Gabriel Roeder Smith & Company
Consultants & Actuaries

MINNESOTA STATE RETIREMENT SYSTEM
LEGISLATORS RETIREMENT FUND

GASB STATEMENTS NO. 67 AND NO. 68 ACCOUNTING AND FINANCIAL REPORTING FOR PENSIONS

JUNE 30, 2016

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December 1, 2016

Minnesota State Retirement System
Legislators Retirement Fund
St. Paul, Minnesota

Dear Board of Directors:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 for the Legislators Retirement Fund ("LRF"), as amended by Statement No. 82. These calculations have been made on a basis that is consistent with our understanding of these accounting standards.

GASB Statement No. 67 is the accounting standard that applies to the financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust. GASB Statement No. 82 is an amendment to Statements No. 67, No. 68, and No. 73, intended to improve consistency in the application of the accounting statements.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing financial reporting and disclosure information that satisfies the requirements of GASB Statements No. 67 and No. 68. The Net Pension Liability is not an appropriate measure for determining the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. The calculation of the plan's liability for this report may not be applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 67 may produce significantly different results. The information in this report is calculated on a total plan basis. MSRS is responsible for preparing the Schedule of Employer Allocations and the Schedule of Pension Amounts by Employer, as applicable. This report may be provided to parties other than the Minnesota State Retirement System (MSRS) only in its entirety and only with the permission of MSRS. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by MSRS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different, please let us know. This information was checked for internal consistency, but it was not audited.

This report complements the actuarial valuation report for funding purposes that was or will be provided to the System and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2016 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Legislators Retirement Fund as of the measurement date. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

The signing actuaries are independent of the plan sponsor.

Brian B. Murphy and Bonita J. Wurst are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,

Brian B. Murphy

Brian B. Murphy, FSA, EA, FCA, MAAA

Bonita J. Wurst

Bonita J. Wurst, ASA, EA, FCA, MAAA

BBM/BJW:dj

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SECTION A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY
AS OF JUNE 30, 2016 (DOLLARS IN THOUSANDS)

	2016
Actuarial Valuation Date	June 30, 2016
Measurement Date of the Net Pension Liability	June 30, 2016
Membership	
Number of	
- Service Retirements	302
- Survivors	70
- Disability Retirements	0
- Deferred Retirements	52
- Terminated other non-vested	0
- Active Members	23
- Total	447
Covered-employee Payroll [1]	$ 989
Net Pension Liability	
Total Pension Liability	$ 154,701
Plan Fiduciary Net Position	0
Net Pension Liability	$ 154,701
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	0.00%
Net Pension Liability as a Percentage of Covered-employee Payroll	15,642.16%
Development of the Single Discount Rate	
Single Discount Rate	2.85%
Long-Term Expected Rate of Investment Return	7.50%
Long-Term Municipal Bond Rate [2]	2.85%
Last year ending June 30 in the 2017 to 2116 projection period for which projected benefit payments are fully funded	2017
Total Pension Expense/(Income)	$ 18,525

Deferred Outflows and Deferred Inflows by Source Arising from Current and Prior Periods to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience in the measurement of the Total Pension Liability	$ 0	$ 0
Changes in assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	268	415
Totals	**$ 268**	**$ 415**

[1] *Assumed equal to actual member contributions divided by employee contribution rate.*
[2] *Based on the Bond Buyer 20-Bond Index of general obligation municipal bonds as of June 30, 2016*

DISCUSSION

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans*, establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68, *Accounting and Financial Reporting for Pensions*, establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements. Governmental Accounting Standards Board (GASB) Statement No. 82, Pension Issues, is an amendment to Statements No. 67, No. 68, and No. 73, intended to improve consistency in the application of the accounting standards.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state and local governmental employers to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to LRF subsequent to the measurement date of June 30, 2016.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the difference between expected and actual experience in the measurement of the Total Pension Liability, assumption changes and investment experience.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a Statement of Fiduciary Net Position and a Statement of Changes in Fiduciary Net Position in accordance with GASB Statement No. 67. The *Statement of Fiduciary Net Position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *Statement of Changes in Fiduciary Net Position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Notes to Financial Statements

GASB Statement No. 68 requires the notes to the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

Both GASB Statements No. 67 and No. 68 require the notes to the financial statements for the employers and pension plans to include certain descriptive information about the pension plans through which the pension benefits are provided. The list of disclosure items should include:

- a description of benefits provided by the plan;
- the classes of employees and number of members covered by the pension plan;
- a description of the plan's funding policy, which includes member and employer contribution requirements;
- the pension plan's investment policies;
- the pension plan's fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- the net pension liability using a discount rate that is 1% higher and 1% lower than the current discount rate used to calculate the total pension liability and net pension liability for financial reporting purposes;
- significant assumptions and methods used to calculate the total pension liability;
- inputs to the discount rates; and
- certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- the composition of the pension plan's Board and the authority under which benefit terms may be amended;
- a description of how fair value is determined;
- information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets; and
- annual money-weighted rate of return.

MSRS' comprehensive annual financial report, which contains the basic financial statements and related note disclosures for the Legislators Retirement Fund can be found online at www.msrs.state.mn.us/financial-information or obtained from MSRS at 60 Empire Drive, Suite 300, St. Paul, MN, 55103 or requested via email at info@msrs.us or telephone at 1-800-657-5757.

Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- sources of changes in the net pension liability;
- information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- a comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Measurement of the Net Pension Liability

The net pension liability is to be measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.50% on the actuarial value of assets), then the following outcomes are expected:

1. The employer normal cost as a percentage of pay is expected to remain approximately level as a percentage of payroll.
2. The unfunded actuarial accrued liabilities will increase and not be eliminated.
3. The funded status of the plan will remain at 0%.
4. The plan will be completely dependent upon current contributions to pay benefits.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

(1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, in other words of transferring the obligations to an unrelated third party in an arm's length market value type transaction.

(2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).

(3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

Limitation of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

Timing of the Valuation

GASB Statement Nos. 67 and 68 require that an actuarial valuation to determine the total pension liability be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2016 and a measurement date of June 30, 2016.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the long-term expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 2.85% (based on the weekly rate closest to but not later than the measurement date of the "20-Bond GO Index"); and the resulting single discount rate is 2.85%. The long-term expected rate of return is based on a review of inflation and investment assumptions, dated September 11, 2014, and a recent asset liability study obtained by the Minnesota State Board of Investment.

Effective Date and Transition

GASB Statements No. 67 and No. 68 are effective for fiscal years beginning after June 15, 2013, and June 15, 2014 respectively. Earlier application is encouraged by the GASB. MSRS first implemented GASB Statement No. 67 for fiscal year 2014.

SECTION B

FINANCIAL STATEMENTS

PENSION EXPENSE UNDER GASB STATEMENT NO. 68
FISCAL YEAR ENDED JUNE 30, 2016 (DOLLARS IN THOUSANDS)

A. Expense			
1.	Service Cost	$	495
2.	Interest on the Total Pension Liability		5,333
3.	Current-Period Benefit Changes		0
4.	Employee Contributions (made negative for addition here)		(89)
5.	Projected Earnings on Plan Investments (made negative for addition here)		(138)
6.	Pension Plan Administrative Expense		42
7.	Other Changes in Plan Fiduciary Net Position		(41)
8.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
	Arising from Current Reporting Period		(1,597)
9.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Current Reporting Period		14,653
10.	Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.90%) and actual earnings on Pension Plan Investments		
	Arising from Current Reporting Period		41
11.	**Increases/(Decreases) from Experience in the Current Reporting Period**	**$**	**18,699**
12.	Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability		
	Arising from Prior Reporting Periods		0
13.	Recognition of Outflow (Inflow) of Resources due to assumption changes		
	Arising from Prior Reporting Periods		0
14.	Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.90%) and actual earnings on Pension Plan Investments		
	Arising from Prior Reporting Periods		(174)
15.	**Total Pension Expense / (Income)**	**$**	**18,525**

STATEMENT OF OUTFLOWS AND INFLOWS ARISING FROM CURRENT REPORTING PERIOD
FISCAL YEAR ENDED JUNE 30, 2016 (DOLLARS IN THOUSANDS)

A. Outflows (Inflows) of Resources due to Liabilities		
1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	$	(1,597) [1]
2. Assumption Changes (gains) or losses		14,653 [2]
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		1.0000
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	$	(1,597)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes		14,653
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	$	13,056
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	$	0
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes		0
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	$	0
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	$	207
2. Recognition period for Assets {in years}		5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	$	41
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	$	166

[1] *Includes impact of changes in expected timing of future post-retirement benefit increases.*

[2] *Assumption changes are summarized on page 31.*

STATEMENT OF OUTFLOWS AND INFLOWS ARISING FROM CURRENT AND PRIOR REPORTING PERIODS FISCAL YEAR ENDED JUNE 30, 2016 (DOLLARS IN THOUSANDS)

A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows/(Inflows) of Resources
1. Due to Liabilities	$ 14,653	$ 1,597	$ 13,056
2. Due to Assets	75	208	(133)
3. Total	$ 14,728	$ 1,805	$ 12,923

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows/(Inflows) of Resources
1. Differences between expected and actual experience	$ 0	$ 1,597	$ (1,597)
2. Assumption Changes	14,653	0	14,653
3. Net Difference between projected and actual earnings on pension plan investments	75	208	(133)
4. Total	$ 14,728	$ 1,805	$ 12,923

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows/(Inflows) of Resources
1. Differences between expected and actual experience	$ 0	$ 0	$ 0
2. Assumption Changes	0	0	0
3. Net Difference between projected and actual earnings on pension plan investments	268	415	(147)
4. Total	$ 268	$ 415	$ (147)

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Net Deferred Outflows/(Inflows) of Resources
2017	$ (133)
2018	(132)
2019	75
2020	43
2021	0
Thereafter	0
Total	$ (147)

STATEMENT OF FIDUCIARY NET POSITION AS OF JUNE 30, 2016 (DOLLARS IN THOUSANDS)

Assets		June 30, 2016
Cash & Short-term Investments	$	1,465
Receivables		2
Investment Pools (at fair value)		0
Securities Lending Collateral		0
Capital Assets		0
Total Assets	**$**	**1,467**
Total Deferred Outflows of Resources	**$**	**0**
Total Liabilities	**$**	**(1,508)**
Total Deferred Inflows of Resources	**$**	**0**
Net Position Restricted for Pensions	**$**	**(41)**
Adjustment to Zero	**$**	**41**
Adjusted Net Position Restricted for Pensions	**$**	**0**

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION FOR THE FISCAL YEAR ENDED JUNE 30, 2016 (DOLLARS IN THOUSANDS)

1.	**Net position at market value at beginning of year**	**$**	**3,430**
Additions			
2.	Contributions		
	a. Employee	$	89
	b. Employer		0
	c. State General Fund Appropriations		5,087
	d. Total contributions	$	5,176
3.	Investment income		
	a. Investment income/(loss)	$	(68)
	b. Investment expenses		(1)
	c. Net investment income/(loss)	$	(69)
4.	Other Additions	$	41
5.	**Total Additions** *(2.d.) + (3.c.) + (4.)*	**$**	**5,148**
Deductions			
6.	Benefits Paid		
	a. Annuity benefits	$	(8,496)
	b. Refunds		(40)
	c. Total benefits paid	$	(8,536)
7.	Expenses		
	a. Other deductions	$	0
	b. Administrative		(42)
	c. Total expenses	$	(42)
8.	**Total deductions** *(6.c.) + (7.c.)*	**$**	**(8,578)**
9.	**Net increase/(decrease) in fiduciary net position** *(5.) + (8.)*	**$**	**(3,430)**
10.	**Net position at market value at end of year** *(1.) + (9.)*	$	0
11.	State Board of Investment calculated annual investment return		-0.1%

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS CURRENT PERIOD

FISCAL YEAR ENDED JUNE 30, 2016 (DOLLARS IN THOUSANDS)

A. Total Pension Liability			
1. Service Cost	$	495	
2. Interest on the Total Pension Liability		5,333	
3. Changes of benefit terms		0	
4. Difference between expected and actual experience of the Total Pension Liability		(1,597)	(1)
5. Changes of assumptions		14,653	(2)
6. Benefit payments, including refunds of employee contributions		(8,536)	
7. Net change in Total Pension Liability	$	10,348	
8. Total Pension Liability – Beginning		144,353	
9. Total Pension Liability – Ending	**$**	**154,701**	
B. Plan Fiduciary Net Position			
1. Contributions – State General Fund Appropriations	$	5,087	
2. Contributions – Employee		89	
3. Net investment income		(69)	
4. Benefit payments, including refunds of employee contributions		(8,536)	
5. Pension Plan Administrative Expense		(42)	
6. Other changes		41	
7. Net change in Plan Fiduciary Net Position	$	(3,430)	
8. Plan Fiduciary Net Position – Beginning		3,430	
9. Plan Fiduciary Net Position – Ending	**$**	**-**	
C. Net Pension Liability, *A.9.-B.9.*	**$**	**154,701**	
D. Plan Fiduciary Net Position as a percentage of the Total Pension Liability, *B.9./A.9.*		**0.00%**	
E. Covered-Employee Payroll	**$**	**989**	**(3)**
F. Net Pension Liability as a percentage of Covered-Employee Payroll, *C./E.*		**15,642.16%**	

(1) *Includes impact of changes in expected timing of future post-retirement benefit increases.*
(2) *Assumption changes are summarized on page 31.*
(3) *Assumed equal to actual member contributions divided by employee contribution rate.*

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS MULTIYEAR (DOLLARS IN THOUSANDS)

Last 10 Fiscal Years (which will be built prospectively)

Fiscal year ending June 30,	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Total Pension Liability										
Service Cost	$ 495	$ 428	$ 398							
Interest on the Total Pension Liability	5,333	6,113	6,177							
Benefit Changes	0	0	0							
Difference between Expected and Actual Experience	(1,597)	(7,303)	(237)							
Assumption Changes	14,653 [1]	7,057 [1]	11,201							
Benefit Payments	(8,496)	(8,441)	(8,407)							
Refunds	(40)	0	(79)							
Net Change in Total Pension Liability	$ 10,348	$ (2,146)	9,053							
Total Pension Liability - Beginning	144,353	146,499	137,446							
Total Pension Liability - Ending (a)	**$ 154,701**	**$ 144,353**	**$ 146,499**							
Plan Fiduciary Net Position										
State General Fund Appropriation	$ 5,087	$ 3,216	$ 3,436							
Employee Contributions	89	153	101							
Pension Plan Net Investment Income	(69)	281	1,750							
Benefit Payments	(8,496)	(8,441)	(8,407)							
Refunds	(40)	0	(79)							
Pension Plan Administrative Expense	(42)	(37)	(36)							
Other Changes	41	0	0							
Net Change in Plan Fiduciary Net Position	$ (3,430)	(4,828)	(3,235)							
Plan Fiduciary Net Position - Beginning	3,430	8,258	11,493							
Plan Fiduciary Net Position - Ending (b)	**0**	**$ 3,430**	**$ 8,258**							
Net Pension Liability - Ending (a) - (b)	**$ 154,701**	**140,923**	**138,241**							
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	**0.00 %**	**2.38 %**	**5.64 %**							
Covered-Employee Payroll [2]	**$ 989**	**$ 1,700**	**$ 1,122**							
Net Pension Liability as a Percentage of Covered-Employee Payroll	**15,642.16 %**	**8,289.59 %**	**12,320.94 %**							

Notes to Schedule:

(1) *Assumption changes are summarized on page 31.*

(2) *Assumed equal to plan member contributions divided by employee contribution rate.*

SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF NET PENSION LIABILITY MULTIYEAR (DOLLARS IN THOUSANDS)

Last 10 Fiscal Years (which will be built prospectively)

Fiscal Year Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered-Employee Payroll	Net Pension Liability as a % of Covered-Employee Payroll
	(a)	(b)	(a)-(b)=(c)	(b)/(c)	(d)	(c)/(d)
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014	$ 146,499	$ 8,258	$ 138,241	5.64%	$ 1,122	12,320.94 %
2015	144,353	3,430	140,923	2.38%	1,700	8,289.59 %
2016	154,701	0	154,701	0.00%	989	15,642.16 %

SCHEDULE OF CONTRIBUTIONS MULTIYEAR* (DOLLARS IN THOUSANDS)
Last 10 Fiscal Years

Fiscal Year Ending June 30,	Actuarially Determined Contribution	Actual Contributions	Contribution Deficiency (Excess)	Covered-Employee Payroll	Actual Contribution as a % of Covered-Employee Payroll
	(a)	(b)	(a)-(b)=(c)	(d)	(b)/(d)
2007	$ 2,885	$ 2,199	$ 686	$ 2,380	92.39%
2008	3,736	2,652	1,084	1,993	133.07
2009	5,084	1,711	3,373	1,963	87.16
2010	8,183	2,428	5,755	1,877	129.36
2011	8,164	3,265	4,899	1,774	184.05
2012	19,348	4,401	14,947	1,378	319.38
2013	17,402	3,869	13,533	1,233	313.79
2014	21,082	3,436	17,646	1,122	306.24
2015	38,736	3,216	35,520	1,700	189.18
2016	21,711	5,087	16,624	989	514.36

* *Effective July 1, 2013, the Elective State Officers Retirement Fund was administratively consolidated with the Legislators Retirement Fund. All figures in the table above represent the combined total from both funds, as directed by MSRS.*

NOTES TO SCHEDULE OF CONTRIBUTIONS

Valuation Date:	June 30, 2016
Notes	Actuarially determined contribution rates are calculated as of each June 30 and apply to the fiscal year beginning on the day after the measurement date.

Methods and Assumptions Used to Determine Contribution Rates Reported in this Schedule:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Dollar, Closed
Remaining Amortization Period	10 years
Asset Valuation Method	Market value of assets
Salary Increases	5.00% including inflation
Investment Rate of Return	0.00% per annum
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2012 valuation pursuant to an experience study prepared by a former actuary.
Healthy Post-Retirement Mortality	RP-2000 annuitant generational mortality table, projected with mortalilty improvement scale AA, white collar adjustment.

Other Information:

Benefit Increases After Retirement	The post-retirement increase is assumed to remain 2.00% for all future years.

See separate funding actuarial valuation report as of July 1, 2016 for additional detail. To obtain this report, contact MSRS at 60 Empire Drive, Suite 300, St. Paul, MN, 55103 or request via email at info@msrs.us or telephone at 1-800-651-5757.

This report can be found online at www.msrs.state.mn.us/actuarial-reports.

SCHEDULE OF INVESTMENT RETURNS MULTIYEAR

Last 10 Fiscal Years

Fiscal Year Ending June 30,	Annual Return[1]
2007	
2008	
2009	
2010	
2011	
2012	
2013	
2014	19.30 %
2015	5.00
2016	NA

[1] *Annual money-weighted rate of return, net of investment expenses.*

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to MSRS for GASB-compliance purposes. MSRS furnished this information to us for inclusion within this report. We did not audit this information. We are not responsible for its accuracy or completeness.

Rate of Return

For the year ended June 30, 2016, the Legislators Retirement Fund assets were depleted, and therefore an annual money-weighted rate of return cannot be calculated. The money-weighted rate of return is a method of calculating period-by-period returns on pension plan investments that adjusts for the changing amounts actually invested. For purposes of this schedule, the money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

10-Year Schedule of Money-Weighted Investment Return

Ten-year data is not available. Additional years will be provided when they become available.

To request additional information about the computation of the annual money-weighted rate of return and the investments for the Minnesota Retirement Systems (including the investments for MSRS' defined benefit retirement funds), contact SBI at 60 Empire Drive, Suite 355, St. Paul, Minnesota, 55103, via email at minn.sbi@state.mn.us or telephone at (651) 296-3328.

SECTION D

ADDITIONAL FINANCIAL STATEMENT DISCLOSURES

ASSET ALLOCATION

Long-Term Expected Return on Plan Assets

The long-term expected rate of return on pension plan investments was determined using a building-block method. Best estimates for expected future real rates of return (expected returns, net of inflation) were developed for each asset class using both long-term historical returns and long-term capital market expectation from a number of investment management and consulting organizations. The asset class estimates and the target allocations were then combined to produce geometric, long-term expected real rate of return for the portfolio. Inflation expectations were applied to derive the nominal rate of return for the portfolio. For each asset class that is included in the pension fund's target asset allocation as of June 30, 2016, these best estimates are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (Geometric)
Domestic Stocks	45.00%	5.50%
International Stocks	15.00	6.00
Bonds	18.00	1.45
Alternative Assets	20.00	6.40
Unallocated Cash	2.00	0.50
Total	100.00%	

The Minnesota State Board of Investment (SBI) compiled this data and the related investment notes and provided it to MSRS for GASB-compliance purposes. MSRS furnished this information to us for inclusion within this report. We did not audit this information. We are not responsible for its accuracy or completeness.

At MSRS' direction, for purposes of this valuation, the long-term expected rate of return assumption is 7.50%. This assumption is based on a review of inflation and investment return assumptions dated September 11, 2014, and a recent asset liability study obtained by the SBI. Since the plan's assets are $0, MSRS' long-term expected rate of investment return of 7.50% is not utilized in this valuation. A single discount rate of 2.85% was used to measure the total pension liability as of July 1, 2016.

Single Discount Rate

A single discount rate of 2.85% was used to measure the total pension liability. This single discount rate was based on a municipal bond rate of 2.85% and the pay-as-you-go status of this plan. Since the plan's assets are $0, MSRS' long-term expected rate of investment return of 7.50% is not utilized in this valuation.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the fund's net pension liability, calculated using a single discount rate of 2.85%, as well as what the fund's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower (1.85%) or 1-percentage-point higher (3.85%) than the current rate:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

(Dollars in Thousands)

	1% Decrease 1.85%	Current Single Discount Rate Assumption 2.85%	1% Increase 3.85%
Total Pension Liability	$173,150	$154,701	$139,340
Net Position Restricted for Pensions	0	0	0
Net Pension Liability	$173,150	$154,701	$139,340

For more information on the calculation of the single discount rate, refer to Section G of this report.

GASB STATEMENT NO. 68 RECONCILIATION (DOLLARS IN THOUSANDS)

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)	Deferred Outflows	Deferred Inflows	Total Pension Expense
Balance Beginning of Year	**$ 144,353**	**$ 3,430**	**$ 140,923**	**$ 136**	**$ 623**	
Changes for the Year:						
Service Cost	$ 495		$ 495			$ 495
Interest on Total Pension Liability	5,333		5,333			5,333
Interest on Plan Fiduciary Net Position (1)		$ 138	(138)			(138)
Changes in Benefit Terms						
Liability Experience Gains and Losses	(1,597)		(1,597)	-	-	(1,597)
Changes in Assumptions	14,653		14,653	-	-	14,653
Recognition of Deferred Outflows/(Inflows) of Resources Arising from Prior Reporting Periods						
Liability Experience Gains/(Losses)				-	-	-
Assumption Changes				-	-	-
Investment Gains/(Losses)				$ (34)	$ (208)	(174)
State General Fund Appropriations		5,087	(5,087)			
Contributions - Employees		89	(89)			(89)
Asset Gain/(Loss) (1)		(207)	207	166	-	41
Benefit Payouts	(8,536)	(8,536)				
Administrative Expenses		(42)	42			42
Other Changes		41	(41)			(41)
Net Changes	**$ 10,348**	**$ (3,430)**	**$ 13,778**	**$ 132**	**$ (208)**	**$ 18,525**
Balance End of Year	**$ 154,701**	**$ -**	**$ 154,701**	**$ 268**	**$ 415**	

(1) The sum of these items equals the net investment income of $(69).

SUMMARY OF POPULATION STATISTICS

		Terminated		Recipients			
	Actives	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	Total
Members on 7/1/2015	**23**	**56**	**0**	**305**	**0**	**72**	**456**
Additions	0	0	0	0	0	0	**0**
Return to active	0	0	0	0	0	0	**0**
Terminated non-vested	0	0	0	0	0	0	**0**
Service retirements	0	(3)	0	3	0	0	**0**
Terminated deferred	0	0	0	0	0	0	**0**
Terminated refund/transfer	0	0	0	0	0	0	**0**
Deaths	0	0	0	(7)	0	(5)	**(12)**
New beneficiary	0	0	0	0	0	3	**3**
Disabled	0	0	0	0	0	0	**0**
Unexpected status changes	0	(1)	0	1	0	0	**0**
Net change	0	(4)	0	(3)	0	(2)	**(9)**
Members on 6/30/2016	**23**	**52**	**0**	**302**	**0**	**70**	**447**

SECTION E

SUMMARY OF BENEFITS

SUMMARY OF PLAN PROVISIONS – LEGISLATORS RETIREMENT PLAN

Following is a summary of the major plan provisions used in the valuation of this report. MSRS is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the plan provisions shown below are not accurate and complete, the valuation results may differ significantly from those shown in this report and may require a revision of this report.

Plan year	July 1 through June 30
Eligibility	Members of the State Legislature first elected to office before July 1, 1997 and who elect to retain coverage under this plan (i.e., do not elect Social Security coverage).
Contributions	
Member	9.00% of salary which must be paid to the state's General Fund.
Employer	Plan is funded by annual appropriations from the state's General Fund. Employee contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).
Allowable service	Service while in an eligible position.
Salary	Compensation received for service as a member of the legislature. Salary includes the monthly compensation paid to a legislator and the per diem payments paid during a regular or special session. Salary does not include additional compensation attributable to a leadership position.
Average salary	Average of the five highest successive years of salary.
Retirement	
<u>Normal retirement benefit</u>	
Age/Service requirements	Age 62 and either six full years of service or service during all or part of four regular legislative sessions. For eligibility purposes, service does not include credit for time not served when a member does not serve a full term of office.
	A percentage of Average Salary for each year of service as follows:
Amount	First elected prior to January 1, 1979: (a) 5.00% for the first eight years of service prior to January 1, 1979; and (b) 2.50% for subsequent years. Elected after December 31, 1978: (a) 2.50%.

SUMMARY OF PLAN PROVISIONS – LEGISLATORS RETIREMENT PLAN (CONTINUED)

Retirement (Continued)	
Early retirement benefit	
Age/service requirements	Age 55 and either six full years of service or service during all or part of four regular legislative sessions.
Amount	Normal retirement benefit based on service and Average Salary at retirement date and actuarially reduced for each month the member is under age 62 assuming augmentation to age 62 at 3.00% per year.
Form of payment	Paid as a 50% joint and survivor annuity to member, spouse and dependent children. Annuitants may elect 100% joint and survivor bounce back annuity, life annuity, or a term certain and life annuity on an actuarially equivalent basis.
Benefit increases	Since 2011, benefit recipients have received annual 2.00% benefit increases. When the funding ratio of the State Employees Retirement Fund reaches 90% for two consecutive years (actuarial accrued liability on a Market Value of Assets basis) for two consecutive years, the benefit increase will revert to 2.50%. If, after reverting to a 2.50% increase, the State Employees Retirement Fund funding ratio (determined on a Market Value of Assets basis) declines to less than 80% for the most recent actuarial valuation year or 85% for two consecutive years, the benefit increase will decrease to 2.00%. A benefit recipient who has been receiving a benefit for at least 12 full months as of the June 30 of the calendar year immediately before the adjustment will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of the June 30 of the calendar year immediately before the adjustment will receive a pro rata increase.
Disability	No additional benefits provided beyond standard plan. Treated as retirement or termination, depending on age and service at termination.
Death	
Surviving spouse benefit	
Age/Service requirement	Death while active, or after termination if service requirements for a normal retirement benefit is met but payments have not begun.
Amount	Survivor payments of 50% of the retirement benefit of the member assuming the member had attained normal retirement age and had a minimum of eight years of service. Benefit is paid for life. A former member's benefit is augmented as a Deferred Annuity to date of death before determining the portion payable to the spouse. If the legislator was at least age 60 at death, the surviving spouse may elect an optional joint and survivor annuity. If a deferred benefit was not eligible to be in pay status before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Benefit increases	Same as for retirement.

SUMMARY OF PLAN PROVISIONS – LEGISLATORS RETIREMENT PLAN (CONTINUED)

Death (Continued)	
Surviving dependent children's benefit	
Age/Service requirement	Same as spouse's benefit.
Amount	Benefit for first child is 25.00% of the retirement benefit (computed as for surviving spouse) with 12.50% for each additional child. Maximum payable (including spouse) is 100.00% of the retirement benefit. Benefits cease when a child marries or attains age 18 (22 if a full-time student).
Benefit increases	Same as retirement.
Refund of contributions	
Age/Service requirement	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount	Member's contributions with 6.00% annual interest compounded daily until June 30, 2011, 4.00% thereafter.
Termination	
Refund of contributions	
Age/Service requirement	Termination of service.
Amount	Member's contributions with 6.00% annual interest compounded daily until June 30, 2011, 4.00% thereafter. If a member is vested, a deferred annuity may be elected in lieu of a refund.
Deferred benefit	
Age/service requirement	Same service requirements as for normal retirement.
Amount	Benefit computed under law in effect at termination and increased by the following annual augmentation percentage: (a.) 0.00% before July 1, 1973; (b.) 5.00% from July 1, 1973 to January 1, 1981; (c.) 3.00% until the earlier of January 1 of the year following attainment of age 55 and January 1, 2012; (d.) 5.00% until the earlier of January 1, 2012 and when the annuity begins; and (e.) 2.00% from January 1, 2012 forward. Amount is payable at normal or early retirement. For members who terminated prior to July 1, 1997 but were not eligible to commence their pensions before July 1, 1997, the benefit shall be increased to reflect the actuarial equivalent change in post-retirement interest rate from 5.00% to 6.00%.
Adjustments for benefits not in pay status	Benefits are adjusted on an actuarial equivalent basis to reflect the 1997 change in post-retirement interest rate assumption from 5.00% to 6.00%.

SUMMARY OF PLAN PROVISIONS – LEGISLATORS RETIREMENT PLAN (CONCLUDED)

Optional form conversion factors	Actuarially equivalent factors based on RP-2000 mortality for healthy annuitants, white collar adjustment, projected to 2025 using scale AA, blended 55% males, and 6.50% interest.
Combined service annuity	Members are eligible for combined service benefits if they: (a.) Have sufficient allowable service in total that equals or exceeds the applicable service credit vesting requirement of the retirement plan with the longest applicable service credit vesting requirement; and (b.) Have at least six months of allowable service credit in each plan worked under; and (c.) Are not in receipt of a benefit from another plan, or have applied for benefits with an effective date within one year. Members who meet the above requirements must have their benefit based on the following: (a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement. (b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.
Changes in Plan Provisions	There have been no changes in plan provisions since the prior valuation.

SUMMARY OF PLAN PROVISIONS – ELECTIVE STATE OFFICERS RETIREMENT PLAN

Following is a summary of the major plan provisions used in the valuation of this report. MSRS is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the plan provisions shown below are not accurate and complete, the valuation results may differ significantly from those shown in this report and may require a revision of this report.

Plan year	July 1 through June 30
Eligibility	Must be employed as a "Constitutional Officer" first elected prior to July 1, 1997 and must elect to retain coverage under this plan (i.e., does not elect Social Security coverage). Plan is closed to new members since July 1, 1997.
Contributions	Plan is funded by annual appropriations from the State's General Fund.
Allowable service	Service while in an eligible position as a constitution officer.
Salary	Salary upon which Elective State Officers Retirement Fund contributions have been made.
Average salary	Average of the five highest successive years of Salary.
Retirement	
<u>Normal retirement benefit</u>	
Age/Service requirements	Age 62 and eight years of Allowable Service.
Amount	2.50% of Average Salary for each year of Allowable Service. For members who terminated service after June 30, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
<u>Early retirement benefit</u>	
Age/Service requirement	Age 60 and eight years of Allowable Service.
Amount	Normal retirement benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.50% for each month the member is under age 62 at the time of retirement.
Form of Payment	Life annuity.
Benefit increases	Since 2011, benefit recipients have received annual 2.00% benefit increases. When the funding ratio of the State Employees Retirement Fund reaches 90% (actuarial accrued liability ratio on a Market Value of Assets basis) for two consecutive years, the benefit increase will revert to 2.50%. If, after reverting to a 2.50% increase, the State Employees Retirement Fund funding ratio (determined on a Market Value of Assets basis) declines to less than 80% for the most recent actuarial valuation year or 85% for two consecutive years, the benefit increase will decrease to 2.00%. A benefit recipient who has been receiving a benefit for at least 12 full months as of the June 30 of the calendar year immediately before the adjustment will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of the June 30 of the calendar year immediately before the adjustment will receive a pro rata increase.
Disability	No additional benefits provided beyond standard plan. Treated as retirement or termination, depending on age and Allowable Service as of disablement.

SUMMARY OF PLAN PROVISIONS – ELECTIVE STATE OFFICERS RETIREMENT PLAN (CONTINUED)

Death	
Surviving spouse benefit	
Age/Service requirement	Death while active, or after retirement, or after termination but prior to retirement with at least eight years of Allowable Service.
Amount	Survivor payments of 50% of the retirement benefit of the member assuming the member had attained age 62 and had a minimum of eight years of Allowable Service. A former member's benefit is augmented as a Deferred Annuity to date of death before determining the portion payable to the spouse. If a member dies prior to July 1, 1997 and the beneficiary was not eligible to commence a survivor benefit as of July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Benefit increases	Same as for retirement.
Surviving dependent children's benefit	
Age/Service requirement	Same as spouse's benefit.
Amount	Benefit for first child is 25.00% of the retirement benefit (computed as for surviving spouse) with 12.50% for each additional eligible child. Maximum payable (including spouse) is 100.00% of the retirement benefit. Benefits cease when a child marries or attains age 18 (22 if a full-time student).
Benefit increases	Same as for retirement.
Termination	
Refund of contributions	
Age/Service requirement	Termination of service.
Amount	Member's contributions with 6.00% interest compounded daily to July 1, 2011 and 4.00% compounded daily thereafter. If a member is vested, a deferred annuity may be elected in lieu of a refund.
Deferred benefit	
Age/service requirement	Eight years of Allowable Service.

SUMMARY OF PLAN PROVISIONS – ELECTIVE STATE OFFICERS RETIREMENT PLAN (CONCLUDED)

Termination (Continued)	
Deferred benefit Amount	Benefit computed under law in effect at termination and increased by the following annual augmentation percentage: (a.) 0.00% before July 1, 1979; (b.) 5.00% from July 1, 1979 to January 1, 1981; (c.) 3.00% until age 55, or until January 1, 2012, whichever is earlier; (d.) 5.00% thereafter until the annuity begins but prior to January 1, 2012; and (e.) 2.00% from January 1, 2012 thereafter. Amount is payable at normal or early retirement. If a member terminated prior to July 1, 1997 but was not eligible to commence his or her pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Combined service annuity	Members are eligible for combined service benefits if they: (a.) Have sufficient allowable service in total that equals or exceeds the applicable service credit vesting requirement of the retirement plan with the longest applicable service credit vesting requirement; and (b.) Have at least six months of allowable service credit in each plan worked under; and (c.) Are not in receipt of a benefit from another plan, or have applied for benefits with an effective date within one year. Members who meet the above requirements must have their benefit based on the following: (a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement. (b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.
Optional form conversion factors	Actuarially equivalent factors based on RP-2000 mortality for healthy annuitants, white collar adjustment, projected to 2025 using scale AA, blended 55% males, and 6.50% interest.
Changes in plan provisions	There have been no changes in plan provisions since the prior valuation.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

ACTUARIAL METHODS USED FOR THE DETERMINATION OF TOTAL PENSION LIABILITY AND RELATED VALUES

Actuarial Cost Method

Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

(i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;

(ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Total Pension Liability.

Valuation of Future Post-Retirement Benefit Increases

Benefit recipients receive a future annual 2.00% post-retirement benefit increase. If the funding ratio (on a market value of assets basis) of the State Employees Retirement Fund (SERF) reaches 90% (based on a 2.50% post-retirement benefit increase assumption) for two consecutive years, the benefit increase in the Legislators Retirement Fund will revert to 2.50%.

To determine an assumption regarding a future change in the post-retirement benefit increase, we performed a projection of the SERF liabilities and assets. For additional detail, see the 2016 GASB Statements No. 67 and 68 valuation report for the SERF which can be found online at www.msrs.state.mn.us/actuarial-reports. The projection indicates that this plan is expected to pay a 2.00% benefit increase indefinitely. This assumption is reflected in our calculations.

Asset Valuation Method

Fair value of assets.

SUMMARY OF ACTUARIAL ASSUMPTIONS USED IN THE DETERMINATION OF TOTAL PENSION LIABILITY AND RELATED VALUES

The following assumptions were used in valuing the liabilities and benefits under the plan. The demographic assumptions are based on the last experience study, dated February 2012, prepared by a former actuary. The economic assumptions are based on a review of inflation and investment return assumptions, dated September 11, 2014, and a recent asset liability study obtained by the SBI.

The Allowance for Combined Service Annuity was also based on a recommendation by a former actuary. We are unable to judge the reasonableness of this assumption without performing a substantial amount of additional work beyond the scope of the assignment. We note that the LCPR Actuary has recently completed a review of this assumption. This review recommended changes to this assumption, expected to be effective at a future date.

Investment return	7.50% per annum.
Single discount rate	2.85% per annum.
Benefit increases after retirement	2.00% per annum.
Salary increases	4.50% annually.
Inflation	2.50% annually.
Mortality rates	
Healthy Pre-retirement	RP-2000 employee generational mortality table projected with mortality improvement scale AA, white collar adjustment, set forward three years for males and set back one year for females.
Healthy Post-retirement	RP-2000 annuitant generational mortality table projected with mortality improvement scale AA, white collar adjustment. The RP-2000 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 15 to 70 and the annuitant mortality table contains mortality rates for ages 50 to 120. We have applied the annuitant mortality table for active members beyond age 70 until the assumed retirement age and the employee mortality table for annuitants younger than age 50.
Disabled	N/A
Retirement	Members retiring from active status are assumed to retire according to the age related rates shown in the rate table. Members who have attained the highest assumed retirement age are assumed to retire in one year.
Withdrawal	Ultimate rates based on actual experience. Rates are shown in rate table.

SUMMARY OF ACTUARIAL ASSUMPTIONS (CONTINUED)

Disability	None.
Allowance for combined service annuity	Liabilities for former members are increased by 30.00% to account for the effect of some participants having eligibility for a Combined Service Annuity.
Administrative expenses	In the valuation year, equal to prior year administrative expenses expressed as a percentage of prior year projected payroll. In each subsequent year, equal to the initial administrative expense percentage applied to payroll for the closed group.
Refund of contributions	Account balances accumulate interest until normal retirement date and are discounted back to the valuation date. All employees withdrawing after becoming eligible for a deferred benefit take the larger of their contributions accumulated with interest or the value of their deferred benefit.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 62.
Percentage married	85% of active members are assumed to be married. 100% of Elective State Officers members are assumed to be eligible for the automatic 50% survivor benefit.
Age of spouse	Females are assumed to be three years younger than their male spouses.
Eligible children	Each member may have two dependent children depending on member's age. Assumed first born child born at member's age 28 and second born child at member's age 31.
Form of payment	Active married members are assumed to elect 50% joint and survivor annuity. Active single members and deferred members are assumed to elect a life annuity. Unless reported with a joint & survivor option, retired members are assumed to have a spouse that is eligible for the automatic survivor benefit. Deferred Elective State Officers Retirement Fund members are assumed to elect a life annuity with automatic survivor benefits.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility. Decrements are assumed to occur mid-fiscal year.
Service credit accruals	It is assumed that members accrue one year of service credit per year.
Pay Increases	Pay increases are assumed to happen at the beginning of the fiscal year. This is equivalent to assuming that reported earnings are pensionable earnings for the year ending on the valuation date.

SUMMARY OF ACTUARIAL ASSUMPTIONS (CONTINUED)

Unknown data for certain members	To prepare this report, GRS has used and relied on participant data supplied by the Fund. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided.

In cases where submitted data was missing or incomplete, the following assumptions were applied:

Legislators Retirement Plan

Data for active members:
There were no members reported with zero or invalid salary.

There were no members reported with missing service.

There were no members reported with missing or invalid gender or birth dates.

Data for terminated members:
There were 11 members reported without a benefit. If available, we calculated benefits for these members using the reported Average Salary and credited service. If Average Salary was also not reported (10 members), we assumed a value of $30,000. There were no members reported without credited service or a termination date.

There were no members reported with missing or invalid gender or birth dates.

Data for members receiving benefits:
There were no members reported with missing or invalid birth dates, gender, or benefits.

There were 292 retired members reported:

- 111 members were reported with the 75% or 100% joint and survivor option. These members were valued as indicated by the option elected.
- 180 members were reported with a life annuity or the 50% joint and survivor option. All of these members were valued as a 50% joint and survivor annuity per MSRS' direction.
- There was one retiree reported with a bounce back annuity but was not reported with a reasonable reduction factor. A factor of 0.80 was assumed for the 100% joint and survivor annuity.

Of the 292 retired members, 158 members had an invalid or missing survivor gender and 150 members had a missing or invalid survivor date of birth. We used the valuation assumptions if the survivor gender or date of birth was missing or invalid.

There were no survivors reported on the data file with an expired benefit.

SUMMARY OF ACTUARIAL ASSUMPTIONS (CONTINUED)

Unknown data for certain members	**Elective State Officers Retirement Fund** There were no members reported with missing gender, birth dates or benefit amounts. <u>Data for members receiving benefits:</u> Unless reported with the 100% joint & survivor option, all retired and deferred members were assumed to have a spouse that is eligible for the automatic survivor benefit. Valuation assumptions were used if the survivor gender (6 members) or date of birth (6 members) were missing or invalid.
Changes in actuarial assumptions	The single discount rate changed from 3.80% to 2.85%. The long-term expected rate of return on pension plan investments has been reduced from 7.90% to 7.50% as of July 1, 2016. The inflation assumption has been reduced from 2.75% to 2.50%, and the salary scale rates have been reduced by 0.25% at each age. The assumed post-retirement benefit increase rate was changed from 2.00% per year through 2043 and 2.50% thereafter to 2.00% for all year. For accounting purposes, this change was treated as a difference between expected and actual experience.

SUMMARY OF ACTUARIAL ASSUMPTIONS (CONCLUDED)

	Rate (%)*			
	Healthy Pre-Retirement Mortality**		Healthy Post-Retirement Mortality**	
Age	Male	Female	Male	Female
20	0.04%	0.02%	0.03%	0.02%
25	0.04	0.02	0.04	0.02
30	0.05	0.02	0.04	0.03
35	0.08	0.04	0.06	0.05
40	0.11	0.06	0.09	0.06
45	0.17	0.09	0.13	0.10
50	0.24	0.15	0.60	0.24
55	0.35	0.22	0.54	0.35
60	0.56	0.34	0.66	0.56
65	0.85	0.54	1.16	0.91
70	2.67	0.82	1.93	1.52

* *Generally, mortality rates are expected to increase as age increases. These standard mortality rates have been adjusted slightly to prevent decreasing mortality rates. If the rates were not adjusted as described, we would not expect the valuation results to be materially different.*

** *These rates were adjusted for mortality improvements using projection scale AA.*

Age	Percent Retiring
60	0.00%
61	0.00
62	40.00
63	30.00
64	30.00
65	40.00
66	30.00
67	25.00
68	25.00
69	25.00
70	30.00
71+	100.00

	Withdrawal	
Service	House	Senate
1	0.0%	0.0%
2	30.0	0.0
3	0.0	0.0
4	20.0	25.0
5	0.0	0.0
6	10.0	0.0
7	0.0	0.0
8	5.0	10.0
9+	0.0	0.0

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

CALCULATION OF THE SINGLE DISCOUNT RATE

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Fiduciary Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the long-term expected rate of return is used as the discount rate. In years where assets are not projected to be sufficient to meet benefit payments, the use of a “risk-free” municipal bond rate is required, as described in the following paragraph.

The *Single Discount Rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the plan fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

This plan is currently funded on a pay-as-you-go basis by annual appropriations from the state’s General Fund. The current contribution levels (member contributions and annual appropriations) are not sufficient to cover annual benefit payments. For the fiscal year ending June 30, 2016, total contributions (plan member contributions and state General Fund appropriations) were $5.2 million and total benefit payments were $8.5 million.

For the purpose of this valuation, we have recognized that the assets are not sufficient to pay benefits in any future year regardless of future investment income. The municipal bond rate is 2.85% (based on the 20-Bond GO rate as of June 30, 2016); and the **resulting single discount rate is 2.85%.**

SECTION H

GLOSSARY OF TERMS

GLOSSARY OF TERMS

Actuarial Accrued Liability (AAL)	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
Actuarial Assumptions	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
Accrued Service	Service credited under the system which was rendered before the date of the actuarial valuation.
Actuarial Equivalent	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
Actuarial Cost Method	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
Actuarial Gain (Loss)	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
Actuarial Present Value (APV)	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future benefit payments at predetermined rates of interest to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Valuation	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial Valuation Date	The date as of which an actuarial valuation is performed.
Actuarially Determined Contribution (ADC)	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

GLOSSARY OF TERMS

Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
Amortization Method	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
Cost-of-Living Adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-Employee Payroll	The payroll of covered employees, which is typically only the pensionable pay (meets the statutory salary definition) and does not include pay above any pay cap.
Deferred Inflows and Outflows of Resources	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
Discount Rate or Single Discount Rate	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: 1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and 2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.
Entry Age Actuarial Cost Method or Entry Age Normal (EAN)	The EAN is a funding method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

GLOSSARY OF TERMS

Fiduciary Net Position	The fiduciary net position is the value of the net assets of the trust restricted for pension benefits.
GASB	The Governmental Accounting Standards Board is an organization that exists with authority to promulgate accounting standards for state and local governmental entities.
Long-Term Expected Rate of Return	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
Money-Weighted Rate of Return	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.
Multiple-Employer Defined Benefit Pension Plan	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Municipal Bond Rate	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
Net Pension Liability (NPL)	The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.
Non-Employer Contributing Entities	Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting Statements No. 67 and No. 68 plan members are not considered non-employer contributing entities.
Normal Cost	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
Other Postemployment Benefits (OPEB)	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
Real Rate of Return	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
Service Cost	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.

GLOSSARY OF TERMS

Total Pension Expense

The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year:

1. Service Cost
2. Interest on the Total Pension Liability
3. Current-Period Changes in Benefit Terms
4. Employee Contributions
5. Projected Earnings on Plan Investments
6. Pension Plan Administrative Expense
7. Other Changes in Plan Fiduciary Net Position
8. Recognition of Outflow (Inflow) of Resources due to the difference between expected and actual in measurement of the Total Pension Liability
9. Recognition of Outflow (Inflow) of Resources due to Assumption Changes
10. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on pension plan investments

Total Pension Liability (TPL)

The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.

Unfunded Actuarial Accrued Liability (UAAL)

The UAAL is the difference between actuarial accrued liability and valuation assets.

Valuation Assets

The valuation assets are the plan fiduciary net position used in determining the net position liability of the fund. For purposes of the GASB Statement No. 67, the asset valuation method is equal to the market value of assets.