GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION OF MINNESOTA

LOCAL GOVERNMENT CORRECTIONAL SERVICE RETIREMENT PLAN

ACTUARIAL VALUATION REPORT AS OF JULY 1, 2014

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December 3, 2014

Public Employees Retirement Association of Minnesota
Local Government Correctional Service Retirement Plan
St. Paul, Minnesota

Dear Trustees of the Local Government Correctional Service Retirement Plan:

The results of the July 1, 2014 annual actuarial valuation of the Local Government Correctional Service Retirement Plan are presented in this report. This report was prepared at the request of the Board and is intended for use by the Board and staff and those designated or approved by the Board. This report may be provided to parties other than the Plan 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 Plan's funding progress and to determine the required contribution rate for the fiscal year beginning July 1, 2014. 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 Public Employees Retirement Association of Minnesota (PERA), 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 PERA.

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 Trustees. These parties are responsible for selecting the Plan's funding policy, actuarial valuation methods, asset valuation methods, and assumptions. 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. PERA is solely responsible for communicating to GRS any changes required thereto.

Guidance regarding the selection of economic assumptions for measuring pension obligations is provided by Actuarial Standards of Practice (ASOP) No. 27. A revision of ASOP No. 27, applicable to valuation dates on or after September 30, 2014, will guide assumption setting for future valuations. A recent review of inflation and investment return assumptions for accounting purposes resulted in a recommended range of 7% to 8% for assumed investment return. Additional review and discussion will be required before the next valuation.

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. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

This report should not be relied on for any purpose other than the purpose described herein. 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.

Brian B. Murphy and Bonita J. Wurst 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 Local Government Correctional Service Retirement Plan 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

Brian B. Murphy, FSA, EA, MAAA

Bonita J. Wurst

Bonita J. Wurst, ASA, EA, MAAA

BBM/BJW:bd

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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, 2014	Actuarial Valuation as of July 1, 2013
Statutory Contributions - Chapter 353E (% of Payroll)	14.58%	14.58%
Required Contributions - Chapter 356 (% of Payroll)	13.49%	14.32%
Sufficiency / (Deficiency)	1.09%	0.26%

The contribution sufficiency increased from 0.26% of payroll to 1.09% of payroll. The primary reason for the increased contribution sufficiency is the better than expected investment return during the past fiscal year.

The Plan Assets section provides detail on the Plan Assets used for the valuation including a development of the actuarial value of assets (AVA). The market value of assets (MVA) earned approximately 18.4% for the plan year ending June 30, 2014. The AVA earned approximately 13.0% for the plan year ending June 30, 2014 as compared to the assumed rate of 8.0%. The assumed rate is mandated by Minnesota Statutes.

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.

Accounting information prepared according to Statements No. 67 and No. 68 will be provided in a separate report.

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, 2014	July 1, 2013
Contributions (*% of Payroll*)		
Statutory - Chapter 353E	14.58%	14.58%
Required - Chapter 356	13.49%	14.32%
Sufficiency / (Deficiency)	1.09%	0.26%
Funding Ratios (*dollars in thousands*)		
Assets		
- Current assets (AVA)	$ 410,489	$ 346,778
- Current assets (MVA)	453,232	366,750
Accrued Benefit Funding Ratio		
- Current benefit obligations	$ 386,664	$ 344,438
- Funding ratio (AVA)	106.16%	100.68%
- Funding ratio (MVA)	117.22%	106.48%
Accrued Liability Funding Ratio		
- Actuarial accrued liability	$ 426,508	$ 381,179
- Funding ratio (AVA)	96.24%	90.98%
- Funding ratio (MVA)	106.27%	96.21%
Projected Benefit Funding Ratio		
- Current and expected future assets	$ 620,398	$ 551,071
- Current and expected future benefit obligations	597,012	545,494
- Projected benefit funding ratio (AVA)	103.92%	101.02%
Participant Data		
Active members		
- Number	3,603	3,493
- Projected annual earnings *(000s)*	182,353	174,707
- Average projected annual earnings	50,611	50,016
- Average age	40.3	40.6
- Average service	7.7	7.6
Service retirements	571	503
Survivors	36	31
Disability retirements	162	156
Deferred retirements	2,380	2,232
Terminated other non-vested	1,936	1,816
Total	**8,688**	**8,231**

Summary of Valuation Results

Effects of Changes

The following changes in plan provisions, actuarial assumptions, and methods were recognized as of July 1, 2014:

- The interest rate assumption used to determine optional form conversion factors was changed from 6.00% to 6.50% (with a future effective date).
- The methodology for valuing future post-retirement increases was clarified in statutes.
- Separate pre-retirement and post-retirement investment return rates which implicitly valued the post-retirement benefit increases were changed to a single investment return assumption and an explicit assumption for post-retirement benefit increases.

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

The combined impact of the above changes was to increase the accrued liability by $6.2 million and increase the required contribution by 0.4% of pay, as follows:

	Before Changes	Reflecting Assumption Changes
Normal Cost Rate, % of Pay	12.5%	12.6%
Amortization of Unfunded Accrued Liability, % of pay	0.5%	0.8%
Expenses (% of Pay)	0.1%	0.1%
Total Required Contribution, % of Pay	13.1%	13.5%
Accrued Liability Funding Ratio	97.7%	96.2%
Projected Benefit Funding Ratio	105.3%	103.9%
Unfunded Accrued Liability (in millions)	$9.8	$16.0

Valuation of Future Post-Retirement Benefit Increases

Benefit recipients received a post-retirement benefit increase of 1.0% on January 1, 2013 and January 1, 2014. Because the actuarial accrued liability funding ratio (on a market value of assets basis) was at least 90% as of July 1, 2013 and July 1, 2014, the benefit increase will revert to 2.5% on January 1, 2015.

If, after reverting to a 2.5% benefit increase, the funding ratio declines to less than 80% for one year or less than 85% for two consecutive years, the benefit increase will decrease to 1.0%.

In this valuation, we assumed all future postretirement benefit increases would equal 2.5%.

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 Public Employees Retirement Association of Minnesota. 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.
- **Additional schedules** shows the Schedule of Funding Progress and Schedule of Contributions.
- **Glossary** defines the terms used in this report.

Plan Assets

Statement of Fiduciary Net Position *(Dollars in Thousands)*

	Market Value	
Assets in Trust	**June 30, 2014**	**June 30, 2013**
Cash, equivalents, short term securities	$ 12,591	$ 10,314
Fixed income	105,666	84,021
Equity	277,713	219,130
SBI Alternative	57,118	53,048
Other	0	0
Total Assets in Trust	**$ 453,088**	**$ 366,513**
Assets Receivable	400	461
Amounts Payable	(256)	(224)
Net Assets Held in Trust for Pension Benefits	**$ 453,232**	**$ 366,750**

Plan Assets

Reconciliation of Plan Assets *(Dollars in Thousands)*

The following exhibit shows the revenue, expenses and resulting assets of the Fund as reported by the Public Employees Retirement Association for the Plan's prior two fiscal years.

Change in Assets	**Market Value**	
Year Ending	**June 30, 2014**	**June 30, 2013**
1. Fund balance at market value at beginning of year	$ 366,750	$ 305,408
2. Contributions		
a. Member	10,030	9,609
b. Employer	15,054	14,498
c. Other sources	0	0
d. Total contributions	25,084	24,107
3. Investment income		
a. Investment income/(loss)	70,079	44,879
b. Investment expenses	(628)	(501)
c. Net subtotal	69,451	44,378
4. Other	0	0
5. Total income: *(2.d.) + (3.c.) + (4.)*	**$ 94,535**	**$ 68,485**
6. Benefits Paid		
a. Annuity benefits	(6,711)	(5,757)
b. Refunds	(1,105)	(1,177)
c. Total benefits paid	(7,816)	(6,934)
7. Expenses		
a. Other	(1)	0
b. Administrative	(236)	(209)
c. Total expenses	(237)	(209)
8. Total disbursements: *(6.c.) + (7.c.)*	**(8,053)**	**(7,143)**
9. Fund balance at market value at end of year	**$ 453,232**	**$ 366,750**
10. Approximate return on market value of assets	18.4%	14.0%

Plan Assets

Actuarial Asset Value *(Dollars in Thousands)*

		June 30, 2014	June 30, 2013
1. Market value of assets available for benefits		$ 453,232	$ 366,750
2. Determination of average balance			
a. Total assets available at beginning of year		366,750	305,408
b. Total assets available at end of year		453,232	366,750
c. Net investment income for fiscal year		69,451	44,378
d. Average balance *[a. + b. - c.] / 2*		375,266	313,890
3. Expected return *[8.0% * 2.d.]*		30,021	25,111
4. Actual return		69,451	44,378
5. Current year asset gain/(loss) *[4. - 3.]*		39,430	19,267
6. Unrecognized asset returns			
	Original Amount	**Unrecognized Amount**	
a. Year ended June 30, 2014	$ 39,430	31,544	N/A
b. Year ended June 30, 2013	19,267	11,560	15,413
c. Year ended June 30, 2012	(16,702)	(6,681)	(10,021)
d. Year ended June 30, 2011	31,598	6,320	12,639
e. Year ended June 30, 2010	9,703	N/A	1,941
f. Unrecognized return adjustment		42,743	19,972
7. **Actuarial value at end of year** *(1. - 6.f.)*		**$ 410,489**	**$ 346,778**
8. Approximate return on actuarial value of assets during fiscal year		13.0%	7.3%
9. Ratio of actuarial value of assets to market value of assets		0.91	0.95

Membership Data

Distribution of Active Members

	Years of Service as of June 30, 2014									
Age	**<3***	**3 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35+**	**Total**
< 25	214	1								**215**
Avg. Earnings	23,725	10,024								**23,662**
25 - 29	370	88	77	2						**537**
Avg. Earnings	30,997	43,232	47,584	44,269						**35,430**
30 - 34	197	64	289	46						**596**
Avg. Earnings	30,197	43,488	50,422	54,795						**43,330**
35 - 39	107	39	141	146	19					**452**
Avg. Earnings	31,658	40,862	51,637	57,642	60,154					**48,275**
40 - 44	72	34	128	173	70					**477**
Avg. Earnings	34,960	40,850	52,231	62,266	60,985					**53,658**
45 - 49	44	22	91	168	109					**434**
Avg. Earnings	30,028	43,910	54,831	60,155	68,115					**57,160**
50 - 54	33	21	75	150	141					**420**
Avg. Earnings	33,717	40,835	53,118	58,826	65,074					**57,032**
55 - 59	17	8	46	108	109					**288**
Avg. Earnings	25,212	39,717	49,736	60,092	66,287					**58,157**
60 - 64	3	4	33	47	61					**148**
Avg. Earnings	15,213	35,062	47,386	52,193	62,851					**54,301**
65 - 69	1		7	11	11					**30**
Avg. Earnings	8,342		28,330	54,549	60,027					**48,899**
70+	3		1	1	1					**6**
Avg. Earnings	5,029		38,253	56,611	62,119					**28,678**
Total	**1,061**	**281**	**888**	**852**	**521**					**3,603**
Avg. Earnings	**29,530**	**42,212**	**50,973**	**59,069**	**64,863**					**47,898**

* *This exhibit does not reflect service earned in other PERA plans or Combined Service Annuity benefits. It should not be relied upon as an indicator of non-vested status.*

In each cell, the top number is the count of active participants for the age/service combination and the bottom number is average valuation earnings for the fiscal year ending on the valuation date.

Membership Data

Distribution of Service Retirements

	Years Retired as of June 30, 2014							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<50								
Avg. Benefit								
50 - 54	10	9						**19**
Avg. Benefit	9,615	7,687						**8,702**
55 - 59	18	55	8					**81**
Avg. Benefit	6,346	9,740	6,226					**8,639**
60 - 64	27	102	46	2				**177**
Avg. Benefit	11,843	10,416	6,644	3,822				**9,579**
65 - 69	13	73	67	24				**177**
Avg. Benefit	11,797	8,564	5,944	2,745				**7,021**
70 - 74		17	37	29				**83**
Avg. Benefit		5,429	6,123	2,392				**4,677**
75 - 79		3	10	17				**30**
Avg. Benefit		4,851	4,389	1,673				**2,896**
80 - 84				4				**4**
Avg. Benefit				940				**940**
85 - 89								
Avg. Benefit								
90+								
Avg. Benefit								
Total	**68**	**259**	**168**	**76**				**571**
Avg. Benefit	**10,052**	**9,264**	**6,096**	**2,304**				**7,499**

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, 2014							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<45	1	3	3	1				**8**
Avg. Benefit	7,158	6,110	5,205	213				**5,165**
45 - 49	1	4						**5**
Avg. Benefit	5,366	12,557						**11,119**
50 - 54	1	1	1					**3**
Avg. Benefit	16,182	6,821	2,286					**8,430**
55 - 59		1	1	1				**3**
Avg. Benefit		22,840	6,760	1,014				**10,205**
60 - 64		4	3	1				**8**
Avg. Benefit		6,544	6,641	1,217				**5,915**
65 - 69	1	2		2				**5**
Avg. Benefit	950	7,343		14,632				**8,980**
70 - 74		1	2					**3**
Avg. Benefit		2,143	3,802					**3,249**
75 - 79	1							**1**
Avg. Benefit	976							**976**
80 - 84								
Avg. Benefit								
85 - 89								
Avg. Benefit								
90+								
Avg. Benefit								
Total	**5**	**16**	**10**	**5**				**36**
Avg. Benefit	**6,126**	**8,827**	**5,219**	**6,342**				**7,104**

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

Distribution of Disability Retirements

	Years Disabled as of June 30, 2014 *							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
< 45		13	4					**17**
Avg. Benefit		12,795	13,046					**12,854**
45 - 49		6	7	1				**14**
Avg. Benefit		17,442	21,142	25,134				**19,841**
50 - 54		12	7	3				**22**
Avg. Benefit		11,077	15,739	24,081				**14,334**
55 - 59		9	16	8				**33**
Avg. Benefit		16,096	17,891	21,886				**18,370**
60 - 64		10	15	7				**32**
Avg. Benefit		13,048	16,941	13,637				**15,002**
65 - 69	11	14	3	3				**31**
Avg. Benefit	20,082	16,866	10,732	13,600				**17,097**
70 - 74		4	7					**11**
Avg. Benefit		12,561	12,035					**12,226**
75+			1	1				**2**
Avg. Benefit			13,137	516				**6,826**
Total	**11**	**68**	**60**	**23**				**162**
Avg. Benefit	**20,082**	**14,200**	**16,338**	**17,793**				**15,902**

** Based on effective date as provided by PERA, "Years Disabled" may reflect years since age 65 for members over age 65.*

In each cell, the top number is the count of disabled participants for the age/years disabled 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 7/1/2013	**3,493**	**2,232**	**1,816**	**503**	**156**	**31**	**8,231**
New members	497	0	0	0	0	0	**497**
Return to active	28	(13)	(15)	0	0	0	**0**
Terminated non-vested	(140)	0	140	0	0	0	**0**
Service retirements	(47)	(23)	0	70	0	0	**0**
Terminated deferred	(174)	174	0	0	0	0	**0**
Terminated refund/transfer	(47)	(43)	(28)	0	0	0	**(118)**
Deaths	(2)	(1)	(1)	(4)	(1)	0	**(9)**
New beneficiary	0	0	0	0	0	6	**6**
Disabled	(5)	0	0	0	5	0	**0**
Data correction	0	54	24	2	2	(1)	**81**
Net change	110	148	120	68	6	5	**457**
Members on 6/30/2014	**3,603**	**2,380**	**1,936**	**571**	**162**	**36**	**8,688**

Terminated Member Statistics	Deferred Retirement	Other Non-Vested	Total
Number	2,380	1,936	4,316
Average age	40.8	38.2	39.6
Average service	3.3	0.9	2.2
Average annual benefit, with augmentation to Normal Retirement Date and 30% CSA load	$5,062	N/A	$5,062
Average refund value, with 30% CSA load	$9,296	$1,241	$5,683

Development of Costs

Actuarial Valuation Balance Sheet *(Dollars in Thousands)*

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. The resources available to meet projected obligations for current members consist of current fund assets plus the present value of anticipated future contributions intended to fund benefits for current members. In the exhibit below, B.2 is the estimated present value of contributions to fund the normal cost rate for current members until their respective termination dates. Item B.1 is the present value of the total 14.58% statutory contribution net of normal cost and anticipated Plan expenses during the period from the valuation date to the statutory unfunded amortization date.

The contributions made in excess of amounts required for current benefit payments are accumulated as a reserve to help meet benefit payments in later years. It is this reserve system which permits the establishment of a level rate of contribution each year.

			June 30, 2014
A. Actuarial Value of Assets			$ 410,489
B. Expected Future Assets			
1. Present value of expected future statutory supplemental contributions			39,405
2. Present value of future normal cost contributions			170,504
3. Total expected future assets: *(1.) + (2.)*			$ 209,909
C. Total Current and Expected Future Assets: *(A.+ B.3)*			$ 620,398
D. Current Benefit Obligations*			
1. Benefit recipients	**Non-Vested**	**Vested**	**Total**
a. Service retirements	$ 0	$ 54,073	$ 54,073
b. Disability retirements	0	28,605	28,605
c. Survivors	0	2,960	2,960
2. Deferred retirements with augmentation	0	67,457	67,457
3. Former members without vested rights	1,178	0	1,178
4. Active members	6,318	226,073	232,391
5. Total Current Benefit Obligations	$ 7,496	$ 379,168	$ 386,664
E. Expected Future Benefit Obligations			$ 210,348
F. Total Current and Expected Future Benefit Obligations**			$ 597,012
G. Unfunded Current Benefit Obligations: *(D.5.) - (A.)*			(23,825)
H. Unfunded Current and Future Benefit Obligations: *(F.) - (C.)*			(23,386)
I. Accrued Benefit Funding Ratio: *(A.)/(D.)*			106.16%
J. Projected Benefit Funding Ratio: *(C.)/(F.)*			103.92%

* *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 (*Dollars in Thousands)*

	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			
a. Retirement annuities	$ 351,383	$ 108,336	$ 243,047
b. Disability benefits	44,452	24,921	19,531
c. Survivor's benefits	6,423	2,361	4,062
d. Deferred retirements	38,764	28,750	10,014
e. Refunds*	1,717	6,136	(4,419)
f. Total	$ 442,739	$ 170,504	$ 272,235
2. Deferred retirements with future augmentation	67,457	0	67,457
3. Former members without vested rights	1,178	0	1,178
4. Annuitants	85,638	0	85,638
5. Total	$ 597,012	$ 170,504	$ 426,508
B. Determination of Unfunded Actuarial Accrued Liability (UAAL)			
1. Actuarial accrued liability			$ 426,508
2. Current assets (AVA)			410,489
3. Unfunded actuarial accrued liability			$ 16,019
C. Determination of Supplemental Contribution Rate			
1. Present value of future payrolls through the amortization date of June 30, 2031			$2,153,292
2. Supplemental contribution rate: *(B.3.) / (C.1.)*			0.74% **

* *Includes non-vested refunds and non-married survivor benefits only.*

** *The amortization factor as of June 30, 2014 is 11.8084.*

Development of Costs

Changes in Unfunded Actuarial Accrued Liability (UAAL) *(Dollars in Thousands)*

	Year Ending June 30, 2014		
	Actuarial Accrued Liability	Current Assets	Unfunded Actuarial Accrued Liability
A. At beginning of year	$ 381,179	$ 346,778	$ 34,401
B. Changes due to interest requirements and current rate of funding			
1. Normal cost, including expenses	$ 22,250	0	$ 22,250
2. Benefit payments	(7,816)	(7,816)	0
3. Contributions	0	25,084	(25,084)
4. Interest on A., B.1., B.2. and B.3.	32,664	28,433	4,231
5. Total *(B.1. + B.2. + B.3. + B.4.)*	47,098	45,701	1,397
C. Expected unfunded actuarial accrued liability at end of year *(A. + B.5.)*			$ 35,798
D. Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected			
1. Age and Service Retirements			$ (1,178)
2. Disability Retirements			(1,287)
3. Death-in-Service Benefits			(38)
4. Withdrawals			$ 149
5. Salary increases			(4,304)
6. Investment income			(18,010)
7. Mortality of annuitants			(59)
8. Other items			(1,228)
9. Total			(25,955)
E. Unfunded actuarial accrued liability at end of year before Plan amendments and changes in actuarial assumptions *(C. + D.5.)*			$ 9,843
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			$ 6,176
H. Change in unfunded actuarial accrued liability due to changes in decrement timing and miscellaneous methodology			$ 0
I. Unfunded actuarial accrued liability at end of year *(E. + F. + G. + H.)**			$ 16,019

** The unfunded actuarial accrued liability on a market value of assets basis is $(26,724).*

Development of Costs

Determination of Contribution Sufficiency/(Deficiency) *(Dollars in Thousands)*

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

	Percent of Payroll	Dollar Amount
A. Statutory contributions - Chapter 353E		
1. Employee contributions	5.83%	$ 10,631
2. Employer contributions	8.75%	15,956
3. Total	14.58%	$ 26,587
B. Required contributions - Chapter 356		
1. Normal cost		
a. Retirement benefits	8.22%	$ 14,990
b. Disability benefits	2.00%	3,647
c. Survivors	0.17%	310
d. Deferred retirement benefits	1.79%	3,264
e. Refunds*	0.43%	784
f. Total	12.61%	$ 22,995
2. Supplemental contribution amortization of Unfunded Actuarial Accrued Liability by June 30, 2031	0.74%	$ 1,349
3. Allowance for expenses	0.14%	$ 255
4. Total	13.49% **	$ 24,599
C. Contribution Sufficiency/(Deficiency) *(A.3. - B.4.)*	1.09%	$ 1,988

Note: Projected annual payroll for fiscal year beginning on the valuation date: $182,353.

* *Includes non-vested refunds and non-married survivor benefits only.*

** *The required contribution on a market value of assets basis is 11.86% of payroll.*

Actuarial Basis

Actuarial Methods

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

Actuarial Cost Method

Actuarial Accrued Liability and required contributions in this report are computed using the Entry Age Normal Cost Method. This method is prescribed by Minnesota Statute. 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 percent of payroll assuming payroll increases. The total contribution developed under this method is the sum of normal cost, expenses, and the payment toward the UAAL.

Select and Ultimate Discount Rate Methodology

Based on direction from the LCPR's actuary, the select and ultimate discount rate methodology was applied to the entry age normal results as follows:

1. The present value of projected benefits was calculated using the prescribed select and ultimate discount rates.
2. An equivalent single interest rate that produced approximately the same present value of projected benefits was determined.
3. The equivalent single interest rate was used to determine the entry age normal accrued liability and normal cost.

The equivalent single interest rate used in this valuation was 8.43% (8.41% last year).

Valuation of Future Post-Retirement Benefit Increases

If the Plan has reached the funding ratio threshold required to pay a 2.5% benefit increase, Minnesota Statutes require the 2.5% benefit increase rate to be reflected in the liability calculations. If the Plan has not yet reached the funding ratio threshold required to pay a 2.5% benefit increase, Minnesota Statutes require a projection to be performed to determine the expected attainment of the funding ratio threshold, and the expected reversion to a 2.5% benefit increase rate must be reflected in the liability calculations.

Actuarial Basis

Actuarial Methods (Concluded)

Funding Objective
The fundamental financing objective of the fund is to establish contribution rates which, when expressed as a percentage of active member payroll, will remain approximately level from generation to generation and meet the required deadline for full funding.

Decrement Timing
All decrements are assumed to occur mid-year.

Asset Valuation Method
The assets are valued based on a five-year moving average of expected and market values (five-year average actuarial value) determined as follows:

- At the end of each plan year, an average asset value is calculated as the average of the market asset value at the beginning and end of the fiscal year net of investment income for the fiscal year;
- The investment gain or (loss) is taken as the excess of actual investment income over the expected investment income based on the average asset value as calculated above;
- The investment gain or (loss) so determined is recognized over five years at 20% per year; and
- The asset value is the sum of the market asset value plus the scheduled recognition of investment gains or (losses) during the current and the preceding four fiscal years.

Payment on the Unfunded Actuarial Accrued Liability
Payment equals a level percentage of payroll each year to the statutory amortization date of June 30, 2031 assuming payroll increases of 3.75% per annum. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount is amortized over 30 years as a level percentage of payroll. If the unfunded liability increases due to changes in benefits, assumptions, or methods, the statutory amortization date will be re-determined. Projected payroll is multiplied by 0.959 in the determination of the present value of future payroll to account for timing differences (as required by the Standards for Actuarial Work).

Changes in Methods since Prior Valuation
The methodology for valuing future post-retirement increases was clarified in Minnesota Statutes.

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 Board of Trustees. These parties are responsible for selecting the assumptions used for this valuation. The assumptions prescribed are based on the last experience study, dated February 2012, prepared by a former actuary.

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	Select and Ultimate Rates: July 1, 2014 to June 30, 2017 8.00% per annum July 1, 2017 and later 8.50% per annum
Benefit increases after retirement	2.5% per annum
Salary increases	Reported salary at valuation date increased according to the rate table, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for members with less than one year of service earned during the year.
Payroll growth	3.75% per year.
Mortality rates	
Healthy Pre-retirement	RP-2000 employee generational mortality table projected with scale AA, white collar adjustment.
Healthy Post-retirement	RP-2000 annuitant generational mortality table projected with scale AA, white collar adjustment. The RP-2000 employee mortality table as published by the Society of Actuaries (SOA) contains mortality rates for ages 15 to 70 and the annuitant mortality table contains mortality rates for ages 50 to 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	RP-2000 disabled mortality 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	Select and Ultimate rates based on actual experience. Ultimate rates after the third year are shown in rate table. Select rates in the first three years are: Year — Select Withdrawal Rates 1 — 25% 2 — 20% 3 — 15%

Actuarial Basis

Summary of Actuarial Assumptions (Continued)

Disability	Age-related rates based on experience; see table of sample rates. All incidences are assumed to be duty-related.
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	Prior year administrative expenses expressed as percentage of prior year projected payroll.
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 55.
Percentage married	85% of active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Females are assumed to be three years younger than their male spouses. For members in payment status, actual spouse date of birth is used, if provided.
Eligible children	Retiring members are assumed to have no dependent children.
Form of payment	Married members retiring from active status are assumed to elect subsidized joint and survivor form of annuity as follows: Males: 5% elect 25% Joint & Survivor option 10% elect 50% Joint & Survivor option 10% elect 75% Joint & Survivor option 35% elect 100% Joint & Survivor option Females: 5% elect 25% Joint & Survivor option 5% elect 50% Joint & Survivor option 5% elect 75% Joint & Survivor option 5% elect 100% Joint & Survivor option Remaining married members and unmarried members are assumed to elect the Straight Life option. Members receiving deferred annuities (including current terminated deferred members) are assumed to elect a straight life annuity.
Eligibility testing	Eligibility for benefits is determined based upon the age nearest birthday and service on the date the decrement is assumed to occur.
Decrement operation	Withdrawal decrements do not operate during retirement eligibility.
Service credit accruals	It is assumed that members accrue one year of service credit per year.

Actuarial Basis

Summary of Actuarial Assumptions (Continued)

Unknown data for certain members	To prepare this report, GRS has used and relied on participant data supplied by the Fund. Although GRS has reviewed the data in accordance with Actuarial Standards of Practice No. 23, GRS has not verified or audited any of the data or information provided. In cases where submitted data was missing or incomplete, the following assumptions were applied: <u>Data for active members:</u> There were 45 members reported with zero salary. We used prior year salary (39 members), if available; otherwise high five salary with a 10% load to account for salary increases (four members). If neither prior year salary or high five salary was available, we assumed a value of $35,000 (three members). There were also 38 members reported without a gender and one member reported without a date of birth. We assumed a date of birth of July 1, 1974 and male gender. <u>Data for terminated members:</u> We calculated benefits for these members using the reported Average Salary and credited service. There were no members reported without Average Salary. If credited service was not reported (33 members), we used elapsed time from hire date to termination date (19 members), otherwise we assumed nine years of service (14 members). If termination date was not reported (15 members), we assumed the termination date was equal to the hire date plus credited service, otherwise the valuation date. There were no members reported without a date of birth. There was one member reported without a gender; male was assumed. <u>Data for retired members:</u> There were no members reported without a date of birth, gender or benefit.
Changes in actuarial assumptions	Separate pre-retirement and post-retirement investment return rates which implicitly valued the post-retirement benefit increases were changed to a single investment return assumption and an explicit assumption for post-retirement benefit increases.

Actuarial Basis

Summary of Actuarial Assumptions (Continued)

	Rate (%)*					
	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality	
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
20	0.03%	0.02%	0.03%	0.02%	2.26%	0.75%
25	0.04	0.02	0.04	0.02	2.26	0.75
30	0.04	0.03	0.04	0.03	2.26	0.75
35	0.06	0.05	0.06	0.05	2.26	0.75
40	0.09	0.06	0.09	0.06	2.26	0.75
45	0.13	0.10	0.13	0.10	2.26	0.75
50	0.60	0.24	0.20	0.16	2.90	1.15
55	0.54	0.35	0.27	0.24	3.54	1.65
60	0.66	0.56	0.43	0.38	4.20	2.18
65	1.16	0.91	0.67	0.59	5.02	2.80
70	1.93	1.52	0.98	0.88	6.26	3.76

* *Generally, mortality rates are expected to increase as age increases. Due to the combination of pre-retirement rates, post-retirement rates, the white collar adjustment, and Projection Scale AA, the prescribed mortality tables have a few ages where assumed mortality decreases slightly instead of increases. We have used the rates as prescribed, but note that the prescribed assumption may not be reasonable at every age. If the rates were reasonably adjusted so that they decreased at all ages, we would not expect the valuation results to be materially different.*

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

	Withdrawal Rates		Disability Retirement	
Age	**Male**	**Female**	**Male**	**Female**
20	14.70%	14.20%	0.04%	0.04%
25	14.70%	14.20%	0.06%	0.06%
30	9.10%	11.40%	0.10%	0.08%
35	6.00%	8.60%	0.18%	0.11%
40	4.40%	6.90%	0.23%	0.18%
45	3.40%	4.30%	0.34%	0.39%
50	2.40%	3.10%	0.55%	0.70%
55	1.40%	2.20%	0.88%	1.18%
60	0.00%	0.00%	1.41%	2.41%
65	0.00%	0.00%	1.67%	2.67%

Actuarial Basis

Summary of Actuarial Assumptions (Concluded)

Age	Retirement
50	3%
51	2
52	2
53	2
54	5
55	20
56	8
57	8
58	8
59	8
60	15
61	15
62	30
63	30
64	30
65	40
66	40
67	40
68	40
69	40
70+	100

Salary Scale	
Age	Increase
20	9.00%
25	7.75
30	6.75
35	6.25
40	5.75
45	5.00
50	5.00
55	4.75
60	4.25
65	4.00
70+	4.00

Actuarial Basis

Summary of Plan Provisions

Following is a summary of the major plan provisions used in the valuation of this report. PERA 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	Local government employees in covered correctional service for a county administered jail or correctional facility or in a regional correctional facility administered by multiple counties, who are directly responsible for security, custody and control of persons confined in jail or facility, who are expected to respond to incidents within the jail or facility, and who are not members of the Public Employees Police and Fire Fund.
Contributions	Shown as a percent of salary: <u>Member</u> 5.83% <u>Employer</u> 8.75% Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).
Allowable service	Local Government Correctional Service during which member contributions were made (effective July 1, 1999). May also include certain leaves of absence, military service and periods while temporary Worker's Compensation is paid.
Salary	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes unused annual leaves and sick leave payments, severance payments, Workers' Compensation benefits and employer-paid flexible spending accounts, cafeteria plans, healthcare expense accounts, day-care expenses, fringe benefits and the cost of insurance coverage.
Average salary	Average of the five highest successive years of salary. Average Salary is based on all Allowable Service if less than five years.
Vesting	Hired before July 1, 2010: 100% vested after 3 years of Allowable Service. Hired after June 30, 2010: 50% vested after 5 years of Allowable Service; 60% vested after 6 years of Allowable Service; 70% vested after 7 years of Allowable Service; 80% vested after 8 years of Allowable Service; 90% vested after 9 years of Allowable Service; and 100% vested after 10 years of Allowable Service.
Retirement	
<u>Normal retirement benefit</u>	
Age/service requirement	Age 55 and vested. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.
Amount	1.9% of Average Salary for each year of Allowable Service, pro rata for completed months.

Actuarial Basis

Summary of Plan Provisions (Continued)

Retirement (Continued)

Early Retirement

Age/service requirement	Age 50 and vested.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with actuarial reduction to commencement age assuming 3% augmentation to age 55 (2.50% if hired after June 30, 2006).
Form of payment	Life annuity. Actuarially equivalent options are: 25%, 50%, 75% or 100% Joint and Survivor. If a Joint and Survivor benefit is elected and the beneficiary predeceases the annuitant, the annuitant's benefit increases to the Life Annuity amount. This "bounce back" is subsidized by the plan.
Benefit increases	Benefit recipients received a post-retirement benefit increase of 1.0% on January 1, 2013 and January 1, 2014. If the actuarial accrued liability funding ratio (on a market value of assets basis) reaches 90% for two consecutive years, the benefit increase will revert to 2.5%. If, after reverting to a 2.5% benefit increase, the funding ratio declines to less than 80% for one year or less than 85% for two consecutive years, the benefit increase will decrease to 1.0%. 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

Duty Disability

Age/service requirement	Member who cannot perform his duties as a direct result of a disability relating to an act of duty specific to protecting the property and personal safety of others.
Amount	47.50% of Average Salary plus 1.90% of Average Salary for each year in excess of 25 years of Allowable Service (pro rata for completed months). Payment begins at disability and ends at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.

Regular Disability

Age/service requirement	At least one year of Allowable Service and a disability preventing member from performing normal duties that arise out of activities not related to covered employment or while at work, activities related to duties that do not present inherent dangers specific to occupation.

Actuarial Basis

Summary of Plan Provisions (Continued)

Disability (Continued)	
Amount	Normal Retirement Benefit based on Allowable Service (minimum of 10 years) and Average Salary at disability. Payment begins at disability and ends at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.
Retirement benefit	
Age/service requirement	Age 65 with continued disability.
Amount	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before age 65 or the normal retirement benefit available at age 65, or an actuarially equivalent optional annuity.
Form of payment	Same as for retirement.
Benefit increases	Same as for retirement.
Death	
Surviving spouse benefit	
Age/service requirement	Vested active member at any age or vested former member age 50 or older who dies before retirement or disability benefit commences. If an active member dies, benefits may commence immediately, regardless of age.
Amount	Surviving spouse receives the 100% joint and survivor benefit using the Normal Retirement formula above. If commencement is prior to age 55, the appropriate early retirement formula described above applies except that one-half the monthly reduction factor is used from age 50 to the commencement age. In lieu of this benefit, the surviving spouse may elect a refund of contributions with interest or an actuarially equivalent term certain annuity (lump sum payable to estate at death).
Benefit increases	Same as for retirement.
Surviving dependent children's benefit	
Age/service requirement	If no surviving spouse, all dependent children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased member.
Amount	Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is to be proportionally divided among surviving children.
Refund of contributions	
Age/service requirement	Active employee dies and survivor benefits paid are less than member's contributions or a former employee dies before annuity begins.

Actuarial Basis

Summary of Plan Provisions (Continued)

Death (Continued)	
Amount	If no survivor benefits are paid, the member's contributions with 6.00% interest until June 30, 2011; 4.00% interest thereafter. If survivor benefits are paid and accumulated contributions exceed total payments to the surviving spouse and children, then the remaining contributions are paid out.
Termination	
Refund of contributions	
Age/service requirement	Termination of local government service.
Amount	If member terminated before July 1, 2011, member's contributions with 6.00% interest compounded annually until June 30, 2011; 4.00% interest thereafter. If member terminated after June 30, 2011, member's contributions credited with 4% interest compounded annually.
Deferred benefit	
Age/service requirement	A deferred annuity may be elected in lieu of a refund if vested. Partially or fully vested.
Amount	Benefit computed under law in effect at termination and increased by the following percentage (augmentation), compounded annually, if termination of employment is prior to January 1, 2012: (a.) 3.00% (2.50% if hired after June 30, 2006) until the earlier of January 1 of the year following attainment of age 55 and January 1, 2012; (b.) 5.00% (2.50% if hired after June 30, 2006) thereafter until the earlier of the date the annuity begins and January 1, 2012; and (c.) 1.00% from January 1, 2012 thereafter. If a member terminates employment after 2011, they are not eligible for augmentation.
Form of payment	Same as for retirement.
Optional form conversion factors	Actuarially equivalent factors based on the RP-2000 mortality table for healthy annuitants, white collar adjustment, projected to 2026 using scale AA, no setbacks, blended 65% males and 6.0% interest. The interest rate assumption will change to 6.5% on the earlier of the effective date of the next mortality adjustment or July 1, 2017.

Actuarial Basis

Summary of Plan Provisions (Concluded)

Combined service annuity	Members are eligible for combined service benefits if they: (a.) Meet minimum retirement age for each plan participated in and total public service meets the vesting requirements of each plan; or (b.) Have three or more years of service under PERA and the covered fund(s) (if hired prior to July 1, 2010). Other requirements for combined service include: (a.) Member must have at least six months of allowable service credit in each plan worked under; and (b.) Member may not be in receipt of a benefit from another plan. 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	The interest assumption used to determine optional form conversion factors was changed (with a future effective date).

Additional Schedules

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)
7-1-2001	$ 25,014	$ 25,453	$ 439	98.28 %	$ 91,025	0.48 %
7-1-2002	40,105	42,144	2,039	95.16	101,309	2.01
7-1-2003	56,487	62,542	6,055	90.32	110,296	5.49
7-1-2004	75,515	85,693	10,178	88.12	109,600	9.29
7-1-2005	98,156	108,926	10,770	90.11	116,849	9.22
7-1-2006	125,776	133,306	7,530	94.35	125,189	6.01
7-1-2007	159,548	162,169	2,621	98.38	134,117	1.95
7-1-2008	192,937	192,572	(365)	100.19	154,202	(0.24)
7-1-2009	217,577	229,383	11,806	94.85	154,650	7.63
7-1-2010	242,019	248,867	6,848	97.25	154,777	4.42
7-1-2011	274,704	284,593	9,889	96.53	165,077 [2]	5.99
7-1-2012	306,454	343,199	36,745	89.29	164,340 [2]	22.36
7-1-2013	346,778	381,179	34,401	90.98	164,820 [2]	20.87
7-1-2014	410,489	426,508	16,019	96.24	172,041 [2]	9.31

[1] *Information prior to 2012 provided by prior actuaries. See prior reports for additional detail.*
[2] *Assumed equal to actual member contributions divided by 5.83%.*

Additional Schedules

Schedule of Contributions from the Employer and Other Contributing Entities[1]

(Dollars in Thousands)

Plan Year Ended June 30	Actuarially Required Contribution Rate (a)	Actual Covered Payroll (b)	Actual Member Contributions (c)	Annual Required Contributions [(a)x(b)] - (c) = (d)	Actual Employer Contributions[2] (e)	Percentage Contributed (e)/(d)
2001	14.36 %	$ 91,025	$ 5,308	$ 7,763	$ 8,054	103.75%
2002	14.21	101,309	5,882	8,514	8,830	103.71
2003	14.10	110,296	6,430	9,122	9,645	105.74
2004	14.15	109,600	6,672	8,837	10,029	113.50
2005	13.06	116,849	7,192	8,068	10,814	134.03
2006	13.09	125,189	7,881	8,507	11,826	139.02
2007	12.71	134,117	8,335	8,712	12,499	143.48
2008	12.37	154,202	8,922	10,153	13,388	131.87
2009	13.50	154,650	9,409	11,469	14,124	123.15
2010	14.03	154,777	9,442	12,273	14,170	115.46
2011	13.21	165,077 [3]	9,624	12,183	14,289	117.29
2012	13.42	164,340 [3]	9,581	12,473	14,320	114.80
2013	14.45	164,820 [3]	9,609	14,207	14,498	102.04
2014	14.32	172,041 [3]	10,030	14,606	15,054	103.07
2015	13.49					

[1] *Information prior to 2012 provided by prior actuary. See prior reports for additional detail.*
[2] *Includes contributions from other sources (if applicable).*
[3] *Assumed equal to actual member contributions divided by 5.83%.*

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 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.
GASB No. 67 and GASB No. 68	Statements No. 67 and No. 68, issued in June 2012, replace the requirements of Statements No. 25 and No. 27, respectively. Statement No. 68, effective for the fiscal year beginning July 1, 2014, sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67, effective for the fiscal year beginning July 1, 2013, sets the rules for the systems themselves. Accounting information prepared according to Statements No. 67 and No. 68 will be provided in a separate report.
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.