

Vermont State Teachers' Retirement System

Information Required Under
Governmental Accounting Standards Board
Statement No. 67 as of June 30, 2014

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October 14, 2014

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

GASB 67 Report as of June 30, 2014

Dear Board Members:

This actuarial valuation report provides information concerning the Vermont State Teachers' Retirement System (VSTRS) 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 effective for the fiscal year ending June 30, 2014.

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, 2014.

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 VSTRS' 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, 2013 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, 2014

Net Pension Liability

The components of the net pension liability as of June 30, 2014, are as follows:

Total pension liability	\$	2,663,801,594
System fiduciary net position		<u>(1,705,364,604)</u>
Net pension liability	\$	958,436,990
System fiduciary net position as a percentage of the total pension liability		64.02%

Actuarial Assumptions

The total pension liability as of June 30, 2014 was determined by rolling forward the total pension liability as of June 30, 2013 to June 30, 2014 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, 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.

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. 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, is employed.

Best estimates of arithmetic rates of return for each major asset class included in the target asset allocation as of June 30, 2014 are summarized in the following table:

<u>Asset Class</u>	<u>Long-Term Expected Real Rate of Return</u>
Equity	6.70%
Fixed Income	2.94%
Alternatives	6.26%
Multi-strategy	5.98%

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 8.15%. 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.

In the projection of future cash outflows of the System, it was assumed that administrative expenses payable from System assets would amount to approximately \$2 million in fiscal 2014 and rise by 3% per annum.

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 8.15%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.15%) or 1-percentage-point higher (9.15%) than the current rate:

	<u>1% Decrease (7.15%)</u>	<u>Current Discount Rate (8.15%)</u>	<u>1% Increase (9.15%)</u>
Net Pension Liability	\$ 1,258,726,082	\$ 958,436,990	\$ 706,363,780

Schedules of Required Supplementary Information

Schedule of Changes in the Net Pension Liability and Related Ratios

	<u>FYE June 30, 2014</u>
Total pension liability	
Service cost	\$ 33,143,487
Interest	206,150,481
Changes of benefit terms	0
Differences between expected and actual experience	0
Changes of assumptions	0
Benefit payments	<u>(140,846,837)</u>
Net change in total pension liability	\$ 98,447,131
Total pension liability-beginning	\$ 2,565,354,463
Total pension liability-ending (a)	\$ 2,663,801,594
System fiduciary net pension	
Contributions - employers	\$ 71,869,736
Contributions – members	32,558,584
Net investment income	212,338,194
Benefit payments, including refunds of member contributions	(140,846,837)
Administrative expenses	(26,115,813)
Other	<u>1,209,177</u>
Net change in System fiduciary net position	\$ 151,013,041
System fiduciary net position-beginning	\$ 1,554,351,563
System fiduciary net position-ending (b)	<u>\$ 1,705,364,604</u>
System's net pension liability-ending (a)-(b)	\$ 958,436,990
System fiduciary net position as a percentage of the total pension liability	64.02%
Covered payroll as of June 30, 2013 actuarial valuation	\$ 563,623,421
Net pension liability as a percentage of covered payroll	170.05%

Notes to Schedule:

Benefit changes since June 30, 2013: None

Changes of assumptions since June 30, 2013: None



Schedule of Employer Contributions

	<u>FYE June 30, 2014</u>
Actuarially determined contribution	\$ 68,352,825
Contributions related to the actuarially determined contribution	<u>71,869,736</u>
Contribution deficiency (excess)	\$ 3,516,911

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, 2012 actuarial valuation will be made during the fiscal year ended June 30, 2014.

The methods and assumptions used to calculate the actuarially determined contribution in the June 30, 2013 actuarial valuation are shown in Section II.

Schedule of Investment Returns

	<u>FYE June 30, 2014</u>
Annual money-weighted rate of return, net of investment expenses	13.83%

Vermont State Teachers' Retirement System
GASB 67 Valuation - June 30, 2014



Table 1

Projection of Fiduciary Net Position
(000's omitted)

Fiscal Year	Interest	Beginning	Member	Employer	Benefit	Administrative	Projected	Ending
Ending	Rate	Fiduciary	Contributions	Contributions	Payments	Expenses	Investment	Fiduciary
June 30		Net Position					Earnings	Net Position
2014	6.25%	1,554,352	25,518	70,373	232,389	2,000	92,885	1,508,738
2015	6.75%	1,508,738	24,651	71,766	153,012	2,060	99,893	1,549,976
2016	7.00%	1,549,976	23,125	73,972	162,958	2,122	106,159	1,588,152
2017	7.50%	1,588,152	21,672	76,402	172,298	2,186	116,298	1,628,040
2018	7.75%	1,628,040	20,315	79,023	180,985	2,252	122,983	1,667,124
2019	8.25%	1,667,124	19,004	81,859	190,057	2,320	133,838	1,709,447
2020	8.25%	1,709,447	17,799	84,878	199,267	2,390	137,027	1,747,495
2021	8.25%	1,747,495	16,652	88,142	207,847	2,462	139,902	1,781,882
2022	8.50%	1,781,882	15,553	91,702	216,291	2,536	146,815	1,817,124
2023	8.50%	1,817,124	14,532	95,522	224,291	2,612	149,591	1,849,866
2024	8.50%	1,849,866	13,563	99,622	231,771	2,690	152,190	1,880,780
2025	8.50%	1,880,780	12,643	104,030	238,797	2,771	154,666	1,910,551
2026	8.50%	1,910,551	11,788	108,761	245,395	2,854	157,080	1,939,931
2027	8.50%	1,939,931	10,962	113,769	251,664	2,940	159,487	1,969,546
2028	8.50%	1,969,546	10,171	119,103	257,538	3,028	161,945	2,000,199
2029	8.50%	2,000,199	9,403	124,768	263,265	3,119	164,512	2,032,498
2030	8.75%	2,032,498	8,664	130,771	268,516	3,213	172,177	2,072,381
2031	9.00%	2,072,381	7,957	137,106	273,336	3,309	180,721	2,121,520
2032	9.00%	2,121,520	7,275	143,795	277,705	3,408	185,211	2,176,688
2033	9.00%	2,176,688	6,615	150,855	281,798	3,510	190,273	2,239,123
2034	9.00%	2,239,123	5,977	158,300	285,399	3,615	196,029	2,310,415
2035	9.00%	2,310,415	5,372	166,144	288,464	3,723	202,624	2,392,368
2036	9.00%	2,392,368	4,797	174,403	291,226	3,835	210,212	2,486,719
2037	9.00%	2,486,719	4,258	183,101	293,006	3,950	218,979	2,596,101
2038	9.00%	2,596,101	3,746	192,245	293,587	4,069	229,173	2,723,608
2039	9.00%	2,723,608	3,276	0	293,174	4,191	232,176	2,661,695
2040	9.00%	2,661,695	2,838	0	292,776	4,317	226,596	2,594,037
2041	9.00%	2,594,037	2,427	0	290,875	4,447	220,567	2,521,709
2042	9.00%	2,521,709	2,058	0	287,897	4,580	214,166	2,445,456
2043	9.00%	2,445,456	1,731	0	284,509	4,717	207,432	2,365,393
2044	9.00%	2,365,393	1,433	0	280,017	4,859	200,405	2,282,356
2045	9.00%	2,282,356	1,162	0	275,146	5,005	193,128	2,196,495
2046	9.00%	2,196,495	937	0	269,295	5,155	185,642	2,108,623
2047	9.00%	2,108,623	745	0	262,727	5,310	178,007	2,019,338
2048	9.00%	2,019,338	580	0	255,277	5,469	170,285	1,929,457
2049	9.00%	1,929,457	447	0	247,579	5,633	162,522	1,839,214
2050	9.00%	1,839,214	335	0	239,028	5,802	154,764	1,749,483
2051	9.00%	1,749,483	246	0	230,232	5,976	147,064	1,660,585
2052	9.00%	1,660,585	175	0	221,117	6,155	139,453	1,572,941
2053	9.00%	1,572,941	123	0	211,544	6,340	131,977	1,487,157
2054	9.00%	1,487,157	82	0	201,816	6,530	124,674	1,403,567
2055	9.00%	1,403,567	54	0	191,835	6,726	117,581	1,322,641
2056	9.00%	1,322,641	33	0	181,723	6,928	110,733	1,244,755
2057	9.00%	1,244,755	18	0	171,575	7,136	104,160	1,170,223
2058	9.00%	1,170,223	10	0	161,570	7,350	97,883	1,099,195
2059	9.00%	1,099,195	4	0	151,745	7,571	91,913	1,031,796
2060	9.00%	1,031,796	1	0	142,115	7,798	86,261	968,145
2061	9.00%	968,145	0	0	132,695	8,032	80,937	908,355

Vermont State Teachers' Retirement System
GASB 67 Valuation - June 30, 2014



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

Fiscal Year	Beginning	Member	Employer	Benefit	Administrative	Projected	Ending
Ending	Fiduciary	Contributions	Contributions	Payments	Expenses	Investment	Fiduciary
June 30	Net Position					Earnings	Net Position
Interest							
Rate							
2062	9.00%	908,355	0	0	123,505	8,273	852,527
2063	9.00%	852,527	0	0	114,563	8,521	800,751
2064	9.00%	800,751	0	0	105,882	8,777	753,111
2065	9.00%	753,111	0	0	97,474	9,040	709,687
2066	9.00%	709,687	0	0	89,358	9,311	670,545
2067	9.00%	670,545	0	0	81,550	9,590	635,741
2068	9.00%	635,741	0	0	74,068	9,878	605,316
2069	9.00%	605,316	0	0	66,932	10,174	579,293
2070	9.00%	579,293	0	0	60,157	10,479	557,683
2071	9.00%	557,683	0	0	53,760	10,793	540,480
2072	9.00%	540,480	0	0	47,755	11,117	527,659
2073	9.00%	527,659	0	0	42,151	11,451	519,186
2074	9.00%	519,186	0	0	36,957	11,795	515,014
2075	9.00%	515,014	0	0	32,176	12,149	515,088
2076	9.00%	515,088	0	0	27,807	12,513	519,351
2077	9.00%	519,351	0	0	23,846	12,888	527,741
2078	9.00%	527,741	0	0	20,282	13,275	540,203
2079	9.00%	540,203	0	0	17,104	13,673	556,689
2080	9.00%	556,689	0	0	14,295	14,083	577,164
2081	9.00%	577,164	0	0	11,835	14,505	601,609
2082	9.00%	601,609	0	0	9,702	14,940	630,027
2083	9.00%	630,027	0	0	7,870	15,388	662,447
2084	9.00%	662,447	0	0	6,314	15,850	698,928
2085	9.00%	698,928	0	0	5,006	16,326	739,560
2086	9.00%	739,560	0	0	3,920	16,816	784,471
2087	9.00%	784,471	0	0	3,030	17,320	833,828
2088	9.00%	833,828	0	0	2,311	17,840	887,834
2089	9.00%	887,834	0	0	1,737	18,375	946,741
2090	9.00%	946,741	0	0	1,287	18,926	1,010,845
2091	9.00%	1,010,845	0	0	939	19,494	1,080,488
2092	9.00%	1,080,488	0	0	675	20,079	1,156,064
2093	9.00%	1,156,064	0	0	478	20,681	1,238,020
2094	9.00%	1,238,020	0	0	334	21,301	1,326,854
2095	9.00%	1,326,854	0	0	231	21,940	1,423,123
2096	9.00%	1,423,123	0	0	158	22,598	1,527,447
2097	9.00%	1,527,447	0	0	108	23,276	1,640,503
2098	9.00%	1,640,503	0	0	73	23,974	1,763,043
2099	9.00%	1,763,043	0	0	50	24,693	1,895,884
2100	9.00%	1,895,884	0	0	34	25,434	2,039,924
2101	9.00%	2,039,924	0	0	23	26,197	2,196,143
2102	9.00%	2,196,143	0	0	16	26,983	2,365,608
2103	9.00%	2,365,608	0	0	11	27,792	2,549,485
2104	9.00%	2,549,485	0	0	7	28,626	2,749,045
2105	9.00%	2,749,045	0	0	5	29,485	2,965,671
2106	9.00%	2,965,671	0	0	3	30,370	3,200,871
2107	9.00%	3,200,871	0	0	2	31,281	3,456,289
2108	9.00%	3,456,289	0	0	1	32,219	3,733,716
2109	9.00%	3,733,716	0	0	0	33,186	4,035,104

Vermont State Teachers' Retirement System
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Table 2

Projection of Fiduciary Net Position
(000's omitted)

Fiscal Year	Ending June 30	Interest Rate	Beginning Fiduciary Net Position	Benefit Payments	Present Value of Benefit Payments				
					Benefit Payments		Funded Portion at select and ultimate rates	Unfunded Portion at 3.66%	Using Single Discount Rate of 8.15%
				Funded Portion	Unfunded Portion				
2014	6.25%	1,554,352	232,389	232,389	0	225,450	0	223,460	
2015	6.75%	1,508,738	153,012	153,012	0	139,057	0	136,044	
2016	7.00%	1,549,976	162,958	162,958	0	138,407	0	133,967	
2017	7.50%	1,588,152	172,298	172,298	0	136,131	0	130,970	
2018	7.75%	1,628,040	180,985	180,985	0	132,709	0	127,205	
2019	8.25%	1,667,124	190,057	190,057	0	128,740	0	123,513	
2020	8.25%	1,709,447	199,267	199,267	0	124,692	0	119,738	
2021	8.25%	1,747,495	207,847	207,847	0	120,148	0	115,481	
2022	8.50%	1,781,882	216,291	216,291	0	115,235	0	111,115	
2023	8.50%	1,817,124	224,291	224,291	0	110,135	0	106,541	
2024	8.50%	1,849,866	231,771	231,771	0	104,892	0	101,796	
2025	8.50%	1,880,780	238,797	238,797	0	99,606	0	96,978	
2026	8.50%	1,910,551	245,395	245,395	0	94,339	0	92,146	
2027	8.50%	1,939,931	251,664	251,664	0	89,170	0	87,378	
2028	8.50%	1,969,546	257,538	257,538	0	84,102	0	82,678	
2029	8.50%	2,000,199	263,265	263,265	0	79,237	0	78,147	
2030	8.75%	2,032,498	268,516	268,516	0	74,315	0	73,698	
2031	9.00%	2,072,381	273,336	273,336	0	69,403	0	69,367	
2032	9.00%	2,121,520	277,705	277,705	0	64,690	0	65,164	
2033	9.00%	2,176,688	281,798	281,798	0	60,223	0	61,141	
2034	9.00%	2,239,123	285,399	285,399	0	55,957	0	57,255	
2035	9.00%	2,310,415	288,464	288,464	0	51,888	0	53,509	
2036	9.00%	2,392,368	291,226	291,226	0	48,059	0	49,949	
2037	9.00%	2,486,719	293,006	293,006	0	44,361	0	46,467	
2038	9.00%	2,596,101	293,587	293,587	0	40,779	0	43,050	
2039	9.00%	2,723,608	293,174	293,174	0	37,359	0	39,750	
2040	9.00%	2,661,695	292,776	292,776	0	34,228	0	36,704	
2041	9.00%	2,594,037	290,875	290,875	0	31,198	0	33,717	
2042	9.00%	2,521,709	287,897	287,897	0	28,329	0	30,857	
2043	9.00%	2,445,456	284,509	284,509	0	25,684	0	28,195	
2044	9.00%	2,365,393	280,017	280,017	0	23,191	0	25,659	
2045	9.00%	2,282,356	275,146	275,146	0	20,906	0	23,312	
2046	9.00%	2,196,495	269,295	269,295	0	18,772	0	21,097	
2047	9.00%	2,108,623	262,727	262,727	0	16,802	0	19,031	
2048	9.00%	2,019,338	255,277	255,277	0	14,978	0	17,098	
2049	9.00%	1,929,457	247,579	247,579	0	13,327	0	15,332	
2050	9.00%	1,839,214	239,028	239,028	0	11,804	0	13,687	
2051	9.00%	1,749,483	230,232	230,232	0	10,431	0	12,190	
2052	9.00%	1,660,585	221,117	221,117	0	9,191	0	10,825	
2053	9.00%	1,572,941	211,544	211,544	0	8,067	0	9,576	
2054	9.00%	1,487,157	201,816	201,816	0	7,060	0	8,447	
2055	9.00%	1,403,567	191,835	191,835	0	6,157	0	7,424	
2056	9.00%	1,322,641	181,723	181,723	0	5,351	0	6,503	
2057	9.00%	1,244,755	171,575	171,575	0	4,635	0	5,677	
2058	9.00%	1,170,223	161,570	161,570	0	4,004	0	4,943	
2059	9.00%	1,099,195	151,745	151,745	0	3,450	0	4,292	
2060	9.00%	1,031,796	142,115	142,115	0	2,965	0	3,717	
2061	9.00%	968,145	132,695	132,695	0	2,539	0	3,209	

Vermont State Teachers' Retirement System
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Table 2
 (continued)
 Projection of Fiduciary Net Position
 (000's omitted)

Fiscal Year	Ending June 30	Interest Rate	Beginning Fiduciary Net Position	Benefit Payments	Present Value of Benefit Payments				
					Benefit Payments		Funded Portion at select and ultimate rates	Unfunded Portion at 3.66%	Using Single Discount Rate of 8.15%
				Funded Portion	Unfunded Portion				
2062	9.00%	908,355	123,505	123,505	0	2,168	0	2,762	
2063	9.00%	852,527	114,563	114,563	0	1,845	0	2,369	
2064	9.00%	800,751	105,882	105,882	0	1,565	0	2,024	
2065	9.00%	753,111	97,474	97,474	0	1,322	0	1,723	
2066	9.00%	709,687	89,358	89,358	0	1,111	0	1,460	
2067	9.00%	670,545	81,550	81,550	0	931	0	1,232	
2068	9.00%	635,741	74,068	74,068	0	775	0	1,035	
2069	9.00%	605,316	66,932	66,932	0	643	0	865	
2070	9.00%	579,293	60,157	60,157	0	530	0	719	
2071	9.00%	557,683	53,760	53,760	0	435	0	594	
2072	9.00%	540,480	47,755	47,755	0	354	0	488	
2073	9.00%	527,659	42,151	42,151	0	287	0	398	
2074	9.00%	519,186	36,957	36,957	0	231	0	323	
2075	9.00%	515,014	32,176	32,176	0	184	0	260	
2076	9.00%	515,088	27,807	27,807	0	146	0	208	
2077	9.00%	519,351	23,846	23,846	0	115	0	165	
2078	9.00%	527,741	20,282	20,282	0	90	0	129	
2079	9.00%	540,203	17,104	17,104	0	69	0	101	
2080	9.00%	556,689	14,295	14,295	0	53	0	78	
2081	9.00%	577,164	11,835	11,835	0	40	0	60	
2082	9.00%	601,609	9,702	9,702	0	30	0	45	
2083	9.00%	630,027	7,870	7,870	0	23	0	34	
2084	9.00%	662,447	6,314	6,314	0	17	0	25	
2085	9.00%	698,928	5,006	5,006	0	12	0	18	
2086	9.00%	739,560	3,920	3,920	0	9	0	13	
2087	9.00%	784,471	3,030	3,030	0	6	0	10	
2088	9.00%	833,828	2,311	2,311	0	4	0	7	
2089	9.00%	887,834	1,737	1,737	0	3	0	5	
2090	9.00%	946,741	1,287	1,287	0	2	0	3	
2091	9.00%	1,010,845	939	939	0	1	0	2	
2092	9.00%	1,080,488	675	675	0	1	0	1	
2093	9.00%	1,156,064	478	478	0	1	0	1	
2094	9.00%	1,238,020	334	334	0	0	0	1	
2095	9.00%	1,326,854	231	231	0	0	0	0	
2096	9.00%	1,423,123	158	158	0	0	0	0	
2097	9.00%	1,527,447	108	108	0	0	0	0	
2098	9.00%	1,640,503	73	73	0	0	0	0	
2099	9.00%	1,763,043	50	50	0	0	0	0	
2100	9.00%	1,895,884	34	34	0	0	0	0	
2101	9.00%	2,039,924	23	23	0	0	0	0	
2102	9.00%	2,196,143	16	16	0	0	0	0	
2103	9.00%	2,365,608	11	11	0	0	0	0	
2104	9.00%	2,549,485	7	7	0	0	0	0	
2105	9.00%	2,749,045	5	5	0	0	0	0	
2106	9.00%	2,965,671	3	3	0	0	0	0	
2107	9.00%	3,200,871	2	2	0	0	0	0	
2108	9.00%	3,456,289	1	1	0	0	0	0	
2109	9.00%	3,733,716	0	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.

INTEREST RATE: A select-and-ultimate interest rate set, specified below. The interest rate set is 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 NORMAL RETIREMENT: Representative values of the assumed annual rates of withdrawal, vested retirement, early retirement, disability and death are as follows:

Age	Withdrawal and Vested Retirement		Disability		Death	
	Males	Females	Males	Females	Males	Females
25	20.00%	20.00%	.010%	.015%	.02%	.02%
30	12.00	14.00	.015	.015	.02	.02
35	8.00	11.30	.020	.015	.02	.02
40	6.50	8.60	.030	.020	.05	.02
45	5.80	6.00	.053	.045	.05	.04
50	5.40	5.00	.067	.070	.07	.06
55	5.40	4.84	.088	.095	.07	.10
59	5.40	4.84	.234	.142	.09	.14
60	5.40	4.84	.294	.168	.09	.15
61	5.40	4.84	.366	.202	.297	.17

Age	Reduced Early Retirement		Full Early Retirement	
	Grandfathered	Non-Grandfathered	Grandfathered	Non-Grandfathered
50	-	-	40.00%	25.00%
55	8.75%	8.75%	20.00	20.00
56	6.25	6.25	10.00	10.00
57	6.25	6.25	10.00	10.00
58	6.25	6.25	10.00	10.00
59	6.25	6.25	10.00	10.00
60	12.50	12.50	30.00	17.00
61	12.50	12.50	17.00	17.00

SERVICE RETIREMENTS: Occur between ages 62 (60 for Group A) and 70. The assumed rates of service retirement are as follows:

Age	Annual Rate of Retirement	
	Grandfathered	Non-Grandfathered
62	25.0%	20.0%
63	20.0	20.0
64	20.0	20.0
65	30.0	30.0
66	30.0	30.0
67	30.0	30.0
68	20.0	20.0
69	30.0	30.0
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	8.40%
30	7.05
35	6.15
40	5.45
45	4.95
50	4.60
55	4.35
60	4.25
64	4.25

DEATHS AFTER RETIREMENT: The 1995 Buck Mortality Tables set back three years for males and one year for females, for retirees, terminated vested members and beneficiaries; the RP-2000 Disabled Life Table with projection to 2016 using Scale AA for disabled retirees. The tables used contain a margin to reflect anticipated mortality improvement after the valuation date.

INFLATION: The separately stated assumptions for investment return, salary increases and cost of living adjustments are consistent with an expected annual inflation rate of 3.00% to 3.25% per year.

FUTURE EXPENSES: No provision made.

SPOUSE'S AGE: Husbands are assumed to be three years older than their wives.

PERCENT MARRIED: 85% of the male members and 35% of the female members are assumed to be married.

COST-OF-LIVING ADJUSTMENTS: Assumed to occur on January 1 following one year of retirement at the rate of 3% per annum for Group A members and 1.5% per annum for Group C member (beginning at age 62 for Group C members who elect reduced early retirement).

INACTIVE MEMBERS: A liability equal to 350% of accumulated contributions of inactive members is included in the valuation liabilities.

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

ASSET VALUATION METHOD: The amount of the assets for valuation purposes equals the preliminary asset value plus 20% of the difference between the 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 and expected investment income. If necessary, a further adjustment is made to ensure that the valuation assets are within 20% of the market value.

MEMBER DATA: 351 members terminated on June 30, 2013 and retired on July 1, 2013 were included with a valuation status as members receiving benefits. 409 members who were active on June 30, 2013 and terminated on July 1, 2013, were included with a valuation status as inactive. For those terminated members with at least five years of service, the system will automatically vest them six years after their termination if they do not withdraw.

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

Data for Valuation

In preparing the actuarial valuation as of June 30, 2013, 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, 2013:

Retired members or beneficiaries currently receiving benefits	7,743
Inactive members	2,322
Active members	10,101
Terminated vested members	751



Section III – Summary of System Provisions

Effective Date	July 1, 1947.
Creditable Service	Service as a member plus purchased service.
Average Final Compensation (AFC)	Average annual compensation during highest 3 successive years.
Membership	Immediate upon employment.
Grandfathered status	Group C members who were within five years of normal retirement eligibility as defined prior to July 1, 2010, are "grandfathered"

GROUP A

GROUP C

Service Retirement Allowance

Eligibility

Age 60 or 30 years of creditable service.

Grandfathered: Age 62 or 30 years of creditable service for.

Non-Grandfathered: Age 65 or age plus creditable service equal 90.



	<u>GROUP A</u>	<u>GROUP C</u>
Amount of Allowance	Member annuity based on accumulated contributions plus a pension which, with member annuity, equals 1/60 of AFC times creditable service.	<p>Grandfathered:</p> <p>Member annuity based on accumulated contributions plus a pension which, with member annuity, equals 1/80 of AFC times creditable service prior to July 1, 1990 plus 1/60 of AFC times creditable service after July 1, 1990.</p> <p>Non Grandfathered:</p> <p>Member annuity based on accumulated contributions plus a pension which, with member annuity, equals 1/80 of AFC times creditable service prior to July 1, 1990 plus 1/60 of AFC times creditable service after July 1, 1990 up to 20 years of service, plus 1/50 of AFC for years of service after 20.</p> <p>If member already has 20 or more years of service on June 30, 2010, the 1/50 will be applied to all service accrued after July 1, 2010.</p>
Minimum	\$6,600 after 30 years of creditable service (pro-rata portion if less than 30 years).	N/A
Maximum	None	<p>Grandfathered: 50% of AFC up to June 30, 2010. May continue to accrue up to 53.34% of AFC with service earned after July 1, 2010.</p> <p>Non-Grandfathered: 60% of AFC.</p>
Early Retirement Allowance		
Eligibility	Age 55.	Age 55 and 5 years of creditable service.



	<u>GROUP A</u>	<u>GROUP C</u>
Amount of Allowance	Actuarial equivalent of service allowance using AFC and creditable service at early retirement.	Grandfathered: Accrued normal benefit reduced 6% for each year under age 62. Non-Grandfathered: Accrued normal benefit reduced by actuarial reduction from normal retirement age.
Vested Retirement Allowance		
Eligibility	5 years of creditable service.	5 years of creditable service.
Amount of Allowance	Commencing at age 60 calculated as a service allowance using AFC and creditable service at termination.	Commencing at age 62, calculated as a service allowance using AFC and creditable service at termination.
Disability Retirement Allowance		
Eligibility	Total and permanent disability after 5 years of creditable service (5 years preceding retirement served in State).	Total and permanent disability after 5 years of creditable service (5 years preceding retirement served in State).
Amount of Allowance	Calculated as a service allowance based on AFC and creditable service at disability retirement, subject to a 25% of AFC minimum.	Calculated as a service allowance based on AFC and creditable service at disability retirement, subject to a 25% of AFC minimum.
Death Benefits		
Eligibility	Age 60 or 30 years of creditable service; 10 years of creditable service if in service at death.	Age 55 and 5 years of creditable service or 10 years of creditable service.
Amount of Allowance	Accrued allowance paid under 100% survivorship option. If the eligibility requirements are not met or if beneficiary so elects, the member's accumulated contributions are paid to the beneficiary or estate. Certain children's benefits may also be payable.	Accrued allowance paid under 100% survivorship option. If the eligibility requirements are not met or if beneficiary so elects, the member's accumulated contributions are paid to the beneficiary or estate. Certain children's benefits may also be payable.



	<u>GROUP A</u>	<u>GROUP C</u>
Return of Contributions	If no other beneficiary is payable, a terminated member receives his accumulated contributions with interest.	If no other beneficiary is payable, a terminated member receives his accumulated contributions with interest.
Options	The allowance may be paid in various optional forms at the election of the member.	The allowance may be paid in various optional forms at the election of the member.
Post-retirement Adjustments	On each December 31 allowances in payment for at least one year are adjusted for cost-of-living changes based on the Consumer Price Index, but not in excess of 5%.	On each December 31, allowances in payment for at least one year are adjusted for cost-of-living changes based on one-half of the increase in the Consumer Price Index, but not in excess of 5%. For members receiving a reduced early retirement allowance, the adjustment will not apply before age 62.
Contributions		
Members	5.5% of earnable compensation. Contributions stop after 25 years of creditable service.	5% of earnable compensation; for non-vested participants and future new hires, 6% of earnable compensation effective July 1, 2014.
State	Normal and accrued liability contributions actuarially determined to keep the system financially sound.	Normal and accrued liability contributions actuarially determined to keep the system financially sound.