

**PUBLIC EMPLOYEES RETIREMENT ASSOCIATION OF MINNESOTA
GENERAL EMPLOYEES RETIREMENT PLAN
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2013**



November 2013

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, 2013 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, to determine the required contribution rate for the fiscal year beginning July 1, 2013, and to determine the actuarial information required by Governmental Accounting Standards Board (GASB) Statement No. 25. Note that we have not attempted to quantify the impact of GASB Statements No. 67 and No. 68 in this report.

The valuation was based upon information furnished by the 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.

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.

Trustees

November 2013

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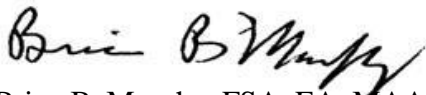
The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

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, FSA, EA, MAAA



Bonita J. Wurst, ASA, EA, MAAA

BBM/BJW:sc

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Summary of Valuation Results

Contributions

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

Contributions	Actuarial Valuation as of	
	July 1, 2013	July 1, 2012
Statutory Contributions - Chapter 353 (% of Payroll)	13.50%	13.50%
Required Contributions - Chapter 356 (% of Payroll)	15.15%	14.46%
Sufficiency / (Deficiency)	(1.65)%	(0.96)%

The statutory contribution deficiency increased from 0.96% of payroll to 1.65% of payroll. The primary reason for the increase is the recognition of investment losses from prior years in the actuarial value of assets. Lower than expected salaries resulted in a liability gain but also increased the payment on the unfunded actuarial accrued liability as a percent of payroll.

Statutory contributions are not sufficient to fully amortize the unfunded actuarial accrued liability over the statutory amortization period of 18 years. Based on the current member and employer contribution rates and other methods and assumptions described in this report, including the actuarial value of assets, it would take 26 years to eliminate the unfunded liability. Current contributions are not sufficient to cover interest on the unfunded liability, which will result in the unfunded liability growing during the short-term.

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 14.2% for the plan year ending June 30, 2013. The AVA earned approximately 6.2% for the plan year ending June 30, 2013 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.

The Plan Accounting sections detail the required accounting information for the Plan under GASB No. 25 (as amended by GASB No. 50). 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.

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, 2013	July 1, 2012
Contributions (<i>% of Payroll</i>)		
Statutory - Chapter 353	13.50%	13.50%
Required - Chapter 356	15.15%	14.46%
Sufficiency / (Deficiency)	(1.65)%	(0.96)%
Funding Ratios (<i>dollars in thousands</i>)		
Accrued Benefit Funding Ratio		
- Current assets (AVA)	\$ 14,113,295	\$ 13,661,682
- Current benefit obligations	18,480,077	17,561,706
- Funding ratio	76.37%	77.79%
Accrued Liability Funding Ratio		
- Current assets (AVA)	14,113,295	\$ 13,661,682
- Market value of assets (MVA)	15,084,608	13,577,653
- Actuarial accrued liability	\$ 19,379,769	18,598,897
- Funding ratio (AVA)	72.82%	73.45%
- Funding ratio (MVA)	77.84%	73.00%
Projected Benefit Funding Ratio		
- Current and expected future assets	\$ 20,846,228	\$ 20,492,589
- Current and expected future benefit obligations	21,915,442	21,129,663
- Projected benefit funding ratio	95.12%	96.98%
Participant Data		
Active members		
- Number	139,763	139,330
- Projected annual earnings (<i>000s</i>)	\$ 5,256,798	\$ 5,201,524
- Average projected annual earnings	\$ 37,612	\$ 37,332
- Average age	47.3	47.3
- Average service	11.0	11.1
Service retirements	67,861	64,472
Survivors	7,539	7,425
Disability retirements	3,683	3,638
Deferred retirements	45,946	44,354
Terminated other non-vested	119,509	115,287
Total	384,301	374,506

Summary of Valuation Results

Valuation of Future Post-Retirement Benefit Increases

A very important assumption affecting the valuation results is the expectation of future post-retirement benefit increases. The Plan's accrued liability funding ratio (on a market value of assets basis and assuming 1.0% post-retirement benefit increases in all future years) is currently 77.8%. If the Plan reaches a funding ratio of 90% (on a market value of assets basis) for two consecutive years in the future, post-retirement increases will revert to the 2.5% level.

The funding ratio threshold that must be attained to pay a 2.5% postretirement benefit increase to benefit recipients was changed in 2013 from 90% for one year to 90% for two consecutive years. The funding ratio threshold that determines when a 2.5% postretirement benefit increase must decrease to 1.0% was changed in 2013 from less than 90% for one year to less than 80% for one year or less than 85% for two consecutive years.

We performed a projection of liabilities and assets, using the 2013 valuation results as a baseline and assuming future experience follows the valuation assumptions (including future investment returns of 8.0% for four years and 8.5% thereafter). In addition, the projection utilized the following methods and assumptions:

- Liabilities and normal cost assume future benefit increases of 2.5% for all years
- Cash flow (benefit payments paid) assuming future benefit increases at 1.0% per year
- Level normal cost as a percent of pay (assuming total payroll increases as assumed in the valuation for purposes of amortizing the unfunded liability)
- 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 the funded status of this plan is not expected to reach 90% within the next 15 years of the projection.

The liabilities in this report are based on the assumption that the post-retirement benefit increase will remain at the reduced level of 1.0% indefinitely. We relied on direction from PERA on this issue. If we assumed future post-retirement benefit increases of 2.5% instead of 1.0%, the actuarial accrued liability would be \$21.9 billion instead of \$19.4 billion, resulting in a funded ratio of 68.8% (on a market value basis) as of July 1, 2013.

Supplemental Information

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

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

Plan Assets

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

Assets in Trust	Market Value	
	June 30, 2013	June 30, 2012
Cash, equivalents, short term securities	\$ 391,295	\$ 271,693
Fixed income	3,462,343	3,020,637
Equity	9,029,914	8,147,351
SBI Alternative	2,186,034	2,120,943
Other	8,066	8,745
Total Assets in Trust	\$ 15,077,652	\$ 13,569,369
Assets Receivable	17,569	19,563
Amounts Payable	(10,613)	(11,279)
Net Assets Held in Trust for Pension Benefits	15,084,608	13,577,653

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 Year Ending	Market Value	
	June 30, 2013	June 30, 2012
1. Fund balance at market value at beginning of year	\$ 13,577,653	\$ 13,616,622
2. Contributions		
a. Member	327,933	321,412
b. Employer	372,652	368,037
c. Other sources	0	0
d. Total contributions	700,585	689,449
3. Investment income		
a. Investment income/(loss)	1,924,422	338,896
b. Investment expenses	(20,676)	(18,479)
c. Net subtotal	1,903,746	320,417
4. Other	0	564
5. Total income: (2.d.) + (3.c.) + (4.)	\$ 2,604,331	\$ 1,010,430
6. Benefits Paid		
a. Annuity benefits	(1,051,591)	(1,000,644)
b. Refunds	(35,865)	(39,105)
c. Total benefits paid	(1,087,456)	(1,039,749)
7. Expenses		
a. Other	(23)	0
b. Administrative	(9,897)	(9,650)
c. Total expenses	(9,920)	(9,650)
8. Total disbursements: (6.c.) + (7.c.)	(1,097,376)	(1,049,399)
9. Fund balance at market value at end of year	\$ 15,084,608	\$ 13,577,653
10. Approximate return on market value of assets	14.2%	2.3%

Plan Assets

Actuarial Asset Value (Dollars in Thousands)

	<u>June 30, 2013</u>	<u>June 30, 2012</u>
1. Market value of assets available for benefits	\$ 15,084,608	\$ 13,577,653
2. Determination of average balance		
a. Total assets available at beginning of year	13,577,653	13,616,622
b. Total assets available at end of year	15,084,608	13,577,653
c. Net investment income for fiscal year	1,903,746	320,417
d. Average balance $[a. + b. - c.] / 2$	13,379,258	13,436,929
3. Expected return $[8.0\% * 2.d.]$ (8.5% in 2012)	1,070,341	1,142,139
4. Actual return	1,903,746	320,417
5. Current year asset gain/(loss) $[4. - 3.]$	833,405	(821,722)
6. Unrecognized asset returns		
	Original	Unrecognized Amount
	Amount	
a. Year ended June 30, 2013	\$ 833,405	\$ 666,724
b. Year ended June 30, 2012	(821,722)	(493,033)
c. Year ended June 30, 2011	1,657,793	663,118
d. Year ended June 30, 2010	672,522	134,504
e. Year ended June 30, 2009	(3,451,678)	N/A
f. Unrecognized return adjustment		971,313
7. Actuarial value at end of year (1. - 6.f.)	\$ 14,113,295	\$ 13,661,682
8. Approximate return on actuarial value of assets during fiscal year	6.2%	4.2%
9. Ratio of actuarial value of assets to market value of assets	0.94	1.01

Membership Data

Distribution of Active Members (Total)

Age	Years of Service as of June 30, 2013									Total
	<3*	3 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
< 25	4,161	238	40							4,439
Avg. Earnings	13,966	20,276	22,400							14,380
25 - 29	6,797	1,679	1,546	27						10,049
Avg. Earnings	21,607	28,836	35,298	33,554						24,953
30 - 34	4,888	1,650	4,046	965	16					11,565
Avg. Earnings	24,932	33,188	41,720	44,453	40,578					33,634
35 - 39	4,015	1,354	3,463	2,579	579	8				11,998
Avg. Earnings	23,698	30,265	43,266	50,915	51,379	44,592				37,287
40 - 44	3,995	1,631	3,923	2,959	2,004	465	11			14,988
Avg. Earnings	20,833	26,677	37,238	49,466	55,609	54,175	43,361			37,116
45 - 49	3,530	1,724	4,752	3,622	2,551	1,732	734	8		18,653
Avg. Earnings	20,178	24,222	31,453	40,547	51,626	58,077	55,867	55,505		36,619
50 - 54	2,995	1,490	4,711	4,942	3,576	2,594	2,176	1,014	42	23,540
Avg. Earnings	21,870	25,577	30,444	36,219	43,224	54,108	60,237	56,017	58,819	38,713
55 - 59	2,351	1,010	3,324	3,948	3,836	3,306	2,486	1,785	834	22,880
Avg. Earnings	20,849	25,285	31,646	35,680	38,316	46,541	56,369	62,040	58,107	40,244
60 - 64	1,422	732	2,082	2,419	2,283	2,421	1,958	1,005	1,049	15,371
Avg. Earnings	18,811	24,783	30,915	35,659	38,241	43,168	50,908	60,352	64,820	40,053
65 - 69	620	321	842	693	492	542	404	207	213	4,334
Avg. Earnings	11,812	17,286	21,944	33,365	37,259	42,166	47,786	50,959	66,642	32,235
70+	332	203	546	382	181	114	71	64	53	1,946
Avg. Earnings	7,828	8,211	13,095	17,553	24,710	30,173	35,324	35,129	50,094	17,186
Total	35,106	12,032	29,275	22,536	15,518	11,182	7,840	4,083	2,191	139,763
Avg. Earnings	20,727	26,866	34,441	40,126	44,155	49,290	55,380	59,132	61,971	35,855

* 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)

Age	Years of Service as of June 30, 2013								Total	
	<3*	3 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34		35+
< 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								1	1	
Avg. Earnings								83,981	83,981	
65 - 69								7	7	
Avg. Earnings								42,882	42,882	
70+								2	2	
Avg. Earnings								66,279	66,279	
Total								10	10	
Avg. Earnings								51,671	51,671	

* 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)

Age	Years of Service as of June 30, 2013									Total
	<3*	3 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	
< 25	4,161	238	40							4,439
Avg. Earnings	13,966	20,276	22,400							14,380
25 - 29	6,797	1,679	1,546	27						10,049
Avg. Earnings	21,607	28,836	35,298	33,554						24,953
30 - 34	4,888	1,650	4,046	965	16					11,565
Avg. Earnings	24,932	33,188	41,720	44,453	40,578					33,634
35 - 39	4,015	1,354	3,463	2,579	579	8				11,998
Avg. Earnings	23,698	30,265	43,266	50,915	51,379	44,592				37,287
40 - 44	3,995	1,631	3,923	2,959	2,004	465	11			14,988
Avg. Earnings	20,833	26,677	37,238	49,466	55,609	54,175	43,361			37,116
45 - 49	3,530	1,724	4,752	3,622	2,551	1,732	734	8		18,653
Avg. Earnings	20,178	24,222	31,453	40,547	51,626	58,077	55,867	55,505		36,619
50 - 54	2,995	1,490	4,711	4,942	3,576	2,594	2,176	1,014	42	23,540
Avg. Earnings	21,870	25,577	30,444	36,219	43,224	54,108	60,237	56,017	58,819	38,713
55 - 59	2,351	1,010	3,324	3,948	3,836	3,306	2,486	1,785	834	22,880
Avg. Earnings	20,849	25,285	31,646	35,680	38,316	46,541	56,369	62,040	58,107	40,244
60 - 64	1,422	732	2,082	2,419	2,283	2,421	1,958	1,005	1,048	15,370
Avg. Earnings	18,811	24,783	30,915	35,659	38,241	43,168	50,908	60,352	64,802	40,061
65 - 69	620	321	842	693	492	542	404	207	206	4,327
Avg. Earnings	11,812	17,286	21,944	33,365	37,259	42,166	47,786	50,959	67,449	32,356
70+	332	203	546	382	181	114	71	64	51	1,944
Avg. Earnings	7,828	8,211	13,095	17,553	24,710	30,173	35,324	35,129	49,459	17,135
Total	35,106	12,032	29,275	22,536	15,518	11,182	7,840	4,083	2,181	139,753
Avg. Earnings	20,727	26,866	34,441	40,126	44,155	49,290	55,380	59,132	62,018	35,854

* 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)

Age	Years Retired as of June 30, 2013							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
<50								
Avg. Benefit								
50 - 54	9	24						33
Avg. Benefit	16,873	9,970						11,852
55 - 59	815	1,557	57					2,429
Avg. Benefit	15,328	11,605	10,761					12,834
60 - 64	2,040	5,117	2,688	54				9,899
Avg. Benefit	14,622	14,545	11,432	11,505				13,699
65 - 69	1,536	7,286	5,620	2,196	24			16,662
Avg. Benefit	13,817	12,877	13,201	11,681	32,590			12,943
70 - 74	271	1,957	5,676	4,467	1,652	6		14,029
Avg. Benefit	8,087	10,372	10,938	12,418	13,708	28,908		11,609
75 - 79	88	496	1,358	4,273	3,334	860	6	10,415
Avg. Benefit	7,538	6,390	8,203	10,766	16,894	17,353	39,519	12,718
80 - 84	41	205	375	919	3,496	1,948	464	7,448
Avg. Benefit	5,865	5,655	5,518	8,517	14,750	18,987	24,314	14,921
85 - 89	7	24	119	231	727	2,069	1,323	4,500
Avg. Benefit	6,289	6,639	4,702	5,526	13,507	15,033	26,407	17,311
90+	1	8	28	45	112	362	1,890	2,446
Avg. Benefit	29,930	1,357	4,839	3,881	9,936	11,306	18,975	16,933
Total	4,808	16,674	15,921	12,185	9,345	5,245	3,683	67,861
Avg. Benefit	13,907	12,676	11,401	11,245	15,222	16,640	22,351	13,389

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)

Age	Years Retired as of June 30, 2013							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
<50								
Avg. Benefit								
50 - 54								
Avg. Benefit								
55 - 59								
Avg. Benefit								
60 - 64		3	9	3				15
Avg. Benefit		33,498	41,850	17,334				35,276
65 - 69	2	21	64	181	15			283
Avg. Benefit	2,257	27,812	36,358	42,224	39,406			39,396
70 - 74	1	14	73	326	289	5		708
Avg. Benefit	2,902	24,623	28,653	38,434	45,150	30,920		39,791
75 - 79		4	21	180	619	240	5	1,069
Avg. Benefit		45,036	41,187	28,610	44,309	43,903	42,858	41,509
80 - 84	1	2	5	42	442	527	232	1,251
Avg. Benefit	56,191	72,240	21,218	32,722	37,250	41,938	41,630	39,892
85 - 89			1	8	91	413	641	1,154
Avg. Benefit			26,361	30,183	34,209	32,029	42,471	37,983
90+					13	62	918	993
Avg. Benefit					38,235	26,103	29,207	29,131
Total	4	44	173	740	1,469	1,247	1,796	5,473
Avg. Benefit	15,902	30,770	33,483	36,472	41,621	38,203	35,583	37,802

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)

Age	Years Retired as of June 30, 2013							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
<50								
Avg. Benefit								
50 - 54	9	24						33
Avg. Benefit	16,873	9,970						11,852
55 - 59	815	1,557	57					2,429
Avg. Benefit	15,328	11,605	10,761					12,834
60 - 64	2,040	5,114	2,679	51				9,884
Avg. Benefit	14,622	14,534	11,330	11,162				13,666
65 - 69	1,534	7,265	5,556	2,015	9			16,379
Avg. Benefit	13,832	12,834	12,934	8,937	21,232			12,486
70 - 74	270	1,943	5,603	4,141	1,363	1		13,321
Avg. Benefit	8,106	10,269	10,707	10,370	7,041	18,852		10,111
75 - 79	88	492	1,337	4,093	2,715	620	1	9,346
Avg. Benefit	7,538	6,076	7,684	9,981	10,644	7,076	22,825	9,425
80 - 84	40	203	370	877	3,054	1,421	232	6,197
Avg. Benefit	4,607	4,999	5,305	7,358	11,494	10,474	6,999	9,880
85 - 89	7	24	118	223	636	1,656	682	3,346
Avg. Benefit	6,289	6,639	4,519	4,641	10,545	10,794	11,310	10,181
90+	1	8	28	45	99	300	972	1,453
Avg. Benefit	29,930	1,357	4,839	3,881	6,220	8,248	9,311	8,597
Total	4,804	16,630	15,748	11,445	7,876	3,998	1,887	62,388
Avg. Benefit	13,906	12,628	11,159	9,614	10,298	9,915	9,756	11,248

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)

Age	Years Since Death as of June 30, 2013							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
<45	15	78	36	25	12	6	4	176
Avg. Benefit	9,600	5,801	5,461	5,761	7,275	12,459	15,718	6,602
45 - 49	9	25	24	8	7	5	3	81
Avg. Benefit	3,734	4,058	8,107	8,383	7,297	4,837	4,086	5,978
50 - 54	25	48	40	19	10	7		149
Avg. Benefit	9,293	9,797	6,645	7,725	8,675	17,739		8,900
55 - 59	36	134	108	40	29	6	2	355
Avg. Benefit	8,323	8,793	10,298	6,629	9,719	14,066	17,214	9,171
60 - 64	66	192	154	79	30	18	7	546
Avg. Benefit	9,991	11,092	11,194	11,213	13,312	18,967	22,131	11,529
65 - 69	65	225	203	95	41	24	15	668
Avg. Benefit	14,065	10,626	11,364	11,681	15,895	21,631	17,109	12,199
70 - 74	65	245	203	153	90	65	34	855
Avg. Benefit	11,540	12,047	12,196	12,559	15,155	18,577	20,660	13,302
75 - 79	75	276	244	220	124	92	77	1,108
Avg. Benefit	13,594	13,125	15,879	15,528	17,370	14,614	24,397	15,622
80 - 84	89	297	254	228	166	152	119	1,305
Avg. Benefit	17,310	18,314	16,867	20,410	18,434	14,555	22,231	18,265
85 - 89	66	253	250	218	207	151	179	1,324
Avg. Benefit	17,160	17,282	16,732	20,253	19,863	18,302	18,816	18,388
90+	27	123	171	149	150	136	216	972
Avg. Benefit	17,521	16,291	17,212	16,819	16,825	15,775	14,333	16,143
Total	538	1,896	1,687	1,234	866	662	656	7,539
Avg. Benefit	13,381	13,245	13,966	15,827	17,057	16,377	18,615	15,019

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)

Age	Years Since Death as of June 30, 2013							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
<45	3			1	1	2	2	9
Avg. Benefit	17,398			5,564	7,668	18,718	26,990	17,427
45 - 49					1			1
Avg. Benefit					4,606			4,606
50 - 54				2		1		3
Avg. Benefit				8,019		35,963		17,334
55 - 59		5		1	2	1	1	10
Avg. Benefit		16,078		1,995	12,255	36,129	27,928	17,095
60 - 64		4	4	5	4	6	5	28
Avg. Benefit		13,562	12,556	14,250	27,389	35,058	23,140	21,833
65 - 69	7	12	16	12	4	13	7	71
Avg. Benefit	37,389	21,349	29,164	33,171	32,873	31,593	25,410	29,615
70 - 74	6	41	40	31	19	29	26	192
Avg. Benefit	28,278	26,757	25,169	27,032	37,021	31,223	24,452	27,896
75 - 79	16	67	74	65	37	22	59	340
Avg. Benefit	29,401	25,948	31,527	31,566	33,878	29,797	29,335	30,098
80 - 84	41	104	85	101	68	59	80	538
Avg. Benefit	28,391	33,455	33,418	34,140	30,759	25,314	28,765	31,261
85 - 89	25	86	99	97	107	75	126	615
Avg. Benefit	30,320	32,913	28,849	33,376	29,326	25,923	23,153	28,750
90+	9	55	84	85	77	85	161	556
Avg. Benefit	26,620	26,747	26,125	23,229	24,212	19,727	16,351	21,679
Total	107	374	402	400	320	293	467	2,363
Avg. Benefit	29,118	29,431	29,223	30,107	29,152	25,277	22,683	27,609

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)

Age	Years Since Death as of June 30, 2013							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
<45	12	78	36	24	11	4	2	167
Avg. Benefit	7,651	5,801	5,461	5,769	7,239	9,330	4,446	6,019
45 - 49	9	25	24	8	6	5	3	80
Avg. Benefit	3,734	4,058	8,107	8,383	7,745	4,837	4,086	5,995
50 - 54	25	48	40	17	10	6		146
Avg. Benefit	9,293	9,797	6,645	7,690	8,675	14,701		8,727
55 - 59	36	129	108	39	27	5	1	345
Avg. Benefit	8,323	8,510	10,298	6,748	9,531	9,654	6,500	8,942
60 - 64	66	188	150	74	26	12	2	518
Avg. Benefit	9,991	11,040	11,158	11,008	11,146	10,921	19,611	10,972
65 - 69	58	213	187	83	37	11	8	597
Avg. Benefit	11,250	10,022	9,841	8,574	14,060	9,859	9,847	10,128
70 - 74	59	204	163	122	71	36	8	663
Avg. Benefit	9,838	9,090	9,013	8,882	9,304	8,391	8,338	9,075
75 - 79	59	209	170	155	87	70	18	768
Avg. Benefit	9,307	9,015	9,068	8,802	10,349	9,843	8,213	9,214
80 - 84	48	193	169	127	98	93	39	767
Avg. Benefit	7,844	10,154	8,542	9,491	9,883	7,730	8,829	9,149
85 - 89	41	167	151	121	100	76	53	709
Avg. Benefit	9,136	9,232	8,787	9,733	9,738	10,782	8,507	9,401
90+	18	68	87	64	73	51	55	416
Avg. Benefit	12,972	7,834	8,607	8,305	9,033	9,189	8,424	8,745
Total	431	1,522	1,285	834	546	369	189	5,176
Avg. Benefit	9,474	9,267	9,193	8,979	9,969	9,310	8,564	9,271

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)

Age	Years Disabled* as of June 30, 2013							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
< 45	4	16	8	2				30
Avg. Benefit	4,658	6,854	6,360	1,834				6,095
45 - 49	3	39	29	15	1			87
Avg. Benefit	15,818	7,634	6,719	3,844	4,763			6,924
50 - 54	17	86	75	43	19	5		245
Avg. Benefit	10,573	11,259	9,136	6,411	6,549	6,140		9,241
55 - 59	32	205	174	101	46	17		575
Avg. Benefit	13,218	12,377	10,944	8,435	9,099	6,611		10,865
60 - 64	45	306	296	167	58	22	7	901
Avg. Benefit	16,108	14,064	12,166	10,829	9,975	9,429	4,554	12,493
65 - 69	183	514	80	27	12	3		819
Avg. Benefit	13,316	13,026	9,834	10,423	8,668	6,229		12,604
70 - 74		88	393	3	3			487
Avg. Benefit		9,836	13,108	7,130	33,401			12,605
75+			47	264	135	65	28	539
Avg. Benefit			11,853	15,088	17,478	18,038	17,767	15,900
Total	284	1,254	1,102	622	274	112	35	3,683
Avg. Benefit	13,487	12,582	11,735	11,710	13,467	13,765	15,124	12,377

* 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)

Age	Years Disabled* as of June 30, 2013							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
< 45								
Avg. Benefit								
45 - 49								
Avg. Benefit								
50 - 54								
Avg. Benefit								
55 - 59								
Avg. Benefit								
60 - 64								
Avg. Benefit								
65 - 69	3	9						12
Avg. Benefit	41,858	42,742						42,521
70 - 74		3	16		2			21
Avg. Benefit		17,757	49,814		49,917			45,244
75+			4	31	32	24	17	108
Avg. Benefit			35,801	39,296	34,814	33,549	25,533	34,395
Total	3	12	20	31	34	24	17	141
Avg. Benefit	41,858	36,496	47,011	39,296	35,703	33,549	25,533	36,703

* 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)

Age	Years Disabled* as of June 30, 2013							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
< 45	4	16	8	2				30
Avg. Benefit	4,658	6,854	6,360	1,834				6,095
45 - 49	3	39	29	15	1			87
Avg. Benefit	15,818	7,634	6,719	3,844	4,763			6,924
50 - 54	17	86	75	43	19	5		245
Avg. Benefit	10,573	11,259	9,136	6,411	6,549	6,140		9,241
55 - 59	32	205	174	101	46	17		575
Avg. Benefit	13,218	12,377	10,944	8,435	9,099	6,611		10,865
60 - 64	45	306	296	167	58	22	7	901
Avg. Benefit	16,108	14,064	12,166	10,829	9,975	9,429	4,554	12,493
65 - 69	180	505	80	27	12	3		807
Avg. Benefit	12,840	12,496	9,834	10,423	8,668	6,229		12,160
70 - 74		85	377	3	1			466
Avg. Benefit		9,556	11,550	7,130	371			11,134
75+			43	233	103	41	11	431
Avg. Benefit			9,625	11,868	12,092	8,959	5,765	11,265
Total	281	1,242	1,082	591	240	88	18	3,542
Avg. Benefit	13,185	12,351	11,082	10,263	10,317	8,370	5,294	11,408

* 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			Total
	Actives	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	
Members on 7/1/2012	139,330	44,354	115,287	64,472	3,638	7,425	374,506
New members	14,747	0	0	0	0	0	14,747
Return to active	2,347	(851)	(1,494)	(1)	(1)	0	0
Terminated non-vested	(5,753)	0	5,753	0	0	0	0
Service retirements	(2,740)	(2,201)	0	4,941	0	0	0
Terminated deferred	(5,690)	5,690	0	0	0	0	0
Terminated refund/transfer	(2,136)	(1,134)	(1,113)	0	0	0	(4,383)
Deaths	(170)	(111)	(211)	(1,813)	(147)	(429)	(2,881)
New beneficiary	0	0	0	0	0	560	560
Disabled	(147)	0	0	0	147	0	0
Data adjustments	(25)	199	1,287	262	46	(17)	1,752
Net change	433	1,592	4,222	3,389	45	114	9,795
Members on 6/30/2013	139,763	45,946	119,509	67,861	3,683	7,539	384,301

Terminated Member Statistics	Deferred Retirement	Other Non-Vested	Total
Number	45,946	119,509	165,455
Average age	50.0	47.7	48.3
Average service	7.7	0.9	2.8
Average annual benefit, with augmentation to Normal Retirement Date and 60% CSA load	\$ 9,938	N/A	\$ 9,938
Average refund value, with 60% CSA load	\$14,538	\$1,124	\$ 4,849

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 13.50% 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.

				<u>June 30, 2013</u>
A. Actuarial Value of Assets				\$ 14,113,295
B. Expected Future Assets				
1. Present value of expected future statutory supplemental contributions				4,197,260
2. Present value of future normal cost contributions				2,535,673
3. Total expected future assets: (1.) + (2.)				\$ 6,732,933
C. Total Current and Expected Future Assets (A.+ B.3)				\$ 20,846,228
D. Current Benefit Obligations*				
1. Benefit recipients	<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>	
a. Service retirements	\$ 0	\$ 8,160,701	\$ 8,160,701	
b. Disability retirements	0	385,333	385,333	
c. Survivors	0	805,572	805,572	
2. Deferred retirements with augmentation	0	2,013,024	2,013,024	
3. Former members without vested rights	68,252	0	68,252	
4. Active members	104,547	6,942,648	7,047,195	
5. Total Current Benefit Obligations	<u>\$ 172,799</u>	<u>\$ 18,307,278</u>	<u>\$ 18,480,077</u>	
E. Expected Future Benefit Obligations				\$ 3,435,365
F. Total Current and Expected Future Benefit Obligations**				\$ 21,915,442
G. Unfunded Current Benefit Obligations: (D.5.) - (A.)				\$ 4,366,782
H. Unfunded Current and Future Benefit Obligations: (F.) - (C.)				\$ 1,069,214
I. Accrued Benefit Funding Ratio: (A.)/(D.)				76.37%
J. Projected Benefit Funding Ratio: (C.)/(F.)				95.12%

* 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	\$ 9,439,210	\$ 1,758,809	\$ 7,680,401
b. Disability benefits	342,395	114,681	227,714
c. Survivor's benefits	177,491	45,034	132,457
d. Deferred retirements	470,032	434,020	36,012
e. Refunds*	<u>53,432</u>	<u>183,129</u>	<u>(129,697)</u>
f. Total	\$ 10,482,560	\$ 2,535,673	\$ 7,946,887
2. Deferred retirements with future augmentation	2,013,024	0	2,013,024
3. Former members without vested rights	68,252	0	68,252
4. Annuitants	<u>9,351,606</u>	<u>0</u>	<u>9,351,606</u>
5. Total	\$ 21,915,442	\$ 2,535,673	\$ 19,379,769
B. Determination of Unfunded Actuarial Accrued Liability (UAAL)			
1. Actuarial accrued liability			\$ 19,379,769
2. Current assets (AVA)			<u>14,113,295</u>
3. Unfunded actuarial accrued liability			\$ 5,266,474
C. Determination of Supplemental Contribution Rate			
1. Present value of future payrolls through the amortization date of June 30, 2031			\$ 64,672,725
2. Supplemental contribution rate: $(B.3.) / (C.1.)$			8.14 % **

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

** The amortization factor as of June 30, 2013 is 12.3212.

Development of Costs

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

	Year Ending June 30, 2013		
	Actuarial Accrued Liability	Current Assets	Unfunded Actuarial Accrued Liability
A. At beginning of year	\$ 18,598,897	\$ 13,661,682	\$ 4,937,215
B. Changes due to interest requirements and current rate of funding			
1. Normal cost and expenses	\$ 365,702	\$ 0	\$ 365,702
2. Benefit payments	(1,087,456)	(1,087,456)	0
3. Contributions	0	700,585	(700,585)
4. Interest on A., B.1., B.2., and B.3.	<u>1,521,051</u>	<u>1,077,460</u>	<u>443,591</u>
5. Total (B.1. + B.2. + B.3. + B.4.)	799,297	690,589	108,708
C. Expected unfunded actuarial accrued liability at end of year (A. + B.5.)			\$ 5,045,923
D. Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected			
1. Age and service retirements			\$ 10,806
2. Disability retirements			(936)
3. Death-in-service benefits			(7,831)
4. Withdrawals			(35,074)
5. Salary increases			(132,170)
6. Investment income			238,976
7. Mortality of annuitants			(13,347)
8. Other items			<u>160,127</u>
9. Total			\$ 220,551
E. Unfunded actuarial accrued liability at end of year before plan amendments and changes in actuarial assumptions (C. + D.9.)			\$ 5,266,474
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			\$ 0
H. Change in unfunded actuarial accrued liability due to changes in decrement timing and miscellaneous methodology			\$ 0
I. Unfunded actuarial accrued liability at end of year (E. + F. + G. + H.)*			\$ 5,266,474

* The unfunded actuarial accrued liability on a market value of assets basis is \$4,295,161.

Development of Costs

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

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

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
A. Statutory contributions - Chapter 353		
1. Employee contributions	6.25%	\$ 328,565
2. Employer contributions	7.25%	381,142
3. Total	<u>13.50%</u>	<u>\$ 709,707</u>
B. Required contributions - Chapter 356		
1. Normal cost		
a. Retirement benefits	4.91%	\$ 258,097
b. Disability benefits	0.29%	15,244
c. Survivors	0.13%	6,833
d. Deferred retirement benefits	1.02%	53,631
e. Refunds*	0.47%	24,708
f. Total	<u>6.82%</u>	<u>\$ 358,513</u>
2. Supplemental contribution amortization of Unfunded Actuarial Accrued Liability by June 30, 2031	8.14%	\$ 427,903
3. Allowance for expenses	<u>0.19%</u>	<u>9,988</u>
4. Total	15.15% **	\$ 796,404
C. Contribution Sufficiency/(Deficiency) (A.3. - B.4.)	(1.65)%	\$ (86,697)

Note: Projected annual payroll for fiscal year beginning on the valuation date: \$5,256,798.

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

** The required contribution on a market value of assets basis is 13.65% of payroll.

Development of Costs

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

	Percent of Payroll	Dollar Amount
A. Statutory contributions - Chapter 353		
1. Employee contributions	9.10%	\$ 49
2. Employer contributions	11.78%	63
3. Total	20.88%	\$ 112
B. Required contributions - Chapter 356		
1. Normal cost		
a. Retirement benefits	2.64%	\$ 14
b. Disability benefits	0.22%	1
c. Survivors	0.08%	0
d. Deferred retirement benefits	3.10%	17
e. Refunds*	0.70%	4
f. Total	6.74%	\$ 36

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

Note: Projected annual payroll for fiscal year beginning on the valuation date: \$535.

Development of Costs

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

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
A. Statutory contributions - Chapter 353		
1. Employee contributions	6.25%	\$ 328,516
2. Employer contributions	7.25%	381,079
3. Total	<u>13.50%</u>	<u>\$ 709,595</u>
 B. Required contributions - Chapter 356		
1. Normal cost		
a. Retirement benefits	4.91%	\$ 258,083
b. Disability benefits	0.29%	15,243
c. Survivors	0.13%	6,833
d. Deferred retirement benefits	1.02%	53,614
e. Refunds*	0.47%	24,704
f. Total	<u>6.82%</u>	<u>\$ 358,477</u>

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

Note: Projected annual payroll for fiscal year beginning on the valuation date: \$5,256,263.

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 8.37% (8.34% last year).

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.

Actuarial Basis

Actuarial Methods (Concluded)

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.

The Minnesota Post Retirement Investment Fund (Post Fund) was dissolved on June 30, 2009. For the purpose of determining the actuarial value of assets, the Post Fund asset loss for the fiscal year ending June 30, 2009 was recognized incrementally over five years at 20% per year, similar to the smoothing described above. Prior to June 30, 2009, Post Fund asset gains and losses were not smoothed.

Payment on the Unfunded Actuarial Accrued Liability

Payment equals a level percentage of payroll each year to the statutory amortization date of June 30, 2031 assuming payroll increases of 3.75% per annum. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount is amortized over 30 years as a level percentage of payroll. 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

None.

Actuarial Basis

Summary of Actuarial Assumptions

The following assumptions were used in valuing the liabilities and benefits under the plan. All actuarial assumptions are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement (LCPR), or the 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, 2013 to June 30, 2017 7.00% per annum post-retirement 8.00% per annum pre-retirement July 1, 2017 and later 7.50% per annum post-retirement 8.50% per annum pre-retirement
Benefit increases after retirement	Payment of 1.00% annual benefit increases after retirement are accounted for by using the 7.50% post-retirement assumption (7.0% during 4-year select period), as required by Minnesota Statute. Mathematically, this assumption funds a post-retirement benefit increase of 0.9% instead of 1.0%. This valuation does not reflect any potential additional benefit increases payable if the plan's funding ratio exceeds 90%.
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: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Year</th> <th style="text-align: center;">Select Withdrawal Rates</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">40.00%</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">15.00%</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">10.00%</td> </tr> </tbody> </table>	Year	Select Withdrawal Rates	1	40.00%	2	15.00%	3	10.00%								
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: <table style="margin-left: 40px;"> <tr> <td style="padding-right: 20px;">Males:</td> <td>5% elect 25% Joint & Survivor option</td> </tr> <tr> <td></td> <td>15% elect 50% Joint & Survivor option</td> </tr> <tr> <td></td> <td>10% elect 75% Joint & Survivor option</td> </tr> <tr> <td></td> <td>30% elect 100% Joint & Survivor option</td> </tr> <tr> <td>Females:</td> <td>5% elect 25% Joint & Survivor option</td> </tr> <tr> <td></td> <td>5% elect 50% Joint & Survivor option</td> </tr> <tr> <td></td> <td>5% elect 75% Joint & Survivor option</td> </tr> <tr> <td></td> <td>15% elect 100% Joint & Survivor option</td> </tr> </table> <p>Remaining married members and unmarried members are assumed to elect the Straight Life option.</p> <p>Members receiving deferred annuities (including current terminated deferred members) are assumed to elect a straight life annuity.</p>	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
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																
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.
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In cases where submitted data was missing or incomplete, the following assumptions were applied:

Data for active members:

There were 1,700 members reported with zero salary. We used prior year salary (973 members), if available; otherwise high five salary with a 10% load to account for salary increases (927 members). If neither prior year salary or high five salary was available, we assumed a value of \$35,000.

There were also 1,799 members reported without a gender and 120 members reported with an invalid date of birth. We assumed a date of birth of July 1, 1966 and female gender.

Data for terminated members:

We calculated benefits for these members using the reported Average Salary and credited service. If Average Salary was not reported (324 members), we assumed a value of \$24,000. If credited service was not reported (157 members), we assumed credited service was elapsed time from hire to termination date (112 members); otherwise nine years. If termination date was not reported (118 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 July 1, 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 147 members reported without a gender. We assumed a date of birth of July 1, 1966 and female gender.

Data for retired members:

There was one member reported with an invalid date of birth and 58 members reported without a gender. We assumed a date of birth of July 1, 1945 and female gender.

Changes in actuarial assumptions	None.
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Actuarial Basis

Summary of Actuarial Assumptions (Continued)

Age	Rate (%)*					
	Healthy Post-Retirement Mortality**		Healthy Pre-Retirement Mortality**		Disability Mortality	
	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.

Age	Withdrawal Rates After Third Year		Disability Retirement	
	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)

Age	Retirement		Salary Scale	
	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: <table> <tr> <td><u>Member</u></td> <td>9.10% of salary</td> </tr> <tr> <td><u>Employer</u></td> <td>11.78% of salary</td> </tr> </table> <p>Member contributions are “picked up” according to the provisions of Internal Revenue Code 414(h).</p>	<u>Member</u>	9.10% of salary	<u>Employer</u>	11.78% of salary
<u>Member</u>	9.10% of salary				
<u>Employer</u>	11.78% of salary				
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, 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

Normal retirement benefit

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.

Early retirement benefit

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.

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 prioritization 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	<p>Members are eligible for combined service benefits if they:</p> <ul style="list-style-type: none"> (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). <p>Other requirements for combined service include:</p> <ul style="list-style-type: none"> (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. <p>Members who meet the above requirements must have their benefit based on the following:</p> <ul style="list-style-type: none"> (a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement. (b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.
Changes in plan provisions	<p>The funding ratio threshold that must be attained to pay a 2.5% postretirement benefit increase to benefit recipients was changed from 90% for one year to 90% for two consecutive years. The funding ratio threshold that determines when a 1.0% postretirement benefit increase must be paid was changed from less than 90% for one year to less than 80% for one year or less than 85% for two consecutive years.</p>

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: Member: 6.25% of salary Employer: 7.25% of salary 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, 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	
<u>Normal retirement benefit</u>	
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;
- (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.

Actuarial Basis

Summary of Plan Provisions – Coordinated (Concluded)

Combined service annuity	<p>Members are eligible for combined service benefits if they:</p> <ul style="list-style-type: none"> (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). <p>Other requirements for combined service include:</p> <ul style="list-style-type: none"> (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. <p>Members who meet the above requirements must have their benefit based on the following:</p> <ul style="list-style-type: none"> (a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement. (b.) Average salary is based on the high five consecutive years during their entire service in all covered plans
Changes in plan provisions	<p>The funding ratio threshold that must be attained to pay a 2.5% postretirement benefit increase to benefit recipients was changed from 90% for one year to 90% for two consecutive years. The funding ratio threshold that determines when a 1.0% postretirement benefit increase must be paid was changed from less than 90% for one year to less than 80% for one year or less than 85% for two consecutive years.</p>

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

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

Schedule of Funding Progress¹ (Dollars in Thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a)/(b)	Actual Covered Payroll (Previous FY) (c)	UAAL as a Percentage of Covered Payroll [(b)-(a)]/(c)
7-1-1991	\$ 3,570,304	\$ 4,988,671	\$ 1,418,367	71.57 %	\$ 2,124,409	66.77 %
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

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%.

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

Schedule of Contributions from the Employer and Other Contributing Entities¹ (Dollars in Thousands)

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

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)
1991	10.04 %	\$ 2,124,409	\$ 94,413	\$ 118,878	\$ 101,907	85.72%
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					

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

<i>Accrued Benefit Funding Ratio</i>	The ratio of assets to Current Benefit Obligations.
<i>Accrued Liability Funding Ratio</i>	The ratio of assets to Actuarial Accrued Liability.
<i>Actuarial Accrued Liability (AAL)</i>	The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs.
<i>Actuarial Assumptions</i>	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.
<i>Actuarial Cost Method</i>	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.
<i>Actuarial Equivalent</i>	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
<i>Actuarial Present Value (APV)</i>	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.
<i>Actuarial Present Value of Projected Benefits</i>	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.
<i>Actuarial Valuation</i>	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).
<i>Actuarial Value of Assets</i>	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)

<i>Amortization Method</i>	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.
<i>Amortization Payment</i>	That portion of the plan contribution or ARC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.
<i>Amortization Period</i>	The period used in calculating the Amortization Payment.
<i>Annual Required Contribution (ARC)</i>	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.
<i>Augmentation</i>	Annual increases to deferred benefits.
<i>Closed Amortization Period</i>	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.
<i>Current Benefit Obligations</i>	The present value of benefits earned to the valuation date, based on current service and including future salary increases to retirement.
<i>Employer Normal Cost</i>	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
<i>Expected Assets</i>	The present value of anticipated future contributions intended to fund benefits for current members.
<i>Experience Gain/Loss</i>	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)

<i>GASB</i>	Governmental Accounting Standards Board.
<i>GASB No. 25 and GASB No. 27</i>	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.
<i>GASB No. 50</i>	The accounting standard governing a state or local governmental employer's accounting for pensions.
<i>GASB No. 67 and GASB No. 68</i>	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.
<i>Normal Cost</i>	The annual cost assigned, under the Actuarial Cost Method, to the current plan year.
<i>Projected Benefit Funding Ratio</i>	The ratio of the sum of Actuarial Value of Assets and Expected Assets to the Actuarial Present Value of Projected Benefits.
<i>Unfunded Actuarial Accrued Liability</i>	The difference between the Actuarial Accrued Liability and Actuarial Value of Assets.
<i>Valuation Date</i>	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.