fund.

After payments, the Fund balance at the end of FY2018 totaled $29,430,748. For more detailed information regarding the Higher Education Endowment Trust Fund, please visit the Treasurer's Office's website.

Figure 28: Higher Education Endowment Trust Fund Balance

June 30, 2018

Ending balance FY 2017		**$31,141,905**
	FY 2017 Contributions received in FY 2018	$70,455
Opening balance FY 2018		**$31,212,360**
	Distributions FY2017	
	5%: ***University of Vermont***	($500,729)
	Vermont State Colleges	($500,729)
	Vermont Student Assistance Corp.	($500,729)
	2%: ***University of Vermont***	$0
	Vermont State Colleges	$0
	Income earned FY 2018	$917,647
	Appreciation (Depreciation) FY 2018	$313,583
	Fees and Other Charges FY 2018	($3,856)
Principal Balance June 30, 2018 [3]		**$30,937,547**
	Statutory Distributions Available [1]	
	5% of 12-Quarter Moving Average as of June 30, 2018	($1,506,799)
	2% of 12-Quarter Moving Average as of June 30, 2018	($600,875)
	Total Projected Statutory Distribution	**($2,107,674)**
	Balance After Projected Statutory Distribution	$28,829,873
	Total Contributions Received as of June 30, 2018	$29,181,264
	Principal Balance Shortfall After Projected Statutory Distribution	($351,391)
	Adjustments to Distributions Due to Shortfall	
	5% Distribution Adjusted (0.00%)	($1,506,799)
	2% Distribution Adjusted (-58.48%) [2]	($249,484)
	Total Available Distribution Adjusted to Maintain the Principal Balance Floor as Required by Statute	**($1,756,283)**
	Actual Distributions for 2018	
	5% Distribution	**$1,506,799**
	2% Distribution [2]	$0
		$1,506,799
Principal Balance after distributions		**$29,430,748**
	Fundraising target for potential 2% distribution in 2020 *(Contingent on an institutional match in FY 2019 and Principal Balance greater than the total Contributions)*	$602,720

[1] Assuming statutory levels (5% distribution & 2% distribution) without regard to statutory requirement to keep balance at or above the total principal contributions.

[2] Committee elected to forego the 2% distribution for the fiscal year

[3] Numbers may not add due to rounding

Transportation Infrastructure Bonds

Beginning in 2010, the State began issuing Special Obligation Transportation Infrastructure Bonds (TIBs), which are payable from assessments on motor vehicle gasoline and diesel fuel. The State has issued three series of TIBs bonds (in 2010, 2012 and 2013) totaling $36,385,000. As of June 30, 2018, there were $26,750,000 of bonds outstanding.