Gabriel Roeder Smith & Company
Consultants & Actuaries

ELECTIVE STATE OFFICERS RETIREMENT FUND
MINNESOTA STATE RETIREMENT SYSTEM
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2012

GRS
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December 2012

Minnesota State Retirement System
Elective State Officers Retirement Fund
St. Paul, Minnesota

Dear Board of Directors:

The results of the July 1, 2012 annual actuarial valuation of the Elective State Officers Retirement Fund are presented in this report. This report was prepared at the request of the Board and is intended for use by the Retirement Fund and those designated or approved by the Board. This report may be provided to parties other than the Fund only in its entirety. GRS is not responsible for the consequences of any unauthorized use of this report.

The purpose of the valuation is to measure the Fund's funding progress, to determine the required contribution rate for the fiscal year beginning July 1, 2012, and to determine the actuarial information required by Governmental Accounting Standards Board (GASB) Statement No. 25. Note that we have not attempted to quantify the impact of GASB Statements No. 67 and No. 68 in this report.

The valuation was based upon information furnished by the Minnesota State Retirement System (MSRS), concerning benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not otherwise audit the data. We are not responsible for the accuracy or completeness of the information provided by MSRS.

Actuarial assumptions, including discount rates, mortality tables and others identified in this report, are prescribed by Minnesota Statutes Section 356.215, the Legislative Commission on Pensions and Retirement (LCPR), and the Board of Directors. These parties are responsible for selecting the plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. In order to comply with GASB, MSRS directed GRS to use an investment return assumption of 0%. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in the Actuarial Basis of this report. MSRS is solely responsible for communicating to GRS any changes required thereto.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

This report should not be relied on for any purpose other than the purpose described in the primary communication. Determinations of the financial results associated with the benefits described in this report in a manner other than the intended purpose may produce significantly different results.

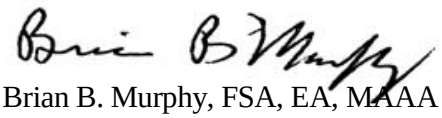
The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

The undersigned actuaries are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. In addition, Mr. Murphy meets the requirements of "approved actuary" under Minnesota Statutes Section 356.215, Subdivision 1, Paragraph (c).

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge and belief the information contained in this report is accurate and fairly presents the actuarial position of the Elective State Officers Retirement Fund as of the valuation date and was performed in accordance with the requirements of Minnesota Statutes Section 356.215, and the requirements of the Standards for Actuarial Work established by the LCPR. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

We are available to answer any questions or provide further details.

Respectfully submitted,



Brian B. Murphy, FSA, EA, MAAA

Bonita J. Wurst, ASA, EA, MAAA

BBM/BJW:sc

Contents

Summary of Valuation Results

Contributions

The following table summarizes important contribution information as described in the Development of Costs section.

Contributions	Actuarial Valuation as of July 1, 2012	Actuarial Valuation as of July 1, 2011
Statutory Contributions - Chapter 352C	$ 0	$ 0
Required Contributions - Chapter 356	990,661	748,401
Sufficiency / (Deficiency)	(990,661)	(748,401)

This plan has no assets. The Chapter 356 Required Contribution shown above represents the estimated annual contribution amount that would be needed for this plan to attain 100% funding by July 1, 2021, based upon the prescribed assumptions. The Required Contribution includes not only the expected benefit payments for the year, but also amounts intended to pre-fund future benefit payments. Actual contributions have been less than the Required Contribution amount since 1998. Without a change in contribution policy, the funding target identified by Chapter 356 will not be met.

This plan is currently funded on a pay-as-you-go basis by annual appropriations from the state's General Fund approximately equal to the amount of annual benefit payments. The expected benefit payments for the next 10 years, based on current data, methods, and assumptions, are:

Fiscal Year Ending	Expected Annual Benefit Payments
2013	$492,000
2014	486,000
2015	479,000
2016	471,000
2017	462,000
2018	452,000
2019	441,000
2020	428,000
2021	414,000
2022	399,000

Participant reconciliation and statistics are detailed in the *Membership Data* section. The *Actuarial Basis* section includes a summary of plan provisions and actuarial methods and assumptions used for the calculations in this report. The *Plan Accounting* section details the required accounting information for the Plan under GASB No. 25 (as amended by GASB No. 50).

Summary of Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in plan provisions, actuarial assumptions or valuation methods and procedures between the two valuations are described after the summary.

	Actuarial Valuation as of	
	July 1, 2012	**July 1, 2011**
Contributions		
Statutory - Chapter 352C	$ 0	$ 0
Required - Chapter 356	990,661 *	748,401 **
Sufficiency/(Deficiency)	(990,661) *	(748,401) **
Funding Ratios		
Accrued Liability Funding Ratio		
- Current assets (AVA)	$ 0	$ 0
- Actuarial accrued liability	8,906,950	3,692,642 **
- Funding ratio	0.00%	0.00%
Projected Benefit Funding Ratio		
- Current and expected future assets	$ 0	$ 0
- Current and expected future benefit obligations	8,906,950	3,692,642 **
- Projected benefit funding ratio	0.00%	0.00%
Participant Data		
Active members	0	0
Service retirements	10	10
Survivors	4	4
Disability retirements	0	0
Deferred retirements	1	1
Terminated other non-vested	0	0
Total	**15**	15

* *The expected benefit payments for the fiscal year are $492,000. The Required Contribution also includes amounts intended to pre-fund future benefit payments.*

** *Alternate assumption results (see 2011 valuation report for details):*

Required Contribution	*$1,269,363*
Sufficiency/(Deficiency)	*(1,269,363)*
Actuarial Accrued Liability	*7,610,176*

Summary of Valuation Results

The 2011 valuation was prepared by Mercer. As part of the transition of actuarial work from Mercer to GRS, we replicated the 2011 valuation including a change from beginning of year decrement timing to mid-year decrement timing. The results of this replication are as follows:

	Valuation Results As of July 1, 2011		
	Mercer	**GRS**	**Ratio**
Present Value of Projected Benefits	$3,692,642	$3,728,299	101.0%
Actuarial Accrued Liability	3,692,642	3,728,299	101.0%
Required Contributions	748,401	755,618	101.0%

Differences in valuation results due to differences in actuarial software are not unexpected. The replication results indicate a high degree of consistency.

Effects of Changes

The following changes in actuarial assumptions were recognized as of July 1, 2012. Note that many of the stated changes do not apply because all members are inactive and entitled to immediate benefits.

- The investment return assumption was changed from 8.5% pre-retirement and 6.5% post-retirement (the difference implicitly values a 2% post-retirement benefit increase) to 0% for pre- and post-retirement, with post-retirement benefit increases of 2% accounted for explicitly in the projected benefits. *The statutory pre-retirement investment return assumption is 0%, and the statutory post-retirement investment return assumption is -2.0% until June 30, 2040 and -2.5% after June 30, 2040. In order to comply with GASB, MSRS directed GRS to use a post-retirement investment return assumption of 0% instead of the negative statutory post-retirement investment return assumption. Because the 2% post-retirement benefit increases are accounted for explicitly in the benefit payments instead of through the use of a lower post-retirement interest assumption, the results are approximately equivalent to those that would be obtained by using a post-retirement investment return assumption of -2.0% for all years.*
- Healthy pre-retirement mortality was changed from 1983 Group Annuity Mortality set back four years for males and set back two years for females to RP-2000 annuitant generational mortality, white collar adjustment, set forward three years for males and set back one year for females.
- Healthy post-retirement mortality was changed from 1983 Group Annuity Mortality to RP-2000 annuitant generational mortality, white collar adjustment.
- All retired and deferred members were assumed to have a spouse eligible for the automatic survivor benefit. Previously, only members reported with a spouse benefit were assumed to be eligible for the automatic survivor benefit.
- As per MN Statutes 356.215 subdivision 11(c), a new amortization period is determined by amortizing the unfunded liability before the assumption changes over the original amortization period using original assumptions, amortizing the additional unfunded liability over 30 years using current assumptions, and then determining the equivalent amortization period in whole years. This resulted in a new amortization period of nine years (previously five years).

Summary of Valuation Results

Effects of Changes (Concluded)

The combined impact of the above changes was to increase the accrued liability by $5.3 million and increase the required contribution by $0.14 million, as follows:

	Before Amortization Period and Assumption Changes	Reflecting Assumption Changes	Reflecting Assumption and Amortization Period Changes
Unfunded Accrued Liability	$ 3,652,821	$ 8,906,950	$ 8,906,950
Total Required Contribution	$ 855,342	$ 1,782,390	$ 990,661
Accrued Liability Funding Ratio	0.0%	0.0%	0.0%

Refer to the Actuarial Basis section of this report for a complete description of these changes.

Summary of Valuation Results

Valuation of Future Post-Retirement Benefit Increases

A very important assumption affecting the valuation results is the expectation of future post-retirement benefit increases, which, by statute, depends on the accrued liability funding ratio of the State Employees Retirement Fund instead of this plan which has a 0% funding ratio. If the State Employees Retirement Fund reaches a funding ratio of 90% (on a market value of assets basis) in the future, post-retirement increases in the Elective State Officers Retirement Fund will revert to the 2.5% level. The State Employees Retirement Fund's accrued liability funding ratio (on a market value of assets basis and assuming 2.0% post-retirement benefit increases in all future years) is currently 82.1%.

The liabilities in this report are based on the assumption that the post-retirement benefit increase will remain at the reduced level of 2.0% indefinitely. If we assumed future post-retirement benefit increases of 2.5% instead of 2.0%, the actuarial accrued liability would increase by $512,000.

Supplemental Information

The remainder of the report includes information supporting the results presented in the previous sections.

- **Plan assets** presents information about the plan's assets as reported by the Minnesota State Retirement System. The assets represent the portion of total fund liabilities that has been funded.
- **Membership data** presents and describes the membership data used in the valuation.
- **Development of costs** shows the liabilities for plan benefits and the derivation of the contribution amount.
- **Actuarial basis** describes the plan provisions, as well as the methods and assumptions used to value the plan. The valuation is based on the premise that the plan is ongoing.
- **Plan accounting under GASB No. 25 (as amended by GASB No. 50)** shows the disclosures required by GASB Statement No. 25 as amended by GASB Statement No. 50.
- **Glossary** defines the terms used in this report.

Plan Assets

Statement of Plan Net Assets as of June 30, 2012

Assets Held in Trust	Market Value	
Cash, equivalents, short term securities	$	0
Fixed income		0
Equity		0
Other		0
Total cash, investments, and other assets	**$**	**0**
Amounts Receivable		7,513
Total Assets	**$**	**7,513**
Amounts Payable		(7,513)
Net Assets Held in Trust for Pension Benefits	**$**	**0**

Plan Assets

Reconciliation of Plan Assets

The following exhibit shows the revenue, expenses and resulting assets of the Fund as reported by the Minnesota State Retirement System for the Plan's Fiscal Year July 1, 2011 to June 30, 2012.

Change in Assets		**Market Value**
1.	Fund balance at market value at July 1, 2011	$ 0
2.	Contributions	
	a. Member	0
	b. Employer	0
	c. Other sources	466,211
	d. Total contributions	$ 466,211
3.	Investment income	
	a. Investment income/(loss)	0
	b. Investment expenses	0
	c. Net investment income/(loss)	0
4.	Other	0
5.	**Total income:** *(2.d.) + (3.c.) + (4.)*	**$ 466,211**
6.	Benefits Paid	
	a. Annuity benefits	(459,340)
	b. Refunds	0
	c. Total benefits paid	(459,340)
7.	Expenses	
	a. Other	0
	b. Administrative	(6,871)
	c. Total expenses	(6,871)
8.	**Total disbursements:** *(6.c.) + (7.c.)*	**(466,211)**
9.	**Fund balance at market value at July 1, 2012:** *(1.) + (5.) + (8.)*	**$ 0**

Plan Assets

Actuarial Asset Value

Actuarial Asset Value is equal to Market Value, including receivable contributions and reduced by amounts payable at the valuation date.

Membership Data

Distribution of Service Retirements

	Years Retired as of June 30, 2012							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<50								
Avg. Benefit								
50 - 54								
Avg. Benefit								
55 - 59								
Avg. Benefit								
60 - 64								
Avg. Benefit								
65 - 69			1					**1**
Avg. Benefit			9,489					**9,489**
70 - 74			2					**2**
Avg. Benefit			32,231					**32,231**
75 - 79				2	1			**3**
Avg. Benefit				76,975	9,249			**54,399**
80 - 84				1	2	1		**4**
Avg. Benefit				18,421	39,260	6,868		**25,952**
85 - 89								
Avg. Benefit								
90+								
Avg. Benefit								
Total			**3**	**3**	**3**	**1**		**10**
Avg. Benefit			**24,650**	**57,457**	**29,256**	**6,868**		**34,096**

In each cell, the top number is the count of retired participants for the age/years retired combination and the bottom number is the average annual benefit amount.

Membership Data

Distribution of Survivors

	Years Since Death as of June 30, 2012							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<45								
Avg. Benefit								
45 - 49								
Avg. Benefit								
50 - 54								
Avg. Benefit								
55 - 59								
Avg. Benefit								
60 - 64								
Avg. Benefit								
65 - 69		1						**1**
Avg. Benefit		35,411						**35,411**
70 - 74					1			**1**
Avg. Benefit					9,249			**9,249**
75 - 79								
Avg. Benefit								
80 - 84					1			**1**
Avg. Benefit					53,301			**53,301**
85 - 89								
Avg. Benefit								
90+					1			**1**
Avg. Benefit					24,969			**24,969**
Total		**1**			**3**			**4**
Avg. Benefit		**35,411**			**29,173**			**30,733**

In each cell, the top number is the count of survivors for the age/years since death combination and the bottom number is the average annual benefit amount.

Membership Data

Reconciliation of Members

		Terminated		Recipients			
	Actives	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	Total
Members on 7/1/2011	**0**	**1**	**0**	**10**	**0**	**4**	**15**
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	0	0	0	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	0	0	0	**0**
New beneficiary	0	0	0	0	0	0	**0**
Disabled	0	0	0	0	0	0	**0**
Data correction	0	0	0	0	0	0	**0**
Net change	0	0	0	0	0	0	**0**
Members on 6/30/2012	**0**	**1**	**0**	**10**	**0**	**4**	**15**

Terminated Member Statistics	Deferred Retirement	Other Non-Vested	Total
Number	1	0	1
Average age	66.5	N/A	66.5
Average service	8.0	N/A	8.0
Average annual benefit, with augmentation to Normal Retirement Date and 30% CSA load	$30,021	N/A	$30,021

Development of Costs

Actuarial Valuation Balance Sheet

The actuarial balance sheet is based on the principle that the long-term projected benefit obligations of the plan should be ideally equal to the long-term resources available to fund those obligations. Because this plan is funded on a pay-as-you-go basis, the present value of projected member and employer contributions is zero, and the present value of benefits is not equal to the assets on hand, as shown in the exhibit below.

				June 30, 2012
A. Actuarial Value of Assets				$ 0
B. Expected Future Assets				
1. Present value of expected future statutory supplemental contributions				0
2. Present value of future normal cost contributions				0
3. Total present value of future contributions: *(1.) + (2.)*				$ 0
C. Total Current and Expected Future Assets (A.) + (B.3.)				$ 0
D. Current Benefit Obligations*				
1. Benefit recipients	**Non-Vested**	**Vested**	**Total**	
a. Service retirements	$ 0	$ 6,234,678	$ 6,234,678	
b. Disability retirements	0	0	0	
c. Survivors	0	1,801,750	1,801,750	
2. Deferred retirements with augmentation	0	870,522	870,522	
3. Former members without vested rights	0	0	0	
4. Active members	0	0	0	
5. Total Current Benefit Obligations	$ 0	$ 8,906,950	$ 8,906,950	
E. Expected Future Benefit Obligations				$ 0
F. Total Current and Expected Future Benefit Obligations**				$ 8,906,950
G. Unfunded Current Benefit Obligations: *(D.5.) - (A.)*				$ 8,906,950
H. Unfunded Current and Future Benefit Obligations: *(F.) - (C.)*				$ 8,906,950

* *Present value of credited projected benefits (projected compensation, current service)*

** *Present value of projected benefits (projected compensation, projected service)*

Development of Costs

Determination of Unfunded Actuarial Accrued Liability and Supplemental Contribution Rate

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. Determination of Actuarial Accrued Liability (AAL)			
1. Active members	$ 0	$ 0	$ 0
2. Deferred retirements with future augmentation	870,522	0	870,522
3. Former members without vested rights	0	0	0
4. Benefit recipients	8,036,428	0	8,036,428
5. Total	$8,906,950	$ 0	$8,906,950
B. Determination of Unfunded Actuarial Accrued Liability (UAAL)			
1. Actuarial accrued liability			$8,906,950
2. Current assets (AVA)			0
3. Unfunded actuarial accrued liability			$8,906,950
C. Determination of Supplemental Contribution Amount*			
1. Current unfunded actuarial accrued liability to be amortized by June 30, 2021			$8,906,950
2. Supplemental contribution amount			$ 989,661 **

* *The amortization of the unfunded actuarial accrued liability (UAAL) using the current amortization method results in initial payments less than the "interest only" payment on the UAAL. Payments less than the interest only amount will result in the UAAL increasing for an initial period of time.*

** *The amortization factor as of July 1, 2012 is 9.0000.*

Development of Costs

Changes in Unfunded Actuarial Accrued Liability (UAAL)

	Year Ending June 30, 2012
A. Unfunded actuarial accrued liability at beginning of year	$ 3,692,642
B. Changes due to interest requirements and current rate of funding	
1. Normal cost and actual administrative expenses	6,871
2. Contributions	(466,211)
3. Interest on A., B.1. and B.2.	294,353
4. Total *(B.1. + B.2. + B.3.)*	(164,987)
C. Expected unfunded actuarial accrued liability at end of year *(A. + B.4.)*	3,527,655
D. Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected	
1. Age and Service Retirements	0
2. Disability Retirements	0
3. Death-in-Service Benefits	0
4. Withdrawals	0
5. Salary increases	0
6. Investment income	0
7. Mortality of annuitants	122,827
8. Other items	(36,348)
9. Total	86,479
E. Unfunded actuarial accrued liability at end of year before plan amendments and changes in actuarial assumptions (C. + D.9.)	3,614,134
F. Change in unfunded actuarial accrued liability due to changes in plan provisions	0
G. Change in unfunded actuarial accrued liability due to changes in actuarial assumptions	5,254,129
H. Change in unfunded actuarial accrued liability due to changes in decrement timing and miscellaneous methodology	38,687
I. Unfunded actuarial accrued liability at end of year (E. + F. + G. + H.)	$ 8,906,950

Development of Costs

Determination of Contribution Sufficiency/(Deficiency)*

The required contribution is defined in statutes as the sum of normal cost, a supplemental contribution to amortize the UAAL, and an allowance for expenses.

	Dollar Amount
A. Statutory contributions - Chapter 352C	
1. Employee contributions	$ 0
2. Employer contributions	0
3. Total	$ 0
B. Required contributions - Chapter 356	
1. Normal cost	$ 0
2. Supplemental contribution amortization of Unfunded Actuarial Accrued Liability by June 30, 2021	$ 989,661
3. Allowance for expenses	$ 1,000
4. Total	$ 990,661
C. Contribution Sufficiency/(Deficiency) *(A.3. - B.4.)*	$ (990,661)

* *Plan is funded by annual appropriations from the state's General Fund. Estimated benefit payments of $492,000 are expected to be paid during the upcoming fiscal year.*

Actuarial Basis

Actuarial Methods

All actuarial methods are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement, or the MSRS Board of Directors. Different methodologies may also be reasonable and results based on other methodologies would be different.

Actuarial Cost Method

An actuarial cost method is a set of techniques used by the actuary to develop contribution levels under a retirement plan. The actuarial cost method used in this valuation for all purposes is the Entry Age Actuarial Cost Method. Under this method, a normal cost is developed by amortizing the actuarial value of benefits expected to be received by each active participant (as a level percentage of pay) over the total working lifetime of that participant, from hire to termination. Age as of the valuation date was calculated based on the dates of birth provided by the Fund. Entry age for valuation purposes was calculated as the age on the valuation date minus the provided years of service on the valuation date.

To the extent that current assets and future normal costs do not support participants' expected future benefits, an unfunded actuarial accrued liability ("UAAL") develops. The UAAL is amortized over the statutory amortization period using level dollar. The total contribution developed under this method is the sum of normal cost, expenses, and the payment toward the UAAL.

Since this is a closed plan with no active members, normal cost and present value of normal costs is $0.

Asset Valuation Method

Market Value.

Payment on the Unfunded Actuarial Accrued Liability

Payment equals a level dollar amount each year to the statutory amortization date of June 30, 2021. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years. If the unfunded liability increases due to changes in benefits, assumptions, or methods, the statutory amortization date will be re-determined.

Funding Objective

This plan is currently funded on a pay-as-you-go basis by annual appropriations from the state's General Fund approximately equal to the amount of annual benefit payments and the fund's share of MSRS' annual administrative expenses.

Changes in Methods since Prior Valuation

None.

Actuarial Basis

Summary of Actuarial Assumptions

The following assumptions were used in valuing the liabilities and benefits under the plan. All actuarial assumptions are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement (LCPR), or the MSRS Board of Directors. These parties are responsible for selecting the assumptions used for this valuation. The assumptions prescribed are based on the last assumption review, dated January 2012, prepared by a former actuary, and are consistent with the *Alternate Assumptions* used in the 2011 valuation. Note that pre-retirement assumptions do not apply because all members are inactive and entitled to immediate benefits.

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.

Investment return	0.00% per annum post-retirement 0.00% per annum pre-retirement In order to comply with GASB, MSRS directed GRS to use a post-retirement investment return assumption of 0.0% instead of the statutory post-retirement investment return assumption of -2.0% until June 30, 2040 and -2.5% after June 30, 2040.
Benefit increases after retirement	Payment of 2.00% annual benefit increases after retirement are accounted for explicitly in the projected benefits.
Mortality rates	
Healthy Pre-retirement	RP-2000 employee generational mortality table, white collar adjustment, set forward three years for males and set back one year for females. Note that this assumption is not applicable, since all members are either receiving benefits or assumed to commence benefits immediately.
Healthy Post-retirement	RP-2000 annuitant generational mortality table, 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 95. 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
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	$1,000 per year.
Refund of contributions	All employees withdrawing after eight years of service were assumed to leave their contributions on deposit and receive a deferred annuitant benefit.
Commencement of deferred benefits	Terminated deferred members are assumed to begin receiving benefits at age 62 (or immediately if over age 62).
Percentage married	100% of members are assumed to be eligible for the automatic survivor benefit.
Age of spouse	Females are assumed to be three years younger than their male spouses.
Eligible children	Members are assumed to have two dependent children depending on member's age. Assumed first child born at member's age 28 and second child born at member's age 31.

Actuarial Basis

Summary of Actuarial Assumptions (Concluded)

Form of payment	Deferred members are assumed to elect a life annuity with automatic survivor benefits.
Unknown data for certain members	Retired and deferred members were assumed to have a spouse eligible for the automatic survivor benefit. Of the 11 retired and deferred members, nine were reported with a married status but only three were reported with a spouse benefit amount. All members were valued as a 50% joint & survivor annuity per MSRS' direction.
Changes in actuarial assumptions	The investment return assumption was changed from 8.5% pre-retirement and 6.5% post-retirement to 0% for pre- and post-retirement. Post-retirement benefit increases are now accounted for explicitly in the projected benefits. Healthy pre-retirement mortality was changed from 1983 Group Annuity Mortality set back four years for males and set back two years for females to RP-2000 employee generational mortality, white collar adjustment, set forward three years for males and set back one year for females. All retired and deferred members were assumed to have a spouse eligible for the automatic survivor benefit. Previously, only members reported with a spouse benefit were assumed to be eligible for the automatic survivor benefit. Healthy post-retirement mortality was changed from 1983 Group Annuity Mortality to RP-2000 annuitant generational mortality, white collar adjustment. Note that many of the stated changes do not apply because all members are inactive and entitled to immediate benefits.

Actuarial Basis

Summary of Plan Provisions

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	
Normal retirement benefit	
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%.
Early retirement benefit	
Age/Service requirement	Age 60 and eight years of Allowable Service.
Form of payment	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	Benefit recipients receive future annual 2.0% benefit increases. When the funding ratio of the State Employees Retirement Fund reaches 90% (on a Market Value of Assets basis), the benefit increase will revert to 2.5%. A benefit recipient who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Members receiving benefits for at least one month but less than 12 full months as of June 30 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.

Actuarial Basis

Summary of Plan Provisions (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.

Actuarial Basis

Summary of Plan Provisions (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.
Changes in plan provisions	None.

Plan Accounting Under GASB No. 25 (as amended by GASB No. 50)

Provided below is information required under GASB Statement No. 25 as amended by GASB Statement No. 50 - Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans as amended by GASB Statement No. 50.

Schedule of Funding Progress[1] *(Dollars in Thousands)*

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a)/(b)	Actual Covered Payroll (Previous FY) (c)	UAAL as a Percentage of Covered Payroll [(b)-(a)]/(c)
7-1-1991	$ 308,000	$ 2,249,000	$ 1,941,000	13.69%	$ 422,000	459.95 %
7-1-1992	334,000	2,380,000	2,046,000	14.03	378,000	541.27
7-1-1993	322,000	2,689,000	2,367,000	11.97	500,000	473.40
7-1-1994	361,000	2,848,000	2,487,000	12.68	411,000	605.11
7-1-1995	378,000	2,948,000	2,570,000	12.82	422,000	609.00
7-1-1996	412,000	2,983,000	2,571,000	13.81	456,000	563.82
7-1-1997	456,000	3,214,000	2,578,000	14.19	467,000	590.58
7-1-1998	500,000	3,369,000	2,869,000	14.84	461,000	622.34
7-1-1999	198,000	3,373,000	3,175,000	5.87	291,000	1091.07
7-1-2000	199,000	3,535,000	3,336,000	5.63	0	N/A
7-1-2001	201,000	3,775,000	3,574,000	5.32	0	N/A
7-1-2002	201,000	4,075,000	3,874,000	4.93	0	N/A
7-1-2003 [2]	-	-	-	-	-	-
7-1-2004	203,566	4,001,787	3,798,221	5.09	0	N/A
7-1-2005	204,297	4,065,308	3,861,011	5.03	0	N/A
7-1-2006	207,099	3,969,766	3,762,667	5.22	0	N/A
7-1-2007	211,540	3,969,250	3,757,710	5.33	0	N/A
7-1-2008	212,336	3,907,991	3,695,655	5.43	0	N/A
7-1-2009	213,165	3,885,951	3,672,786	5.49	0	N/A
7-1-2010	214,002	3,782,189	3,568,187	5.66	0	N/A
7-1-2011 [3]	0	7,610,176	7,610,176	0.00	0	N/A
7-1-2012	0	8,906,950	8,906,950	0.00	0	N/A

[1] Information prior to 2012 provided by prior actuary. See prior reports for additional detail.
[2] An actuarial valuation was not completed as of July 1, 2003.
[3] Based on alternate assumptions, including an investment return assumption of 0%.

Plan Accounting Under GASB No. 25 (as amended by GASB No. 50)

Schedule of Contributions from the Employer and Other Contributing Entities[1]
(Dollars in Thousands)

The GASB Statement No. 25 required and actual contributions are as follows:

Plan Year Ended June 30	Actuarially Required Contribution Rate/Amount[2] (a)	Actual Covered Payroll (b)	Actual Member Contributions (c)	Annual Required Contributions [(a)x(b)] - (c) = (d)	Actual Employer Contributions (e)	Percentage Contributed (e)/(d)
1991	34.84%	$ 422,000	$ 38,000	$ 109,000	$ 40,000	36.70%
1992	33.28	378,000	34,000	92,000	111,000	120.65
1993	36.23	500,000	45,000	136,000	88,000	64.71
1994	38.64	411,000	37,000	122,000	164,000	134.43
1995	42.00	422,000	38,000	139,000	165,000	118.71
1996	43.58	456,000	41,000	1,580	151,000	95.57
1997	43.49	467,000	42,000	161,000	167,000	103.73
1998	51.07	461,000	42,000	193,000	175,000	90.67
1999	51.66	291,000	26,000	124,000	40,000	32.26
2000	$ 321,000	0	0	321,000	306,000	95.33
2001	340,000	0	0	340,000	330,000	97.06
2002	371,000	0	0	371,000	354,000	95.42
2003	412,000	0	0	412,000	371,000	90.12
2004	412,000	0	0	412,000	382,679	92.88
2005	436,594	0	0	436,594	394,561	90.37
2006	464,671	0	0	464,671	416,638	89.66
2007	477,221	0	0	477,221	427,468	89.57
2008	506,141	0	0	506,141	434,894	85.92
2009	557,643	0	0	557,643	442,099	79.28
2010	601,274	0	0	601,274	453,201	75.37
2011	643,501	0	0	643,501	460,335	71.54
2012[3]	1,269,363	0	0	1,269,363	466,211	36.73
2013	990,661	0	0	990,661	N/A	N/A

[1] Information prior to 2012 provided by prior actuary. See prior reports for additional detail.
[2] Shown as a percent of payroll for years before 2000.
[3] Based on alternate assumptions, including an investment return assumption of 0%.

Glossary of Terms

Accrued Benefit Funding Ratio	The ratio of assets to Current Benefit Obligations.
Accrued Liability Funding Ratio	The ratio of assets to Actuarial Accrued Liability.
Actuarial Accrued Liability (AAL)	The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs.
Actuarial Assumptions	Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members; and other items.
Actuarial Cost Method	A procedure for allocating the Actuarial Present Value of Future Benefits between the Actuarial Present Value of future Normal Costs and the Actuarial Accrued Liability.
Actuarial Equivalent	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV)	The amount of funds required to provide a payment or series of payments in the future. It is determined by discounting the future payments with an assumed interest rate and with the assumed probability each payment will be made.
Actuarial Present Value of Projected Benefits	The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits, and inactive, non-retired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial Valuation	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB Statement No. 25, such as the Funded Ratio and the Annual Required Contribution (ARC).
Actuarial Value of Assets	The value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially required contribution (ARC).

Glossary of Terms (Continued)

Amortization Method	A method for determining the Amortization Payment. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. The stream of payments increases at the rate at which total covered payroll of all active members is assumed to increase.
Amortization Payment	That portion of the plan contribution or ARC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.
Amortization Period	The period used in calculating the Amortization Payment.
Annual Required Contribution (ARC)	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under GASB No. 25. The ARC consists of the Employer Normal Cost and Amortization Payment.
Augmentation	Annual increases to deferred benefits.
Closed Amortization Period	A specific number of years that is reduced by one each year, and declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc.
Current Benefit Obligations	The present value of benefits earned to the valuation date, based on current service and including future salary increases to retirement.
Employer Normal Cost	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Expected Assets	The present value of anticipated future contributions intended to fund benefits for current members.
Experience Gain/Loss	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two actuarial valuations. To the extent that actual experience differs from that assumed, Unfunded Actuarial Accrued Liabilities emerge which may be larger or smaller than projected. Gains are due to favorable experience, e.g., the assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, losses are the result of unfavorable experience, i.e., actual results that produce Unfunded Actuarial Accrued Liabilities which are larger than projected.

Glossary of Terms (Concluded)

GASB	Governmental Accounting Standards Board.
GASB No. 25 and GASB No. 27	These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 27 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 25 sets the rules for the systems themselves.
GASB No. 50	The accounting standard governing a state or local governmental employer's accounting for pensions.
Normal Cost	The annual cost assigned, under the Actuarial Cost Method, to the current plan year.
Projected Benefit Funding Ratio	The ratio of the sum of Actuarial Value of Assets and Expected Assets to the Actuarial Present Value of Projected Benefits.
Unfunded Actuarial Accrued Liability	The difference between the Actuarial Accrued Liability and Actuarial Value of Assets.
Valuation Date	The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date.