

Vermont State Employees' Retirement System

Information Required Under
Governmental Accounting Standards Board
Statement No. 67 as of June 30, 2015

©2014 Xerox Corporation and Buck Consultants, LLC. All rights reserved. Xerox® and Xerox and Design® are trademarks of Xerox Corporation in the United States and/or other countries. Buck Consultants® is a registered trademark of Buck Consultants, LLC in the United States and/or other countries. BRXXXX.

Other company trademarks are also acknowledged.

Document Version: 1.0 (July 2014).



November 16, 2015

David L. Driscoll, FSA
Principal, Consulting Actuary

Board of Trustees
Vermont State Employees' Retirement System
Montpelier, Vermont 05609

Buck Consultants, LLC.
101 Federal Street, Suite 900
Boston, MA 02110

david.driscoll@xerox.com
tel 617.275.8028
fax 201.633.5168

GASB 67 Report as of June 30, 2015

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, 2015.

This report covers the retirement [Section 401(a)] portion of the System. The retiree medical benefits payable under the System will be 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, 2015.

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, 2014 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

Table of Contents

Section I
GASB 67 Information 1

Section II
Actuarial Assumptions and Methods..... 9

Section III
Summary of System Provisions..... 15

Section I – GASB 67 Information

Notes to the Financial Statements for the Year Ended June 30, 2015

Net Pension Liability

The components of the net pension liability as of June 30, 2015, are as follows:

Total pension liability	\$	2,169,908,969
System fiduciary net position		<u>(1,624,861,239)</u>
Net pension liability	\$	545,047,730
System fiduciary net position as a percentage of the total pension liability		74.88%

Actuarial Assumptions

The total pension liability as of June 30, 2015 was determined by rolling forward the total pension liability as of June 30, 2014 to June 30, 2015, using the actuarial assumptions outlined in Section II. Except for the expected rate of return on assets, these assumptions were selected on the basis of the experience study that was performed for the five-year period ending June 30, 2010. The recommended assumption changes based on this experience study were adopted by the Board at its May 24, 2011 Board meeting, and were effective for the June 30, 2011 actuarial valuation. The 7.95% expected rate of return on assets was adopted by the Board at a meeting held on July 27, 2015.

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. For funding valuations performed through June 30, 2014, these best estimate ranges were combined to produce forecasts of the short, intermediate, and longer term horizons by weighting the expected future nominal rates of return by the target asset allocation percentage. The various time horizons in the forecast are intended to capture more recent economic and capital market conditions as well as other plausible environments that could develop in the future over economic cycles. To reflect this in the rate-of-return assumption, a Select and Ultimate assumption setting approach, which is cited in Section 3.6.4 of Actuarial Standard of Practice No. 27 as an alternative to a single assumed rate of return, was employed.

Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of June 30, 2015 are summarized in the following table:

<u>Asset Class</u>	<u>Long-Term Expected Real Rate of Return</u>
Equity	8.61%
Fixed Income	1.91%
Alternatives	6.93%
Multi-strategy	4.88%

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. Tables 1 and 2 provide additional details regarding the determination of the discount rate.

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:

	<u>1% Decrease (6.95%)</u>	<u>Current Discount Rate (7.95%)</u>	<u>1% Increase (8.95%)</u>
Net Pension Liability	\$802,736,525	\$545,047,730	\$328,081,719

Schedules of Required Supplementary Information

Schedule of Changes in the Net Pension Liability and Related Ratios

	<u>FYE June 30, 2015</u>
Total pension liability	
Service cost	\$ 41,786,352
Interest	164,404,550
Changes of benefit terms	0
Differences between expected and actual experience	3,979,303
Changes of assumptions	62,246,999
Benefit payments	<u>(111,396,184)</u>
Net change in total pension liability	\$ 161,021,020
Total pension liability-beginning	\$ 2,008,887,949
Total pension liability-ending (a)	\$ 2,169,908,969
System fiduciary net pension	
Contributions - employers	\$ 55,881,364
Contributions – members	33,296,248
Net investment income	(8,484,694)
Benefit payments, including refunds of member contributions	(111,396,184)
Administrative expenses	(1,858,854)
Other	<u>177,491</u>
Net change in System fiduciary net position	\$ (32,384,629)
System fiduciary net position-beginning	\$ 1,657,245,868
System fiduciary net position-ending (b)	<u>\$ 1,624,861,239</u>
System's net pension liability-ending (a)-(b)	\$ 545,047,730
System fiduciary net position as a percentage of the total pension liability	74.88%
Covered payroll as of June 30, 2014 actuarial valuation	\$ 437,675,917
Net pension liability as a percentage of covered payroll	124.53%

Notes to Schedule:

Benefit changes since June 30, 2014: None

Changes of assumptions since June 30, 2014: The discount rate used to measure the net pension liability was lowered from 8.22% to 7.95%, due to the adoption by the Board of Trustees of a 7.95% expected future rate of return on assets for funding purposes.



Schedule of Employer Contributions

	<u>FYE June 30, 2015</u>
Actuarially determined contribution	\$ 44,651,783
Contributions related to the actuarially determined contribution	<u>55,881,364</u>
Contribution deficiency (excess)	\$ (11,229,581)

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, 2013 actuarial valuation will be made during the fiscal year ended June 30, 2015.

The methods and assumptions used to calculate the actuarially determined contribution in the June 30, 2014 actuarial valuation are shown in Section II.

Schedule of Investment Returns

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

Vermont State Employees' Retirement System
GASB 67 Valuation - June 30, 2015



Table 1

Projection of Fiduciary Net Position (000's omitted)								
Fiscal Year		Beginning	Member	Employer	Benefit	Administrative	Projected	Ending
Ending	Interest	Fiduciary	Contributions	Contributions	Payments	Expenses	Investment	Fiduciary
<u>June 30</u>	<u>Rate</u>	<u>Net Position</u>					<u>Earnings</u>	<u>Net Position</u>
2015	6.25%	1,657,246	33,296	55,881	137,287	0	102,097	1,711,233
2016	6.75%	1,711,233	26,662	44,495	118,952	0	113,922	1,777,360
2017	7.00%	1,777,360	21,352	45,507	125,308	0	122,404	1,841,315
2018	7.50%	1,841,315	20,853	46,601	132,182	0	135,715	1,912,302
2019	7.75%	1,912,302	20,340	47,743	139,689	0	145,480	1,986,176
2020	8.25%	1,986,176	18,975	48,931	147,443	0	160,644	2,067,283
2021	8.25%	2,067,283	18,446	50,209	155,809	0	167,027	2,147,156
2022	8.25%	2,147,156	17,997	51,531	163,898	0	173,325	2,226,111
2023	8.50%	2,226,111	17,506	52,988	172,140	0	184,988	2,309,452
2024	8.50%	2,309,452	17,052	54,515	180,423	0	191,771	2,392,368
2025	8.50%	2,392,368	16,550	56,145	188,929	0	198,512	2,474,646
2026	8.50%	2,474,646	16,023	57,855	197,376	0	205,203	2,556,351
2027	8.50%	2,556,351	15,505	59,644	205,786	0	211,851	2,637,565
2028	8.50%	2,637,565	14,998	61,543	213,954	0	218,472	2,718,624
2029	8.50%	2,718,624	14,489	63,564	221,922	0	225,093	2,799,849
2030	8.75%	2,799,849	13,988	65,708	229,507	0	238,570	2,888,607
2031	9.00%	2,888,607	13,369	67,987	237,650	0	253,093	2,985,406
2032	9.00%	2,985,406	12,821	70,315	245,219	0	261,550	3,084,873
2033	9.00%	3,084,873	12,232	72,806	252,750	0	270,254	3,187,415
2034	9.00%	3,187,415	11,595	75,417	260,182	0	279,243	3,293,488
2035	9.00%	3,293,488	10,962	78,160	267,120	0	288,577	3,404,067
2036	9.00%	3,404,067	10,346	81,065	273,673	0	298,341	3,520,146
2037	9.00%	3,520,146	9,684	84,142	279,850	0	308,622	3,642,744
2038	9.00%	3,642,744	8,985	87,389	285,890	0	319,502	3,772,730
2039	9.00%	3,772,730	8,265	7,554	291,869	0	327,391	3,824,071
2040	9.00%	3,824,071	7,583	6,965	297,115	0	331,725	3,873,229
2041	9.00%	3,873,229	6,929	6,412	301,655	0	335,896	3,920,811
2042	9.00%	3,920,811	6,333	5,865	305,571	0	339,956	3,967,394
2043	9.00%	3,967,394	5,780	5,349	308,735	0	343,962	4,013,749
2044	9.00%	4,013,749	5,231	4,868	311,389	0	347,971	4,060,431
2045	9.00%	4,060,431	4,701	4,391	313,666	0	352,028	4,107,885
2046	9.00%	4,107,885	4,167	3,917	315,444	0	356,176	4,156,701
2047	9.00%	4,156,701	3,642	3,458	316,536	0	360,478	4,207,744
2048	9.00%	4,207,744	3,135	3,009	317,307	0	364,996	4,261,577
2049	9.00%	4,261,577	2,664	2,567	316,927	0	369,818	4,319,699
2050	9.00%	4,319,699	2,216	2,173	315,945	0	375,055	4,383,198
2051	9.00%	4,383,198	1,815	1,794	313,688	0	380,835	4,453,954
2052	9.00%	4,453,954	1,465	1,461	310,381	0	387,318	4,533,817
2053	9.00%	4,533,817	1,137	1,170	306,284	0	394,659	4,624,499
2054	9.00%	4,624,499	868	900	300,773	0	403,040	4,728,534
2055	9.00%	4,728,534	661	689	293,997	0	412,683	4,848,569
2056	9.00%	4,848,569	469	524	286,602	0	423,796	4,986,756
2057	9.00%	4,986,756	336	371	278,103	0	436,594	5,145,954
2058	9.00%	5,145,954	219	267	269,035	0	451,311	5,328,717
2059	9.00%	5,328,717	142	174	259,142	0	468,188	5,538,079
2060	9.00%	5,538,079	79	112	248,771	0	487,482	5,776,981
2061	9.00%	5,776,981	32	62	237,928	0	509,456	6,048,603
2062	9.00%	6,048,603	12	25	226,542	0	534,401	6,356,499

Table 1
 (continued)
 Projection of Fiduciary Net Position
 ('000's omitted)

	Interest	Beginning	Member	Employer	Benefit	Administrative	Projected	Ending
	Rate	Fiduciary	Contributions	Contributions	Payments	Expenses	Investment	Fiduciary
		Net Position					Earnings	Net Position
2063	9.00%	6,356,499	5	9	214,805	0	562,628	6,704,336
2064	9.00%	6,704,336	2	4	202,892	0	594,457	7,095,907
2065	9.00%	7,095,907	0	1	190,851	0	630,228	7,535,285
2066	9.00%	7,535,285	0	0	178,745	0	670,305	8,026,845
2067	9.00%	8,026,845	0	0	166,629	0	715,079	8,575,296
2068	9.00%	8,575,296	0	0	154,560	0	764,971	9,185,707
2069	9.00%	9,185,707	0	0	142,596	0	820,435	9,863,546
2070	9.00%	9,863,546	0	0	130,795	0	881,960	10,614,711
2071	9.00%	10,614,711	0	0	119,220	0	950,075	11,445,566
2072	9.00%	11,445,566	0	0	107,936	0	1,025,348	12,362,978
2073	9.00%	12,362,978	0	0	97,007	0	1,108,397	13,374,368
2074	9.00%	13,374,368	0	0	86,501	0	1,199,884	14,487,751
2075	9.00%	14,487,751	0	0	76,482	0	1,300,530	15,711,799
2076	9.00%	15,711,799	0	0	67,015	0	1,411,111	17,055,896
2077	9.00%	17,055,896	0	0	58,154	0	1,532,470	18,530,212
2078	9.00%	18,530,212	0	0	49,950	0	1,665,520	20,145,782
2079	9.00%	20,145,782	0	0	42,441	0	1,811,252	21,914,592
2080	9.00%	21,914,592	0	0	35,655	0	1,970,743	23,849,681
2081	9.00%	23,849,681	0	0	29,606	0	2,145,168	25,965,242
2082	9.00%	25,965,242	0	0	24,290	0	2,335,802	28,276,754
2083	9.00%	28,276,754	0	0	19,689	0	2,544,041	30,801,106
2084	9.00%	30,801,106	0	0	15,766	0	2,771,405	33,556,746
2085	9.00%	33,556,746	0	0	12,474	0	3,019,558	36,563,830
2086	9.00%	36,563,830	0	0	9,754	0	3,290,315	39,844,391
2087	9.00%	39,844,391	0	0	7,539	0	3,585,663	43,422,515
2088	9.00%	43,422,515	0	0	5,763	0	3,907,773	47,324,525
2089	9.00%	47,324,525	0	0	4,357	0	4,259,015	51,579,183
2090	9.00%	51,579,183	0	0	3,258	0	4,641,983	56,217,908
2091	9.00%	56,217,908	0	0	2,410	0	5,059,506	61,275,004
2092	9.00%	61,275,004	0	0	1,763	0	5,514,673	66,787,914
2093	9.00%	66,787,914	0	0	1,275	0	6,010,856	72,797,495
2094	9.00%	72,797,495	0	0	911	0	6,551,734	79,348,318
2095	9.00%	79,348,318	0	0	642	0	7,141,320	86,488,996
2096	9.00%	86,488,996	0	0	447	0	7,783,990	94,272,539
2097	9.00%	94,272,539	0	0	307	0	8,484,515	102,756,747
2098	9.00%	102,756,747	0	0	208	0	9,248,098	112,004,638
2099	9.00%	112,004,638	0	0	138	0	10,080,411	122,084,911
2100	9.00%	122,084,911	0	0	91	0	10,987,638	133,072,458
2101	9.00%	133,072,458	0	0	59	0	11,976,519	145,048,917
2102	9.00%	145,048,917	0	0	38	0	13,054,401	158,103,280
2103	9.00%	158,103,280	0	0	24	0	14,229,294	172,332,551
2104	9.00%	172,332,551	0	0	15	0	15,509,929	187,842,464
2105	9.00%	187,842,464	0	0	9	0	16,905,821	204,748,277
2106	9.00%	204,748,277	0	0	6	0	18,427,345	223,175,615
2107	9.00%	223,175,615	0	0	3	0	20,085,805	243,261,418
2108	9.00%	243,261,418	0	0	2	0	21,893,528	265,154,943
2109	9.00%	265,154,943	0	0	1	0	23,863,945	289,018,887
2110	9.00%	289,018,887	0	0	1	0	26,011,700	315,030,586
2111	9.00%	315,030,586	0	0	0	0	28,352,753	343,383,339
2112	9.00%	343,383,339	0	0	0	0	30,904,500	374,287,839

**Vermont State Employees' Retirement System
GASB 67 Valuation - June 30, 2015**



Table 2

Fiscal Year	Projection of Fiduciary Net Position (000's omitted)						Present Value of Benefit Payments	
	Ending June 30	Interest Rate	Beginning Fiduciary Net Position	Benefit Payments	Benefit Payments		Unfunded Portion at 3.73%	Using Single Discount Rate of 7.95%
					Funded Portion	Unfunded Portion		
2015	6.25%	1,657,246	137,287	137,287	0	0	132,135	
2016	6.75%	1,711,233	118,952	118,952	0	0	106,057	
2017	7.00%	1,777,360	125,308	125,308	0	0	103,496	
2018	7.50%	1,841,315	132,182	132,182	0	0	101,133	
2019	7.75%	1,912,302	139,689	139,689	0	0	99,006	
2020	8.25%	1,986,176	147,443	147,443	0	0	96,805	
2021	8.25%	2,067,283	155,809	155,809	0	0	94,764	
2022	8.25%	2,147,156	163,898	163,898	0	0	92,343	
2023	8.50%	2,226,111	172,140	172,140	0	0	89,844	
2024	8.50%	2,309,452	180,423	180,423	0	0	87,232	
2025	8.50%	2,392,368	188,929	188,929	0	0	84,618	
2026	8.50%	2,474,646	197,376	197,376	0	0	81,891	
2027	8.50%	2,556,351	205,786	205,786	0	0	79,092	
2028	8.50%	2,637,565	213,954	213,954	0	0	76,175	
2029	8.50%	2,718,624	221,922	221,922	0	0	73,193	
2030	8.75%	2,799,849	229,507	229,507	0	0	70,120	
2031	9.00%	2,888,607	237,650	237,650	0	0	67,261	
2032	9.00%	2,985,406	245,219	245,219	0	0	64,292	
2033	9.00%	3,084,873	252,750	252,750	0	0	61,386	
2034	9.00%	3,187,415	260,182	260,182	0	0	58,538	
2035	9.00%	3,293,488	267,120	267,120	0	0	55,673	
2036	9.00%	3,404,067	273,673	273,673	0	0	52,838	
2037	9.00%	3,520,146	279,850	279,850	0	0	50,051	
2038	9.00%	3,642,744	285,890	285,890	0	0	47,366	
2039	9.00%	3,772,730	291,869	291,869	0	0	44,795	
2040	9.00%	3,824,071	297,115	297,115	0	0	42,242	
2041	9.00%	3,873,229	301,655	301,655	0	0	39,729	
2042	9.00%	3,920,811	305,571	305,571	0	0	37,281	
2043	9.00%	3,967,394	308,735	308,735	0	0	34,893	
2044	9.00%	4,013,749	311,389	311,389	0	0	32,601	
2045	9.00%	4,060,431	313,666	313,666	0	0	30,421	
2046	9.00%	4,107,885	315,444	315,444	0	0	28,341	
2047	9.00%	4,156,701	316,536	316,536	0	0	26,344	
2048	9.00%	4,207,744	317,307	317,307	0	0	24,464	
2049	9.00%	4,261,577	316,927	316,927	0	0	22,635	
2050	9.00%	4,319,699	315,945	315,945	0	0	20,903	
2051	9.00%	4,383,198	313,688	313,688	0	0	19,225	
2052	9.00%	4,453,954	310,381	310,381	0	0	17,622	
2053	9.00%	4,533,817	306,284	306,284	0	0	16,108	
2054	9.00%	4,624,499	300,773	300,773	0	0	14,654	
2055	9.00%	4,728,534	293,997	293,997	0	0	13,269	
2056	9.00%	4,848,569	286,602	286,602	0	0	11,982	
2057	9.00%	4,986,756	278,103	278,103	0	0	10,771	
2058	9.00%	5,145,954	269,035	269,035	0	0	9,652	
2059	9.00%	5,328,717	259,142	259,142	0	0	8,613	
2060	9.00%	5,538,079	248,771	248,771	0	0	7,659	
2061	9.00%	5,776,981	237,928	237,928	0	0	6,786	
2062	9.00%	6,048,603	226,542	226,542	0	0	5,985	

**Vermont State Employees' Retirement System
 GASB 67 Valuation - June 30, 2015**



Table 2
 (continued)
 Projection of Fiduciary Net Position
 (000's omitted)

Fiscal Year	Ending June 30	Interest Rate	Beginning Fiduciary Net Position	Benefit Payments	Benefit Payments		Present Value of Benefit Payments	
					Funded Portion	Unfunded Portion	Unfunded Portion at 3.73%	Using Single Discount Rate of 7.95%
2063	9.00%	6,356,499	214,805	214,805	0	0	5,257	
2064	9.00%	6,704,336	114,563	114,563	0	0	2,597	
2065	9.00%	7,095,907	105,882	105,882	0	0	2,224	
2066	9.00%	7,535,285	97,474	97,474	0	0	1,896	
2067	9.00%	8,026,845	89,358	89,358	0	0	1,610	
2068	9.00%	8,575,296	81,550	81,550	0	0	1,361	
2069	9.00%	9,185,707	74,068	74,068	0	0	1,146	
2070	9.00%	9,863,546	66,932	66,932	0	0	959	
2071	9.00%	10,614,711	60,157	60,157	0	0	798	
2072	9.00%	11,445,566	53,760	53,760	0	0	661	
2073	9.00%	12,362,978	47,755	47,755	0	0	544	
2074	9.00%	13,374,368	42,151	42,151	0	0	445	
2075	9.00%	14,487,751	36,957	36,957	0	0	361	
2076	9.00%	15,711,799	32,176	32,176	0	0	291	
2077	9.00%	17,055,896	27,807	27,807	0	0	233	
2078	9.00%	18,530,212	23,846	23,846	0	0	185	
2079	9.00%	20,145,782	20,282	20,282	0	0	146	
2080	9.00%	21,914,592	17,104	17,104	0	0	114	
2081	9.00%	23,849,681	14,295	14,295	0	0	88	
2082	9.00%	25,965,242	11,835	11,835	0	0	68	
2083	9.00%	28,276,754	9,702	9,702	0	0	51	
2084	9.00%	30,801,106	7,870	7,870	0	0	39	
2085	9.00%	33,556,746	6,314	6,314	0	0	29	
2086	9.00%	36,563,830	5,006	5,006	0	0	21	
2087	9.00%	39,844,391	3,920	3,920	0	0	15	
2088	9.00%	43,422,515	3,030	3,030	0	0	11	
2089	9.00%	47,324,525	2,311	2,311	0	0	8	
2090	9.00%	51,579,183	1,737	1,737	0	0	5	
2091	9.00%	56,217,908	1,287	1,287	0	0	4	
2092	9.00%	61,275,004	939	939	0	0	2	
2093	9.00%	66,787,914	675	675	0	0	2	
2094	9.00%	72,797,495	478	478	0	0	1	
2095	9.00%	79,348,318	334	334	0	0	1	
2096	9.00%	86,488,996	231	231	0	0	0	
2097	9.00%	94,272,539	158	158	0	0	0	
2098	9.00%	102,756,747	108	108	0	0	0	
2099	9.00%	112,004,638	73	73	0	0	0	
2100	9.00%	122,084,911	50	50	0	0	0	
2101	9.00%	133,072,458	34	34	0	0	0	
2102	9.00%	145,048,917	23	23	0	0	0	
2103	9.00%	158,103,280	16	16	0	0	0	
2104	9.00%	172,332,551	11	11	0	0	0	
2105	9.00%	187,842,464	7	7	0	0	0	
2106	9.00%	204,748,277	5	5	0	0	0	
2107	9.00%	223,175,615	3	3	0	0	0	
2108	9.00%	243,261,418	2	2	0	0	0	
2109	9.00%	265,154,943	1	1	0	0	0	
2110	9.00%	289,018,887	0	0	0	0	0	
2111	9.00%	315,030,586	0	0	0	0	0	
2112	9.00%	343,383,339	0	0	0	0	0	



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. Through June 30, 2014, a select-and-ultimate interest rate set was used, as specified below. The interest rate set was restarted every year.

Year 1: 6.25%	Year 10: 8.50%
Year 2: 6.75%	Year 11: 8.50%
Year 3: 7.00%	Year 12: 8.50%
Year 4: 7.50%	Year 13: 8.50%
Year 5: 7.75%	Year 14: 8.50%
Year 6: 8.25%	Year 15: 8.50%
Year 7: 8.25%	Year 16: 8.75%
Year 8: 8.25%	Year 17 and later: 9.00%
Year 9: 8.50%	

SEPARATIONS FROM SERVICE: 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	4.1%	.03%
30	3.3	.04
35	2.7	.05
40	2.5	.08
45	2.2	.13
50	1.9	.21
55	N/A	.35
59	N/A	.52
60	N/A	.57
61	N/A	.62

¹ Increased during first 10 years of service.

ACTIVE SERVICE MORTALITY: RP-2000 Table for Employees using Scale AA to 2016



GROUPS A, D AND F

Retirement-Group F*			
Male Employee		Female Employee	
Age	Rate	Age	Rate
50	20.0%	50	6.0%
51	20.0	51	6.0
52	10.0	52	8.0
53	10.0	53	9.0
54	10.0	54	10.0
55	5.0	55	5.0
56	4.2	56	4.2
57	5.6	57	5.6
58	6.3	58	6.3
59	7.0	59	7.0
60	7.0	60	7.0
61	14.0	61	14.0
62	28.0	62	28.0
63	17.5	63	17.5
64	17.5	64	17.5
65	25.0	65	25.0
66	15.0	66	15.0
67	17.5	67	17.5
68	17.5	68	17.5
69	20.0	69	20.0
70	100.0	70	100.0

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

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

Age	Annual Rate of Salary Increase	Age	Annual Rate of Salary Increase
25	7.79%	50	5.70%
30	7.33%	55	5.20%
35	7.00%	60	4.67%
40	6.75%	64	4.50%
45	6.27%		

GROUPS A, D AND F

Salary increases of several classes of employees in Groups D and F are assumed to follow the schedule shown below:

Annual Rate of Salary Adjustment				
Fiscal Year	Group D Judiciary	Group F Non Exempt Non Judiciary	Group F Exempt Non Judiciary	Group F Exempt Judiciary
2013	4.6%	3%	5%	4.6%
2014	N/A	Valuation Salary Scale less 1.7%	N/A	N/A
2015	N/A	N/A	N/A	N/A

DEATHS AFTER RETIREMENT:

For service retirees and beneficiaries, the RP-2000 Mortality Tables for Employees and Healthy Annuitants projected with Scale AA to 2010.

For disabled retirees, the RP-2000 Combined Mortality Tables for Employees and Healthy Annuitants with a three-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% to 3.25%.

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

ACTUARIAL COST METHOD: The costs of the System 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, the cost-of-living-adjustment is assumed to increase from 1.5% to 3% per annum effective January 1, 2014.

INACTIVE MEMBERS: Valuation liability equals 250% of accumulated contributions.

HEALTH AND MEDICAL BENEFITS FOR RETIREES: Not included in this valuation.

ASSET VALUATION METHOD: The amount of the assets for funding 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. Through June 30, 2014, a select-and-ultimate interest rate set was used, as specified below. The interest rate set was restarted every year.

Year 1: 6.25%	Year 10: 8.50%
Year 2: 6.75%	Year 11: 8.50%
Year 3: 7.00%	Year 12: 8.50%
Year 4: 7.50%	Year 13: 8.50%
Year 5: 7.75%	Year 14: 8.50%
Year 6: 8.25%	Year 15: 8.50%
Year 7: 8.25%	Year 16: 8.75%
Year 8: 8.25%	Year 17 and later: 9.00%
Year 9: 8.50%	

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 ¹
	Men Employee	Female Employee	
25	3.60%	7.20%	.15%
30	3.60%	7.20%	.20
35	3.60%	7.20%	.27
40			.40
45			.65
50			1.09
55			1.82
60			2.93

ACTIVE SERVICE MORTALITY²: RP-2000 Table for Employees using Scale AA to 2016

- ¹ Increased during first 5 years of service.
- ² 20% of disabilities and 30% of deaths assumed to be accidental.

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	7.79%
30	7.33
35	7.00
40	6.75
45	6.27
50	5.70
55	5.20
60	4.67

GROUP C

Salary increases over these three fiscal years are assumed to follow the schedule shown below:

Annual Rate of Salary Adjustment		
Fiscal Year	Non Exempt Non State Police	Non Exempt State Police
2013	3%	3%
2014	Valuation Salary Scale less 1.7%	Valuation Salary Scale less 2.4%
2015	N/A	N/A

DEATHS AFTER RETIREMENT:

For service retirees and beneficiaries, the RP-2000 Mortality Tables for Employees and Healthy Annuitants projected with Scale AA to 2010.

For disabled retirees, the RP-2000 Combined Mortality Tables for Employees and Healthy Annuitants with a three-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% to 3.25%.

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

ACTUARIAL COST METHOD: Individual entry age normal actuarial cost method. For actuarial valuations prior to June 30, 2006, the entry age normal cost method with frozen initial liability was used.

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.

HEALTH AND MEDICAL BENEFITS FOR RETIREES: Not included in this valuation.

ASSET VALUATION METHOD: The amount of the assets used for funding 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, 2014, 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, 2014:

Retired members or beneficiaries currently receiving benefits	5,980
Inactive members	867
Active members	8,325
Terminated vested members	732

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>
-------------	--

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	Groups A and F - Death after eligibility for early retirement or 10 years of service. Group C - Death after normal retirement age or 10 years of service. Group D - Death after normal retirement age or 10 years of service.
Amount	Groups A, D and F – maximum of reduced allowance under 100% survivor option and disability allowance under 100% disability survivor option, commencing immediately. 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%).

Accidental Death Benefit

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

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).

Group C – 8.28% (until June 30, 2016).

Group F
– 6.40% through June 30, 2016
– 5.10% from July 1, 2016 through June 30, 2019
– 4.85% thereafter