Gabriel Roeder Smith & Company
Consultants & Actuaries

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION OF MINNESOTA

GENERAL EMPLOYEES RETIREMENT PLAN

ACTUARIAL VALUATION REPORT AS OF JULY 1, 2014

GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries

100 South Fifth Street
Suite 1900
Minneapolis, MN 55402-1267

612.605.6200 phone
612.605.6203 fax
www.gabrielroeder.com

December 3, 2014

Public Employees Retirement Association of Minnesota
General Employees Retirement Plan
St. Paul, Minnesota

Dear Trustees of the General Employees Retirement Plan:

The results of the July 1, 2014 annual actuarial valuation of the General Employees 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 General Employees 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

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, 2014	Actuarial Valuation as of July 1, 2013
Statutory Contributions - Chapter 353 (% of Payroll)	13.75%	13.50%
Required Contributions - Chapter 356 (% of Payroll)	15.80%	15.15%
Sufficiency/(Deficiency)	(2.05)%	(1.65)%

The statutory contribution deficiency increased from 1.65% of payroll to 2.05% of payroll. The primary reason for the increase is the recognition of additional liability due to the assumption that the post-retirement benefit increase rate will change from 1.0% to 2.5% in 2027.

Based on the actuarial value of assets and scheduled contribution rates, statutory contributions are not sufficient to fully amortize the unfunded actuarial accrued liability over the statutory amortization period of 19 years. However, on a market value of assets basis, contributions are sufficient by 0.52% of payroll. Additionally, member and employer contribution rates are scheduled to increase to 14.00% of pay on January 1, 2015.

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 18.5% for the plan year ending June 30, 2014. The AVA earned approximately 14.1% 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 353	13.75%	13.50%
Required - Chapter 356	15.80%	15.15%
Sufficiency/(Deficiency)	(2.05)%	(1.65)%
Funding Ratios (*dollars in thousands*)		
Accrued Benefit Funding Ratio		
- Current assets (AVA)	$ 15,644,540	$ 14,113,295
- Current benefit obligations	20,246,103	18,480,077
- Funding ratio	77.27%	76.37%
Accrued Liability Funding Ratio		
- Current assets (AVA)	15,644,540	$ 14,113,295
- Market value of assets (MVA)	17,404,822	15,084,608
- Actuarial accrued liability	$ 21,282,504	19,379,769
- Funding ratio (AVA)	73.51%	72.82%
- Funding ratio (MVA)	81.78%	77.84%
Projected Benefit Funding Ratio		
- Current and expected future assets	$ 22,716,547	$ 20,846,228
- Current and expected future benefit obligations	24,123,025	21,915,442
- Projected benefit funding ratio	94.17%	95.12%
Participant Data		
Active members		
- Number	143,343	139,763
- Projected annual earnings *(000s)*	$ 5,392,643	$ 5,256,798
- Average projected annual earnings	$ 37,621	$ 37,612
- Average age	47.0	47.3
- Average service	10.7	11.0
Service retirements	71,740	67,861
Survivors	7,690	7,539
Disability retirements	3,704	3,683
Deferred retirements	48,505	45,946
Terminated other non-vested	121,019	119,509
Total	**396,001**	**384,301**

Summary of Valuation Results

Effects of Changes

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

- Member contribution rates will increase from 6.25% to 6.50% of pay and employer contribution rates will increase from 7.25% to 7.50% of pay effective January 1, 2015. Since the contribution increases will be effective January 1, 2015, the statutory contribution rates shown in this report for the fiscal year ending June 30, 2015 reflect half a year at the rate as of July 1, 2014 and half a year at the rate as of January 1, 2015.
- The interest rate assumption used to determine optional form conversion factors was changed (with a future effective date).
- The methodology for valuing future post-retirement increases was clarified in statutes, and the assumed post-retirement benefit increase rate was changed from 1.0% per year to 1.0% per year through 2026 and 2.5% per year thereafter.
- Statutes were changed to provide for extension of the amortization period under certain circumstances. As a result of this as well as the change in the assumed post-retirement benefit increase rate, the amortization date was changed from June 30, 2031 to June 30, 2033.
- 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 $1.2 billion and increase the required contribution by 1.9% of pay, as follows:

	Before Plan Changes	Reflecting Plan Changes	Reflecting Plan and Assumption Changes	Reflecting Plan, Assumption, and Amortization Changes
Normal Cost Rate, % of Pay	6.8%	6.8%	7.4%	7.4%
Amortization of Unfunded Accrued Liability, % of pay	6.9%	6.9%	8.9%	8.2%
Expenses (% of Pay)	0.2%	0.2%	0.2%	0.2%
Total Required Contribution, % of Pay	13.9%	13.9%	16.5%	15.8%
Accrued Liability Funding Ratio	78.0%	78.0%	73.5%	73.5%
Projected Benefit Funding Ratio	98.1%	98.8%	92.4%	94.2%
Unfunded Accrued Liability (in billions)	$4.4	$4.4	$5.6	$5.6

Summary of Valuation Results

Valuation of Future Post-Retirement Benefit Increases

Benefit recipients receive a future annual 1.0% post-retirement benefit increase. If the funding ratio reaches 90% (based on a 2.5% post-retirement benefit increase assumption) 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%.

To determine an assumption regarding a future change in the post-retirement benefit increase, we performed a projection of liabilities and assets based on the following methods and assumptions:

- Future investment returns of 8.00% through June 30, 2017; 8.50% thereafter;
- Open group; stable active population (new member profile based on average new members hired in recent years);
- The post-retirement benefit increase rate is assumed to be 1.0% per year until the funding ratio threshold required to pay a 2.5% post-retirement benefit increase is reached; and
- Current statutory contributions (i.e., not including potential contribution increases under the contribution stabilizer statutes).

Based on these assumptions and methods, the projection indicates that this plan is expected to attain the funding ratio threshold required to pay a 2.5% post-retirement benefit increase in the year 2026, and that the plan would begin paying 2.5% benefit increases on January 1, 2027. This assumption is reflected in our calculations.

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.
- **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	$ 457,676	$ 391,295
Fixed income	4,061,777	3,462,343
Equity	10,675,284	9,029,914
SBI Alternative	2,195,599	2,186,034
Other	7,626	8,066
Total Assets in Trust	**$ 17,397,962**	**$ 15,077,652**
Assets Receivable	16,199	17,569
Amounts Payable	(9,339)	(10,613)
Net Assets Held in Trust for Pension Benefits	**$ 17,404,822**	**$ 15,084,608**

Plan Assets

Reconciliation of Plan Assets *(Dollars in Thousands)*

The following exhibits show the revenue, expenses and resulting assets of the Fund as reported by the Public Employees Retirement Association for the 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	$ 15,084,608	$ 13,577,653
2. Contributions		
a. Member	334,495	327,933
b. Employer	382,251	372,652
c. Other sources	0	0
d. Total contributions	716,746	700,585
3. Investment income		
a. Investment income/(loss)	2,785,047	1,924,422
b. Investment expenses	(24,193)	(20,676)
c. Net subtotal	2,760,854	1,903,746
4. Other	605	0
5. Total income: *(2.d.) + (3.c.) + (4.)*	**$ 3,478,205**	**$ 2,604,331**
6. Benefits Paid		
a. Annuity benefits	(1,109,866)	(1,051,591)
b. Refunds	(38,264)	(35,865)
c. Total benefits paid	(1,148,130)	(1,087,456)
7. Expenses		
a. Other	0	(23)
b. Administrative	(9,861)	(9,897)
c. Total expenses	(9,861)	(9,920)
8. Total disbursements: *(6.c.) + (7.c.)*	**(1,157,991)**	**(1,097,376)**
9. Fund balance at market value at end of year	**$ 17,404,822**	**$ 15,084,608**
10. Approximate return on market value of assets	18.5%	14.2%

Plan Assets

Actuarial Asset Value *(Dollars in Thousands)*

		June 30, 2014	June 30, 2013
1. Market value of assets available for benefits		$ 17,404,822	$ 15,084,608
2. Determination of average balance			
a. Total assets available at beginning of year		15,084,608	13,577,653
b. Total assets available at end of year		17,404,822	15,084,608
c. Net investment income for fiscal year		2,760,854	1,903,746
d. Average balance *[a. + b. - c.] / 2*		14,864,288	13,379,258
3. Expected return *[8.0% * 2.d.]*		1,189,143	1,070,341
4. Actual return		2,760,854	1,903,746
5. Current year asset gain/(loss) *[4. - 3.]*		1,571,711	833,405
6. Unrecognized asset returns			
	Original Amount	**Unrecognized Amount**	
a. Year ended June 30, 2014	$ 1,571,711	$ 1,257,369	N/A
b. Year ended June 30, 2013	833,405	500,043	$ 666,724
c. Year ended June 30, 2012	(821,722)	(328,689)	(493,033)
d. Year ended June 30, 2011	1,657,793	331,559	663,118
e. Year ended June 30, 2010	672,522	N/A	134,504
f. Unrecognized return adjustment		1,760,282	971,313
7. **Actuarial value at end of year** *(1. - 6.f.)*		**$ 15,644,540**	**$ 14,113,295**
8. Approximate return on actuarial value of assets during fiscal year		14.1%	6.2%
9. Ratio of actuarial value of assets to market value of assets		0.90	0.94

Membership Data

Distribution of Active Members (Total)

	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	4,742	204	20							**4,966**
Avg. Earnings	14,094	21,641	17,182							**14,417**
25 - 29	7,967	1,688	1,304	24						**10,983**
Avg. Earnings	22,033	29,668	34,981	32,095						**24,766**
30 - 34	5,900	1,738	3,911	847	21					**12,417**
Avg. Earnings	25,908	34,349	42,449	43,498	46,435					**33,534**
35 - 39	4,727	1,472	3,496	2,463	667	7				**12,832**
Avg. Earnings	24,250	32,951	43,210	52,159	51,611	54,637				**37,209**
40 - 44	4,391	1,615	3,761	2,726	2,049	447	9			**14,998**
Avg. Earnings	22,023	27,608	37,634	50,300	57,321	54,346	52,765			**37,483**
45 - 49	4,029	1,626	4,524	3,318	2,505	1,698	671	19		**18,390**
Avg. Earnings	21,124	25,549	32,356	41,897	52,838	59,098	57,578	49,835		**37,212**
50 - 54	3,250	1,474	4,580	4,507	3,674	2,412	2,170	890	45	**23,002**
Avg. Earnings	22,333	26,500	30,461	36,227	43,808	55,468	61,167	58,579	55,164	**38,976**
55 - 59	2,713	1,080	3,341	3,778	3,963	3,206	2,527	1,687	800	**23,095**
Avg. Earnings	21,676	27,022	32,061	35,593	38,565	45,871	57,647	63,348	58,749	**40,226**
60 - 64	1,611	752	2,091	2,375	2,404	2,474	2,092	1,002	1,119	**15,920**
Avg. Earnings	18,162	25,878	31,623	36,012	38,430	42,330	51,275	62,128	64,840	**40,173**
65 - 69	795	318	851	709	570	564	453	201	232	**4,693**
Avg. Earnings	11,979	15,170	23,644	32,134	39,277	41,846	48,797	55,029	67,374	**32,396**
70+	433	205	518	384	183	124	83	57	60	**2,047**
Avg. Earnings	8,203	9,281	12,746	17,245	24,317	31,291	39,572	37,984	50,806	**17,346**
Total	**40,558**	**12,172**	**28,397**	**21,131**	**16,036**	**10,932**	**8,005**	**3,856**	**2,256**	**143,343**
Avg. Earnings	**21,337**	**28,201**	**34,878**	**40,457**	**44,788**	**49,221**	**56,237**	**61,055**	**62,374**	**35,834**

* *This exhibit does not reflect service earned in other PERA 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 Active Members (Basic)

	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										
Avg. Earnings										
25 - 29										
Avg. Earnings										
30 - 34										
Avg. Earnings										
35 - 39										
Avg. Earnings										
40 - 44										
Avg. Earnings										
45 - 49										
Avg. Earnings										
50 - 54										
Avg. Earnings										
55 - 59										
Avg. Earnings										
60 - 64										
Avg. Earnings										
65 - 69									5	**5**
Avg. Earnings									50,784	**50,784**
70+									3	**3**
Avg. Earnings									60,437	**60,437**
Total									**8**	**8**
Avg. Earnings									**54,404**	**54,404**

* *This exhibit does not reflect service earned in other PERA 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 Active Members (Coordinated)

	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	4,742	204	20							**4,966**
Avg. Earnings	14,094	21,641	17,182							**14,417**
25 - 29	7,967	1,688	1,304	24						**10,983**
Avg. Earnings	22,033	29,668	34,981	32,095						**24,766**
30 - 34	5,900	1,738	3,911	847	21					**12,417**
Avg. Earnings	25,908	34,349	42,449	43,498	46,435					**33,534**
35 - 39	4,727	1,472	3,496	2,463	667	7				**12,832**
Avg. Earnings	24,250	32,951	43,210	52,159	51,611	54,637				**37,209**
40 - 44	4,391	1,615	3,761	2,726	2,049	447	9			**14,998**
Avg. Earnings	22,023	27,608	37,634	50,300	57,321	54,346	52,765			**37,483**
45 - 49	4,029	1,626	4,524	3,318	2,505	1,698	671	19		**18,390**
Avg. Earnings	21,124	25,549	32,356	41,897	52,838	59,098	57,578	49,835		**37,212**
50 - 54	3,250	1,474	4,580	4,507	3,674	2,412	2,170	890	45	**23,002**
Avg. Earnings	22,333	26,500	30,461	36,227	43,808	55,468	61,167	58,579	55,164	**38,976**
55 - 59	2,713	1,080	3,341	3,778	3,963	3,206	2,527	1,687	800	**23,095**
Avg. Earnings	21,676	27,022	32,061	35,593	38,565	45,871	57,647	63,348	58,749	**40,226**
60 - 64	1,611	752	2,091	2,375	2,404	2,474	2,092	1,002	1,119	**15,920**
Avg. Earnings	18,162	25,878	31,623	36,012	38,430	42,330	51,275	62,128	64,840	**40,173**
65 - 69	795	318	851	709	570	564	453	201	227	**4,688**
Avg. Earnings	11,979	15,170	23,644	32,134	39,277	41,846	48,797	55,029	67,739	**32,376**
70+	433	205	518	384	183	124	83	57	57	**2,044**
Avg. Earnings	8,203	9,281	12,746	17,245	24,317	31,291	39,572	37,984	50,299	**17,283**
Total	**40,558**	**12,172**	**28,397**	**21,131**	**16,036**	**10,932**	**8,005**	**3,856**	**2,248**	**143,335**
Avg. Earnings	**21,337**	**28,201**	**34,878**	**40,457**	**44,788**	**49,221**	**56,237**	**61,055**	**62,402**	**35,833**

* *This exhibit does not reflect service earned in other PERA 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 (Total)

	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	22	15						**37**
Avg. Benefit	10,117	11,341						**10,613**
55 - 59	827	1,569	44					**2,440**
Avg. Benefit	15,741	12,341	11,303					**13,475**
60 - 64	2,261	5,345	2,551	59				**10,216**
Avg. Benefit	15,509	14,989	11,451	13,283				**14,211**
65 - 69	1,765	8,370	5,786	2,304	26			**18,251**
Avg. Benefit	14,748	13,347	13,312	12,156	22,579			**13,334**
70 - 74	304	2,309	5,835	4,548	1,849	5	1	**14,851**
Avg. Benefit	10,095	10,669	11,295	12,615	13,207	23,526	17,941	**11,820**
75 - 79	87	521	1,435	4,286	3,489	1,074	5	**10,897**
Avg. Benefit	7,003	7,220	8,142	10,365	14,764	21,250	28,898	**12,385**
80 - 84	21	228	404	976	3,296	2,351	480	**7,756**
Avg. Benefit	6,539	5,318	5,875	8,020	12,335	21,341	21,165	**14,510**
85 - 89	5	47	114	247	605	2,287	1,393	**4,698**
Avg. Benefit	6,446	4,749	4,667	5,933	9,990	16,618	24,098	**17,001**
90+	1	9	22	56	103	404	1,999	**2,594**
Avg. Benefit	5,602	5,444	4,911	3,860	6,705	12,670	19,191	**17,175**
Total	**5,293**	**18,413**	**16,191**	**12,476**	**9,368**	**6,121**	**3,878**	**71,740**
Avg. Benefit	**14,772**	**13,102**	**11,570**	**11,229**	**13,227**	**18,990**	**21,210**	**13,511**

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 Service Retirements (Basic)

	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								
Avg. Benefit								
55 - 59								
Avg. Benefit								
60 - 64			2	1				**3**
Avg. Benefit			40,676	24,732				**35,362**
65 - 69	2	12	33	138	13			**198**
Avg. Benefit	29,654	21,238	32,185	41,958	29,719			**38,145**
70 - 74	1	14	64	249	301	5	1	**635**
Avg. Benefit	65,681	29,500	29,304	37,668	43,937	23,526	17,941	**39,518**
75 - 79		5	16	128	490	340	4	**983**
Avg. Benefit		45,991	24,331	30,883	42,791	47,673	30,360	**42,594**
80 - 84		2	5	41	263	654	207	**1,172**
Avg. Benefit		72,962	24,807	27,293	30,493	45,231	40,926	**40,496**
85 - 89				10	43	466	591	**1,110**
Avg. Benefit				32,487	36,461	34,452	42,599	**38,850**
90+					8	72	913	**993**
Avg. Benefit					26,712	30,384	30,827	**30,762**
Total	**3**	**33**	**120**	**567**	**1,118**	**1,537**	**1,716**	**5,094**
Avg. Benefit	**41,663**	**31,628**	**29,436**	**36,316**	**39,696**	**41,737**	**36,091**	**38,428**

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 Service Retirements (Coordinated)

	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	22	15						**37**
Avg. Benefit	10,117	11,341						**10,613**
55 - 59	827	1,569	44					**2,440**
Avg. Benefit	15,741	12,341	11,303					**13,475**
60 - 64	2,261	5,345	2,549	58				**10,213**
Avg. Benefit	15,509	14,989	11,428	13,086				**14,205**
65 - 69	1,763	8,358	5,753	2,166	13			**18,053**
Avg. Benefit	14,731	13,335	13,203	10,257	15,439			**13,062**
70 - 74	303	2,295	5,771	4,299	1,548			**14,216**
Avg. Benefit	9,912	10,554	11,096	11,164	7,232			**10,583**
75 - 79	87	516	1,419	4,158	2,999	734	1	**9,914**
Avg. Benefit	7,003	6,845	7,959	9,734	10,185	9,010	23,053	**9,389**
80 - 84	21	226	399	935	3,033	1,697	273	**6,584**
Avg. Benefit	6,539	4,720	5,638	7,175	10,760	12,134	6,181	**9,884**
85 - 89	5	47	114	237	562	1,821	802	**3,588**
Avg. Benefit	6,446	4,749	4,667	4,813	7,965	12,054	10,465	**10,242**
90+	1	9	22	56	95	332	1,086	**1,601**
Avg. Benefit	5,602	5,444	4,911	3,860	5,020	8,829	9,409	**8,748**
Total	**5,290**	**18,380**	**16,071**	**11,909**	**8,250**	**4,584**	**2,162**	**66,646**
Avg. Benefit	**14,757**	**13,068**	**11,437**	**10,035**	**9,640**	**11,362**	**9,399**	**11,606**

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 (Total)

	Years Since Death as of June 30, 2014							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<45	15	85	41	20	13	6	3	**183**
Avg. Benefit	10,089	6,514	4,430	5,841	8,170	9,855	20,213	**6,719**
45 - 49	10	25	28	9	6	4	3	**85**
Avg. Benefit	3,387	3,302	7,198	9,716	8,452	7,203	3,864	**5,841**
50 - 54	23	53	35	17	9	6	4	**147**
Avg. Benefit	7,921	8,817	6,846	7,938	7,829	14,562	**12,908**	**8,391**
55 - 59	37	136	105	36	25	12	3	**354**
Avg. Benefit	10,750	9,190	8,858	7,697	9,239	12,910	13,934	**9,272**
60 - 64	63	208	173	78	27	20	9	**578**
Avg. Benefit	11,298	10,306	11,336	10,429	10,842	18,088	19,850	**11,182**
65 - 69	68	238	220	114	44	28	13	**725**
Avg. Benefit	12,168	11,118	12,076	10,786	14,615	19,665	14,498	**12,058**
70 - 74	88	246	212	153	74	69	35	**877**
Avg. Benefit	11,896	11,985	12,499	12,368	13,567	19,327	21,512	**13,259**
75 - 79	77	298	233	202	125	83	75	**1,093**
Avg. Benefit	12,809	12,544	15,650	14,412	17,838	15,657	23,941	**15,194**
80 - 84	88	297	236	234	163	137	114	**1,269**
Avg. Benefit	20,533	17,561	16,308	19,236	19,237	16,057	21,191	**18,222**
85 - 89	49	269	253	250	180	165	189	**1,355**
Avg. Benefit	20,497	17,141	16,470	22,475	19,850	18,763	20,145	**19,097**
90+	35	128	169	165	155	137	235	**1,024**
Avg. Benefit	20,351	18,103	17,583	16,435	16,893	16,414	15,530	**16,826**
Total	**553**	**1,983**	**1,705**	**1,278**	**821**	**667**	**683**	**7,690**
Avg. Benefit	**14,215**	**13,098**	**13,756**	**15,880**	**16,997**	**17,122**	**18,967**	**15,073**

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 Survivors (Basic)

	Years Since Death as of June 30, 2014							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<45		3		1		1	2	**7**
Avg. Benefit		17,558		5,620		20,216	27,260	**19,004**
45 - 49					1	1		**2**
Avg. Benefit					7,745	17,594		**12,669**
50 - 54				2	1	1		**4**
Avg. Benefit				8,099	4,652	36,323		**14,293**
55 - 59		1		1	1	2	1	**6**
Avg. Benefit		12,378		2,015	15,786	22,729	28,207	**17,307**
60 - 64	1	4	6	4	3	4	5	**27**
Avg. Benefit	6,825	12,064	13,743	8,559	26,593	41,204	24,899	**20,032**
65 - 69	3	13	11	11	3	12	5	**58**
Avg. Benefit	20,852	30,389	26,624	34,342	32,436	30,343	22,855	**29,378**
70 - 74	18	31	40	29	12	29	25	**184**
Avg. Benefit	22,119	28,825	24,939	26,283	27,780	33,803	26,768	**27,360**
75 - 79	15	62	64	54	32	25	55	**307**
Avg. Benefit	23,546	26,294	33,696	31,720	38,336	29,085	28,871	**30,601**
80 - 84	34	118	72	91	67	47	72	**501**
Avg. Benefit	33,719	30,790	30,033	34,115	32,294	30,760	29,387	**31,480**
85 - 89	21	93	91	111	93	76	129	**614**
Avg. Benefit	34,808	31,831	29,493	37,447	29,703	27,728	25,633	**30,469**
90+	21	58	80	84	69	82	171	**565**
Avg. Benefit	29,384	29,505	26,994	24,586	27,636	21,133	17,772	**23,419**
Total	**113**	**383**	**364**	**388**	**282**	**280**	**465**	**2,275**
Avg. Benefit	**29,338**	**29,600**	**28,943**	**31,539**	**30,490**	**27,292**	**23,742**	**28,442**

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 Survivors (Coordinated)

	Years Since Death as of June 30, 2014							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<45	15	82	41	19	13	5	1	**176**
Avg. Benefit	10,089	6,110	4,430	5,853	8,170	7,783	6,119	**6,230**
45 - 49	10	25	28	9	5	3	3	**83**
Avg. Benefit	3,387	3,302	7,198	9,716	8,593	3,739	3,864	**5,677**
50 - 54	23	53	35	15	8	5	4	**143**
Avg. Benefit	7,921	8,817	6,846	7,917	8,226	10,210	12,908	**8,226**
55 - 59	37	135	105	35	24	10	2	**348**
Avg. Benefit	10,750	9,167	8,858	7,859	8,966	10,946	6,798	**9,134**
60 - 64	62	204	167	74	24	16	4	**551**
Avg. Benefit	11,370	10,272	11,250	10,530	8,874	12,309	13,537	**10,748**
65 - 69	65	225	209	103	41	16	8	**667**
Avg. Benefit	11,767	10,005	11,311	8,271	13,311	11,657	9,274	**10,552**
70 - 74	70	215	172	124	62	40	10	**693**
Avg. Benefit	9,267	9,557	9,607	9,114	10,816	8,832	8,371	**9,514**
75 - 79	62	236	169	148	93	58	20	**786**
Avg. Benefit	10,211	8,932	8,816	8,097	10,785	9,869	10,384	**9,176**
80 - 84	54	179	164	143	96	90	42	**768**
Avg. Benefit	12,230	8,840	10,283	9,767	10,124	8,379	7,141	**9,573**
85 - 89	28	176	162	139	87	89	60	**741**
Avg. Benefit	9,765	9,379	9,154	10,518	9,318	11,106	8,348	**9,675**
90+	14	70	89	81	86	55	64	**459**
Avg. Benefit	6,802	8,656	9,124	7,982	8,274	9,379	9,540	**8,710**
Total	**440**	**1,600**	**1,341**	**890**	**539**	**387**	**218**	**5,415**
Avg. Benefit	**10,331**	**9,148**	**9,634**	**9,053**	**9,938**	**9,763**	**8,780**	**9,457**

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 (Total)

	Years Disabled* as of June 30, 2014							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
< 45	2	16	6	4				**28**
Avg. Benefit	4,090	5,705	3,875	4,781				**5,066**
45 - 49	7	29	26	12	1	1		**76**
Avg. Benefit	14,500	7,977	6,058	3,642	5,458	4,811		**7,162**
50 - 54	17	84	61	36	10	8		**216**
Avg. Benefit	14,353	9,630	9,028	6,678	5,590	6,046		**9,020**
55 - 59	45	177	175	106	44	22	1	**570**
Avg. Benefit	19,837	13,343	10,336	9,678	8,098	7,486	4,289	**11,604**
60 - 64	28	302	286	164	67	28	6	**881**
Avg. Benefit	14,590	14,398	12,385	10,446	10,824	8,995	3,923	**12,500**
65 - 69	213	517	76	33	8	4	2	**853**
Avg. Benefit	12,066	13,248	12,268	8,626	5,382	14,726	7,415	**12,606**
70 - 74		87	413	4	1	1		**506**
Avg. Benefit		11,940	12,801	8,466	3,182	71,435		**12,716**
75+			45	281	153	65	30	**574**
Avg. Benefit			15,349	14,484	17,027	16,235	20,052	**15,719**
Total	**312**	**1,212**	**1,088**	**640**	**284**	**129**	**39**	**3,704**
Avg. Benefit	**13,542**	**12,978**	**11,941**	**11,611**	**13,360**	**12,832**	**16,519**	**12,546**

** 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

Distribution of Disability Retirements (Basic)

	Years Disabled* as of June 30, 2014							
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		9						**9**
Avg. Benefit		44,561						**44,561**
70 - 74		2	13			1		**16**
Avg. Benefit		31,713	42,212			71,435		**42,726**
75+			3	28	32	20	17	**100**
Avg. Benefit			69,791	40,286	35,285	31,112	30,947	**36,148**
Total		**11**	**16**	**28**	**32**	**21**	**17**	**125**
Avg. Benefit		**42,225**	**47,383**	**40,286**	**35,285**	**33,032**	**30,947**	**37,596**

** 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

Distribution of Disability Retirements (Coordinated)

	Years Disabled* as of June 30, 2014							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
< 45	2	16	6	4				**28**
Avg. Benefit	4,090	5,705	3,875	4,781				**5,066**
45 - 49	7	29	26	12	1	1		**76**
Avg. Benefit	14,500	7,977	6,058	3,642	5,458	4,811		**7,162**
50 - 54	17	84	61	36	10	8		**216**
Avg. Benefit	14,353	9,630	9,028	6,678	5,590	6,046		**9,020**
55 - 59	45	177	175	106	44	22	1	**570**
Avg. Benefit	19,837	13,343	10,336	9,678	8,098	7,486	4,289	**11,604**
60 - 64	28	302	286	164	67	28	6	**881**
Avg. Benefit	14,590	14,398	12,385	10,446	10,824	8,995	3,923	**12,500**
65 - 69	213	508	76	33	8	4	2	**844**
Avg. Benefit	12,066	12,693	12,268	8,626	5,382	14,726	7,415	**12,265**
70 - 74		85	400	4	1			**490**
Avg. Benefit		11,474	11,845	8,466	3,182			**11,736**
75+			42	253	121	45	13	**474**
Avg. Benefit			11,460	11,628	12,198	9,623	5,806	**11,409**
Total	**312**	**1,201**	**1,072**	**612**	**252**	**108**	**22**	**3,579**
Avg. Benefit	**13,542**	**12,710**	**11,412**	**10,299**	**10,576**	**8,904**	**5,370**	**11,671**

** 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	**139,763**	**45,946**	**119,509**	**67,861**	**3,683**	**7,539**	**384,301**
New members	16,814	0	0	0	0	0	**16,814**
Return to active	2,537	(868)	(1,666)	(1)	(2)	0	**0**
Terminated non-vested	(5,359)	0	5,359	0	0	0	**0**
Service retirements	(3,033)	(2,369)	0	5,402	0	0	**0**
Terminated deferred	(4,890)	4,890	0	0	0	0	**0**
Terminated refund/transfer	(2,156)	(1,095)	(1,128)	0	(1)	0	**(4,380)**
Deaths	(186)	(137)	(329)	(1,801)	(142)	(439)	**(3,034)**
New beneficiary	0	0	0	0	0	532	**532**
Disabled	(123)	0	0	0	123	0	**0**
Data adjustments	(24)	2,138	(726)	279	43	58	**1,768**
Net change	3,580	2,559	1,510	3,879	21	151	**11,700**
Members on 6/30/2014	**143,343**	**48,505**	**121,019**	**71,740**	**3,704**	**7,690**	**396,001**

Terminated Member Statistics	Deferred Retirement	Other Non-Vested	Total
Number	48,505	121,019	169,524
Average age	50.4	47.7	48.5
Average service	7.6	0.9	2.8
Average annual benefit, with augmentation to Normal Retirement Date and 60% CSA load	$ 9,889	N/A	$ 9,889
Average refund value, with 60% CSA load	$15,035	$948	$ 4,979

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 13.75% 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			$ 15,644,540
B. Expected Future Assets			
1. Present value of expected future statutory supplemental contributions			4,231,486
2. Present value of future normal cost contributions			2,840,521
3. Total expected future assets: *(1.) + (2.)*			$ 7,072,007
C. Total Current and Expected Future Assets *(A.+ B.3)*			$ 22,716,547
D. Current Benefit Obligations*			
1. Benefit recipients	**Non-Vested**	**Vested**	**Total**
a. Service retirements	$ 0	$ 8,995,993	$ 8,995,993
b. Disability retirements	0	401,707	401,707
c. Survivors	0	831,351	831,351
2. Deferred retirements with augmentation	0	2,333,790	2,333,790
3. Former members without vested rights	52,158	0	52,158
4. Active members	90,014	7,541,090	7,631,104
5. Total Current Benefit Obligations	$ 142,172	$ 20,103,931	$ 20,246,103
E. Expected Future Benefit Obligations			$ 3,876,922
F. Total Current and Expected Future Benefit Obligations**			$ 24,123,025
G. Unfunded Current Benefit Obligations: *(D.5.) - (A.)*			$ 4,601,563
H. Unfunded Current and Future Benefit Obligations: *(F.) - (C.)*			$ 1,406,478
I. Accrued Benefit Funding Ratio: *(A.)/(D.)*			77.27%
J. Projected Benefit Funding Ratio: *(C.)/(F.)*			94.17%

* *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	$ 10,380,233	$ 2,004,646	$ 8,375,587
b. Disability benefits	368,262	125,791	242,471
c. Survivor's benefits	192,445	50,394	142,051
d. Deferred retirements	512,447	491,489	20,958
e. Refunds*	54,639	168,201	(113,562)
f. Total	$ 11,508,026	$ 2,840,521	$ 8,667,505
2. Deferred retirements with future augmentation	2,333,790	0	2,333,790
3. Former members without vested rights	52,158	0	52,158
4. Annuitants	10,229,051	0	10,229,051
5. Total	$ 24,123,025	$ 2,840,521	$ 21,282,504
B. Determination of Unfunded Actuarial Accrued Liability (UAAL)			
1. Actuarial accrued liability			$ 21,282,504
2. Current assets (AVA)			15,644,540
3. Unfunded actuarial accrued liability			$ 5,637,964
C. Determination of Supplemental Contribution Rate			
1. Present value of future payrolls through the amortization date of June 30, 2033			$ 68,470,651
2. Supplemental contribution rate: *(B.3.) / (C.1.)*			8.23 % **

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

** *The amortization factor as of June 30, 2014 is 12.6970.*

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	$ 19,379,769	$ 14,113,295	$ 5,266,474
B. Changes due to interest requirements and current rate of funding			
1. Normal cost, including expenses	$ 368,374	$ 0	$ 368,374
2. Benefit payments	(1,148,130)	(1,148,130)	0
3. Contributions	0	716,746	(716,746)
4. Interest on A., B.1., B.2., and B.3.	1,589,454	1,111,808	477,646
5. Total *(B.1. + B.2. + B.3. + B.4.)*	809,698	680,424	129,274
C. Expected unfunded actuarial accrued liability at end of year *(A. + B.5.)*			$ 5,395,748
D. Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected			
1. Age and service retirements			$ (445)
2. Disability retirements			(935)
3. Death-in-service benefits			(10,522)
4. Withdrawals			(25,373)
5. Salary increases			(70,266)
6. Investment income			(850,821)
7. Mortality of annuitants			(8,445)
8. Other items			(11,226)
9. Total			(978,033)
E. Unfunded actuarial accrued liability at end of year before plan amendments and changes in actuarial assumptions *(C. + D.9.)*			$ 4,417,715
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			$ 1,220,249
H. Change in unfunded actuarial accrued liability due to changes in miscellaneous methodology			$ 0
I. Unfunded actuarial accrued liability at end of year *(E. + F. + G. + H.)**			$ 5,637,964

** The unfunded actuarial accrued liability on a market value of assets basis is $3,877,682.*

Development of Costs

Determination of Contribution Sufficiency/(Deficiency) – Total *(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 353		
1. Employee contributions	6.375%	$ 343,793
2. Employer contributions	7.375%	397,727
3. Total	13.75%	$ 741,520
B. Required Contributions - Chapter 356		
1. Normal cost		
a. Retirement benefits	5.38%	$ 290,112
b. Disability benefits	0.31%	16,717
c. Survivors	0.14%	7,549
d. Deferred retirement benefits	1.13%	60,947
e. Refunds*	0.42%	22,650
f. Total	7.38%	$ 397,975
2. Supplemental Contribution amortization of Unfunded Actuarial Accrued Liability by June 30, 2033	8.23%	$ 443,815
3. Allowance for Expenses	0.19%	10,246
4. Total	15.80% **	$ 852,036
C. Contribution Sufficiency/(Deficiency) *(A.3. - B.4.)*	(2.05)%	$ (110,516)

Note: Projected annual payroll for fiscal year beginning on the valuation date: $5,392,643.

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

*** The required contribution on a market value of assets basis is 13.23% of payroll.*

Development of Costs

Determination of Normal Cost – Basic *(Dollars in Thousands)*

This exhibit compares statutory contributions to normal cost for the group of eight Basic Plan active members.

	Percent of Payroll	Dollar Amount
A. Statutory contributions - Chapter 353		
1. Employee contributions	9.10%	$ 41
2. Employer contributions	11.78%	53
3. Total	20.88%	$ 94
B. Required contributions - Chapter 356		
1. Normal cost		
a. Retirement benefits	2.60%	$ 12
b. Disability benefits	0.22%	1
c. Survivors	0.08%	0
d. Deferred retirement benefits	3.24%	15
e. Refunds*	0.57%	3
f. Total	6.71%	$ 31

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

Note: Projected annual payroll for fiscal year beginning on the valuation date: $450.

Development of Costs

This exhibit compares statutory contributions to normal cost for the group of Coordinated Plan active members.

Determination of Normal Cost – Coordinated *(Dollars in Thousands)*

	Percent of Payroll	Dollar Amount
A. Statutory contributions - Chapter 353		
1. Employee contributions	6.375%	$ 343,752
2. Employer contributions	7.375%	397,674
3. Total	13.75%	$ 741,426
B. Required contributions - Chapter 356		
1. Normal cost		
a. Retirement benefits	5.38%	$ 290,100
b. Disability benefits	0.31%	16,716
c. Survivors	0.14%	7,549
d. Deferred retirement benefits	1.13%	60,932
e. Refunds*	0.42%	22,647
f. Total	7.38%	$ 397,944

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

Note: Projected annual payroll for fiscal year beginning on the valuation date: $5,392,193.

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 8.41% (8.37% 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;
- 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, 2033 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 statutes, and the amortization period was changed to provide for extension under certain circumstances.

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 August 2009, 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	1.00% per annum through 2026 and 2.5% per annum thereafter.	
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, set forward 5 years for males and set back 3 years for females.	
Healthy Post-retirement	RP-2000 annuitant generational mortality table, projected with scale AA, white collar adjustment, no adjustment for males and set back 2 years for females.	
	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 set back 4 years for males and set forward 7 years for females.	
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.	

Actuarial Basis

Summary of Actuarial Assumptions (Continued)

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 — 40.00% 2 — 15.00% 3 — 10.00%
Disability	Age-related rates based on experience; see table of sample rates.
Allowance for combined service annuity	Liabilities for active members are increased by 0.80% and liabilities for former members are increased by 60.00% 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 Normal Retirement.
Percentage married	75% of male and 70% of female active members are assumed to be married. Actual marital status is used for members in payment status.
Age of spouse	Males are assumed to have a beneficiary 3 years younger, while females are assumed to have a beneficiary 2 years older. 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 15% elect 50% Joint & Survivor option 10% elect 75% Joint & Survivor option 30% elect 100% Joint & Survivor option Females: 5% elect 25% Joint & Survivor option 5% elect 50% Joint & Survivor option 5% elect 75% Joint & Survivor option 15% 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 2,671 members reported with zero salary. We used prior year salary (1,904 members), if available; otherwise high five salary with a 10% load to account for salary increases (702 members). If neither prior year salary or high five salary was available, we assumed a value of $35,000. There were also 1,760 members reported without a gender and 56 members reported with an invalid date of birth. We assumed a date of birth of July 1, 1967 and female gender. <u>Data for terminated members:</u> We calculated benefits for these members using the reported Average Salary and credited service. If Average Salary was not reported (256 members), we assumed a value of $24,000. If credited service was not reported (168 members), we assumed credited service was elapsed time from hire to termination date (121 members); otherwise nine years. If termination date was not reported (113 members), we assumed the termination date was equal to hire date plus credited service; otherwise the valuation date unless they are noted as a pre-July 1, 1989 hire, then June 30, 1989. If reported termination date occurs prior to reported hire date, the two dates were swapped. There were 20 members reported with an invalid date of birth and 174 members reported without a gender. We assumed a date of birth of July 1, 1967 and female gender. <u>Data for retired members:</u> There were eight members reported with an invalid date of birth and 68 members reported without a gender. We assumed a date of birth of July 1, 1945 and female gender.
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. The assumed post-retirement benefit increase rate was changed from 1.0% per year to 1.0% per year through 2026 and 2.5% per year thereafter. See page 4 for additional detail about this assumption.

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%	0.04%	0.02%	2.26%	0.75%
25	0.04	0.02	0.04	0.02	2.26	0.75
30	0.04	0.02	0.06	0.02	2.26	0.75
35	0.06	0.04	0.09	0.04	2.26	0.75
40	0.09	0.06	0.13	0.05	2.26	0.90
45	0.13	0.08	0.20	0.08	2.26	1.35
50	0.60	0.13	0.27	0.12	2.38	1.87
55	0.54	0.29	0.43	0.19	3.03	2.41
60	0.66	0.47	0.67	0.28	3.67	3.13
65	1.16	0.74	0.98	0.45	4.35	4.29
70	1.93	1.24	3.36	0.70	5.22	5.95

* *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 After Third Year		Disability Retirement	
Age	**Male**	**Female**	**Male**	**Female**
20	8.40%	8.40%	0.01%	0.01%
25	6.90	6.90	0.01	0.01
30	5.40	5.40	0.02	0.02
35	3.90	4.20	0.05	0.04
40	3.00	3.50	0.09	0.06
45	2.50	3.00	0.14	0.09
50	2.00	2.50	0.23	0.16
55	0.00	0.00	0.49	0.26
60	0.00	0.00	0.82	0.46
65	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00

Actuarial Basis

Summary of Actuarial Assumptions (Concluded)

	Retirement		Salary Scale	
Age	Rule of 90 Eligible	Other	Year	Increase
55	20%	6%	1	12.03%
56	20	6	2	8.90
57	20	6	3	7.46
58	20	7	4	6.58
59	20	8	5	5.97
60	20	8	6	5.52
61	25	12	7	5.16
62	35	20	8	4.87
63	25	16	9	4.63
64	25	18	10	4.42
65	35	35	11	4.24
66	25	25	12	4.08
67	20	20	13	3.94
68	20	20	14	3.82
69	20	20	15	3.70
70	20	20	16	3.60
71+	100	100	17	3.51
			18+	3.50

Actuarial Basis

Summary of Plan Provisions - Basic

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	A public employee who is not covered under the Social Security Act. General exceptions are employees covered by other public funds, certain part-time employees and full-time students under age 23.
Contributions	Shown as a percent of salary: <u>Member</u> 9.10% of salary <u>Employer</u> 11.78% of salary Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).
Allowable service	Service during which member contributions were made. May also include certain leaves of absence and military service.
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 and employer-paid deferred compensation deposits, 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 annual 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: 100% vested after 5 years of Allowable Service. (Not applicable since all Basic members were hired before 1968.)
Retirement	
<u>Normal retirement benefit</u>	
Age/service requirement	Age 65 and vested. Proportionate retirement annuity is available at age 65 and one year of Allowable Service.
Amount	2.70% of Average Salary for each year of Allowable Service.
<u>Early retirement benefit</u>	
Age/service requirement	(a.) Age 55 and vested. (b.) Any age with 30 years of Allowable Service. (c.) Rule of 90: Age plus Allowable Service totals 90.

Actuarial Basis

Summary of Plan Provisions – Basic (Continued)

Retirement (Continued)

Early retirement benefit
(Continued)

Age/service requirement

The greater of (a) or (b):

Amount

(a.) 2.20% of Average Salary for each of the first ten years of Allowable Service and 2.70% of Average Salary for each subsequent year with reduction of 0.25% for each month if the Member is under age 65 at time of retirement and has less than 30 years of Allowable Service or if the Member is under age 62 and has 30 or more years of Allowable Service. No reduction if age plus years of Allowable Service totals 90.

(b.) 2.70% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3.00% per year and actuarial reduction for each month the Member is under age 65.

Form of payment

Life annuity with return on death of any balance of contributions over aggregate monthly payments. 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 receive a future annual 1.0% post-retirement benefit increase. If the funding ratio 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. Members retired under laws in effect before July 1, 1973 receive an additional lump sum payment each year. In 1989, this lump sum payment is the greater of $25 times each full year of Allowable Service or the difference between $400 times each full year of Allowable Service and the sum of benefits paid from any Minnesota public pension plan plus cash payments from the Social Security Administration for the preceding fiscal year July 1, 1988 through June 30, 1989. In each following year, the lump sum payment will increase by the same percentage increase that is applied to regular annuities paid from the fund. Effective January 1, 2002, annual lump sum payment is divided by 12 and paid as a monthly life annuity in the annuity form elected.

Actuarial Basis

Summary of Plan Provisions – Basic (Continued)

Disability

Disability benefit

Age/service requirement	Total and permanent disability before normal retirement age if vested. Since all remaining active Basic members are over normal retirement age, none are eligible for disability benefits.
Amount	Normal Retirement benefit based on Allowable Service and Average Salary at disability without reduction for commencement before Normal Retirement Age. Supplemental benefit of $25 per month payable to the later of the normal retirement age or the five-year anniversary of commencement of disability. The disability benefit is reduced to that amount which, when added to Workers' Compensation, does not exceed the salary the disabled Member received as of the date of the disability or the salary currently payable for the same employment position substantially similar to the one the person held as of the date of the disability, whichever is greater. If a member becomes disabled prior to July 1, 1997 but did not commence his or her benefit before July 1, 1997, the benefit payable is calculated under the laws in effect at the time the Member became disabled and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%. Payments stop earlier if disability ceases. If death occurs prior to age 65, or within five years of disability, the surviving spouse can receive a refund or a survivor benefit. Dependent children are entitled to dependent child benefits subject to the 70.00% family maximum. Payments revert to a retirement annuity at normal retirement age. Benefits may be reduced on resumption of partial employment.
Form of payment	Same as for retirement.
Benefit increases	Same as for retirement.

Retirement after disability

Age/service requirement	Normal retirement age
Amount	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at normal retirement age, or an actuarially equivalent optional annuity.
Benefit increases	Same as for retirement.

Actuarial Basis

Summary of Plan Provisions - Basic (Continued)

Death

Surviving spouse benefit

Age/service requirement	Active Member with 18 months of Allowable Service or while Member is receiving a disability benefit.
Amount	50.00% of salary averaged over last six months. Family benefit is maximum of 70.00% and minimum of 50.00% of average salary. Benefit paid until spouse's death but no payments while spouse is remarried prior to July 1, 1991. If a member becomes deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit as of July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%. Surviving spouse optional annuity may be elected in lieu of this benefit.
Benefit increases	Same as for retirement.

Surviving dependent children's benefit

Age/service requirement	Active Member with 18 months of Allowable Service or while Member is receiving a disability benefit.
Amount	10.00% of salary averaged over last six months for each child. Family benefit minimum (including spouse's benefit) of 50.00% of salary and maximum of 70.00% of average salary. Benefits paid until child marries, dies, or attains age 18 (age 22 if full-time student). If a member becomes deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and 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.

Actuarial Basis

Summary of Plan Provisions - Basic (Continued)

Death (Continued)	
Surviving spouse optional annuity	
Age/service requirement	Member or former Member who dies before retirement benefits commence and other survivor annuity is waived by spouse.
Amount	Survivor's payment of the 100% joint and survivor benefit the Member could have elected if terminated or an actuarial equivalent term certain annuity. If commencement is prior to age 65 (age 62 if 30 years of service), the benefit is reduced the same as early retirement with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer. If a member becomes deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit as of July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and 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.
Refund of contributions with interest	
Age/service requirement	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount	The excess of the Member's contributions with 6.00% interest until June 30, 2011; 4.00% interest thereafter over any disability or survivor benefits paid.
Termination	
Refund of contributions	
Age/service requirement	Termination of public service.
Amount	If member terminated before July 1, 2011, member's contributions credited with 6% interest compounded annually prior to July 1, 2011 and 4% interest thereafter. If member terminated after June 30, 2011, member's contributions credited with 4% interest compounded annually. A deferred annuity may be elected in lieu of a refund if three or more years of Allowable Service.

Actuarial Basis

Summary of Plan Provisions - Basic (Continued)

Termination (Continued)	
Deferred benefit	
Age/service requirement	Fully vested.
Amount	Benefit computed under law in effect at termination and increased by the following "augmentation" percentage compounded annually for terminations prior to 2012: (a.) 0.00% before July 1, 1971; (b.) 5.00% from July 1, 1971 to January 1, 1981; (c.) 3.00% thereafter until the earlier of January 1 of the year following attainment of age 55 and January 1, 2012; (d.) 5.00% thereafter until the earlier of the date the annuity begins and January 1, 2012; and (e.) 1.00% from January 1, 2012 thereafter. Members who terminate after 2011 will receive no future augmentation. Members active with a public employer the day prior to the privatization of the employer become vested immediately and receive enhanced augmentation (unless the enhancement results in a net loss to the Plan). Amount is payable at a normal or early retirement. Augmentation equals 2% compounded annually, unless the enhancement results in a net loss to the Plan, in which case augmentation equals 1% compounded annually. If privatization occurred prior to January 1, 2011, augmentation occurs at the rate of 4.0% compounded annually through the year the Member turns age 55 and 6.0% thereafter until the annuity begins. If privatization occurred prior to January 1, 2007 (or January 1, 2008 for Hutchinson Area Health Care), augmentation occurs at the rate of 5.5% compounded annually through the year the Member turns age 55 and 7.5% thereafter until the annuity begins. If a member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997 and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
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 2025, females set back two years and no setback for males, blended 45% males and 7.5% interest.

Actuarial Basis

Summary of Plan Provisions - Basic (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	None.

Actuarial Basis

Summary of Plan Provisions - Coordinated

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	A public employee who is covered under the Social Security Act. General exceptions are employees covered by other public funds, certain part-time employees and full-time students under age 23. City managers and persons holding certain elective office positions may choose to become Members.	
Contributions	Shown as a percent of salary:	
Effective date	**Member**	**Employer**
July 1, 2010 to December 31, 2014	6.25%	7.25%
January 1, 2015	6.50%	7.50%
	Member contributions are “picked up” according to the provisions of Internal Revenue Code 414(h).	
Allowable service	Service during which member contributions are deducted. May also include certain leaves of absence and military service.	
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 leave and sick leave payments, severance payments, Workers’ Compensation benefits and employer-paid flexible spending accounts and employer-paid deferred compensation deposits, 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 annual salary. Average salary is based on all Allowable Service if less than five years.	
Vesting	Hired before July 1, 2010: 100% vested after three years of Allowable Service. Hired after June 30, 2010: 100% vested after five years of Allowable Service.	
Retirement		
Normal retirement benefit		
Age/service requirement	First hired before July 1, 1989: (a.) Age 65 and vested. (b.) Proportionate retirement annuity is available at age 65 and one year of Allowable Service.	
Amount	1.70% of Average Salary for each year of Allowable Service.	

Actuarial Basis

Summary of Plan Provisions – Coordinated (Continued)

Retirement (Continued)

Normal retirement benefit (Continued)

Age/service requirement	First hired after June 30, 1989: (a.) The greater of age 65 or the age eligible for full Social Security retirement benefits but no later than age 66 and vested. (b.) Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.
Amount	1.70% of Average Salary for each year of Allowable Service.

Early retirement benefit

Age/service requirement	First hired before July 1, 1989: (a.) Age 55 and vested. (b.) Any age with 30 years of Allowable Service. (c.) Rule of 90: Age plus Allowable Service totals 90. First hired after June 30, 1989: (a.) Age 55 and vested.
Amount	First hired before July 1, 1989: The greater of (a) or (b): (a.) 1.20% of Average Salary for each of the first ten years of Allowable Service and 1.70% of Average Salary for each subsequent year with reduction of 0.25% for each month the Member is under age 65 at time of retirement or under age 62 if 30 years of Allowable Service. No reduction if age plus years of Allowable Service totals 90. (b.) 1.70% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3.00% per year and actuarial reduction for each month the Member is under age 65. First hired after June 30, 1989: (a.) 1.70% of Average Salary for each year of Allowable Service assuming augmentation to normal retirement age at 3.00% per year (2.50% if hired after June 30, 2006) and actuarial reduction for each month the Member is under normal retirement age.
Form of payment	Life annuity with return on death of any balance of contributions over aggregate monthly payments. 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.

Actuarial Basis

Summary of Plan Provisions – Coordinated (Continued)

Retirement (Continued)	
Benefit increases	Benefit recipients receive a future annual 1.0% post-retirement benefit increase. If the funding ratio 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. Members retired under laws in effect before July 1, 1973 receive an additional lump sum payment each year. In 1989, this lump sum payment is $25 times each full year of Allowable Service. In each following year, the lump sum payment will increase by the same percentage increase that is applied to regular annuities paid from the fund.
Disability	
Disability benefit	
Age/service requirement	Total and permanent disability before normal retirement age if vested.
Amount	Normal Retirement benefit based on Allowable Service and Average Salary at disability without reduction for commencement before normal retirement age. The disability benefit is reduced to that amount which, when added to Workers' Compensation, does not exceed the salary the disabled Member received as of the date of the disability or the salary currently payable for the same employment position substantially similar to the one the person held as of the date of the disability, whichever is greater. If a Member becomes disabled prior to July 1, 1997 but did not commence his or her benefit before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%. Payments stop if disability ceases or death occurs. Payments change to a retirement annuity at normal retirement age. Benefits may be reduced on resumption of partial employment.
Form of payment	Same as for retirement.
Benefit increases	Same as for retirement.

Actuarial Basis

Summary of Plan Provisions – Coordinated (Continued)

Disability (Continued)	
Retirement after disability	
Age/service requirement	Normal retirement age.
Amount	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at normal retirement age, or an actuarially equivalent optional annuity.
Benefit increases	Same as for retirement.
Death	
Surviving spouse optional annuity	
Age/service requirement	Member or former Member who dies before retirement or disability benefits commence.
Amount	Survivor's payment of the 100% joint and survivor benefit the Member could have elected if terminated or an actuarial equivalent term certain annuity. If commencement is prior to age 65 (age 62 if 30 years of service), the benefit is reduced the same as early retirement with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer. If a member becomes deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and 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.
Refund of contributions	
Age/service requirement	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount	The excess of the Member's contributions with 6.00% interest until June 30, 2011; 4.00% interest thereafter over any disability or survivor benefits paid.
Termination	
Refund of contributions	
Age/service requirement	Termination of public service.
Amount	If member terminated before July 1, 2011, member's contributions credited with 6% interest compounded annually prior to July 1, 2011 and 4% interest thereafter. If member terminated after June 30, 2011, member's contributions credited with 4% interest compounded annually. A deferred annuity may be elected in lieu of a refund if vested.

Actuarial Basis

Summary of Plan Provisions – Coordinated (Continued)

Termination (Continued)	
Deferred benefit	
Age/service requirement	Fully vested.
Amount	Benefit computed under law in effect at termination and increased by the following percentage (augmentation) compounded annually for terminations prior to 2012: (a.) 0.00% before July 1, 1971; (b.) 5.00% from July 1, 1971 to January 1, 1981; (c.) 3.00% (2.50% if hired after June 30, 2006) thereafter until the earlier of January 1 of the year following attainment of age 55 and January 1, 2012; (d.) 5.00% (2.50% if hired after June 30, 2006) thereafter until the earlier of the date the annuity begins and January 1, 2012; or (e.) 1.00% from January 1, 2012 to when the benefit begins. Members who terminate after 2011 will receive no future augmentation. Members active with a public employer the day prior to the privatization of the employer become vested immediately and receive enhanced augmentation (unless the enhancement results in a net loss to the Plan). Amount is payable at a normal or early retirement. Augmentation equals 2% compounded annually, unless the enhancement results in a net loss to the Plan, in which case augmentation equals 1% compounded annually. If privatization occurred prior to January 1, 2011, augmentation occurs at the rate of 4.0% compounded annually through the year the Member turns age 55 and 6.0% thereafter until the annuity begins. If privatization occurred prior to January 1, 2007 (or January 1, 2008 for Hutchinson Area Health Care), augmentation occurs at the rate of 5.5% compounded annually through the year the Member turns age 55 and 7.5% thereafter until the annuity begins. If a member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997 and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
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 2025, females set back two years and no setback for males, blended 45% males and 7.5% interest. The interest rate 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 – Coordinated (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; (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
Contribution Stabilizer	The following is a summary of contribution stabilizer provisions in Minnesota Statute 353.27: • If a contribution sufficiency of at least 1.0% has existed for two consecutive years, member and employer contributions are decreased by at most 0.25% to a level that is necessary to maintain a 1.0% sufficiency. A contribution rate decrease under this section must not be made until at least two years have passed since fully implementing a previous decrease. • If a contribution deficiency of at least 0.5% has existed for two consecutive years, the member and employer contribution rates are increased as follows: o If the contribution deficiency is less than 2.0%, member and employer contributions are each increased by 0.25%. o If the contribution deficiency is greater than 1.99% and less than 4.01%, member and employer contributions are each increased by 0.50%. o If the contribution deficiency is greater than 4.0%, member and employer contributions are each increased by 0.75%.
Changes in plan provisions	Member contribution rates will increase from 6.25% to 6.50% of pay and employer contribution rates will increase from 7.25% to 7.50% of pay effective January 1, 2015. The interest rate 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)
7-1-1992	$ 3,978,110	$ 5,439,953	$ 1,461,843	73.13 %	$ 2,299,532	63.57 %
7-1-1993	4,374,459	5,784,318	1,409,859	75.63	2,403,558	58.66
7-1-1994	4,747,128	6,223,622	1,476,494	76.28	2,557,522	57.73
7-1-1995	5,138,461	6,622,069	1,483,608	77.60	2,679,069	55.38
7-1-1996	5,786,398	7,270,073	1,483,675	79.59	2,814,126	52.72
7-1-1997	6,658,410	8,049,666	1,391,256	82.72	2,979,260	46.70
7-1-1998	7,636,668	8,769,303	1,132,635	87.08	3,271,737	34.62
7-1-1999	8,489,177	9,443,678	954,501	89.89	3,302,808	28.90
7-1-2000	9,609,367	11,133,682	1,524,315	86.31	3,437,954	44.34
7-1-2001	10,527,270	12,105,337	1,578,067	86.96	3,466,587	45.52
7-1-2002	11,017,414	12,958,105	1,940,691	85.02	3,809,864	50.94
7-1-2003	11,195,902	13,776,198	2,580,296	81.27	4,387,649	58.81
7-1-2004	11,477,961	14,959,465	3,481,504	76.73	3,968,034	87.74
7-1-2005	11,843,936	15,892,555	4,048,619	74.53	4,096,138	98.84
7-1-2006	12,495,207	16,737,757	4,242,550	74.65	4,247,109	99.89
7-1-2007	12,985,324	17,705,627	4,720,303	73.34	4,448,954	106.10
7-1-2008	13,048,970	17,729,847	4,680,877	73.60	4,722,432	99.12
7-1-2009	13,158,490	18,799,416	5,640,926	69.99	4,778,708	118.04
7-1-2010	13,126,993	17,180,956	4,053,963	76.40	4,804,627	84.38
7-1-2011	13,455,753	17,898,849	4,443,096	75.18	5,079,429 [2]	87.47
7-1-2012	13,661,682	18,598,897	4,937,215	73.45	5,142,592 [3]	96.01
7-1-2013	14,113,295	19,379,769	5,266,474	72.82	5,246,928 [3]	100.37
7-1-2014	15,644,540	21,282,504	5,637,964	73.51	5,351,920 [3]	105.34

[1] *Information prior to 2012 provided by prior actuaries. See prior reports for additional detail.*
[2] *Assumed equal to actual member contributions divided by 6.125%.*
[3] *Assumed equal to actual member contributions divided by 6.25%.*

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)
1992	9.44 %	$ 2,299,532	$ 101,655	$ 115,421	$ 109,203	94.61%
1993	9.95	2,403,558	106,359	132,795	113,183	85.23
1994	9.58	2,557,522	112,940	132,071	119,390	90.40
1995	9.76	2,679,069	115,986	145,491	123,984	85.22
1996	9.61	2,814,126	121,525	148,913	129,738	87.12
1997	9.75	2,979,260	128,234	162,244	136,686	84.25
1998	9.62	3,271,737	140,385	174,356	151,499	86.89
1999	9.63	3,302,808	158,475	159,585	173,370	108.64
2000	9.22	3,437,954	171,073	145,906	186,637	127.92
2001	11.84	3,466,587	173,380	237,064	188,208	79.39
2002	11.85	3,809,864	191,422	260,047	206,982	79.59
2003	11.52	4,387,649	205,963	299,494	221,689	74.02
2004	12.25	3,968,034	215,697	270,387	225,745	83.49
2005	12.72	4,096,138	216,701	304,328	232,963	76.55
2006	13.26	4,247,109	235,901	327,266	255,531	78.08
2007	13.41	4,448,954	260,907	335,698	283,419	84.43
2008	13.86	4,722,432	280,007	374,522	303,304	80.98
2009	14.22	4,778,708	298,381	381,151	328,603	86.21
2010	15.55	4,804,627	303,571	443,548	342,678	77.26
2011	12.46	5,079,429[3]	311,115	321,782	357,596	111.13
2012	13.47	5,142,592[4]	321,412	371,295	368,037	99.12
2013	14.46	5,246,928[4]	327,933	430,773	372,652	86.51
2014	15.15	5,351,920[4]	334,495	476,321	382,251	80.25
2015	15.80					

[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 6.125%.*
[4] *Assumed equal to actual member contributions divided by 6.25%.*

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.