

Vermont State Employees' Retirement System

Information Required Under
Governmental Accounting Standards Board
Statement No. 67 as of June 30, 2016

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November 21, 2016

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GASB 67 Report as of June 30, 2016

Dear Board Members:

This actuarial valuation report provides information concerning the Vermont State Employees' Retirement System (VSERS) in accordance with the Governmental Accounting Standards Board (GASB) Statement No. 67 (GASB 67). This Statement is an amendment of Statement No. 25, Financial Reporting for Defined Benefit Pension Systems and Note Disclosures for Defined Contribution Systems. Information is provided herein for the fiscal year ending June 30, 2016.

This report covers the retirement [Section 401(a)] portion of the System. The retiree medical benefits payable under the System are addressed in a separate report prepared in accordance with GASB Statement No. 43.

We certify that the information contained in this report has been prepared in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information fairly presents the actuarial position of the System in accordance with the requirements of GASB 67 as of June 30, 2016.

The Board of Trustees and staff of the State Treasurer's office may use this report for the review of the operation of the System. The report may also be used in the preparation of VSERS' audited financial statements. Use of this report for any other purpose or by anyone other than the Board of Trustees, the staff of the State Treasurer's office or its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck Consultants' prior written consent.

Future actuarial measurements may differ significantly from current measurements due to System experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in System provisions or applicable law. An analysis of the potential range of such future differences is beyond the scope of this report.



In preparing the actuarial results, we have relied upon information provided by State Treasurer's office staff regarding System provisions, participants, assets, contributions and other matters used in the actuarial valuation. Although we did not audit the data, we reviewed the data for reasonableness and consistency with the prior year's information. The accuracy of the results presented herein is dependent on the accuracy of the data.

This valuation was prepared based on the actuarial assumptions and methods used in the June 30, 2015, actuarial valuation of the System, except as noted herein. In our opinion, the actuarial assumptions used are appropriate for purposes of the valuation and are reasonably related to the experience of the System and to reasonable long-term expectations.

This report was prepared under my supervision and in accordance with all applicable Actuarial Standards of Practice. I am a Fellow of the Society of Actuaries, an Enrolled Actuary and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

I am available to discuss this report with you at your convenience.

Buck Consultants, LLC

David L. Driscoll

David L. Driscoll, FSA, EA, MAAA
Principal and Consulting Actuary

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Section I – GASB 67 Information

Notes to the Financial Statements for the Year Ended June 30, 2016

Net Pension Liability

The components of the net pension liability as of June 30, 2016, are as follows:

Total pension liability	\$	2,271,588,388
System fiduciary net position		<u>(1,609,650,152)</u>
Net pension liability	\$	661,938,236
System fiduciary net position as a percentage of the total pension liability		70.86%

Actuarial Assumptions

The total pension liability as of June 30, 2016, was determined by rolling forward the total pension liability as of June 30, 2015, to June 30, 2016, using the actuarial assumptions outlined in Section II. These assumptions were selected on the basis of the experience study that was performed for the five-year period ending June 30, 2014. The recommended assumption changes based on this experience study were adopted by the Board at its October 29, 2015, Board meeting, and were effective for the June 30, 2015, actuarial valuation.

Actuarial Cost Method

Entry Age Normal – Level Percentage of Pay

Asset Valuation Method

Invested assets are reported at fair value.



The long-term expected rate of return on System investments was determined using best-estimate ranges of expected future nominal rates of return (expected returns, net of investment expense and inflation) developed for each major asset class using an econometric model that forecasts a variety of economic environments and then calculates asset class returns based on functional relationships between the economic variables and the asset classes.

Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of June 30, 2016, are summarized in the following table:

<u>Asset Class</u>	<u>Long-Term Expected Real Rate of Return</u>
Equity	8.54%
Fixed Income	2.36%
Alternatives	8.35%
Multi-strategy	4.90%

Nominal long-term expected rates of return for these asset classes are equal to the sum of the above expected long-term real rates and the expected long-term inflation rate of 3.0%.

Discount rate: The discount rate used to measure the total pension liability was 7.95%. The projection of cash flows used to determine the discount rate assumed that contributions will continue to be made in accordance with the current funding policy. Based on these assumptions, the fiduciary net position was projected to be available to make all projected future benefit payments to current System members. The assumed discount rate has been determined in accordance with the method prescribed by GASB 67. We believe this assumption is reasonable for the purposes of the measurements required by GASB 67. In determining the discount rate, to the extent assets had been projected to be insufficient to provide for payment of all benefits when due, unfunded benefits would have been discounted using the S&P Municipal Bond 20 Year High Grade Rate Index, the yield to maturity of which was 2.71% on June 30, 2016. Demonstration of the appropriateness of the use of 7.95% as the discount rate in these calculations has been provided to the Office of the State Treasurer under separate cover.

Sensitivity of the net pension liability to changes in the discount rate: The following presents the net pension liability, calculated using the discount rate of 7.95%, as well as what the net pension liability would be if it were calculated using a discount rate that is one-percentage-point lower (6.95%) or one-percentage-point higher (8.95%) than the current rate:

	1% Decrease (6.95%)	Current Discount Rate (7.95%)	1% Increase (8.95%)
Net Pension Liability	\$938,167,240	\$661,938,236	\$430,862,987



Schedules of Required Supplementary Information

Schedule of Changes in the Net Pension Liability and Related Ratios

FYE June 30, 2016

Total pension liability

Service cost	\$ 47,012,283
Interest	171,562,804
Changes of benefit terms	0
Differences between expected and actual experience	25,051,322
Changes of assumptions	(21,853,404)
Benefit payments	<u>(120,093,586)</u>
Net change in total pension liability	\$ 101,679,419
Total pension liability-beginning	\$ 2,169,908,969
Total pension liability-ending (a)	\$ 2,271,588,388

System fiduciary net pension

Contributions - employers	\$ 54,347,060
Contributions – members	34,055,217
Net investment income	17,962,424
Benefit payments, including refunds of member contributions	(120,093,586)
Administrative expenses	(1,468,605)
Other	<u>(13,597)</u>
Net change in System fiduciary net position	\$ (15,211,087)
System fiduciary net position-beginning	\$ 1,624,861,239
System fiduciary net position-ending (b)	\$ <u>1,609,650,152</u>
System's net pension liability-ending (a)-(b)	\$ 661,938,236

System fiduciary net position as a percentage of the total pension liability 70.86%

Covered payroll as of June 30, 2015 actuarial valuation \$ 462,057,022
 Net pension liability as a percentage of covered payroll 143.26%

Notes to Schedule:

Benefit changes since June 30, 2015: None

Changes of assumptions since June 30, 2015: The actuarial assumptions regarding the incidence of mortality, terminations, retirements, and disabilities were changed in accordance the findings of an experience study covering the five-year period ending June 30, 2014.



Schedule of Employer Contributions

	<u>FYE 2015</u>	<u>FYE 2016</u>
Actuarially determined contribution	\$44,651,783	\$46,237,853
Contributions related to the actuarially determined contribution	<u>55,881,364</u>	<u>54,347,060</u>
Contribution deficiency (excess)	(\$11,229,581)	(\$8,109,207)

Notes to Schedule

Valuation date: Actuarially determined contributions are calculated as of the June 30 preceding by twelve months the start of the fiscal year in which contributions are made. That is, the contribution calculated in the June 30, 2014, actuarial valuation will be made during the fiscal year ended June 30, 2016.

The methods and assumptions used to calculate the actuarially determined contribution in the June 30, 2014 actuarial valuation are shown in Schedule B of the report on that valuation. Actuarial assumptions used in subsequent valuations are summarized in Section II of this report.

Schedule of Investment Returns

	<u>FYE June 30, 2014</u>	<u>FYE June 30, 2015</u>	<u>FYE June 30, 2016</u>
Annual money-weighted rate of return, net of investment expenses	14.05%	(0.50%)	1.44%

Section II – Actuarial Assumptions and Methods

NOTE: These assumptions are used in the determination of VSERS' funding requirements. Except as noted in Section I, they are also used for determining liabilities under GASB 67.

GROUPS A, D AND F

INTEREST RATE: 7.95% per annum.

SEPARATIONS FROM SERVICE: Representative values of the assumed annual rates of withdrawal, vested retirement, disability and death are as follows:

Representative values of the assumed annual rates of withdrawal, vested retirement, disability and death are as follows

Age	Withdrawal and Vested Retirement ¹	Disability
25	4.91%	0.02%
30	3.93	0.02
35	3.28	0.03
40	3.04	0.04
45	2.69	0.06
50	2.25	0.10
55	1.83	0.18
59	3.92	0.26
60	3.90	0.28
61	3.89	0.31

Active Service Mortality

RP-2000 Tables for Healthy Employees projected by 10 years from the valuation date using Scale BB. 30% of the employees in Groups A and F are assumed to be blue-collar for purposes of application of the table.

¹ Increased during first 10 years of service.

GROUPS A, D AND F

Active Service Retirement

Retirement Group F ¹		
Age	Male	Female
50	16.0%	6.0%
51	16.0	8.0
52	8.0	9.0
53	8.0	9.0
54	8.0	10.0
55	4.0	5.0
56	3.4	4.2
57	4.5	5.6
58	5.0	6.3
59	5.6	5.6
60	5.6	5.6
61	11.2	11.2
62	22.4	22.4
63	17.5	14.0
64	17.5	14.0
65	25.0	20.0
66	15.0	15.0
67	17.5	17.5
68	17.5	17.5
69	20.0	20.0
70	100.0	100.0

Salary Increases

Representative values of the assumed annual rates of future salary increase are as follows:

Age	Annual Rate of Salary Increase
25	6.21%
30	5.66%
35	5.26%
40	4.92%
45	4.36%
50	3.70%
55	3.50%
60	3.50%
64	3.50%

¹ All Group A and D members are assumed to retire when first eligible.

GROUPS A, D AND F

Deaths after Retirement:

For disabled retirees, the RP-2000 Combined Mortality Tables for Employees and Healthy Annuitants with a five-year set-forward.

Group A and F: For service retirees and beneficiaries, the RP-2000 Tables for Employees and Healthy Annuitants projected 10 years from the valuation date by Scale BB with a 30% blue-collar adjustment.

Group D: For service retirees and beneficiaries, the RP-2000 Tables for Employees and Healthy Annuitants projected 10 years from the valuation date by Scale BB

Inflation

The separately stated assumptions for investment return, salary increases and cost of living adjustments are consistent with an expected long term annual inflation rate of 3.00%.

Future Expenses

No provision made; expenses of the system are paid by the State.

Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

Spouse's Age

Husbands are assumed to be three years older than their wives.

Percent Married

75.4% (71.4% for Group F) of male members and 64.0% (63.1% for Group F) of female members are assumed to be married.

Cost-of-Living Adjustments

Assumed to occur at the rate of 3% per annum for Groups A and D and 1½% per annum for Group F (beginning at age 62 for deferred retirements). For Group F employees retiring after July 1, 2009, cost-of-living-adjustments are assumed to increase from 1.5% to 3% per annum effective January 1, 2014.

Inactive Members

Valuation liability equals 250% of accumulated contributions.

Asset Valuation Method

The amount of the assets for valuation purposes equals the preliminary asset value plus 20% of the difference between market and preliminary asset values. The preliminary asset value is equal to the previous year's asset value (for valuation purposes) adjusted for contributions less benefit payments and expenses plus expected investment income. If necessary, a further adjustment is made to ensure that the valuation assets are within 20% of the market value.

GROUP C

Interest Rate

7.95% per annum.

Separations before Retirement

Representative values of the assumed annual rates of withdrawal, vested retirement, disability and death are as follows:

Age	Withdrawal and Vested Retirement ¹		Disability
	Male	Female	
25	4.32%	8.64%	0.08%
30	4.32%	8.64%	0.10
35	4.32%	8.64%	0.13
40	N/A	N/A	0.20
45	N/A	N/A	0.32
50	N/A	N/A	0.55
55	N/A	N/A	0.91
60	N/A	N/A	1.46

Active Service Mortality²

RP-2000 Table for Healthy Employees projected 10 years from the valuation date using Scale BB.

Early and Normal Retirement Rates

All members are assumed to retire when first eligible to do so.

Salary Increases

Representative values of the assumed annual rates of future salary increase are as follows:

Age	Annual Rate of Salary Increase
25	6.21%
30	5.66%
35	5.26%
40	4.92%
45	4.36%
50	3.70%
55	3.50%
60	3.50%
64	3.50%

¹ Increased during first 10 years of service.

² 20% of disabilities and 30% of deaths assumed to be accidental.

GROUP C

Deaths after Retirement

For service retirees and beneficiaries, the RP-2000 Combined Mortality Tables for Employees and Healthy Annuitants projected 10 years from the valuation date with Scale BB with a blue-collar adjustment.

For disabled retirees, the RP-2000 Combined Mortality Tables for Employees and Healthy Annuitants projected 10 years from the valuation date with Scale BB with a five-year set-forward.

The post-retirement mortality assumption was chosen to recognize improved longevity experienced as well as that expected prior to the next review of assumptions.

Inflation

The separately stated assumptions for investment return, salary increases and cost of living adjustments are consistent with an expected long term annual inflation rate of 3.00%.

Future Expenses

No provision made; expenses of the system are paid by the State.

Actuarial Cost Method

Individual entry age normal actuarial cost method.

Spouse's Age

Husbands are assumed to be three years older than their wives.

Percent Married

73.3% of male members and 61.0% of female members are assumed to be married.

Cost-of-Living Adjustments

Assumed to occur at the rate of 3% per annum.

Inactive Members

Liability equals 250% of accumulated contributions.

Asset Valuation Method

The amount of the assets for valuation purposes equals the preliminary asset value plus 20% of the difference between market and preliminary asset values. The preliminary asset value is equal to the previous year's asset value (for valuation purposes) adjusted for contributions less benefit payments and expenses plus expected investment income. If necessary, a further adjustment is made to ensure that the valuation assets are within 20% of the market value.



Data for Valuation

In preparing the actuarial valuation as of June 30, 2015, the actuary relied on data and assets provided by the staff of the State Treasurer's office. While not verifying the data at their source, the actuary has performed tests for consistency and reasonableness.

The following is a summary of System participants as of June 30, 2015:

Retired members or beneficiaries currently receiving benefits	6,204
Inactive members	891
Active members	8,446
Terminated vested members	735

Section III – Summary of System Provisions

Effective Date	July 1, 1972 (for consolidated system).
Creditable Service	Service as a member plus purchased service.
Membership	Group A - General employees who did not join noncontributory system on July 1, 1981. Group C - State police and motor vehicle inspectors. Group D - Judges. Group F - All other general employees.
Average Final Compensation (AFC)	Groups A and F - average annual compensation during highest 3 consecutive years. Group C - average annual compensation during highest 2 consecutive years. Group D - annual compensation at retirement.
Service Retirement Allowance	
Eligibility	Group A – Earlier of age 65, with five years of service for members hired after July 1, 2004, and age 62 with 20 years of service. Group C - Age 55. Group D - Age 62 with 5 years of service. Group F - Age 62 or 30 years of service. For members hired after June 30, 2008, age 65 or a sum of age plus service greater than or equal to 87.
Amount	Group A - 1.67% of AFC times service. Group C - 2.5% of AFC times service up to 20 years. Group D - 3.33% of AFC times service up to 30 years. Group F - 1.25% of AFC times service prior to January 1, 1991, plus 1.67% of AFC times service after 1990, up to a maximum benefit of 50% of AFC. For members hired on or after July 1, 2008, the maximum benefit is 60% of AFC. The above amounts include the portion of the allowance provided by member contributions.



Early Retirement Allowance

Eligibility	<p>Groups A and D - Age 55 with 5 years of service or 30 years of service.</p> <p>Group C - Age 50 with 20 years of service.</p> <p>Group F - Age 55 with 5 years of service.</p>
Amount	<p>Group A - Actuarial equivalent of normal retirement allowance. For members with 30 years of service, there is no reduction.</p> <p>Group C - Same as normal retirement allowance.</p> <p>Group D - Normal allowance reduced by 3% for each year commencement precedes age 62.</p> <p>Group F – For members hired prior to July 1, 2008, no reduction if 30 years of service; otherwise normal allowance reduced by 6% for each year commencement precedes age 62. For members hired on or after July 1, 2008, no reduction if combination of years and service equal to 87; otherwise reduced from age 65 based on the following table</p>

<u>Years of Service</u>	<u>Reduction in Benefit</u>
35	One eighth of 1% per year
30	One quarter of 1% per year
25	One third of 1% per year
20	Five twelfths of 1% per year
Less than 20	Five ninths of 1% per year

Vested Retirement Allowance

Eligibility	<p>All Groups - 5 years of service.</p> <p>Allowance beginning at normal retirement age based on AFC and service at termination.</p>
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Ordinary Disability Retirement

Allowance

Eligibility	<p>All Groups - 5 years of service and incapacitated, not work related, for performance of duty.</p>
Amount	<p>Immediate allowance based on service to date of disability. Benefit is the greater of 25% of AFC and unreduced accrued benefit as of date of disability.</p>

Accidental Disability Retirement
Allowance

Eligibility	All Groups - incapacitated as a result of work related accident.
Amount	Groups A, D and F - immediate allowance based on service projected to normal retirement. Benefit is the greater of 25% of AFC and unreduced accrued benefit as of date of disability. Group C - Immediate allowance equal to 50% of AFC with additional 10% of AFC for each dependent child (up to 30%).

Ordinary Disability Retirement

Allowance

Eligibility	All Groups - 5 years of service and incapacitated, not work related, for performance of duty.
Amount	Immediate allowance based on service to date of disability. Benefit is the greater of 25% of AFC and unreduced accrued benefit as of date of disability.

Accidental Disability Retirement
Allowance

Eligibility	All Groups - incapacitated as a result of work related accident.
Amount	Groups A, D and F - immediate allowance based on service projected to normal retirement. Benefit is the greater of 25% of AFC and unreduced accrued benefit as of date of disability. Group C - Immediate allowance equal to 50% of AFC with additional 10% of AFC for each dependent child (up to 30%).

Ordinary Death Benefit

Eligibility	<p>Groups A and F - Death after eligibility for early retirement or 10 years of service.</p> <p>Group C - Death after normal retirement age or 10 years of service.</p> <p>Group D - Death after normal retirement age or 10 years of service.</p>
Amount	<p>Groups A, D and F – maximum of reduced allowance under 100% survivor option and disability allowance under 100% disability survivor option, commencing immediately.</p> <p>Group C - 70% of the allowance which would have been payable to the member plus additional allowance equal to 10% of AFC for each dependent child (up to 30%).</p>

Accidental Death Benefit

Eligibility	All Groups - Death as a result of work related accident.
Amount	<p>Groups A, D and F - Allowance equal to 25% of AFC payable to spouse.</p> <p>Group C - Allowance equal to 35% of AFC payable to spouse plus 10% of AFC for each dependent child (up to 30%).</p>

Optional Benefit and Death after Retirement

Lifetime allowance or actuarially equivalent allowance with survivor benefit as elected by member upon retirement.

Upon death of a Group C member, an allowance equal to 70% of the member's allowance is continued to the surviving spouse.

Refund of Contribution

Upon termination, if the member so elects or if no other benefit is payable, the member's accumulated contributions are refunded.

Post-Retirement Adjustments

Groups A, C and D - allowances in payment for at least one year increased on each January 1 by the percentage increase in Consumer Price Index but not more than 5%.

Group F – Same, but increase is based on half of the Consumer Price Index increase. Increase is based on the full Consumer Price index Increase starting in 2014 for employees retiring after July 1, 2008.

Member Contributions

Groups A and D – 6.40% until June 30, 2016; 6.55% thereafter

Group C – 8.28% (until June 30, 2016); 8.43% thereafter

Group F – 6.40% through June 30, 2016; 6.55% thereafter