

Minnesota State Retirement System Legislators Retirement Fund

GASB Statement No. 67 and No. 68

Accounting and Financial Reporting for Pensions

June 30, 2018



November 29, 2018

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 standards.

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 measuring 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 purposes of funding the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statements No. 67 and No. 68 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.

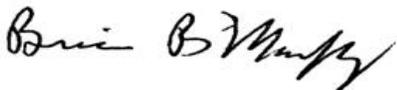
This report complements the actuarial valuation report for funding purposes that was or will be provided to the System and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2018 for additional discussion of the nature of actuarial calculations 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, FSA, EA, FCA, MAAA



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

BBM/BJW:rmn



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SECTION A



EXECUTIVE SUMMARY

Executive Summary

as of June 30, 2018 (Dollars in Thousands)

	2018
Actuarial Valuation Date	June 30, 2018
Measurement Date of the Net Pension Liability	June 30, 2018

Membership

Number of	
- Service Retirements	293
- Survivors	79
- Disability Retirements	-
- Deferred Retirements	39
- Terminated other non-vested	-
- Active Members	19
- Total	430
Covered-employee Payroll ⁽¹⁾	\$ 1,033

Net Pension Liability

Total Pension Liability	\$ 139,367
Plan Fiduciary Net Position	-
Net Pension Liability	\$ 139,367
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	0.00%
Net Pension Liability as a Percentage of Covered-employee Payroll	13,491.48%

Development of the Single Discount Rate

Single Discount Rate	3.62%
Long-Term Expected Rate of Investment Return	7.50%
Long-Term Municipal Bond Rate ⁽²⁾	3.62%
Last year ending June 30 in the 2019 to 2118 projection period for which projected benefit payments are fully funded	N/A

Total Pension Expense/(Income)

\$ 767

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	\$ -	\$ -
Changes in assumptions	-	-
Net difference between projected and actual earnings on pension plan investments	118	-
Totals	\$ 118	\$ -

⁽¹⁾ Assumed equal to actual member contributions divided by employee contribution rate.

⁽²⁾ Based on the 20-Year Municipal GO Index of mixed maturity general obligation municipal bonds as of the weekly closest to but not later than the Measurement Date.

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. 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, 2018.

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%), 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 market 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).

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, 2018 and a measurement date of June 30, 2018.

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).

A single discount rate of 3.62% was used to measure the total pension liability. This single discount rate was based on a municipal bond rate of 3.62% (based on the weekly rate closest to but not later than the measurement date of the "20-Year Municipal GO Index" as published by Fidelity) 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 and no projection is done.

SECTION B



FINANCIAL STATEMENTS

Statement of Pension Expense Under GASB Statement No. 68

Fiscal Year Ended June 30, 2018 (Dollars in Thousands)

A. Expense

1. Service Cost	\$	437
2. Interest on the Total Pension Liability		5,094
3. Current-Period Benefit Changes		(9,839)
4. Employee Contributions (made negative for addition here)		(93)
5. Projected Earnings on Plan Investments (made negative for addition here)		-
6. Pension Plan Administrative Expense		37
7. Other Changes in Plan Fiduciary Net Position		-
8. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension <i>Arising from Current Reporting Period</i>		6,119
9. Recognition of Outflow (Inflow) of Resources due to assumption changes <i>Arising from Current Reporting Period</i>		(856)
10. Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.50%) and actual earnings on Pension Plan Investments <i>Arising from Current Reporting Period</i>		-
11. Increases/(Decreases) from Experience in the Current Reporting Period	\$	899
12. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension <i>Arising from Prior Reporting Periods</i>	\$	-
13. Recognition of Outflow (Inflow) of Resources due to assumption changes <i>Arising from Prior Reporting Periods</i>		-
14. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on Pension Plan Investments <i>Arising from Prior Reporting Periods</i>		(132)
15. Total Pension Expense / (Income)	\$	767

Benefit changes since the previous measurement date are described on page 24.

Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2018 (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	\$	6,119
2. Assumption Changes (gains) or losses		(856)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		1
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		6,119
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes		(856)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$</u>	<u>5,263</u>
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	\$	-
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes		-
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$</u>	<u>-</u>

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$	-
2. Recognition period for Assets {in years}		5
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets		-
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	<u>\$</u>	<u>-</u>

Statement of Outflows and Inflows

Arising from Current and Prior Reporting Periods

Fiscal Year Ended June 30, 2018 (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	\$ 6,119	\$ 856	\$ 5,263
2. Due to Assets	75	207	(132)
3. Total	\$ 6,194	\$ 1,063	\$ 5,131

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	\$ 6,119	\$ -	\$ 6,119
2. Assumption Changes	-	856	(856)
3. Net Difference between projected and actual earnings on pension plan investments	75	207	(132)
4. Total	\$ 6,194	\$ 1,063	\$ 5,131

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	\$ -	\$ -	\$ -
2. Assumption Changes	-	-	-
3. Net Difference between projected and actual earnings on pension plan investments*	118	-	118
4. Total	\$ 118	\$ -	\$ 118

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
2019	\$ 75
2020	43
2021	-
2022	-
2023	-
Thereafter	-
Total	\$ 118

* Paragraph 71(b) of GASB Statement No. 68 requires deferred outflows and inflows arising from differences between projected and actual earnings on pension plan investments to be aggregated and shown as a net amount. For purposes of this valuation, amounts are shown separately for calculation purposes.

Statement of Fiduciary Net Position as of June 30, 2018 (Dollars in Thousands)

Assets	<u>June 30, 2018</u>
Cash & Short-term Investments	\$ 235
Receivables	-
Investment Pools (at fair value)	-
Securities Lending Collateral	-
Capital Assets	<u>-</u>
Total Assets	\$ 235
Total Deferred Outflows of Resources	\$ -
Total Liabilities	\$ (235)
Total Deferred Inflows of Resources	\$ -
Net Position Restricted for Pensions	<u>\$ -</u>

Statement of Changes in Fiduciary Net Position for the Fiscal Year Ended June 30, 2018 (Dollars in Thousands)

1.	Net position at market value at beginning of year	\$	-
	Additions		
2.	Contributions		
	a. Employee	\$	93
	b. Employer		-
	c. State General Fund Appropriations		8,856
	d. Total contributions	\$	8,949
3.	Investment income		
	a. Investment income/(loss)	\$	-
	b. Investment expenses		-
	c. Net investment income/(loss)	\$	-
4.	Other Additions		-
5.	Total Additions (2.d.) + (3.c.) + (4.)	\$	8,949
	Deductions		
6.	Benefits Paid		
	a. Annuity benefits	\$	(8,912)
	b. Refunds		-
	c. Total benefits paid	\$	(8,912)
7.	Expenses		
	a. Other deductions	\$	-
	b. Administrative		(37)
	c. Total expenses	\$	(37)
8.	Total deductions (6.c.) + (7.c.)	\$	(8,949)
9.	Net increase/(decrease) in fiduciary net position (5.) + (8.)	\$	-
10.	Net position at market value at end of year (1.) + (9.)	\$	-
11.	State Board of Investment calculated annual investment return		N/A

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios

Current Period

Fiscal Year Ended June 30, 2018 (Dollars in Thousands)

A. Total Pension Liability	
1. Service Cost	\$ 437
2. Interest on the Total Pension Liability	5,094
3. Changes of benefit terms	(9,839)
4. Difference between expected and actual experience of the Total Pension Liability	6,119
5. Changes of assumptions	(856)
6. Benefit payments, including refunds of employee contributions	(8,912)
7. Net change in Total Pension Liability	\$ (7,957)
8. Total Pension Liability – Beginning	147,324
9. Total Pension Liability – Ending	<u><u>\$ 139,367</u></u>
B. Plan Fiduciary Net Position	
1. Contributions – State General Fund Appropriations	\$ 8,856
2. Contributions – Employee	93
3. Net investment income	-
4. Benefit payments, including refunds of employee contributions	(8,912)
5. Pension Plan Administrative Expense	(37)
6. Other changes	-
7. Net change in Plan Fiduciary Net Position	\$ -
8. Plan Fiduciary Net Position – Beginning	-
9. Plan Fiduciary Net Position – Ending	<u><u>\$ -</u></u>
C. Net Pension Liability, A.9.-B.9.	<u><u>\$ 139,367</u></u>
D. Plan Fiduciary Net Position as a percentage of the Total Pension Liability, B.9./A.9.	0.00%
E. Covered-Employee Payroll	\$ 1,033 ⁽¹⁾
F. Net Pension Liability as a percentage of Covered-Employee Payroll, C./E.	13,491.48%

⁽¹⁾ Assumed equal to actual member contributions divided by employee contribution rate.

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,	2018	2017	2016	2015	2014	2013	2012	2011	2010
Total Pension Liability									
Service Cost	\$ 437	\$ 546	\$ 495	\$ 428	\$ 398				
Interest on the Total Pension Liability	5,094	4,293	5,333	6,113	6,177				
Benefit Changes	(9,839)	-	-	-	-				
Difference between Expected and Actual Experience	6,119	1,517	(1,597)	(7,303)	(237)				
Assumption Changes	(856)	(5,017)	14,653	7,057	11,201				
Benefit Payments	(8,912)	(8,716)	(8,496)	(8,441)	(8,407)				
Refunds	-	-	(40)	-	(79)				
Net Change in Total Pension Liability	\$ (7,957)	\$ (7,377)	\$ 10,348	\$ (2,146)	9,053				
Total Pension Liability - Beginning	147,324	154,701	144,353	146,499	137,446				
Total Pension Liability - Ending (a)	\$ 139,367	\$ 147,324	\$ 154,701	\$ 144,353	\$ 146,499				
Plan Fiduciary Net Position									
State General Fund Appropriation	\$ 8,856	\$ 8,716	\$ 5,087	\$ 3,216	\$ 3,436				
Employee Contributions	93	80	89	153	101				
Pension Plan Net Investment Income	-	-	(69)	281	1,750				
Benefit Payments	(8,912)	(8,716)	(8,496)	(8,441)	(8,407)				
Refunds	-	-	(40)	-	(79)				
Pension Plan Administrative Expense	(37)	(39)	(42)	(37)	(36)				
Other Changes	-	(41)	41	-	-				
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)	\$ -	\$ -	\$ -	\$ 3,430	\$ 8,258				
Net Pension Liability - Ending (a) - (b)	\$ 139,367	\$ 147,324	\$ 154,701	\$ 140,923	138,241				
Plan Fiduciary Net Position as a Percentage									
of Total Pension Liability	0.00 %	0.00 %	0.00 %	2.38 %	5.64 %				
Covered-Employee Payroll ⁽¹⁾	\$ 1,033	\$ 889	\$ 989	\$ 1,700	\$ 1,122				
Net Pension Liability as a Percentage									
of Covered-Employee Payroll	13,491.48 %	16,571.88 %	15,642.16 %	8,289.59 %	12,320.94 %				

Notes to Schedule:

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

Schedule of Net Pension Liability Multiyear (Dollars in Thousands)

Last 10 Fiscal Years (which will be built prospectively)

<u>Fiscal Year Ending June 30,</u>	<u>Total Pension Liability</u> (a)	<u>Plan Net Position</u> (b)	<u>Net Pension Liability</u> (a)-(b)=(c)	<u>Plan Net Position as a % of Total Pension Liability</u> (b)/(c)	<u>Covered- Employee Payroll</u> (d)	<u>Net Pension Liability as a % of Covered- Employee Payroll</u> (c)/(d)
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	-	154,701	0.00	989	15,642.16
2017	147,324	-	147,324	0.00	889	16,571.88
2018	139,367	-	139,367	0.00	1,033	13,491.48

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)
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	22,157	3,436	18,721	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
2017	22,844	8,716	14,128	889 **	980.43
2018	33,560	8,856	24,704	1,033 **	857.31

* 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.

** Assumed equal to actual member contributions divided by employee contribution rate.

Notes to Schedule of Contributions

Methods and Assumptions Used to Determine Fiscal Year Ending June 30, 2018 Contribution Rates Reported in this Schedule:

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.

Valuation Date	June 30, 2017
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Dollar, Closed
Remaining Amortization Period	9 years
Asset Valuation Method	Market value of assets
Salary Increases	5.00% including inflation
Investment Rate of Return	0.00% per annum
Inflation:	2.75% 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-2014 annuitant generational mortality table, projected with mortality improvement scale MP-2015 from a base year of 2014, white collar adjustment, set forward 2-years for males and no age adjustment for females.

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, 2017 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	Annual
Ending	Return⁽¹⁾
June 30,	
2009	
2010	
2011	
2012	
2013	
2014	19.30 %
2015	5.00
2016	NA
2017	NA
2018	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

Beginning with 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.

Ten-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 a 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, 2018, these best estimates are summarized in the following table:

Asset Class	Transitional Target Allocation	Final Target Allocation	Long-Term Expected Real Rate of Return (Geometric Mean)
Domestic Equity ⁽¹⁾	33%	36%	5.10%
International Equity ⁽²⁾	16%	17%	5.30%
Private Markets ⁽³⁾	25%	25%	5.90%
Fixed Income	16%	20% ⁽⁴⁾	0.75%
Treasuries	8%	0%	0.50%
Cash	2%	2%	0.00%
Total	100%	100%	

⁽¹⁾ Domestic Equity includes U.S. Stock Actively Managed and the U.S. Stock Index Fund.

⁽²⁾ International Equity includes Broad International Stock Fund.

⁽³⁾ Private Markets includes the Alternative Investment Pool. If a 25 percent allocation uncommitted allocation to Private Markets cannot be achieved, the uncommitted allocation is invested in Public Equities.

⁽⁴⁾ The Final Target Allocation will combine Fixed Income investment options.

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.

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, 2017. 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 3.62% was used to measure the total pension liability as of July 1, 2018.

Single Discount Rate

A single discount rate of 3.62% was used to measure the total pension liability. This single discount rate was based on a municipal bond rate of 3.62% 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 3.62%, 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 (2.62%) or 1-percentage-point higher (4.62%) than the current rate:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption *(Dollars in Thousands)*

	1% Decrease 2.62%	Current Single Discount Rate Assumption 3.62%	1% Increase 4.62%
Total Pension Liability	\$ 154,902	\$ 139,367	\$ 126,340
Net Position Restricted for Pensions	-	-	-
Net Pension Liability	\$ 154,902	\$ 139,367	\$ 126,340

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	\$ 147,324	\$ -	\$ 147,324	\$ 193	\$ 207	
Changes for the Year:						
Service Cost	\$ 437		\$ 437			\$ 437
Interest on Total Pension Liability	5,094		5,094			5,094
Interest on Plan Fiduciary Net Position		\$ -	-			-
Changes in Benefit Terms	(9,839)		(9,839)			(9,839)
Liability Experience Gains and Losses	6,119		6,119	\$ -	\$ -	6,119
Changes in Assumptions	(856)		(856)	-	-	(856)
Recognition of Deferred Outflows/(Inflows) of Resources Arising from Prior Reporting Periods						
Liability Experience Gains/(Losses)				-	-	-
Assumption Changes				-	-	-
Investment Gains/(Losses)				(75)	(207)	(132)
State General Fund Appropriations		8,856	(8,856)			
Contributions - Employees		93	(93)			(93)
Asset Gain/(Loss)		-	-	-	-	-
Benefit Payouts	(8,912)	(8,912)				
Administrative Expenses		(37)	37			37
Other Changes			-			-
Net Changes	<u>\$ (7,957)</u>	<u>\$ -</u>	<u>\$ (7,957)</u>	<u>\$ (75)</u>	<u>\$ (207)</u>	<u>\$ 767</u>
Balance End of Year	<u>\$ 139,367</u>	<u>\$ -</u>	<u>\$ 139,367</u>	<u>\$ 118</u>	<u>\$ 0</u>	

Summary of Population Statistics

	Terminated			Recipients			Total
	Actives	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	
Members on 7/1/2017	19	44	0	301	0	74	438
Additions	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	(5)	0	5	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	(13)	0	(3)	(16)
New beneficiary	0	0	0	0	0	8	8
Disabled	0	0	0	0	0	0	0
Unexpected status changes	0	0	0	0	0	0	0
Net change	0	(5)	0	(8)	0	5	(8)
Members on 6/30/2018	19	39	0	293	0	79	430

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). Plan is closed to new members.
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.
Amount	A percentage of Average Salary for each year of service as follows: 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%.
<u>Early retirement benefit</u>	
Age/service requirements	Age 55 and either six full years of service or service during all or part of four regular legislative sessions.

Summary of Plan Provisions – Legislators Retirement Plan (Continued)

Retirement (Concluded)	
<u>Early retirement benefit (Concluded)</u>	
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.
<u>Form of payment</u>	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.
<u>Benefit increases</u>	Through December 31, 2018: 2.0% January 1, 2019 – December 31, 2023: 1.0% January 1, 2024 and after: 1.5% For retirements on or after January 1, 2024, the first benefit increase is delayed until the retiree reaches Normal Retirement Age (not applicable to disability benefit recipients, or survivors). 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	
<u>Surviving spouse benefit</u>	
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, except benefit increases are paid prior to Normal Retirement.

Summary of Plan Provisions – Legislators Retirement Plan (Continued)

Death (Concluded)

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 for retirement, except benefit increases are paid prior to Normal 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% interest through June 30, 2011, compounded daily. Beginning July 1, 2011, a member's contributions increase at 4.00% interest compounded daily. Beginning July 1, 2018, a member's contributions increase at 3.00% interest compounded daily.

Termination

Refund of contributions

Age/Service requirement	Termination of service.
Amount	Member's contributions with 6.00% interest through June 30, 2011, compounded daily. Beginning July 1, 2011, a member's contributions increase at 4.00% interest compounded daily. Beginning July 1, 2018, a member's contributions increase at 3.00% interest compounded daily. 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 through December 31, 2018; and (f.) 0.00% from January 1, 2019, thereafter.

Summary of Plan Provisions – Legislators Retirement Plan (Concluded)

Deferred benefit - (Concluded)	<p>Amount (Concluded) Amount is payable at normal or early retirement.</p> <p>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%.</p>
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%.
Actuarial equivalent factors	Actuarially equivalent factors based on RP-2014 mortality for healthy annuitants, white collar adjustment, male rates set forward two years, projected to 2019 using Scale MP-2015, blended 50% males, 5.88% post-retirement interest, and 8.00% pre-retirement interest. Based upon statutory requirements; Joint and Survivor factors are based on an interest assumption of 6.50%. The actuarially equivalent factors are currently being updated to reflect changes adopted during the 2018 legislative session.
Combined service annuity	<p>Members are eligible for combined service benefits if they:</p> <ul style="list-style-type: none"> (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; (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. <p>Members who meet the above requirements must have their benefit based on the following:</p> <ul style="list-style-type: none"> (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	<p>For retirements on or after January 1, 2024, the first benefit increase is delayed until the retiree reaches Normal Retirement Age.</p> <p>Interest credited on member contributions will decrease from 4.0% to 3.0%, beginning July 1, 2018.</p> <p>Deferred augmentation was changed to 0.00% for future accruing benefits, effective January 1, 2019. Augmentation that has already accrued for deferred members will still apply.</p> <p>Post-retirement benefit increases were changed from 2.0% per year, increasing to 2.5% per year upon achieving a 90% funding ratio to a fixed rate of 1.0% for five years (beginning January 1, 2019) and 1.5% per year thereafter.</p>

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.
<u>Form of payment</u>	Life annuity.
<u>Benefit increases</u>	Through December 31, 2018: 2.0% January 1, 2019 – December 31, 2023: 1.0% January 1, 2024 and after: 1.5% For retirements on or after January 1, 2024, the first benefit increase is delayed until the retiree reaches Normal Retirement Age (not applicable to disability benefit recipients, or survivors).

Summary of Plan Provisions – Elective State Officers Retirement Plan (Continued)

Retirement (Continued)	
<u>Early retirement benefit</u>	
Benefit increases (Continued)	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.
Death	
<u>Surviving spouse benefit</u>	
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, except benefit increases are paid prior to Normal Retirement.
<u>Surviving dependent children's benefit</u>	
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, except benefit increases are paid prior to Normal Retirement.
Termination	
<u>Refund of contributions</u>	
Age/Service requirement	Termination of service.

Summary of Plan Provisions – Elective State Officers Retirement Plan (Continued)

Termination (Concluded)

Refund of contributions (Concluded)

Amount Member's contributions with 6.00% interest through June 30, 2011, compounded daily. Beginning July 1, 2011, a member's contributions increase at 4.00% interest compounded daily. Beginning July 1, 2018, a member's contributions increase at 3.00% interest compounded daily. 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.

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;
- (e.) 2.00% from January 1, 2012 through December 31, 2018; and
- (f.) 0.00% from January 1, 2019, 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;
 - (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.
-

Summary of Plan Provisions – Elective State Officers Retirement Plan (Concluded)

Combined service annuity (Concluded)	<p>Members who meet the above requirements must have their benefit based on the following:</p> <p>(a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement.</p> <p>(b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.</p>
Actuarial equivalent factors	<p>Actuarially equivalent factors based on RP-2014 mortality for healthy annuitants, white collar adjustment, male rates set forward two years, projected to 2019 using Scale MP-2015, blended 50% males, 5.88% post-retirement interest, and 8.00% pre-retirement interest. Based upon statutory requirements; Joint and Survivor factors are based on an interest assumption of 6.50%. The actuarially equivalent factors are currently being updated to reflect changes adopted during the 2018 legislative session.</p>
Changes in plan provisions	<p>All Elective State Officers members are receiving benefit payments. A number of provisions affecting benefits for active and deferred members were changed. See the Summary of Plan Provisions for the Legislators Retirement Plan for detail.</p> <p>Post-retirement benefit increases were changed from 2.0% per year, increasing to 2.5% per year upon achieving a 90% funding ratio to a fixed rate of 1.0% for five years (beginning January 1, 2019) and 1.5% per year thereafter.</p>

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; and
- (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.

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. Demographic assumptions other than mortality are based on the last assumption review, dated January 2012, prepared by a former actuary. The economic assumptions are based on a review of inflation and investment return assumptions, dated September 11, 2017. The mortality assumption is based on the last State Employees Retirement Fund experience study, dated June 30, 2015.

The Allowance for Combined Service Annuity was based on an analysis completed by the LCPR actuary and documented in a report dated October 2016.

Investment return	7.50% per annum.
Single Discount Rate	3.62% per annum.
Salary increases	4.50% annually.
Inflation	2.50% annually.
Mortality rates	
Healthy Pre-retirement	RP-2014 employee generational mortality table projected with mortality improvement Scale MP-2015 from a base year of 2014, white collar adjustment, set forward one year for males and no adjustment for females.
Healthy Post-retirement	RP-2014 annuitant generational mortality table projected with mortality improvement Scale MP-2015 from a base year of 2014, white collar adjustment, set forward two years for males and no adjustment for females.
Notes	The RP-2014 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 18 to 80 and the annuitant mortality table contains mortality rates for ages 50 to 120. We have extended the annuitant mortality table as needed for members younger than age 50 who are receiving a benefit by deriving rates based on the employee table and the juvenile table. Similarly, we have extended the employee table as needed for members older than age 80 by deriving rates based on the annuitant table.
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.
Disability	None.
Allowance for combined service annuity	None.

Summary of Actuarial Assumptions (Continued)

Administrative expenses	In the valuation year, equal to prior year administrative expenses expressed as 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. Legislators in payment status are assumed to be 100% married for purposes of a death benefit, except if reported with a joint & survivor benefit. 100% of Elective State Officers members are assumed to be eligible for the automatic survivor benefit.
Age of spouse	Females are assumed to be three years younger than their spouses, and males are assumed to be three years older than their 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, based on average results for applicable members, 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:

Benefits were reported with full augmentation to Normal Retirement Age. Based on direction from MSRS, we adjusted benefits by removing augmentation on a prospective basis beginning January 1, 2019.

There was 1 member 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 (0 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 gender, birth dates or benefits.

There were 285 retired members reported:

- 110 members were reported with the 75% or 100% joint and survivor option. These members were valued as indicated by the option elected.
- 174 members were reported with the life annuity option and 1 member was reported with the 50% joint and survivor option. All of these members were valued as a 50% joint & survivor annuity per MSRS' direction.

Of the 285 retired members, 141 members had an invalid or missing survivor gender and 138 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 retirees reported with a bounce back annuity and an unreasonable reduction factor.

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 Plan

There were no members reported with missing or invalid birth dates, genders or benefits.

All retired members were reported with a life annuity option. Members were assumed to have a spouse that is eligible for the automatic survivor benefits. Valuation assumptions were used if the survivor gender (5 members) or date of birth (5 members) were missing or invalid.

Changes in actuarial assumptions

The Single Discount Rate changed from 3.56% to 3.62%.

Summary of Actuarial Assumptions (Concluded)

Age in 2018	Percent of Members Dying Each Year*			
	Healthy		Healthy	
	Post-Retirement Mortality**	Pre-Retirement Mortality**	Male	Female
20	0.03%	0.01%	0.03%	0.01%
25	0.04	0.02	0.03	0.01
30	0.06	0.05	0.03	0.02
35	0.09	0.08	0.04	0.02
40	0.13	0.11	0.04	0.03
45	0.20	0.15	0.07	0.05
50	0.29	0.19	0.12	0.09
55	0.41	0.27	0.20	0.14
60	0.58	0.38	0.36	0.20
65	0.88	0.62	0.63	0.30
70	1.45	0.99	1.09	0.51
75	2.50	1.65	1.92	0.89
80	4.47	2.89	3.48	1.57
85	8.29	5.21	7.29	4.12
90	14.99	9.53	13.53	9.22

* 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.

** Rates are adjusted for mortality improvements using Scale MP-2015 from a base year of 2014.

Age	Percent Retiring	Service	Percent Terminating (Withdrawing)	
			House	Senate
60	0.00%	1	0.0%	0.0%
61	0.00	2	30.0	0.0
62	40.00	3	0.0	0.0
63	30.00	4	20.0	25.0
64	30.00	5	0.0	0.0
65	40.00	6	10.0	0.0
66	30.00	7	0.0	0.0
67	25.00	8	5.0	10.0
68	25.00	9+	0.0	0.0
69	25.00			
70	30.00			
71+	100.00			

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 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, 2018, total contributions (plan member contributions and state General Fund appropriations) were \$8.9 million and total benefit payments were \$8.9 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 3.62% (based on the weekly rate closest to but not later than the measurement date of the "20-Year Municipal GO AA Index" as published by Fidelity); and the resulting single discount rate is 3.62%. In describing their index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax-exempt securities.

SECTION H

GLOSSARY OF TERMS

Glossary of Terms

<i>Actuarial Accrued Liability (AAL)</i>	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."
<i>Actuarial Assumptions</i>	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.
<i>Accrued Service</i>	Service credited under the system which was rendered before the date of the actuarial valuation.
<i>Actuarial Equivalent</i>	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.
<i>Actuarial Cost Method</i>	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.
<i>Actuarial Gain (Loss)</i>	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.
<i>Actuarial Present Value (APV)</i>	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.
<i>Actuarial Valuation</i>	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.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC)</i>	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

<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Amortization Method</i>	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).
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	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.
<i>Covered-Employee Payroll</i>	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.
<i>Deferred Inflows and Outflows of Resources</i>	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.
<i>Discount Rate or Single Discount Rate</i>	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: <ol style="list-style-type: none">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; and2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.
<i>Entry Age Actuarial Cost Method or Entry Age Normal (EAN)</i>	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

<i>Fiduciary Net Position</i>	The fiduciary net position is the value of the net assets of the trust restricted for pension benefits.
<i>GASB</i>	The Governmental Accounting Standards Board is an organization that exists with authority to promulgate accounting standards for state and local governmental entities.
<i>Long-Term Expected Rate of Return</i>	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.
<i>Money-Weighted Rate of Return</i>	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.
<i>Multiple-Employer Defined Benefit Pension Plan</i>	A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
<i>Municipal Bond Rate</i>	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.
<i>Net Pension Liability (NPL)</i>	The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.
<i>Non-Employer Contributing Entities</i>	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.
<i>Normal Cost</i>	The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.
<i>Other Postemployment Benefits (OPEB)</i>	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.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	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.