

**THE PUBLIC SCHOOL EMPLOYEES'  
RETIREMENT SYSTEM OF PENNSYLVANIA**

**ACTUARIAL VALUATION  
JUNE 30, 2013**

January 22, 2014

The Retirement Board  
Public School Employees'  
Retirement System of Pennsylvania  
P.O. Box 125  
Harrisburg, Pennsylvania 17108

Ladies and Gentlemen:

This report presents the results of the annual actuarial valuation of the Public School Employees' Retirement System of Pennsylvania (Retirement System or PSERS) as of June 30, 2013.

The valuation takes into account all of the promised benefits to which members are entitled as of June 30, 2013, including pension and survivor benefits, and as required by the Public School Employees' Retirement Code, 24 Pa. C.S. §8101 et. seq. (Retirement Code) is the basis for the contribution rate for fiscal year 2014/2015.

As required under Section 8502(j) of the Retirement Code, experience studies are performed once in every five year period. This valuation was prepared on the basis of the demographic and economic assumptions that were selected on the basis of the July 1, 2005 to June 30, 2010 Experience Review and adopted by the Board of Trustees at their March 11, 2011 meeting, which include a 7.50% per annum rate of investment return. As mandated by the Retirement Code, these assumptions will remain in effect for valuation purposes until such time the Board of Trustees adopts revised assumptions.

The actuarial assumptions and methods for financial reporting meet the parameters set forth in Governmental Accounting Standards Board (GASB) Statements No. 25, 43, and 50. The actuarial assumptions and methods used for GASB 25 disclosure are the same as those used for pension funding, except that the GASB 25 amortization payment is determined based on 30-year level-dollar amortization of the unfunded liability. The Health Insurance funding provisions of the Retirement Code differ from the GASB 43 disclosure requirements. For funding purposes the actuarial liability equals the assets in the health insurance account, and a contribution is determined that will assure the solvency of the account through the third fiscal year following the valuation date. For purposes of GASB 43 disclosure the Health Insurance actuarial liability and normal cost requirements have been determined under the entry age actuarial cost method, with 30-year level dollar amortization of the unfunded liability. (The entry age actuarial cost method meets the GASB 43 parameters for determining actuarial liability and normal cost, and is the cost method specified by the Retirement Code for the PSERS pension plan.)

### **Assets and Membership Data**

The Retirement System reported the individual data for members of the Retirement System as of the valuation date to the actuaries. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness. The amount of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Retirement System. The accuracy of the results presented in this report is dependent on the accuracy of the data.

### **Funding Adequacy**

The valuation results indicate that the employer contribution rate for fiscal year 2014/2015 is 21.40%. As of June 30, 2013, the total funded ratio of the plan (for Pensions and Health Insurance combined) is 63.8%, based on the accrued liability and actuarial value of assets calculated under the funding requirements of Section 8328 of the Retirement Code.

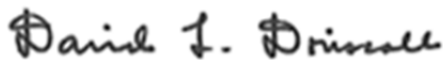
### **Financial Results and Membership Data**

Detailed summaries of the financial results of the valuation and membership data used in preparing the valuation are shown in the valuation report. The actuaries prepared supporting schedules included in the Actuarial and Statistical Section of the PSERS Comprehensive Annual Financial Report (CAFR), and also prepared the trend data schedules included in the Financial Section of the CAFR.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

David L. Driscoll is a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. Edward Quinn and Salvador Nakar are Members of the American Academy of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions concerning it.

Respectfully submitted,



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Principal, Consulting Actuary



Edward Quinn, MAAA, EA  
Director, Retirement Actuary



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# THE PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM OF PENNSYLVANIA

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## **Executive Summary**

This report presents the actuarial valuation as of June 30, 2013 for the Public School Employees' Retirement System of Pennsylvania.

The principal valuation results include:

- The employer contribution rate for fiscal year 2014/2015, which is 21.40%.
- The total funded ratio of the plan determined as of June 30, 2013 under the funding requirements of Section 8328 of the Retirement Code, which is 63.8% based on the accrued liability and the actuarial value of assets for Pensions and Health Insurance as of that date.
- The determination and analysis of actuarial experience in the year ending June 30, 2013, which consisted of a net experience loss of \$1,256 million.
- Annual disclosures as of June 30, 2013 as required by Statements No. 25, 43, and 50 of the Governmental Accounting Standards Board.

The valuation was completed based upon membership and financial data submitted by the Retirement System. Detailed summaries of the financial results of the valuation and membership data used in preparing the valuation are included in the valuation report. The actuaries prepared supporting schedules included in the Actuarial and Statistical Section of the PSERS Comprehensive Annual Financial Report (CAFR), and also prepared the trend data schedules included in the Financial Section of the CAFR.

## **Changes Since Last Year**

### **Legislative and Administrative Changes**

The benefit provisions and contribution provisions are summarized in Table 13. There were no legislative or administrative changes since the prior valuation.

### **Actuarial Assumptions and Methods**

The actuarial assumptions and methods are outlined in Table 12. There were no demographic or economic assumption changes since the prior valuation. We have reviewed the assumptions and methods used in completing the June 30, 2013 actuarial valuation and believe that they are reasonable and in compliance with the applicable standards.

## Contribution Rates

The results of the valuation as of June 30, 2013 determine the employer contribution rate for fiscal year 2014/2015. The calculated employer contribution rate for the 2014/2015 fiscal year is 21.40%, and the Board of Trustees certified this rate at their December 10, 2013 meeting.

The average contribution rate payable by the members is 7.46%. The average member contribution rate of 7.46% is a pay-weighted average of member rates that vary based on date of hire and Class membership. Effective January 1, 2002, the employee contribution rate for members who elected to have prior school service and intervening military service converted to Class T-D service increased by 1.25% to 7.50%. Anyone who enrolled after July 1, 2001 and before July 1, 2011 is a member of Class T-D. Any employee who becomes a member after June 30, 2011 is a Class T-E member or, alternatively, may elect to become a Class T-F member. The base contribution rate for Class T-E members is 7.50% of compensation. The base contribution rate for Class T-F members is 10.30% of compensation. Class T-E and Class T-F members are subject to a “shared-risk” employee contribution rate, as discussed on page 29.

### Reasons for Change in the Rate Calculated by the Actuary

The employer contribution rate calculated by the actuary increased from 16.93% for fiscal year 2013/2014 to 21.40% for fiscal year 2014/2015. The reconciliation of the employer contribution rates by source is as follows:

• FY 2013/2014 Act 120 final rate	16.93%
• Deferral of FY 2014 pension contribution due to Act 120 4.5% collar	<u>7.82</u>
• FY 2013/2014 actual rate	24.75%
• Decrease due to change in normal rate	(0.11)
• Net increase due to payroll growth and liability experience*	0.68
• Increase due to actuarial loss on assets	0.81
• Increase due to deferral of FY 2013 pension contribution due to Act 120 3.5% collar	0.77
• Decrease due to change in health insurance contribution rate	(0.03)
• Deferral of FY 2015 pension contribution due to Act 120 4.5% collar	<u>(5.47)</u>
• FY 2014/2015 employer contribution rate	21.40%

\* Reflects increase from appropriation payroll less than expected partially offset by liability gains.

## Summary of Principal Results

Summarized below are the principal financial results for the Public School Employees' Retirement System based upon the actuarial valuation as of June 30, 2013. Comparable results from the June 30, 2012 valuation are also shown.

Item	June 30, 2013	June 30, 2012
<b>Demographics</b>		
Active Members		
• Number	267,428	273,504
• Average Annual Pay	\$ 47,030	\$ 46,487
Annuitants		
• Number	209,204	202,015
• Average Annual Benefit Payment	\$ 24,603	\$ 24,122
<b>Contribution Rates (as a Percentage of Payroll)</b>		
	(Fiscal Year 2014/2015)	(Fiscal Year 2013/2014)
Employer Contribution Rate:		
• Total Pension Rate Calculated by Actuaries	25.97%	23.82%
• Act 120 Employer Pension Rate After Application of Collar	20.50	16.00
• Health Insurance Contribution Rate	<u>0.90</u>	<u>0.93</u>
• Total Contribution Rate	21.40%	16.93%
• Total Contribution Rate Certified by Board	21.40%	16.93%
Member Average Contribution Rate		
• Total Rate	<u>7.46</u>	<u>7.43</u>
	28.86%	24.36%
<b>Actuarial Funded Status*</b>		
• Accrued Liability	\$ 90,052.2 Mil	\$ 87,854.4 Mil
• Actuarial Value of Assets	<u>57,453.6</u>	<u>58,321.4</u>
• Unfunded Accrued Liability	\$ 32,598.6	\$ 29,533.0
• Funded Ratio	63.8%	66.4%
*Pensions and Health Insurance combined		

## Five-Year History of Principal Financial Results

### Five-Year History of Contribution Rates (As a % of Payroll)

Fiscal Year	Member Contributions	Employer Contributions				
		Normal Cost	Unfunded Accrued Liability	Health Insurance	Preliminary Employer Contribution	Final Employer Contribution*
2014/2015	7.46%	8.46%	17.51%	0.90%	26.87%	21.40%**
2013/2014	7.43	8.57	15.25	0.93	24.75	16.93**
2012/2013	7.40	8.66	12.99	0.86	22.51	12.36**
2011/2012	7.37	8.12	10.15	0.65	18.92	8.65**
2010/2011	7.34	8.08	(0.50)	0.64	8.22	5.64 <sup>o</sup>

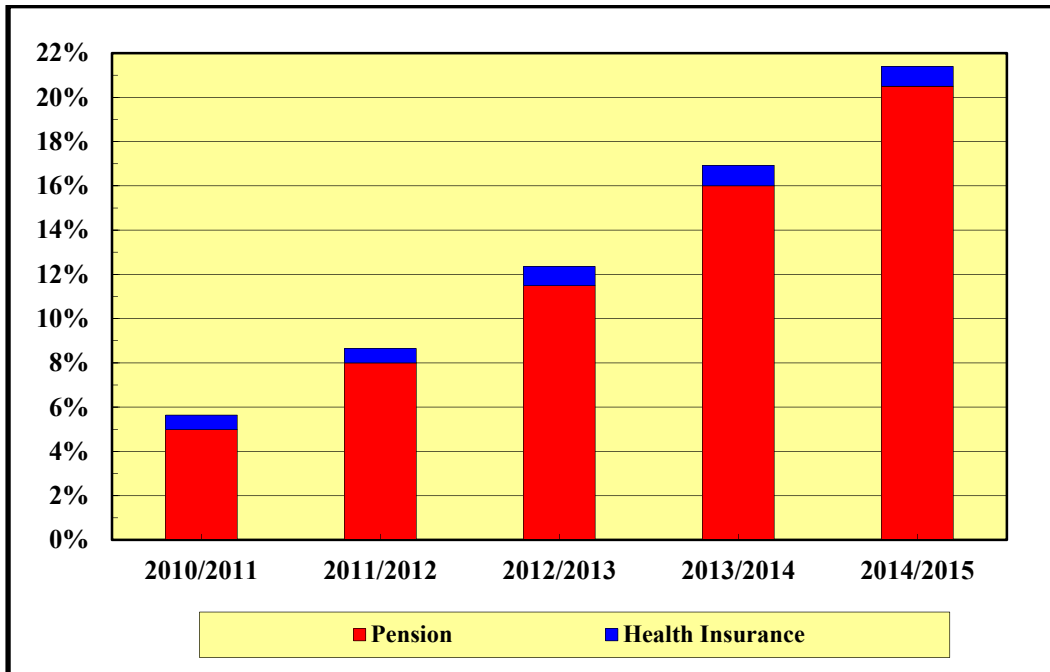
\* Certified by the Board.

\*\* Reflects Act 120 Pension Collar.

<sup>o</sup> Reflects Act 46 Rate Cap.

The following chart shows a five-year history of employer contribution rates:

### Five-Year History of Employer Contribution Rates





## **Funded Ratio**

The financing objective of the Retirement System is to:

- Fully fund all current costs based on the normal contribution rate determined under the funding method; and
- Liquidate the unfunded accrued liability based on level-percent-of-pay amortization schedules required by the Retirement Code as amended by Act 2010-120, i.e., a schedule of 24 years for the unfunded accrued liability as of June 30, 2010 and each change in the unfunded accrued liability due to actuarial experience after the June 30, 2010 valuation. Any legislation after June 30, 2010 that increases the liability will be funded over 10 years based on level-percent-of-pay amortization.
- As directed by Act 2010-120, use pension rate collars to moderate the rise of annual employer pension contribution rates to reach the full actuarially determined contribution funding level in a budgetarily sound manner and within a financially responsible period of time.

The total contribution rate of 26.87% of payroll payable by employers, when taken together with the contributions payable by the members, current assets, and expected future asset returns, is sufficient to achieve the financing objective. However, Act 2010-120 limits the contribution for FY 2014/2015 to 21.40% of payroll. This has the effect of deferring part of the FY 2014/2015 contribution to future years.

The Retirement System's total funded ratio on this funding basis is measured by comparing the actuarial value of assets (based on a phased-in, 10-year moving average market value) to the accrued liability. The accrued liability for pensions is the present value of benefits accumulated to date under the Retirement System's funding method and reflects future pay increases for active employees. The accrued liability for Health Insurance equals the assets in the Health Insurance account.

On this basis, the Retirement System's total funded ratio (for Pensions and Health Insurance combined) is 63.8% as of June 30, 2013. This funded ratio is based on an actuarial value of assets of \$57.5 billion and an accrued liability of \$90.1 billion. The funded ratio for Pensions alone is 63.8% as of June 30, 2013, based on an actuarial value of assets of \$57.4 billion, and an accrued liability of \$90.0 billion.

### **Reasons for Change in the Total Funded Ratio**

The total funded ratio decreased from 66.4% as of June 30, 2012 to 63.8% as of June 30, 2013. This decrease is primarily due to returns below expected levels on assets measured at actuarial value that occurred during the year and a fiscal-year 2013 employer contribution below its recommended level due to the limits imposed by Act 120. These effects were offset in part by experience gains from other sources. There was a net actuarial gain due to demographic experience. Table 6 provides an analysis of the change in the unfunded accrued liability as of June 30, 2013.

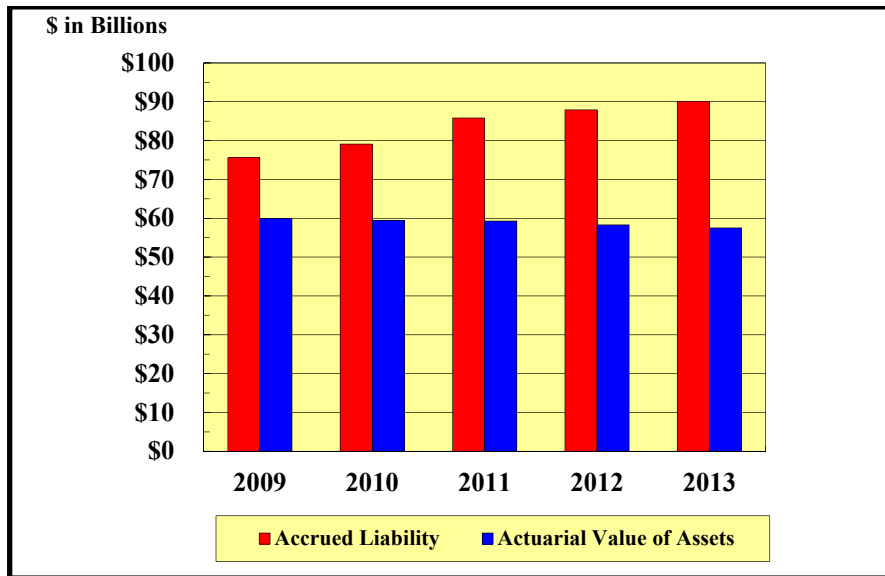
### **Five-Year History of Total Funded Ratio\*** (\$ Amounts in Millions)

Valuation as of June 30	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio
2013	\$ 90,052.2	\$ 57,453.6	\$ 32,598.6	63.8%
2012	87,854.4	58,321.4	29,533.0	66.4
2011	85,751.6	59,252.4	26,499.2	69.1
2010	79,122.3	59,423.7	19,698.6	75.1
2009	75,625.9	59,886.7	15,739.2	79.2

\* For Pensions and Health Insurance (under the funding provisions of the Retirement Code)

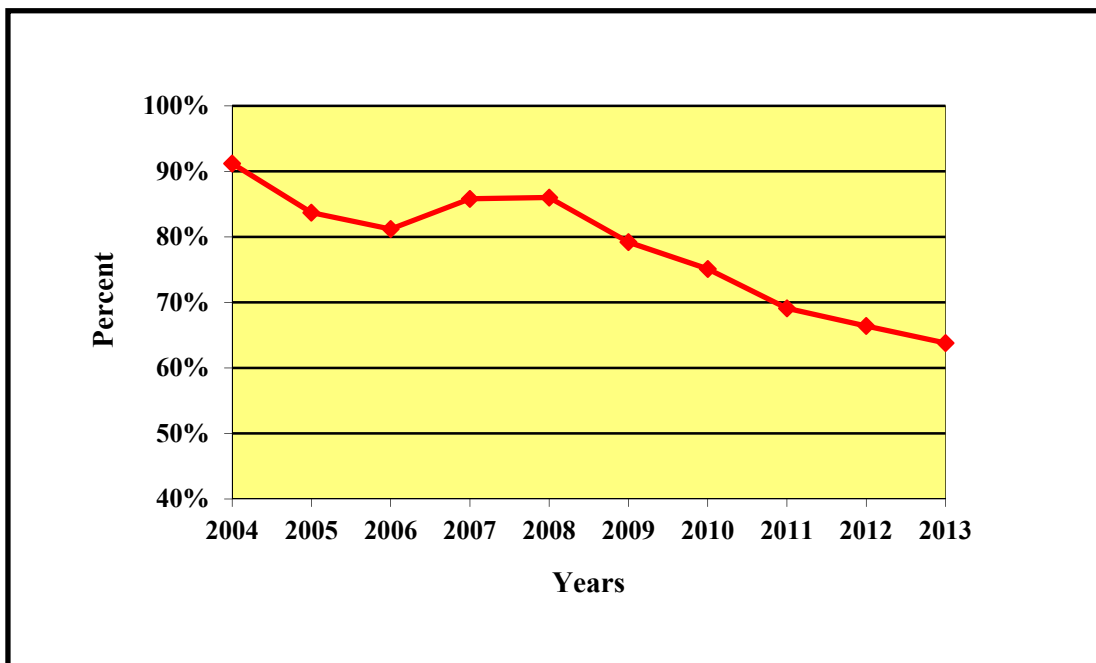
The following chart shows a five-year history of the accrued liability and the actuarial value of assets:

**Five-Year History of Accrued Liability and Actuarial Value of Assets**



The following chart shows a ten-year history of the total funded ratio for Pensions and Health Insurance:

**Ten-Year History of Total Funded Ratio  
(2004 – 2013)**



## **GASB No. 25 Disclosure**

Statement No. 25 of the Governmental Accounting Standards Board (GASB) established reporting standards for the annual financial reports of defined benefit pension plans. The Retirement System complied with Statement No. 25 beginning with the June 30, 1996 valuation. The statement requires disclosure of the "schedule of funding progress" and the "schedule of employer contributions" in the Retirement System's financial statements.

The "schedule of funding progress" shows historical trend information about the Retirement System's actuarial value of pension assets, the actuarial accrued liability for pensions and the unfunded actuarial accrued liability for pensions. The actuarial funded ratio for pensions is measured by comparing the actuarial value of pension assets based on a 10-year moving average market value (a 5-year moving average market value prior to June 30, 2010) to the accrued liability for pensions. The accrued liability is the present value of pension benefits accumulated to date under the Retirement System's funding method and reflects future pay increases for active employees. On this basis, the Retirement System's funded ratio for pensions is 63.8% as of June 30, 2013. This funded ratio is based on an actuarial value of pension assets of \$57.4 billion and an accrued liability for pensions of \$90.0 billion. See Table 7 for more detail.

The schedule of employer contributions shows historical trend information about the GASB Annual Required Contribution (ARC) for pensions, and the percentage of the ARC contributed to the Retirement System. The pension contribution requirements of the Retirement Code differ from the GASB disclosure requirements. As a result, there may be different determinations of contribution requirements for GASB accounting purposes and for State funding purposes. For GASB accounting purposes, the ARC equals the employer normal cost for pensions plus an amount that will amortize the unfunded actuarial accrued liability for pensions over 30 years. Although the employer normal cost for GASB accounting equals the PSERS normal cost for funding, Section 8328 of the Retirement Code specifies different amortization periods for different portions of the unfunded accrued liability, as well as a collar on the employer pension rate. Therefore, the resulting single amortization period may be any number of years. Table 8a presents the GASB 25 schedule of employer contributions.

## **GASB No. 43 Disclosure**

GASB Statement No. 43 established reporting standards for the annual financial reports of postemployment benefit plans other than pension plans, and these reporting requirements apply to the PSERS health insurance premium assistance plan. The Retirement System complied with Statement No. 43 beginning with the June 30, 2006 valuation. The statement requires disclosure of the "schedule of funding progress" and the "schedule of employer contributions" in the Retirement System's financial statements.

The health insurance liability and funding provisions of the Retirement Code differ from the GASB disclosure requirements. As a result, different determinations of actuarial liability and contribution requirements are made for GASB accounting purposes and for State funding purposes. For purposes of funding, the actuarial liability equals the assets in the health insurance account, and the contribution required is the amount necessary to establish reserves sufficient to provide premium assistance payments to all participating eligible annuitants during the fiscal year that immediately follows the year the employer contribution is made. For GASB accounting purposes, the actuarial liability has been determined under the entry age actuarial cost method, and the Annual Required Contribution (ARC) is equal to the entry age normal cost for health insurance plus an amount that will amortize the entry age unfunded actuarial liability for health insurance over a period of 30 years. (The entry age actuarial cost method was selected for this calculation because it meets the GASB parameters for determining actuarial liability and normal cost, and is the cost method specified by the Retirement Code for the PSERS pension plan.)

The GASB 43 schedule of funding progress, presented in Table 7, shows that as of June 30, 2013, the health insurance assets were \$100,349,000, measured on a market value basis, while the GASB 43 health insurance liabilities were \$1,385,033,000, resulting in a funded ratio of 7.2%.

The GASB 43 schedule of employer contributions is presented in Table 8b.

## Rate of Return

The investment return of the trust fund (i.e., total return including both realized and unrealized gains and losses) for fiscal years 2005/2006 through 2012/2013 is shown in the table below. The return based on the actuarial value of assets used for determining annual contribution rates is also shown.

The rate of return on market value reflects the investment earnings on the market value of assets from the beginning of the fiscal year to the end of the fiscal year. The actuarial value of assets is the asset recognized for valuation purposes. The actuarial value of assets is based on a smoothed market value that spreads the difference between the actual and expected return over a period of ten years. The rate of return on the actuarial value of assets is a measure of the increase in the actuarial value of assets from the beginning of the fiscal year to the end of the fiscal year.

Fiscal Year	Rate of Return Based on	
	Market Value*	Actuarial Value**
2012/2013	8.0%	4.8%
2011/2012	3.4	4.9
2010/2011	20.4	6.0
2009/2010	14.6	3.1
2008/2009	-26.5	3.5
2007/2008	-2.8	12.4
2006/2007	22.9	13.9
2005/2006	15.3	7.9

\* Market Value Rate of return provided by Wilshire Associates Incorporated, PSERS investment consultant.

\*\* Prior to fiscal year 2010/2011, the actuarial value of assets are based on a smoothed market value that spreads the difference between the actual and expected return over a period of five years.

**TABLE 1**  
**SUMMARY OF RESULTS OF ACTUARIAL VALUATION**  
**AS OF JUNE 30, 2013**  
(\$ Amounts in Thousands)

Item	June 30, 2013	June 30, 2012
<b>Member Data</b>		
1. Number of Members		
a) Active Members	267,428	273,504
b) Vestees	18,911	17,121
c) Annuitants, Beneficiaries and Survivor Annuitants	209,204	202,015
d) Total	495,543 *	492,640 *
2. Annualized Salaries (\$ Amounts in Thousands) **	\$ 12,577,105	\$ 12,714,371
3. Annual Annuities (\$ Amounts in Thousands)	\$ 5,147,060	\$ 4,872,918
<b>Valuation Results</b>		
4. Present Value of Future Pension Benefits		
a) Active Members	\$ 59,347,835	\$ 59,970,002
b) Inactive Members and Vestees	1,379,601	1,232,277
c) Annuitants, Beneficiaries and Survivor Annuitants	49,979,444	47,511,912
d) Total	\$ 110,706,880	\$ 108,714,191
5. Present Value of Future Pension Normal Cost		
a) Active Members	\$ 9,826,502	\$ 9,836,166
b) Employer	10,928,562	11,117,365
c) Total	\$ 20,755,064	\$ 20,953,531
6. Pension Accrued Liability		
a) Active Members (4a) - (5c)	\$ 38,592,771	\$ 39,016,471
b) Inactive Members and Vestees	1,379,601	1,232,277
c) Annuitants, Beneficiaries and Survivor Annuitants	49,979,444	47,511,912
d) Total	\$ 89,951,816	\$ 87,760,660
7. Health Insurance Assets for Premium Assistance	\$ 100,349	\$ 93,753
8. Total Accrued Liability for Funding (6) + (7)	\$ 90,052,165	\$ 87,854,413
9. Actuarial Value of Assets	\$ 57,453,611	\$ 58,321,375
10. Funded Status (9) / (8)	63.8 %	66.4 %
11. Unfunded Accrued Liability (8) - (9)	\$ 32,598,554	\$ 29,533,038
12. Total Normal Cost Rate	15.92 %	16.00 %
13. Member Contribution Rate	7.46 %	7.43 %
14. Employer Normal Cost Rate (12) - (13)	8.46 %	8.57 %
<b>Employer Annual Funding Requirement</b>		
15. Employer Contribution Rate Calculated by Actuaries	<b>Fiscal 2014/2015</b>	<b>Fiscal 2013/2014</b>
a) Normal	8.46 %	8.57 %
b) Unfunded Accrued Liability	17.51	15.25
c) Preliminary Pension Rate	25.97 %	23.82 %
d) Act 120 Employer Pension Rate Collar	20.50 %	16.00 %
e) Health Insurance	0.90	0.93
f) Total Rate	21.40 %	16.93 %

\* In addition, there are 109,739 and 105,165 inactive members as of June 30, 2013 and June 30, 2012, respectively, who are no longer participating and are valued for their accumulated deductions only.

\*\* The salaries shown represent an annual rate of pay for members who were in active service on the valuation date.

**TABLE 2**

**SUMMARY OF SOURCES OF EMPLOYER CONTRIBUTION RATE  
AS OF JUNE 30, 2013  
(\$ Amounts in Thousands)**

	<b>Funding Period (Years)</b>	<b>Beginning July 1</b>	<b>Initial Liability</b>	<b>7/1/2013 Outstanding Balance</b>	<b>Annual Payment Amount</b>	<b>Percent *</b>
1. Amortization of:						
a) Act 120 Fresh Start Unfunded Accrued Liability And Asset Method Change	24	2011	\$16,279,283	\$17,988,336	\$ 1,316,247	9.76%
b) 2010 Experience	24	2011	3,419,297	3,763,763	275,403	2.04%
c) 2011 Experience	24	2012	564,642	611,879	43,530	0.32%
d) 2011 Assumption Changes	24	2012	4,592,397	4,976,590	354,038	2.63%
e) 2012 Experience	24	2013	2,372,550	2,550,492	176,720	1.31%
f) 2013 Experience	24	2014	2,707,494	<u>2,707,494</u>	<u>194,849</u>	<u>1.45%</u>
Total Amortization Payments				\$32,598,554	\$ 2,360,787	17.51%
2. Employer Normal Cost Rate						<u>8.46%</u>
3. Preliminary Pension Rate (1) + (2)						25.97%
4. Act 120 Fiscal Year 2015 Employer Pension Rate Collar						20.50%
5. Health Insurance Rate						<u>0.90%</u>
6. Final Total Employer Contribution Rate Calculated by Actuary: Minimum of [(3) and (4)] + (5)						21.40%

\* Based on estimated employer payroll for fiscal year ending 2015 of \$13,482,000.



**TABLE 3**  
**DETERMINATION OF HEALTH INSURANCE CONTRIBUTION RATE**  
**FOR FISCAL YEAR 2014/2015**  
(\$ Amounts in Thousands)

Item			
1. June 30, 2013 Balance in Health Insurance Account		\$	100,349
2. Estimated Fiscal 2013/2014 Contribution			
(a) Contribution Rate Certified in 2012 Valuation			0.93%
(b) Estimated Fiscal 2013/2014 payroll		\$	<u>13,174,000</u>
(c) Estimated Contribution = (a) x (b)		\$	122,518
3. Estimated Number of Annuitants who:	Are Eligible		Elect Coverage
(a) Fiscal 2013/2014	139,800		92,268
(b) Fiscal 2014/2015	141,500		93,390
(c) Fiscal 2015/2016	143,100		94,446
4. Estimated Disbursements:	Administration	Assistance	Total
(a) Fiscal 2013/2014	\$ 2,373	\$ 110,722	\$ 113,095
(b) Fiscal 2014/2015	2,447	112,068	114,515
(c) Fiscal 2015/2016	<u>2,533</u>	<u>113,335</u>	<u>115,868</u>
(d) Total	\$ 7,353	\$ 336,125	\$ 343,478
5. Required Fiscal 2014/2015 Contribution			
(4d) – (1) – (2c)		\$	120,611
6. Required Health Insurance Contribution Rate			
(a) Estimated 2014/2015 Payroll		\$	13,482,000
(b) Required Health Insurance Contribution Rate			
(5) / (6a) (rounded up)			0.90%

Notes:

1. Current estimates of fiscal 2013/2014 membership payroll and administrative expenses, and of fiscal 2014/2015 administrative expenses, were provided by PSERS staff.
2. 66% of eligible annuitants are assumed to elect coverage.
3. Premium Assistance payments equal \$100 per month per eligible annuitant.
4. The estimated fiscal 2014 payroll in 2.(b) has been revised from \$13.720 billion to \$13.174 billion.

**TABLE 4**

**SUMMARY OF MARKET VALUE OF PLAN ASSETS  
AS OF JUNE 30, 2013  
(\$ Amounts in Thousands)**

<b>Market Value</b>	
1. Market Value of Assets as of June 30, 2012	\$ 48,627,549
2. Contributions During Fiscal 2012/2013	2,546,165
3. Disbursements During Fiscal 2012/2013	6,144,324
4. Investment Return During Fiscal 2012/2013	
a) Investment Return (Net of Investment Expenses)	\$ 4,126,112
b) Administrative Expenses	<u>39,592</u>
c) Investment Return After Expenses (a) - (b)	\$ 4,086,520
5. Market Value of Assets as of June 30, 2013 (1) + (2) - (3) + (4c)	\$ 49,115,910
6. Rate of Return (per Wilshire)	7.96 %
<b>Asset Allocation by Account</b>	
1. Members' Savings Account	\$ 13,089,342
2. Annuity Reserve Account	49,979,444
3. State Accumulation Account	(14,053,225)
4. Health Insurance Account	<u>100,349</u>
5. Total (1) + (2) + (3) + (4)	\$ 49,115,910

**TABLE 5**

**DERIVATION OF ACTUARIAL VALUE OF ASSETS  
AS OF JUNE 30, 2013\***  
(\$ Amounts in Thousands)

1. Market Value of Assets as of June 30, 2013					\$ 49,115,910
2. Determination of Deferred Gain (Loss)					
		Return on Assets			Deferred
<u>Fiscal</u>	<u>Actual</u>	<u>Expected</u>	<u>Difference</u>	<u>% Deferred</u> #	<u>Amount</u>
<u>Year</u>					
2012/2013	\$ 4,086,520	\$ 4,239,172	\$ (152,652)	90.00%	\$ (137,387)
2011/2012	1,057,435	4,303,637	(3,246,202)	80.00%	(2,596,961)
2010/2011	9,207,766	4,609,422	4,598,344	70.00%	3,218,841
2009/2010	6,100,499	4,651,504	1,448,995	60.00%	869,397
2008/2009	(16,237,298)	4,900,688	(21,137,986)	44.44%	(9,394,660)
2007/2008	(1,816,980)	4,728,472	(6,545,452)	30.00%	(1,963,636)
2006/2007	12,658,871	4,359,054	8,299,817	17.14%	1,422,826
2005/2006	7,901,068	4,242,878	3,658,190	6.67%	243,879
					\$ (8,337,701)
3. Actuarial Value of Assets (1) - (2)					\$ 57,453,611
4. Actuarial Rate of Return **					4.83%

\* The amounts reported include assets for both Pension and Health Insurance.

\*\* The actuarial rate of return is the investment return based on the change in the actuarial value of assets from the June 30, 2012 valuation to the June 30, 2013 valuation.

# The percentage amounts shown are rounded. The corresponding Deferred Amounts reflect the use of unrounded percentages.

**TABLE 6**

**ANALYSIS OF CHANGE IN UNFUNDED ACCRUED LIABILITY  
AS OF JUNE 30, 2013  
(\$ Amounts in Thousands)\***

Item	Amount
1. Unfunded Accrued Liability at June 30, 2012	\$ 29,533,038
2. Interest Credit to June 30, 2013	2,214,978
3. Expected Contributions Toward Unfunded Accrued Liability	<u>1,856,956</u>
4. Expected Unfunded Accrued Liability at June 30, 2013 (1) + (2) - (3)	\$ 29,891,060
5. Actual Unfunded Accrued Liability at June 30, 2013	<u>32,598,554</u>
6. Increase (Decrease) from Expected (5) - (4)	\$ 2,707,494
7. Reasons for Increase (Decrease)	
(a) Experience Losses (Gains)	
(i) Loss from Investment Return on Actuarial Value of Assets	\$ 1,508,777
(ii) Loss from New Entrants and Pickups	205,860
(iii) Gain from Salary Increases Less than Expected	(200,863)
(iv) Loss from Mortality Experience	82,544
(v) Gain from Vested Termination Experience (Retirement/Disability/Termination)	(256,371)
(vi) Gain from Non-vested Termination Experience	(108,137)
(vii) Loss from Data/Miscellaneous	<u>24,538</u>
Subtotal	\$ 1,256,348
(b) Change due to Act 120 3.5% Collar on FY 2013 Pension Contribution	<u>1,451,146</u>
(c) Grand Total	\$ 2,707,494

\* The amounts reported include assets and liabilities for Pensions only.

**TABLE 7**

**SCHEDULE OF FUNDING PROGRESS FOR PENSIONS\***  
**GASB STATEMENT NO. 25 DISCLOSURE**  
(\$ Amounts in Thousands)

Valuation as of June 30	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll**	Unfunded Accrued Liability as a Percentage of Covered Payroll
2013	\$ 57,353,262	\$ 89,951,816	\$ 32,598,554	63.8 %	\$ 12,577,105	259.2 %
2012	58,227,622	87,760,660	29,533,038	66.3	12,714,371	232.3
2011	59,141,131	85,640,383	26,499,252	69.1	12,910,043	205.3
2010	59,306,848	79,005,428	19,698,580	75.1	12,788,847	154.0
2009	59,781,575	75,520,736	15,739,161	79.2	12,524,593	125.7
2008	60,922,157	70,845,637	9,923,480	86.0	11,921,469	83.2

\* The amounts reported above include assets and liabilities for Pensions.

**SCHEDULE OF FUNDING PROGRESS FOR  
POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS\***  
**GASB STATEMENT NO. 43 DISCLOSURE**  
(\$ Amounts in Thousands)

Valuation as of June 30	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll**	Unfunded Accrued Liability as a Percentage of Covered Payroll
2013	\$ 100,349	\$ 1,385,033	\$ 1,284,684	7.2 %	\$ 12,577,105	10.2 %
2012	93,753	1,364,667	1,270,914	6.9	12,714,371	10.0
2011	111,258	1,339,444	1,228,186	8.3	12,910,043	9.5
2010	116,831	1,162,219	1,045,388	10.1	12,788,847	8.2
2009	105,114	1,159,055	1,053,941	9.1	12,524,593	8.4
2008	95,785	1,133,011	1,037,226	8.5	11,921,469	8.7

\* The amounts reported above include assets and liabilities for Health Insurance Premium Assistance. The health insurance liabilities for GASB 43 disclosure have been calculated under the entry age normal cost method, which provides liabilities that differ from those determined under the funding requirements of the Retirement Code.

\*\* The salaries shown represent an annual rate of pay for the year ended June 30<sup>th</sup> for members who were in active service on June 30<sup>th</sup>.

**TABLE 8a**

**SCHEDULE OF EMPLOYER CONTRIBUTIONS FOR PENSIONS  
GASB STATEMENT NO. 25 DISCLOSURE  
(\$ Amounts in Thousands)**

Fiscal Year Ended June 30	Annual Required Contribution	Actual Employer Contribution	Percentage Contributed
2013	\$ 3,110,429	\$ 1,434,815	46 %
2012	2,629,244	1,001,140	38
2011	2,436,602	647,000	27
2010	1,928,278	527,212	27
2009	1,761,295	503,227	29
2008	1,852,238	753,532	41

The Annual Required Contribution (ARC) presented above was determined as part of the actuarial valuation as of two years prior to the dates indicated (i.e., the ARC for the fiscal year ended June 30, 2013 was determined by the valuation completed as of June 30, 2011 which was based on an 7.50% interest rate).

Additional information as of the latest actuarial valuation as follows:

Valuation Date:	6/30/2013
Actuarial Cost Method:	Entry Age
Amortization Method:	Level Dollar, Open
Remaining Amortization Period:	30 Years
Asset Valuation Method:	10 Year Smoothed Market

Actuarial Assumptions:

- Investment Rate of Return\* 7.50%
- Projected Salaried Increases\* 5.50%

\*Includes Inflation at: 3.00%

**TABLE 8b**

**SCHEDULE OF EMPLOYER CONTRIBUTIONS FOR  
POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS  
GASB STATEMENT NO. 43 DISCLOSURE**

(\$ Amounts in Thousands)

Fiscal Year Ended June 30	Annual Required Contribution	Actual Employer Contribution	Percentage Contributed
2013	\$ 113,016	\$ 107,993	96 %
2012	102,104	80,936	79
2011	119,320	88,796	74
2010	117,187	102,703	88
2009	109,531	92,493	84
2008	101,352	81,317	80

The Annual Required Contribution (ARC) beginning with the fiscal year ended June 30, 2009 was determined as part of the actuarial valuation as of two years prior to the date indicated (i.e., the ARC for the fiscal year ended June 30, 2013 was determined by the valuation completed as of June 30, 2011, which was based on an 7.50% interest rate). Prior to the fiscal year which ended June 30, 2009, the ARC was determined as part of the actuarial valuation as of one year prior to the dates indicated.

Additional information as of the latest actuarial valuation as follows:

Valuation Date:	6/30/2013
Actuarial Cost Method:	Entry Age
Amortization Method:	Level Dollar, Open
Remaining Amortization Period:	30 Years
Asset Valuation Method:	Market

Actuarial Assumptions:

- Investment Rate of Return\* 7.50%
- Projected Salaried Increases\* 5.50%

\*Includes Inflation at: 3.00%

**TABLE 9**

**SOLVENCY TEST  
COMPARATIVE SUMMARY OF ACCRUED LIABILITY AND  
ACTUARIAL VALUE OF ASSETS  
(\$ Amounts in Thousands)**

Valuation as of June 30	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member Employer Financed	Actuarial Value of Assets	Portion of Accrued Liability Covered by Valuation Assets		
					(1)	(2)	(3)
2013	\$ 13,089,342	\$ 49,979,444	\$ 26,883,030	\$ 57,353,262	100 %	89 %	0 %
2012	12,535,442	47,511,912	27,713,306	58,227,622	100	96	0
2011	12,242,308	45,648,780	27,749,295	59,141,131	100	100	5
2010	11,850,031	40,284,383	26,871,014	59,306,848	100	100	27
2009	11,087,345	37,112,318	27,321,073	59,781,575	100	100	42
2008	10,532,683	34,617,953	25,695,001	60,922,157	100	100	61

**POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS**

Valuation as of June 30	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Member Employer Financed	Actuarial Value of Assets	Portion of Accrued Liability Covered by Valuation Assets		
					(1)	(2)	(3)
2013	\$ 0	\$ 961,701	\$ 423,332	\$ 100,349	N/A	10 %	0 %
2012	0	934,506	430,161	93,753	N/A	10	0
2011	0	909,076	430,368	111,258	N/A	12	0
2010	0	767,587	394,632	116,831	N/A	15	0
2009	0	759,891	399,164	105,114	N/A	14	0
2008	0	749,070	383,941	95,785	N/A	13	0



**TABLE 10**  
**HISTORY AND PROJECTION OF CONTRIBUTION RATES AND FUNDED RATIOS<sup>1</sup>**

Fiscal Year Ending June	Budgeted Appropriation Payroll <sup>9</sup> (thousands)	Contribution Rates <sup>2</sup>							Funded Ratio
		Employee	Employer Normal Cost	Employer Unfunded Liability	Preliminary Employer Pension	Final Employer Pension <sup>7</sup>	Employer Health Insurance	Total Employer	
2004	\$ 10,030,705	7.08 %	7.25 %	(4.27) %	2.98 %	2.98 %	0.79 %	3.77 %	91.2 %
2005 <sup>3</sup>	11,062,589	7.12	7.48	(7.10)	0.38	4.00	0.23	4.23	83.7
2006	11,505,093	7.16	7.61	(4.28)	3.33	4.00	0.69	4.69	81.2
2007 <sup>4</sup>	11,821,951	7.21	6.62	(0.95)	5.67	5.72	0.74	6.46	85.8
2008	12,881,244	7.25	6.68	(0.24)	6.44	6.44	0.69	7.13	86.0
2009	12,500,000	7.29	6.68	(3.37)	3.31	4.00	0.76	4.76	79.2
2010 <sup>5</sup>	12,899,000	7.32	7.35	(3.72)	3.63	4.00	0.78	4.78	75.1
2011 <sup>5,6</sup>	13,510,000	7.34	8.08	(0.50)	7.58	5.00	0.64	5.64	69.1
2012	14,112,000	7.37	8.12	10.15	18.27	8.00	0.65	8.65	66.4
2013 <sup>8</sup>	14,297,000	7.40	8.66	12.99	21.65	11.50	0.86	12.36	<b>63.8</b>
2014	13,720,000	7.43	8.57	15.25	23.82	16.00	0.93	16.93	61.6
<b>2015</b>	<b>13,482,000</b>	<b>7.46</b>	<b>8.46</b>	<b>17.51</b>	<b>25.97</b>	<b>20.50</b>	<b>0.90</b>	<b>21.40</b>	59.8
2016	13,841,530	7.47	8.23	19.05	27.28	25.00	0.84	25.84	58.5
2017	14,214,689	7.48	8.03	20.41	28.44	28.44	0.83	29.27	57.3
2018	14,613,842	7.48	7.84	21.59	29.43	29.43	0.82	30.25	56.6
2019	15,028,322	7.49	7.66	22.83	30.49	30.49	0.79	31.28	57.9
2020	15,465,597	7.49	7.49	23.81	31.30	31.30	0.78	32.08	59.2
2021	15,914,196	7.49	7.32	23.93	31.25	31.25	0.77	32.02	60.2
2022	16,378,425	7.50	7.15	24.12	31.27	31.27	0.74	32.01	61.6
2023	16,858,286	7.50	6.99	24.50	31.49	31.49	0.73	32.22	63.1
2024	17,349,187	7.50	6.83	24.75	31.58	31.58	0.72	32.30	64.8
2025	17,847,579	7.50	6.67	25.00	31.67	31.67	0.69	32.36	66.5

1. The projection of contribution rates is based on the assumption that there are no changes in demographic assumptions, no changes in benefit provisions, and no actuarial gains or losses other than gains or losses on the actuarial value of assets that result from recognizing currently deferred gains or losses on the market value of assets.
2. In general, the Preliminary Employer Pension Rate equals the sum of the rates for the Employer Normal Cost and the Unfunded Liability; and the Final Employer Pension Rate is the greater of the Preliminary Pension Rate and any Pension Rate Floor or Collar stated in the Retirement Code. The Total Employer Rate is the sum of the Final Employer Pension Rate and the Employer Health Insurance Rate.
3. Act 2003-40 amended the Retirement Code to increase the Employer Pension Rate Floor from 1% to 4%.
4. Revised actuarial assumptions based on a five-year experience review ending June 30, 2005 were used to determine the contributions for the fiscal year ending June 30, 2007. Since the benefit changes under Act 2001-9 had not been in effect throughout the entire period covered by the study the Board decided, at its December 2005 meeting, to delay making any changes to the retirement rate assumptions until further data became available. The 5.72% Final Employer Pension Rate equals the 6.46% Total Employer Rate certified by the Board at that meeting, minus the 0.74% Employer Health Insurance Rate. The 5.67% Preliminary Employer Pension Rate equals the sum of the Employer Normal Cost and Unfunded Liability rates. The Normal Cost and Unfunded Liability rates were calculated by the actuary in January 2006, based on the package of assumptions adopted at the December 2005 meeting.
5. At its January 2009 meeting, the Board voted to reduce the interest rate from 8.50% to 8.25% for the June 30, 2008 valuation and to 8.00% for subsequent valuations.
6. Act 2010-46 recertified the fiscal year ending June 30, 2011 pension rate from 7.58% to 5.00%.
7. The Final Employer Pension rate is limited by the Act 2010-120 pension rate collars for fiscal years 2012 through 2016.
8. Revised actuarial assumptions based on a five-year experience review ending June 30, 2010 were used to determine the contributions for the fiscal year ending June 30, 2013 and thereafter, which include an interest rate of 7.50%.
9. Beginning fiscal year ending June 30, 2005, the appropriation payroll shown is estimated payroll used for valuation purposes, not actual appropriation payroll. Prior to fiscal year ending June 30, 2005, the appropriation payroll shown is the annualized salary.

**TABLE 11**

**HISTORY AND PROJECTION OF  
ANNUITANTS, BENEFICIARIES, SURVIVOR ANNUITANTS AND  
ACTIVE MEMBERS**

Valuation as of June 30	New Annuitants During the Year*	Annuitant Deaths During the Year	Annuitants at End of Year	Beneficiaries and Survivor Annuitants at End of Year	Total Annuitants, Beneficiaries and Survivor Annuitants	Active Members
2004			143,997	7,555	151,552	247,901
2005			148,727	7,792	156,519	255,465
2006			153,757	8,056	161,813	263,350
2007			159,760	8,266	168,026	264,023
2008			165,091	8,449	173,540	272,690
2009			169,919	8,044	177,963	279,701
2010			176,210	8,724	184,934	282,041
2011			183,665	10,957	194,622	279,152
2012			190,560	11,455	202,015	273,504
<b>2013</b>			<b>197,735</b>	<b>11,469</b>	<b>209,204</b>	<b>267,428</b>
2014	15,102	4,785	208,052	10,418	218,470	267,428
2015	12,308	4,997	215,363	10,975	226,338	267,428
2016	12,088	5,213	222,238	11,482	233,720	267,428
2017	11,622	5,454	228,406	11,951	240,357	267,428
2018	11,002	5,698	233,710	12,392	246,102	267,428
2019	10,682	5,906	238,486	12,805	251,291	267,428
2020	10,241	6,135	242,592	13,206	255,798	267,428
2021	9,989	6,364	246,217	13,602	259,819	267,428
2022	9,861	6,574	249,504	13,988	263,492	267,428
2023	9,858	6,806	252,556	14,369	266,925	267,428

\* The number for the fiscal year of the projection reflects the assumption that all Active members age 74 and above, and that all vested inactive members who have reached superannuation age retire immediately.

**TABLE 12****DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS****ASSUMPTIONS**

**Interest Rate:** 7.50% per annum, compounded annually (adopted as of June 30, 2011). The components are 3.00% for inflation and 4.50% for the real rate of return. Actuarial equivalent benefits are determined based on 4% (since 1960).

**Separation from Service:** Illustrative rates of assumed separation from service are shown in the following table (adopted as of June 30, 2011).

Age	Annual Rate of:						
	Non-Vested Withdrawal	Vested Withdrawal*		Death	Disability	Early Retirement**	Superannuation Retirement
		Less Than 10 Years of Service	10 or More Years of Service				
<b>MALES</b>							
25	12.50%	5.50%	2.00%	.037%	.024%		
30	10.50	3.20	2.00	.038	.024		
35	11.00	3.00	1.50	.056	.100		
40	13.00	3.50	1.25	.090	.180		
45	13.00	3.50	1.25	.121	.180		25.00%
50	13.00	3.50	1.70	.173	.280		25.00
55	11.00	3.50	3.00	.245	.430	15.00%	30.00
60	10.50	3.50	4.50	.363	.580	12.00	28.00
65				.592	.100		20.00
69				.810	.100		18.00
<b>FEMALES</b>							
25	13.00%	8.50%	5.00%	.018%	.030%		
30	13.00	6.50	4.00	.019	.040		
35	13.00	5.50	3.00	.022	.060		
40	10.90	4.50	1.50	.035	.100		
45	10.90	4.00	1.50	.055	.150		30.00%
50	10.90	3.75	1.75	.085	.200		30.00
55	10.90	3.75	3.00	.133	.380	15.00%	30.00
60	10.90	4.50	5.50	.197	.380	15.00	30.00
65				.301	.130		25.00
69				.428	.130		20.00

\* Vested Withdrawal – At least 5 years of service for Class T-C and Class T-D members and 10 years of service for Class T-E and Class T-F members but not eligible for Early or Superannuation retirement.

\*\* Early Retirement – Age 55 with 25 years of service, but not eligible for Superannuation retirement.

**Death after Retirement:** The RP-2000 Combined Healthy Annuitant Tables (Male and Female) with age set back 3 years for both genders for healthy annuitants and for dependent beneficiaries. The RP-2000 Combined Disabled Tables (Male and Female) with age set back 7 years for males and set back 3 years for females for disabled annuitants. (A unisex table based on the RP-2000 Combined Healthy Annuitant Tables (Male and Female) with age set back 3 years for both genders assuming the population consists of 25% males and 75% females is used to determine actuarial equivalent benefits.) No provision has been made for future improvements in mortality.

**TABLE 12**

(Continued)

**DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**

**Salary Increase:** Effective average of 5.50% per annum, compounded annually (adopted as of June 30, 2011). The components are 3.00% for inflation, 1% for real wage growth and 1.5% for merit or seniority increases. Representative values are as follows:

Age	Annual Rate of Salary Increase
20	10.75%
30	8.25
40	6.25
50	4.25
55	3.75
60	3.75
65	3.75
70	3.75

**Payroll Growth:** 3.50% per annum.

**MISCELLANEOUS**

**Option 4 Elections:** 100% of Class T-C and Class T-D members are assumed to elect a refund of contributions and a reduced annuity.

**Withdrawal Annuity:** 90% of members are assumed to commence payment immediately and 10% are assumed to defer payment to superannuation age.

**Health Insurance**

**Elections:** 66% of eligible retirees are assumed to elect premium assistance.

**Administrative Expenses:** Assumed equal to 2% of contributions made during the year.

**METHODS**

**Calculations:** The actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system, and on actuarial assumptions that are internally consistent and reasonable based on the actual experience of the System.

**Asset Valuation Method:** A ten-year moving market average (five-year moving market average prior to June 30, 2010) value of assets that recognizes the 7.50% (8.00% prior to June 30, 2011, 8.25% prior to June 30, 2009, and 8.50% prior to June 30, 2008) actuarial expected investment return immediately and spreads the difference between the actual return on the market value of assets and the expected return on the actuarial value of assets over a period of ten years. The averaging period is being phased-in from fiscal year 2006.

## **TABLE 12**

(Continued)

### **DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS**

**Actuarial Cost Method for Pension Funding:** Entry Age Normal Cost Method (modified slightly as of June 30, 2005 to use a pay-weighted average normal contribution rate). The results of each June 30 valuation normally determine the employer contribution rate for the second succeeding fiscal year. Act 120 revised the funding method effective with the June 30, 2010 valuation. Act 120 mandated that the outstanding balance of the unfunded accrued liability as of June 30, 2010, including changes in the unfunded accrued liability due to the funding reforms of Act 120, be amortized over a 24-year period, as a level percent of pay, beginning July 1, 2011. Future valuation gains and losses, and changes in the unfunded accrued liability resulting from changes in actuarial assumptions and methods, are amortized over a 24-year period, as a level percent of pay. Future increases in the unfunded accrued liability due to legislation will be amortized over a 10-year period, as a level percent of pay. Act 120 also modified the employer pension contribution requirements by imposing collars on the rate at which employer contributions may rise from year to year. For the fiscal years ending June 30, 2012, June 30, 2013, and on or after June 30, 2014 the pension contribution rate can be no more than 3%, 3.5% and 4.5%, respectively, of total compensation of all active members, greater than the prior year's final contribution rate. Beginning with the fiscal year in which the actuarially required contribution rate is less than the collared rate, the final contribution rate is the actuarially determined contribution rate, provided that the final contribution rate is not less than the employer normal contribution rate.

**Actuarial Cost Method for GASB 25 Accounting for Pensions:** Same as for pension funding, except that the GASB 25 amortization payment will be set equal to the level dollar amount that will amortize the unfunded accrued liability over a period of 30 years.

**Actuarial Cost Method for Health Insurance Funding:** The actuarial liability equals the assets in the health insurance account, and the results of the June 30 valuation determine the contribution rate for the second succeeding fiscal year. The rate so determined is the rate necessary to establish reserves sufficient to cover administrative expenses and provide premium assistance payments for all participating eligible annuitants during the third fiscal year that follows the valuation date.

**Actuarial Cost Method for GASB 43 Accounting for Health Insurance:** The actuarial liability is determined under the entry age actuarial cost method, and the Annual Required Contribution for the second fiscal year that follows the valuation date is equal to the entry age normal cost for health insurance plus an amount that will amortize the entry age unfunded actuarial liability for health insurance over a period of 30 years.

### **DATA**

**Census and Assets:** The valuation was based on members of the Retirement System as of June 30, 2013 and does not take into account future members. All census data was supplied by the Retirement System and was subject to reasonable consistency checks. The actuaries adjust the data to account for service and pay earned by members on or before the valuation that is not reported by the Retirement System until after the actuarial valuation is performed. Asset data was supplied by the Retirement System.

## TABLE 13

### SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

#### MEMBERSHIP

For valuation purposes, all employees are considered to be full coverage. All employees who become members on and after January 1, 1966 are members of the dual coverage group. Dual coverage members contribute to both PSERS and to Social Security.

#### BENEFITS

##### Superannuation Annuity

**Eligibility** Age 62, or age 60 with 30 years of service, or 35 years of service regardless of age. For Class T-E and Class T-F members, age 65 with a minimum of three years of service credit, or any combination of age and service that totals 92 with at least 35 years of credited service

**Amount** 2.5% of final average salary times years of school service and intervening military service. 2% of final average salary for non-school service, for members who did not elect Class T-D coverage, and for Class T-E members. Minimum of \$100 per year of service. "Final average salary" means the highest average annual salary for any 3 years of service.

Annual salary is subject to a limit of \$200,000, as adjusted under Section 401(a)(17) of the Internal Revenue Code. As of June 30, 2013, the adjusted limit is \$255,000.

For members who elect coverage under Class T-D, the maximum benefit is equal to the limit established by Section 415 of the Internal Revenue Code.

For Class T-E and Class T-F members, the maximum benefit is equal to the lesser of the limit established by Section 415 of the Internal Revenue Code or 100% of final average salary.

##### Early Retirement Annuity

**Eligibility** Age 55 with 25 years of service.

**Amount** Accrued benefit as of date of retirement, reduced 1/4% for each month by which commencement of payments precedes Superannuation Age.

**TABLE 13**  
(Continued)

**SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

For members who elect coverage under Class T-D, the maximum benefit is equal to the limit established by Section 415 of the Internal Revenue Code.

For Class T-E and Class T-F members, the maximum benefit is equal to the lesser of the limit established by Section 415 of the Internal Revenue Code or 100% of final average salary.

**Withdrawal Annuity**

Eligibility	5 years of service. For Class T-E and Class T-F members, ten years of service.
Amount	Accrued benefit deferred to superannuation retirement age or an actuarially reduced benefit payable immediately. Actuarially equivalent benefits are based on 4% interest and a unisex table based on the RP-2000 Combined Healthy Annuitant Tables (Male and Female) with age set back 3 years for both genders assuming the population consists of 25% males and 75% females.

**Disability Annuity**

Eligibility	5 years of service.
Amount	The standard single life annuity if the total number of years of credited service is greater than 16.667, otherwise the standard single life annuity multiplied by the lesser of the following ratios: $(Y^*/Y)$ or $(16.667/Y)$ where Y is the number of years of credited service and Y* is the total years of credited service if the member were to continue as a school employee until superannuation retirement age (or at current age, if later). Minimum of \$100 per year of service.

**Return of Contributions**

Eligibility	Death or separation from service and member does not qualify for other benefits.
Amount	Refund of accumulated deductions includes interest (less annuity payments received prior to death in the case of a retired member).

**Death Benefit**

**TABLE 13**  
(Continued)

**SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

Eligibility	Death of an active member or vestee who was eligible to receive an annuity.
Amount	The present value of the annuity that would have been effective if the member retired on the day before death. Option 1 assumed payable if no other option elected.
<b>Normal and Optional Forms of Benefits</b>	
Normal Form:	Life annuity with a guaranteed payment equal to member contributions with interest.
Option 1:	Reduced benefit with refund of balance of present value of annuity at retirement over payments received. If balance is less than \$5,000, benefit is paid in lump sum; otherwise, beneficiary may elect annuity and/or lump sum.
Option 2:	Joint and 100% survivorship annuity.
Option 3:	Joint and 50% survivorship annuity.
Option 4:	Benefit of equivalent actuarial value, including lump sum payment of member contributions. Class T-E and Class T-F members cannot elect to receive a lump sum payment of member contributions.

**Health Care Premium Assistance**

Eligibility	Retired members who: (a) have 24½ or more years of service, or (b) are disability annuitants, or (c) have 15 or more years of service and who both terminated school service and retired after attaining superannuation age and (d) participate in the PSERS health options program or in an employer-sponsored health insurance program.
Amount	Participating eligible annuitants receive health insurance premium assistance payments from the Health Insurance Account equal to the lesser of \$100 per month or the actual monthly premium. All administrative expenses necessary to operate the health insurance premium assistance program are to



**TABLE 13**  
(Continued)

**SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

be funded by the Health Insurance Account. The Health Insurance Account is credited with contributions of the Commonwealth and the employers.

**CONTRIBUTIONS**

**By Members**

Members who elected coverage under Class T-D and who were most recently enrolled prior to July 22, 1983 contribute at a rate of 6½% of compensation, while members who elected coverage under Class T-D and who were most recently enrolled on or after July 22, 1983 contribute at a rate of 7½% of compensation. Members who did not elect coverage under Class T-D and who were most recently enrolled prior to July 22, 1983 contribute at a rate of 5¼% of compensation, while members who did not elect coverage under Class T-D and who were most recently enrolled on or after July 22, 1983 and prior to July 1, 2001 contribute at a rate of 6¼% of compensation. Anyone who enrolls or re-enrolls on or after July 1, 2001 automatically has coverage under class T-D for subsequent school service and subsequent intervening military service, and must contribute at a rate of 7½% of compensation.

The base contribution rate for Class T-E members is 7½% of compensation. The base contribution rate for Class T-F members is 10.3% of compensation. Class T-E and Class T-F members are subject to a “shared-risk” employee contribution rate. Members benefit when investments of the fund are doing well and share some of the risk when investments underperform. The member contribution rate will stay within the specified range allotted for Class T-E or Class T-F members, but could increase or decrease every three years starting July 1, 2015 depending on investment performance. The member contribution rate can never go below the base rate of 7.5% for Class T-E members and 10.3% for Class T-F members, nor above 9.5% for Class T-E members and 12.3% for class T-F members. If the investment rate of return (less investment fees) is equal to or exceeds the assumed rate of return based on the prior ten-year period, the member contribution rate will decrease by .5%. Likewise, the member contribution rate will increase by .5% if the investment rate of return (less investment fees) during the ten-year period is 1.0% or more below the assumed rate of return. If the Retirement System is fully funded at the time of the comparison, the member contribution rate reverts back to the base rate for the

**TABLE 13**  
(Continued)

**SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS**

Class. There shall not be an increase in the member contribution rate if there has not been an equivalent increase in the employer contribution rate over the previous three-year period. Until a full ten-year look back period is available, the investment return measurement period will begin on July 1, 2011.

By Commonwealth and  
School Districts

Balance of required contribution determined as normal contribution, accrued liability contribution, supplemental annuity contribution, experience adjustment factor and premium assistance contribution, is funded by the Commonwealth and the School District.

**TABLE 14**

**SUMMARY OF MEMBERSHIP DATA  
AS OF JUNE 30, 2013  
(\$ Amounts in Thousands)**

**TOTAL ACTIVE MEMBERS\***

Item	Male	Female	Total
Number of Members	73,095	194,333	267,428
Total Annual Salaries **	\$ 3,831,101	\$ 8,746,004	\$ 12,577,105
Average Age ***	44.4	44.9	44.8
Average Service ***	11.1	10.7	10.8

\* Excludes 128,650 inactive members and vestees.

**CLASS T-C MEMBERS\***

Item	Male	Female	Total
Number of Members	1,097	3,537	4,634
Total Annual Salaries **	\$ 60,369	\$ 144,436	\$ 204,805
Average Age ***	48.5	50.6	50.1
Average Service ***	17.4	15.5	15.9

\* Excludes 34,750 inactive members and vestees.

**CLASS T-D MEMBERS\***

Item	Male	Female	Total
Number of Members	64,038	172,855	236,893
Total Annual Salaries **	\$ 3,580,571	\$ 8,179,231	\$ 11,759,802
Average Age ***	45.2	45.8	45.6
Average Service ***	12.2	11.6	11.8

\* Excludes 75,823 inactive members and vestees.

\*\* The salaries shown in the table above represent an annual rate of pay for the year ended June 30, 2013 for members who were in active service on June 30, 2013.

\*\*\* Average completed years of age and service.

**TABLE 14**  
(Continued)

**SUMMARY OF MEMBERSHIP DATA  
AS OF JUNE 30, 2013**  
(\$ Amounts in Thousands)

**CLASS T-E MEMBERS\***

Item	Male	Female	Total
Number of Members	6,907	15,498	22,405
Total Annual Salaries **	\$ 156,392	\$ 349,367	\$ 505,759
Average Age ***	36.7	35.5	35.9
Average Service ***	0.6	0.7	0.7

\* Excludes 17,900 inactive members.

**CLASS T-F MEMBERS\***

Item	Male	Female	Total
Number of Members	1,053	2,443	3,496
Total Annual Salaries **	\$ 33,769	\$ 72,970	\$ 106,739
Average Age ***	36.6	34.7	35.3
Average Service ***	0.9	0.9	0.9

\* Excludes 177 inactive members.

\*\* The salaries shown in the table above represent an annual rate of pay for the year ended June 30, 2013 for members who were in active service on June 30, 2013.

\*\*\* Average completed years of age and service.

**TABLE 14**  
(Continued)

**SUMMARY OF MEMBERSHIP DATA  
AS OF JUNE 30, 2013  
(\$ Amounts in Thousands)**

**TOTAL ANNUITANTS AND BENEFICIARIES**

Item	Number	Annual Annuities <sup>#</sup>	Average Annuities	Average Age
Annuitants (Normal, Early and Withdrawal)	189,170	\$ 4,870,399	\$ 25,746	70.0
Survivors and Beneficiaries	11,469	119,204	10,394	73.7
Disabled Annuitants	<u>8,565</u>	<u>157,457</u>	18,384	63.7
Total	209,204	\$ 5,147,060	24,603	69.9

**NEW ANNUITANTS AND BENEFICIARIES  
WHO RETIRED BETWEEN JULY 1, 2012 AND JUNE 30, 2013\***

Item	Number*	Annual Annuities <sup>#</sup>	Average Annuities	Average Age
Annuitants (Normal, Early and Withdrawal)	11,863	\$ 348,557	\$ 29,382	60.6
Survivors and Beneficiaries	2,257	13,048	5,781	66.0
Disabled Annuitants	<u>498</u>	<u>12,592</u>	25,284	54.2
Total	14,618	\$ 374,197	25,598	61.2

# The annuities shown in the tables above represent the annual amount payable as of July 1, 2013 for participants who were in payment on June 30, 2013.

\* Excludes 1,638 newly reported annuitants who retired prior to June 30, 2012 and 148 members who retired after June 30, 2012 but died prior to June 30, 2013.

**EXHIBIT I**

**ACTIVE MEMBERSHIP DATA AS OF JUNE 30, 2013  
NUMBER AND AVERAGE ANNUAL SALARY**

Age	Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<b>Under 25</b>	6,983 \$23,980	85 \$28,988								7,068 \$24,040
<b>25-29</b>	17,625 \$34,770	8,048 \$49,961	38 \$45,164							25,711 \$39,540
<b>30-34</b>	8,260 \$33,022	17,685 \$53,801	5,157 \$61,797	39 \$45,332						31,141 \$49,603
<b>35-39</b>	6,330 \$26,501	7,977 \$50,810	12,401 \$65,319	3,086 \$73,152	37 \$52,417					29,831 \$53,997
<b>40-44</b>	8,227 \$22,021	7,423 \$42,132	7,890 \$61,343	9,878 \$75,476	2,469 \$78,915	55 \$48,611				35,942 \$53,447
<b>45-49</b>	8,095 \$20,041	8,042 \$35,033	6,338 \$48,710	4,985 \$67,014	5,821 \$77,439	2,014 \$75,501	76 \$51,824			35,371 \$47,879
<b>50-54</b>	6,565 \$19,696	7,849 \$32,259	7,857 \$41,249	5,195 \$54,147	3,817 \$67,945	4,646 \$77,166	1,804 \$72,154	80 \$49,319		37,813 \$46,012
<b>55-59</b>	4,938 \$19,592	5,577 \$31,363	6,899 \$40,274	6,011 \$49,709	4,760 \$60,247	3,445 \$69,449	3,584 \$79,201	999 \$77,412	31 \$45,563	36,244 \$47,923
<b>60-64</b>	2,935 \$17,676	3,062 \$30,031	3,320 \$40,120	3,296 \$48,476	3,106 \$56,096	2,116 \$61,493	920 \$70,392	858 \$83,806	246 \$82,504	19,859 \$45,225
<b>Over 64</b>	2,408 \$13,116	1,786 \$21,663	1,350 \$31,242	943 \$37,245	763 \$43,669	506 \$46,410	312 \$49,287	184 \$56,566	196 \$79,232	8,448 \$29,083
<b>Total</b>	72,366 \$25,892	67,534 \$43,157	51,250 \$52,692	33,433 \$62,277	20,773 \$67,454	12,782 \$70,889	6,696 \$74,388	2,121 \$77,130	473 \$78,727	267,428 \$47,030

**EXHIBIT II**

**THE NUMBER AND AVERAGE ANNUAL ANNUITY  
AS OF JUNE 30, 2013**

**RETIRED ON ACCOUNT OF SUPERANNUATION, EARLY RETIREMENT AND  
THOSE IN RECEIPT OF WITHDRAWAL ANNUITIES**

Age	Years of Service									Total
	0-4*	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
<b>Under 50</b>		3,719	1,301	362	105	18				5,505
		\$860	\$2,441	\$6,133	\$12,404	\$15,970				\$1,850
<b>50-54</b>		1,254	1,020	416	253	142	67	12		3,164
		\$1,234	\$2,350	\$5,610	\$11,350	\$22,070	\$32,095	\$35,647		\$4,697
<b>55-59</b>		1,179	1,527	949	677	993	3,055	1,730	8	10,118
		\$1,786	\$2,894	\$7,143	\$13,950	\$31,545	\$48,705	\$58,011	\$39,977	\$30,000
<b>60-64</b>	185	1,556	3,529	2,617	2,669	4,039	10,655	10,356	500	36,106
	\$3,129	\$3,304	\$4,569	\$11,101	\$20,948	\$33,018	\$46,250	\$58,566	\$67,232	\$38,029
<b>65-69</b>	809	2,243	4,832	3,990	4,033	5,091	13,045	10,140	1,165	45,348
	\$1,390	\$3,755	\$4,856	\$10,880	\$18,883	\$29,109	\$39,631	\$53,953	\$67,105	\$31,821
<b>70-74</b>	1,001	1,620	3,322	3,405	3,271	3,881	8,318	5,815	937	31,570
	\$1,058	\$3,040	\$4,604	\$9,070	\$15,402	\$23,513	\$33,714	\$43,945	\$58,730	\$24,857
<b>75-79</b>	778	1,168	2,647	2,511	2,983	3,238	4,522	3,199	991	22,037
	\$774	\$2,377	\$3,844	\$7,145	\$11,914	\$19,428	\$28,993	\$37,189	\$45,339	\$19,283
<b>80-84</b>	568	903	2,207	2,221	2,487	2,779	2,983	2,126	938	17,212
	\$712	\$1,889	\$3,451	\$6,215	\$11,104	\$17,263	\$25,193	\$35,025	\$41,551	\$16,715
<b>85-89</b>	419	668	1,644	1,855	1,961	1,761	1,411	1,210	562	11,491
	\$816	\$1,641	\$3,312	\$6,358	\$10,759	\$16,314	\$22,055	\$28,162	\$39,014	\$13,543
<b>Over 89</b>	291	447	1,066	1,173	1,067	955	648	689	283	6,619
	\$1,445	\$1,700	\$3,474	\$6,294	\$10,021	\$14,187	\$18,510	\$23,076	\$29,362	\$10,985
<b>Total</b>	4,051	14,757	23,095	19,499	19,506	22,897	44,704	35,277	5,384	189,170
	\$1,119	\$2,147	\$3,975	\$8,493	\$14,919	\$24,488	\$37,816	\$49,702	\$52,245	\$25,746

\*Includes 60 annuitant records with no service information provided.

**EXHIBIT III**

**THE NUMBER AND AVERAGE ANNUAL ANNUITY  
AS OF JUNE 30, 2013**

**BENEFICIARIES AND SURVIVOR ANNUITANTS**

<b>Age</b>	<b>Years of Service</b>								<b>Total</b>
	<b>0-9*</b>	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30-34</b>	<b>35-39</b>	<b>40+</b>	
<b>Under 50</b>	191	31	31	28	26	17	11	8	343
	\$10,755	\$2,482	\$3,851	\$5,658	\$7,992	\$13,008	\$15,880	\$13,741	\$6,279
<b>50-54</b>	171	15	17	18	14	15	8	7	265
	\$14,579	\$2,737	\$3,862	\$6,366	\$9,470	\$13,693	\$19,694	\$11,270	\$6,709
<b>55-59</b>	1,100	29	44	49	32	27	20	10	1,311
	\$36,434	\$4,618	\$5,675	\$9,027	\$11,835	\$17,906	\$16,821	\$15,690	\$4,963
<b>60-64</b>	599	45	44	48	59	92	66	12	965
	\$39,443	\$4,275	\$5,191	\$9,641	\$14,816	\$15,850	\$21,336	\$12,197	\$14,425
<b>65-69</b>	744	40	40	56	65	175	145	22	1,287
	\$22,719	\$3,742	\$5,148	\$9,436	\$12,592	\$18,288	\$21,918	\$13,883	\$15,413
<b>70-74</b>	692	78	87	70	78	182	167	45	1,399
	\$19,496	\$3,330	\$6,261	\$8,701	\$12,855	\$18,074	\$20,891	\$18,212	\$13,354
<b>75-79</b>	638	110	102	97	104	196	169	84	1,500
	\$14,807	\$3,146	\$4,745	\$7,671	\$11,219	\$14,036	\$19,060	\$21,933	\$11,479
<b>80-84</b>	619	110	133	134	116	204	185	114	1,615
	\$12,690	\$3,240	\$4,389	\$7,263	\$9,063	\$12,932	\$14,818	\$19,289	\$10,307
<b>85-89</b>	575	146	134	138	148	164	211	89	1,605
	\$11,132	\$2,752	\$4,341	\$6,704	\$9,109	\$10,794	\$12,137	\$18,086	\$8,534
<b>Over 89</b>	330	120	97	90	103	119	208	112	1,179
	\$9,025	\$2,169	\$3,742	\$5,300	\$7,090	\$9,209	\$10,962	\$12,804	\$7,434
<b>Total</b>	5,659	724	729	728	745	1,191	1,190	503	11,469
	\$9,763	\$3,045	\$4,649	\$7,445	\$10,253	\$14,334	\$16,410	\$17,300	\$10,394

\*Includes 5,587 beneficiary or survivor annuitant records with no service information provided.



**EXHIBIT IV**

**THE NUMBER AND AVERAGE ANNUAL ANNUITY  
AS OF JUNE 30, 2013**

**RETIRED ON ACCOUNT OF DISABILITY**

Age	Years of Service									Total	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
<b>Under 50</b>		230	171	92	42	10					545
		\$13,702	\$17,178	\$24,073	\$35,416	\$32,002					\$18,552
<b>50-54</b>		216	193	154	113	77	21	1			775
		\$10,689	\$13,743	\$19,477	\$29,472	\$40,376	\$41,813	\$25,466			\$19,746
<b>55-59</b>		307	331	266	264	217	96	2	1		1,484
		\$10,678	\$13,507	\$18,251	\$25,773	\$37,837	\$46,629	\$41,410	\$45,454		\$21,679
<b>60-64</b>		361	411	339	353	400	213	3	2		2,082
		\$8,331	\$12,141	\$16,464	\$24,787	\$35,227	\$47,537	\$46,473	\$22,352		\$22,444
<b>65-69</b>		240	282	267	280	305	149	7	3		1,533
		\$6,962	\$9,454	\$13,251	\$20,973	\$30,029	\$40,259	\$34,807	\$31,731		\$19,076
<b>70-74</b>		170	232	193	190	135	37		1		958
		\$5,228	\$8,152	\$10,470	\$16,871	\$25,111	\$28,914		\$10,189		\$13,023
<b>75-79</b>		102	146	126	104	67	12	3	1		561
		\$5,321	\$6,790	\$8,882	\$14,010	\$19,447	\$28,822	\$43,058	\$16,853		\$10,525
<b>80-84</b>		64	103	76	67	32	5		2		349
		\$3,593	\$5,593	\$8,084	\$12,371	\$19,982	\$20,367		\$32,452		\$8,755
<b>85-89</b>		40	66	31	26	28	4	1			196
		\$3,553	\$6,107	\$8,558	\$11,061	\$16,838	\$20,978	\$24,751			\$8,562
<b>Over 89</b>		19	15	10	16	12	10				82
		\$3,831	\$5,111	\$7,769	\$9,827	\$16,899	\$19,574				\$9,548
<b>Total</b>		1,749	1,950	1,554	1,455	1,283	547	17	10		8,565
		\$8,744	\$11,098	\$14,984	\$22,117	\$31,846	\$42,551	\$37,958	\$27,730		\$18,384

**EXHIBIT V**

**ANNUITANT AND BENEFICIARY MEMBERSHIP DATA  
AS OF JUNE 30, 2013**

**NUMBER AND AVERAGE ANNUAL BENEFIT  
EXCLUDES PARTIAL LUMP SUM PAYMENTS**

Age Last Birthday	Number	Annual Benefit (Thousands)	Average Annual Benefit
<b>Annuitants (Normal, Early and Withdrawal)</b>			
Under 60	18,787	\$ 328,586	\$ 17,490
60 - 64	36,106	1,373,086	38,029
65 - 69	45,348	1,443,012	31,821
70 - 74	31,570	784,735	24,857
75 - 79	22,037	424,936	19,283
Over 79	35,322	516,044	14,610
Total	189,170	\$ 4,870,399	\$ 25,746
<b>Survivors and Beneficiaries</b>			
Under 60	1,919	\$ 10,438	\$ 5,439
60 - 64	965	13,920	14,425
65 - 69	1,287	19,836	15,413
70 - 74	1,399	18,683	13,354
75 - 79	1,500	17,219	11,479
Over 79	4,399	39,108	8,890
Total	11,469	\$ 119,204	\$ 10,394
<b>Disabled Annuitants</b>			
Under 60	2,804	\$ 57,586	\$ 20,537
60 - 64	2,082	46,729	22,444
65 - 69	1,533	29,244	19,076
70 - 74	958	12,476	13,023
75 - 79	561	5,905	10,525
Over 79	627	5,517	8,799
Total	8,565	\$ 157,457	\$ 18,384
<b>Grand Total Average Annual Benefit</b>			
	209,204	\$ 5,147,060	\$ 24,603

## EXHIBIT VI

### 10 YEAR HISTORY OF MEMBERSHIP DATA

#### ACTIVE MEMBERS

Valuation as of June 30	Number of Active Members	Percentage Change in Membership	Total Annualized Payroll (Thousands)*	Percentage Change in Payroll
2013	267,428	(2.22%)	\$ 12,577,105	(1.08%)
2012	273,504	(2.02%)	12,714,371	(1.52%)
2011	279,152	(1.02%)	12,910,043	0.95%
2010	282,041	0.84%	12,788,847	2.11%
2009	279,701	2.57%	12,524,593	5.06%
2008	272,690	3.28%	11,921,469	4.48%
2007	264,023	0.26%	11,410,257	(0.08%)
2006	263,350	3.09%	11,419,049	8.47%
2005	255,465	3.05%	10,527,668	4.95%
2004	247,901	0.49%	10,030,705	3.91%

\* The salaries shown represent an annual rate of pay for the year ending June 30<sup>th</sup> for members who were in active service on June 30<sup>th</sup>.

**EXHIBIT VI**  
(Continued)

**10 YEAR HISTORY OF MEMBERSHIP DATA**

**THE NUMBER AND ANNUAL ANNUITIES OF  
ANNUITANT AND SURVIVOR ANNUITANT MEMBERS**

Year Ended June 30	Number	Annual Annuities* (Millions)	Average Annual Annuities	Additions	Annual Annuities (Millions)	Deletions	Annual Annuities (Millions)	Percentage Change in Membership	Percentage Change in Annuities
2013	209,204	\$ 5,147.1	\$ 24,603	16,404	\$ 377.6	9,215	\$ 83.7	3.56%	5.63%
2012	202,015	4,872.9	24,122	14,579	332.7	7,186	66.6	3.80%	4.78%
2011	194,622	4,650.8	23,897	16,228	453.7	6,540	76.4	5.24%	7.17%
2010	184,934	4,339.6	23,466	12,649	372.8	5,678	77.6	3.92%	8.59%
2009	177,963	3,996.3	22,456	9,651	314.9	5,228	74.4	2.55%	4.85%
2008	173,540	3,811.5	21,963	10,911	345.3	5,397	73.9	3.28%	8.18%
2007	168,026	3,523.4	20,970	10,612	307.5	4,399	56.0	3.84%	7.60%
2006	161,813	3,274.5	20,236	10,637		5,343		3.38%	8.16%
2005	156,519	3,027.6	19,343	10,050		5,083		3.28%	8.20%
2004	151,552	2,798.2	18,464	10,526		4,667		4.02%	9.94%

\* Reflects changes in annuities for continuing payees due to finalization of benefit calculations and due to the commencement of supplemental annuity payments.

**EXHIBIT VII**

**DETAILED TABULATIONS OF THE DATA**

**TABLE 1**

**THE NUMBER AND ANNUAL SALARIED  
OF MEMBERS IN ACTIVE SERVICE DISTRIBUTED BY  
AGE AS OF JUNE 30, 2013**

Age	Male		Female		Total	
	Number	Salaries	Number	Salaries	Number	Salaries
17	6	\$ 73,866	6	\$ 137,309	12	\$ 211,175
18	20	236,309	12	100,202	32	336,511
19	81	1,022,708	56	634,582	137	1,657,290
20	179	2,095,613	115	1,330,732	294	3,426,345
21	224	3,403,792	163	1,603,532	387	5,007,324
22	295	4,835,594	513	9,858,640	808	14,694,234
23	691	15,320,762	1,534	39,412,916	2,225	54,733,678
24	871	22,329,523	2,302	67,518,631	3,173	89,848,154
25	1,079	32,436,658	2,965	98,775,023	4,044	131,211,681
26	1,307	44,104,217	3,512	129,988,110	4,819	174,092,327
27	1,457	54,506,632	3,859	154,600,698	5,316	209,107,330
28	1,610	65,342,589	4,114	176,087,462	5,724	241,430,051
29	1,582	69,624,695	4,226	191,152,604	5,808	260,777,299
30	1,641	74,141,880	4,382	205,131,914	6,023	279,273,794
31	1,832	87,991,462	4,431	215,325,194	6,263	303,316,656
32	1,852	93,292,434	4,461	221,237,192	6,313	314,529,626
33	1,916	101,485,060	4,414	224,171,922	6,330	325,656,982
34	1,852	100,863,404	4,360	221,042,213	6,212	321,905,617
35	1,809	102,267,355	4,133	212,264,857	5,942	314,532,212
36	1,891	108,023,360	4,145	217,675,346	6,036	325,698,706
37	1,840	109,095,848	4,056	209,744,438	5,896	318,840,286
38	1,821	108,955,330	4,172	216,697,967	5,993	325,653,297
39	1,802	111,922,380	4,162	214,126,877	5,964	326,049,257
40	1,922	121,004,778	4,468	225,228,506	6,390	346,233,284
41	2,016	127,447,006	4,955	248,638,078	6,971	376,085,084
42	2,179	136,384,326	5,585	279,982,804	7,764	416,367,130
43	1,992	126,935,686	5,543	278,885,911	7,535	405,821,597
44	1,956	122,310,240	5,326	254,159,656	7,282	376,469,896
45	1,783	113,386,892	5,175	239,447,059	6,958	352,833,951
46	1,759	106,920,629	5,143	231,693,925	6,902	338,614,554
47	1,816	110,234,177	5,068	221,356,813	6,884	331,590,990
48	1,752	101,632,238	5,430	229,390,686	7,182	331,022,924
49	1,820	106,429,905	5,625	233,027,316	7,445	339,457,221
50	1,756	100,155,529	5,497	231,485,731	7,253	331,641,260
51	1,790	100,370,884	5,643	240,690,090	7,433	341,060,974
52	1,888	105,654,421	5,946	251,427,718	7,834	357,082,139
53	1,832	102,771,013	5,711	242,717,475	7,543	345,488,488
54	1,914	106,129,709	5,836	258,460,466	7,750	364,590,175
55	1,901	106,335,354	5,877	264,199,643	7,778	370,534,997
56	1,858	104,149,175	5,893	265,272,167	7,751	369,421,342

**TABLE 1**  
(Continued)

**THE NUMBER AND ANNUAL SALARIED  
OF MEMBERS IN ACTIVE SERVICE DISTRIBUTED BY  
AGE AS OF JUNE 30, 2013**

Age	Male		Female		Total	
	Number	Salaries	Number	Salaries	Number	Salaries
57	1,729	\$ 94,765,995	5,453	\$ 250,710,755	7,182	\$ 345,476,750
58	1,724	91,760,372	5,294	246,755,012	7,018	338,515,384
59	1,522	77,466,204	4,993	235,522,273	6,515	312,988,477
60	1,487	78,501,031	4,372	204,334,805	5,859	282,835,836
61	1,352	66,137,944	3,806	173,874,135	5,158	240,012,079
62	937	44,972,972	2,658	114,154,138	3,595	159,127,110
63	806	36,636,208	2,120	86,606,643	2,926	123,242,851
64	697	29,735,231	1,624	63,175,168	2,321	92,910,399
65	572	22,420,719	1,140	40,780,461	1,712	63,201,180
66	522	18,595,854	977	32,936,364	1,499	51,532,218
67	291	9,526,753	534	16,199,671	825	25,726,424
68	309	9,198,335	477	12,885,718	786	22,084,053
69	287	8,051,455	397	9,761,558	684	17,813,013
70	268	7,685,532	325	7,434,346	593	15,119,878
71	204	5,036,933	294	5,777,483	498	10,814,416
72	141	3,505,882	200	4,080,693	341	7,586,575
73	146	3,333,870	169	3,618,983	315	6,952,853
74	108	3,021,651	152	3,052,727	260	6,074,378
75	88	2,262,152	126	2,512,941	214	4,775,093
76	78	1,767,517	95	1,915,752	173	3,683,269
77	57	1,184,614	83	1,350,132	140	2,534,746
78	51	983,656	63	1,195,205	114	2,178,861
79	33	775,455	52	860,511	85	1,635,966
80	24	529,377	29	486,007	53	1,015,384
81	18	373,664	27	336,471	45	710,135
82	15	393,512	18	401,123	33	794,635
83	15	392,382	12	126,089	27	518,471
84	9	166,953	6	59,955	15	226,908
85	9	239,937	19	374,118	28	614,055
86	2	18,628	4	42,569	6	61,197
87	2	36,178			2	36,178
<b>Total</b>	73,095	\$ 3,831,100,399	194,333	\$ 8,746,004,211	267,428	\$ 12,577,104,610

**TABLE 2**

**THE NUMBER AND ANNUAL SALARIES  
OF MEMBERS IN ACTIVE SERVICE DISTRIBUTED BY  
YEARS OF CREDITED SERVICE AS OF JUNE 30, 2013**

Service	Male		Female		Total	
	Number	Salaries	Number	Salaries	Number	Salaries
0	5,271	\$ 68,075,501	9,813	\$ 133,710,186	15,084	\$ 201,785,687
1	5,264	124,870,623	12,862	293,442,401	18,126	418,313,024
2	3,337	98,236,871	8,707	222,425,352	12,044	320,662,223
3	3,588	132,961,474	9,992	311,369,967	13,580	444,331,441
4	3,348	136,759,954	10,184	351,829,358	13,532	488,589,312
5	3,505	151,657,209	10,714	394,928,052	14,219	546,585,261
6	3,372	157,969,614	10,816	423,417,557	14,188	581,387,171
7	3,451	168,803,582	10,794	448,650,033	14,245	617,453,615
8	3,253	170,577,819	9,737	426,145,403	12,990	596,723,222
9	3,002	167,071,827	8,890	405,345,843	11,892	572,417,670
10	2,715	155,861,456	7,960	375,865,398	10,675	531,726,854
11	2,708	158,302,861	7,840	377,380,849	10,548	535,683,710
12	2,543	154,960,218	7,659	374,917,770	10,202	529,877,988
13	2,354	147,108,995	7,386	376,451,000	9,740	523,559,995
14	2,813	187,816,693	7,272	391,804,645	10,085	579,621,338
15	2,373	160,597,301	5,964	331,904,940	8,337	492,502,241
16	2,332	165,818,351	5,452	313,600,468	7,784	479,418,819
17	1,872	133,153,687	4,590	272,168,020	6,462	405,321,707
18	1,579	115,932,434	4,138	252,386,338	5,717	368,318,772
19	1,411	102,224,818	3,722	234,335,155	5,133	336,559,973
20	1,733	129,904,900	3,699	235,065,196	5,432	364,970,096
21	1,176	86,424,260	3,038	198,220,737	4,214	284,644,997
22	969	70,150,652	2,731	175,753,229	3,700	245,903,881
23	1,006	73,670,455	2,760	183,896,360	3,766	257,566,815
24	1,050	76,279,318	2,611	171,865,405	3,661	248,144,723
25	963	70,493,929	2,321	155,546,017	3,284	226,039,946
26	865	64,206,323	2,019	139,072,458	2,884	203,278,781
27	750	56,272,376	1,828	129,192,043	2,578	185,464,419
28	653	49,025,113	1,547	110,165,996	2,200	159,191,109
29	615	45,811,744	1,221	86,317,331	1,836	132,129,075
30	557	40,282,742	1,019	74,109,092	1,576	114,391,834
31	447	32,851,435	896	65,544,207	1,343	98,395,642
32	468	34,849,781	877	67,082,381	1,345	101,932,162
33	426	33,568,041	891	65,649,864	1,317	99,217,905
34	390	29,960,844	725	54,201,022	1,115	84,161,866
35	248	19,874,918	447	33,800,714	695	53,675,632
36	167	14,055,105	312	22,507,557	479	36,562,662
37	150	12,188,939	258	19,737,773	408	31,926,712
38	97	8,128,738	197	14,021,846	294	22,150,584
39	92	7,676,549	153	11,601,135	245	19,277,684



**TABLE 2**  
(Continued)

**THE NUMBER AND ANNUAL SALARIES  
OF MEMBERS IN ACTIVE SERVICE DISTRIBUTED BY  
YEARS OF CREDITED SERVICE AS OF JUNE 30, 2013**

Service	Male		Female		Total	
	Number	Salaries	Number	Salaries	Number	Salaries
40	57	\$ 5,523,261	91	\$ 6,764,736	148	\$ 12,287,997
41	43	3,629,320	61	4,538,898	104	8,168,218
42	27	2,448,684	34	2,349,505	61	4,798,189
43	14	1,364,928	32	1,951,300	46	3,316,228
44	10	836,567	20	1,200,769	30	2,037,336
45	9	731,466	11	798,357	20	1,529,823
46	3	203,908	10	804,848	13	1,008,756
47	6	494,891	8	449,303	14	944,194
48	3	280,056	7	450,255	10	730,311
49	3	417,197	2	116,748	5	533,945
50	3	292,488	3	220,800	6	513,288
51			3	212,478	3	212,478
52	1	113,314	3	299,369	4	412,683
53	1	92,291			1	92,291
54	2	234,578	1	92,291	3	326,869
55			2	110,063	2	110,063
57			1	91,683	1	91,683
60			1	48,081	1	48,081
61			1	75,629	1	75,629
<b>Total</b>	73,095	\$ 3,831,100,399	194,333	\$ 8,746,004,211	267,428	\$ 12,577,104,610

**TABLE 3**

**THE NUMBER AND ANNUAL ANNUITIES  
OF ANNUITANTS ON THE RETIRED LIST  
AS OF JUNE 30, 2013**

**RETIRED ON ACCOUNT OF SUPERANNUATION, EARLY RETIREMENT AND  
THOSE IN RECEIPT OF WITHDRAWAL ANNUITIES**

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
24	4	\$ 2,434	1	\$ 159	5	\$ 2,593
25	1	312	2	680	3	992
26	1	338	2	530	3	868
27	3	2,368	6	3,102	9	5,470
28	9	7,339	12	5,298	21	12,637
29	8	3,617	17	11,642	25	15,259
30	15	8,144	35	23,780	50	31,924
31	43	29,014	39	23,671	82	52,685
32	24	21,513	56	34,806	80	56,319
33	51	52,158	68	51,065	119	103,223
34	43	38,684	96	70,054	139	108,738
35	68	91,735	97	89,351	165	181,086
36	70	107,688	127	126,606	197	234,294
37	81	98,035	146	152,253	227	250,288
38	71	96,428	152	139,370	223	235,798
39	80	96,622	161	158,339	241	254,961
40	86	145,119	188	214,572	274	359,691
41	98	161,138	199	294,350	297	455,488
42	115	202,725	241	352,790	356	555,515
43	123	286,613	276	479,732	399	766,345
44	122	295,169	253	416,900	375	712,069
45	99	340,710	256	492,001	355	832,711
46	132	369,396	286	594,333	418	963,729
47	146	531,463	306	701,723	452	1,233,186
48	138	430,279	335	764,896	473	1,195,175
49	149	624,033	368	937,196	517	1,561,229
50	166	701,462	392	1,138,186	558	1,839,648
51	168	788,515	410	1,421,748	578	2,210,263
52	187	1,192,895	438	1,648,397	625	2,841,292
53	207	1,599,544	481	2,255,491	688	3,855,035
54	194	1,545,628	521	2,570,375	715	4,116,003
55	296	4,296,512	651	7,424,715	947	11,721,227
56	448	11,516,005	1,041	22,270,504	1,489	33,786,509
57	578	19,606,426	1,352	37,730,366	1,930	57,336,792
58	734	27,474,682	1,755	55,533,965	2,489	83,008,647
59	974	38,462,216	2,289	79,226,544	3,263	117,688,760
60	1,305	57,308,416	3,210	120,023,352	4,515	177,331,768
61	1,673	72,446,037	4,268	165,057,205	5,941	237,503,242
62	2,288	98,419,769	5,591	206,883,619	7,879	305,303,388

**TABLE 3**  
(Continued)

**THE NUMBER AND ANNUAL ANNUITIES  
OF ANNUITANTS ON THE RETIRED LIST  
AS OF JUNE 30, 2013**

**RETIRED ON ACCOUNT OF SUPERANNUATION, EARLY RETIREMENT AND  
THOSE IN RECEIPT OF WITHDRAWAL ANNUITIES**

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
63	2,611	\$ 109,064,527	6,048	\$ 213,406,606	8,659	\$ 322,471,133
64	2,972	122,048,983	6,140	208,427,543	9,112	330,476,526
65	3,333	130,416,099	6,466	210,227,930	9,799	340,644,029
66	4,021	150,597,355	7,267	221,001,715	11,288	371,599,070
67	3,540	126,562,402	5,899	168,871,031	9,439	295,433,433
68	2,900	98,962,154	4,673	129,562,650	7,573	228,524,804
69	2,755	90,462,498	4,494	116,348,622	7,249	206,811,120
70	2,896	92,805,705	4,689	113,467,736	7,585	206,273,441
71	2,852	89,745,444	4,374	100,543,831	7,226	190,289,275
72	2,281	65,234,334	3,916	86,064,154	6,197	151,298,488
73	1,997	56,543,959	3,477	71,075,920	5,474	127,619,879
74	1,813	46,705,977	3,275	62,548,412	5,088	109,254,389
75	1,769	44,618,281	3,182	58,854,229	4,951	103,472,510
76	1,690	41,879,031	2,950	50,214,082	4,640	92,093,113
77	1,614	39,943,062	2,839	46,906,033	4,453	86,849,095
78	1,490	34,593,069	2,666	39,967,389	4,156	74,560,458
79	1,384	31,395,920	2,453	36,564,853	3,837	67,960,773
80	1,316	29,609,645	2,313	33,201,775	3,629	62,811,420
81	1,335	29,915,365	2,388	33,890,923	3,723	63,806,288
82	1,199	28,289,377	2,398	35,128,092	3,597	63,417,469
83	1,118	23,362,542	2,161	29,920,308	3,279	53,282,850
84	956	18,766,241	2,028	25,620,857	2,984	44,387,098
85	818	16,233,382	2,028	25,060,368	2,846	41,293,750
86	787	14,244,843	1,847	22,206,721	2,634	36,451,564
87	662	12,057,566	1,639	19,020,709	2,301	31,078,275
88	579	10,432,791	1,387	14,446,556	1,966	24,879,347
89	472	8,281,049	1,272	13,641,310	1,744	21,922,359
90	350	5,571,073	1,008	9,727,729	1,358	15,298,802
91	264	3,998,933	908	8,795,514	1,172	12,794,447
92	201	3,139,175	798	7,844,487	999	10,983,662
93	147	2,163,629	683	6,649,135	830	8,812,764
94	76	1,039,582	470	4,521,423	546	5,561,005
95	82	924,732	444	4,584,046	526	5,508,778
96	44	630,077	332	3,360,417	376	3,990,494
97	48	517,173	237	2,550,791	285	3,067,964
98	20	278,009	143	1,634,126	163	1,912,135
99	15	288,590	119	1,370,583	134	1,659,173
100	9	121,902	79	981,883	88	1,103,785
101	9	78,822	44	666,960	53	745,782
102	5	46,907	24	316,069	29	362,976

**TABLE 3**  
(Continued)

**THE NUMBER AND ANNUAL ANNUITIES  
OF ANNUITANTS ON THE RETIRED LIST  
AS OF JUNE 30, 2013**

**RETIRED ON ACCOUNT OF SUPERANNUATION, EARLY RETIREMENT AND  
THOSE IN RECEIPT OF WITHDRAWAL ANNUITIES**

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
103	4	\$ 95,964	23	\$ 301,724	27	\$ 397,688
104	1	13,960	14	230,007	15	243,967
105			6	72,523	6	72,523
106	1	27,090	4	59,342	5	86,432
107			3	55,389	3	55,389
108			1	9,545	1	9,545
109			1	18,920	1	18,920
110			1	16,204	1	16,204
111			1	9,259	1	9,259
<b>Total</b>	63,434	\$ 1,921,108,400	125,736	\$ 2,949,290,097	189,170	\$ 4,870,398,497

**TABLE 3**  
(Continued)

**THE NUMBER AND ANNUAL ANNUITIES  
OF ANNUITANTS ON THE RETIRED LIST  
AS OF JUNE 30, 2013**

**RETIRED ON ACCOUNT OF SUPERANNUATION, EARLY RETIREMENT AND  
THOSE IN RECEIPT OF WITHDRAWAL ANNUITIES**

<u>OPTION</u>		<u>MALE</u>		<u>FEMALE</u>	
Maximum	30,001	\$	922,865,732	75,022	\$ 1,719,186,974
1	9,256		219,033,738	25,914	497,629,017
2	14,467		413,071,709	14,483	389,952,996
3	8,351		303,415,232	9,605	312,730,349
4	<u>1,359</u>		<u>62,721,989</u>	<u>712</u>	<u>29,790,761</u>
	63,434	\$	1,921,108,400	125,736	\$ 2,949,290,097

**DEFINITIONS OF OPTIONS**

- Option 1 A life annuity to the member with a guaranteed payment to the beneficiary equal to the present value of the total maximum single life annuity less any amounts paid to the member prior to death.
- Option 2 A joint and one hundred percent (100%) survivor annuity payable during the lifetime of the member with the full amount of such annuity payable thereafter to the designated survivor annuitant, if living at the member's death.
- Option 3 A joint and fifty percent (50%) survivor annuity payable during the lifetime of the member with one-half of such annuity payable thereafter to the designated survivor annuitant, if living at the member's death.
- Option 4 A life annuity to the member with a special death benefit other than the normal option 1, 2, or 3 death benefit.

**TABLE 4**

**THE NUMBER AND ANNUAL ANNUITIES  
OF BENEFICIARIES AND SURVIVOR ANNUITANTS  
AS OF JUNE 30, 2013**

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
12	1	\$ 2,416			1	\$ 2,416
13	1	1,898			1	1,898
14			2	\$ 4,388	2	4,388
15	1	10,483			1	10,483
18			1	2,751	1	2,751
19	1	2,775			1	2,775
20			2	9,620	2	9,620
21			1	1,614	1	1,614
22	2	10,125	3	19,187	5	29,312
23			2	4,018	2	4,018
24	2	6,891	1	1,227	3	8,118
25			2	3,484	2	3,484
26	6	67,726	3	25,735	9	93,461
27	1	2,483	1	483	2	2,966
28	1	21,281	7	87,104	8	108,385
29	3	20,927	2	17,887	5	38,814
30	1		1	13,232	2	13,232
31	6	79,892	3	23,371	9	103,263
32	3	15,461	4	10,745	7	26,206
33	6	21,755	1	8,367	7	30,122
34	3	1,996	5	46,657	8	48,653
35	9	69,095	4	13,847	13	82,942
36	6	19,805	5	11,418	11	31,223
37	2	8,515	4	20,572	6	29,087
38	8	102,070	4	13,648	12	115,718
39	5	22,724	3	8,148	8	30,872
40	3	11,593	9	34,644	12	46,237
41	4	32,131	3	11,641	7	43,772
42	5	14,048	11	76,820	16	90,868
43	6	36,704	5	31,425	11	68,129
44	6	26,966	12	115,240	18	142,206
45	14	45,080	13	50,143	27	95,223
46	12	60,079	22	134,425	34	194,504
47	8	42,198	12	83,655	20	125,853
48	9	82,757	17	165,085	26	247,842
49	9	31,684	34	231,498	43	263,182

**TABLE 4**  
(Continued)

**THE NUMBER AND ANNUAL ANNUITIES  
OF BENEFICIARIES AND SURVIVOR ANNUITANTS  
AS OF JUNE 30, 2013**

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
50	11	\$ 80,639	20	\$ 111,552	31	\$ 192,191
51	10	58,454	23	135,062	33	193,516
52	18	80,992	35	251,825	53	332,817
53	14	108,090	43	364,371	57	472,461
54	21	79,185	70	507,747	91	586,932
55	26	100,199	775	839,794	801	939,993
56	25	100,428	79	725,366	104	825,794
57	34	269,414	81	1,012,857	115	1,282,271
58	29	317,941	113	1,336,788	142	1,654,729
59	36	291,921	113	1,511,679	149	1,803,600
60	38	439,422	128	1,662,528	166	2,101,950
61	51	672,809	114	1,590,083	165	2,262,892
62	63	780,908	134	2,092,270	197	2,873,178
63	58	852,438	142	2,118,397	200	2,970,835
64	72	1,119,743	165	2,591,788	237	3,711,531
65	67	1,143,848	198	3,213,510	265	4,357,358
66	75	1,245,474	237	3,624,467	312	4,869,941
67	66	872,852	184	2,654,999	250	3,527,851
68	58	872,035	173	2,666,705	231	3,538,740
69	64	1,005,805	165	2,536,699	229	3,542,504
70	76	824,396	202	2,827,612	278	3,652,008
71	78	1,015,881	221	3,262,507	299	4,278,388
72	68	827,157	210	3,081,083	278	3,908,240
73	45	452,604	235	2,862,964	280	3,315,568
74	50	622,356	214	2,906,185	264	3,528,541
75	41	613,037	254	3,184,085	295	3,797,122
76	63	548,446	232	2,732,664	295	3,281,110
77	52	506,902	258	3,004,696	310	3,511,598
78	49	483,556	246	2,847,838	295	3,331,394
79	54	599,102	251	2,698,695	305	3,297,797
80	52	469,595	245	2,762,925	297	3,232,520
81	49	385,548	241	2,617,973	290	3,003,521
82	60	627,735	306	3,087,453	366	3,715,188
83	58	587,800	288	2,889,432	346	3,477,232
84	50	408,546	266	2,808,105	316	3,216,651
85	47	426,868	306	2,776,311	353	3,203,179
86	59	498,405	285	2,559,765	344	3,058,170
87	58	472,423	255	2,215,166	313	2,687,589
88	60	424,753	254	2,175,421	314	2,600,174
89	50	387,841	231	1,760,718	281	2,148,559

**TABLE 4**  
(Continued)

**THE NUMBER AND ANNUAL ANNUITIES  
OF BENEFICIARIES AND SURVIVOR ANNUITANTS  
AS OF JUNE 30, 2013**

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
90	50	\$ 318,342	203	\$ 1,560,389	253	\$ 1,878,731
91	34	228,844	169	1,452,450	203	1,681,294
92	35	255,858	139	1,105,637	174	1,361,495
93	31	243,201	126	988,122	157	1,231,323
94	20	116,359	81	491,892	101	608,251
95	13	99,692	79	610,716	92	710,408
96	10	50,702	62	417,557	72	468,259
97	6	28,780	28	187,252	34	216,032
98	6	59,686	27	177,601	33	237,287
99	1	11,358	19	83,864	20	95,222
100	1	1,680	17	129,483	18	131,163
101			3	40,908	3	40,908
102	1	12,901	7	62,028	8	74,929
103			5	13,866	5	13,866
104			3	12,115	3	12,115
107			1	2,126	1	2,126
111	1	1,200			1	1,200
112			1	591	1	591
<b>Total</b>	2,308	\$ 23,975,709	9,161	\$ 95,228,761	11,469	\$ 119,204,470



**TABLE 5**

**THE NUMBER AND ANNUAL ANNUITIES  
OF ANNUITANTS ON THE RETIRED LIST  
AS OF JUNE 30, 2013**

**RETIRED ON ACCOUNT OF DISABILITY**

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
28	1	\$ 13,798			1	\$ 13,798
30			2	\$ 26,584	2	26,584
31	5	80,284	1	22,510	6	102,794
32			1	22,897	1	22,897
33	2	31,598			2	31,598
34	1	7,126	3	52,043	4	59,169
35	1	20,798	5	100,800	6	121,598
36			7	144,440	7	144,440
37	4	70,798	13	223,615	17	294,413
38	3	47,808	6	138,567	9	186,375
39	2	31,916	17	313,276	19	345,192
40	8	158,945	21	396,621	29	555,566
41	4	61,489	16	257,102	20	318,591
42	7	148,092	20	356,080	27	504,172
43	12	276,835	25	480,272	37	757,107
44	8	175,083	34	594,221	42	769,304
45	20	410,370	26	479,556	46	889,926
46	18	408,912	30	537,549	48	946,461
47	18	275,662	34	727,635	52	1,003,297
48	17	343,838	55	911,408	72	1,255,246
49	31	655,770	67	1,106,794	98	1,762,564
50	37	663,404	90	1,639,569	127	2,302,973
51	42	794,024	89	1,679,926	131	2,473,950
52	40	911,317	110	2,010,739	150	2,922,056
53	30	697,747	125	2,474,170	155	3,171,917
54	87	1,918,362	125	2,514,060	212	4,432,422
55	71	1,419,353	170	3,653,002	241	5,072,355
56	81	1,844,250	163	3,119,353	244	4,963,603
57	95	1,981,071	211	4,560,380	306	6,541,451
58	103	2,322,479	226	5,042,000	329	7,364,479
59	111	2,656,325	253	5,573,492	364	8,229,817
60	139	2,927,999	269	5,698,570	408	8,626,569
61	133	3,292,448	297	6,683,236	430	9,975,684
62	122	3,022,575	298	6,838,478	420	9,861,053
63	107	2,324,400	279	6,279,156	386	8,603,556
64	150	3,545,805	288	6,116,507	438	9,662,312
65	112	2,510,133	262	5,345,052	374	7,855,185
66	126	2,841,948	270	5,083,052	396	7,925,000
67	104	1,991,960	219	3,841,380	323	5,833,340
68	71	1,479,946	158	2,529,053	229	4,008,999

**TABLE 5**  
(Continued)

**THE NUMBER AND ANNUAL ANNUITIES  
OF ANNUITANTS ON THE RETIRED LIST  
AS OF JUNE 30, 2013**

**RETIRED ON ACCOUNT OF DISABILITY**

Age	Male		Female		Total	
	Number	Annuities	Number	Annuities	Number	Annuities
69	69	\$ 1,274,141	142	\$ 2,347,128	211	\$ 3,621,269
70	80	1,224,496	170	2,265,408	250	3,489,904
71	63	895,242	174	2,401,302	237	3,296,544
72	40	491,814	136	1,602,079	176	2,093,893
73	44	651,888	123	1,331,900	167	1,983,788
74	41	576,387	87	1,035,597	128	1,611,984
75	49	586,072	90	895,315	139	1,481,387
76	36	418,901	84	1,027,966	120	1,446,867
77	30	334,052	68	705,563	98	1,039,615
78	26	334,059	86	681,817	112	1,015,876
79	20	212,720	72	708,633	92	921,353
80	31	357,642	52	397,842	83	755,484
81	14	116,072	64	593,166	78	709,238
82	17	171,894	50	370,237	67	542,131
83	11	124,160	49	356,137	60	480,297
84	18	237,471	43	330,882	61	568,353
85	10	110,259	52	382,244	62	492,503
86	13	198,860	22	122,516	35	321,376
87	11	100,704	37	323,637	48	424,341
88	8	92,390	25	216,078	33	308,468
89	2	11,890	16	119,596	18	131,486
90	3	27,045	17	154,611	20	181,656
91	4	44,298	12	119,895	16	164,193
92	1	2,791	5	41,185	6	43,976
93	1	4,614	9	99,592	10	104,206
94	2	31,945	5	18,568	7	50,513
95			7	102,182	7	102,182
96			5	44,651	5	44,651
97	1	7,175	5	42,329	6	49,504
98			2	17,972	2	17,972
100			3	24,043	3	24,043
<b>Total</b>	2,568	\$ 51,003,650	5,997	\$ 106,453,216	8,565	\$ 157,456,866

## **EXHIBIT VIII**

### **GLOSSARY**

<b>Accrued Liability</b>	The difference between (a) the present value of future plan benefits, and (b) the present value of future normal cost. It is the portion of the present value of future plan benefits attributable to service accrued as of the valuation date. Sometimes referred to as “actuarial accrued liability.”
<b>Accrued Service</b>	The service credited under the plan that was rendered before the date of the actuarial valuation.
<b>Actuarial Assumptions</b>	Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
<b>Actuarial Cost Method</b>	A mathematical budgeting procedure for allocating the dollar amount of the “present value of future plan benefits” between the present value of future normal cost and the accrued liability. Sometimes referred to as the “actuarial funding method.”
<b>Actuarial Equivalent</b>	A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.
<b>Actuarial Value of Assets</b>	The value of current plan assets recognized for valuation purposes. Based on a smoothed market value that recognizes investment gains and losses over a period of ten years.
<b>Amortization</b>	Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.
<b>Experience Gain (Loss)</b>	A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.
<b>Normal Cost</b>	The annual cost assumed, under the actuarial funding method, for current and subsequent plan years. Sometimes referred to as “current service cost.”

## **EXHIBIT VIII**

(Continued)

### **GLOSSARY**

<b>Present Value</b>	The amount of funds presently required to provide a payment or series of payments in the future. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.
<b>Unfunded Accrued Liability</b>	The difference between the actuarial accrued liability and valuation assets.