## THE PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM OF PENNSYLVANIA

ACTUARIAL VALUATION JUNE 30, 2001

Revised To Reflect Act 38 Of 2002



A Mellon Financial Companysh

One North Dearborn, Suite 1400 Chicago, Illinois 60602-4336

September 10, 2002

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 revised annual actuarial valuation of the Public School Employees' Retirement System of Pennsylvania as of June 30, 2001. The valuation was revised to reflect Act 38 of 2002 which amended the Code. The Act 38 revisions effective with this valuation are:

- Established 1% floor on the pension rate commencing with 2002/2003 fiscal year contribution
- Established 1.15% cap on the total rate for 2002/2003 fiscal year only
- Changed the method of calculating the actuarial value of assets from a three-year smoothing method to a five-year smoothing method

The valuation takes into account all of the promised benefits to which members are entitled, including pension and survivor benefits and establishes the contribution rate for the 2002/2003 fiscal year in conformance with the Retirement Code.

The valuation was based on the actuarial assumptions and methods as adopted by the Board of Trustees, including a valuation interest rate of  $8\frac{1}{2}$ % per annum compounded annually. The actuarial assumptions are unchanged from the prior valuation. The actuarial cost method has been revised in accordance with Act 9 and Act 38. The outstanding balance of the unfunded accrued liability as of June 30, 2001 is amortized over a 10-year period, with level dollar funding beginning July 1, 2002. The increase in liability due to new benefits provided by Act 9, the decrease in unfunded actuarial liability due to the new actuarial asset valuation method provided by Act 38, and future actuarial gains and losses are amortized over a 10-year period with level dollar funding.

The actuarial assumptions and methods comply with the parameters set forth in Governmental Accounting Standards Board Statement No. 25.

The Retirement Board
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### Assets and Membership Data

The Retirement System reported the individual data for members of the System as of the valuation date to the actuary. 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.

### **Funding Adequacy**

The valuation results determine that the employer contribution rate for fiscal year 2002/2003 is 1.15%. The funded status of the plan determined as of June 30, 2001 based on the accrued liability and the actuarial value of assets is 114.4%.

### 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 actuary prepared supporting schedules included in the Actuarial and Statistical Section of PSERS Comprehensive Annual Financial Report. The actuary prepared the trend data schedules included in the Financial Section of PSERS Comprehensive Annual Financial Report.

Qualified actuaries completed the valuations in accordance with accepted actuarial procedures as prescribed by the Actuarial Standards Board. The qualified actuaries are members of the American Academy of Actuaries and are experienced in performing actuarial valuations of public employee retirement systems. To the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally accepted actuarial principles and practice.

Respectfully submitted,

Kim M. Nicholl, F.S.A.

Principal, Consulting Actuary

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## **Executive Summary**

This report presents the actuarial valuation as of June 30, 2001 for the Public School Employees' Retirement System of Pennsylvania.

The principal valuation results include:

- The employer contribution rate for fiscal year 2002/2003 which is 1.15%.
- The funded status of the plan determined as of June 30, 2001 based on the accrued liability and the actuarial value of assets as of that date which is 114.4%.
- The determination of the actuarial gain or loss as of June 30, 2001 which is a loss of \$2.0 billion.
- Annual disclosure as of June 30, 2001 as required by Statement No. 25 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 actuary prepared supporting schedules included in the Actuarial and Statistical Section of PSERS Comprehensive Annual Financial Report. The actuary prepared the trend data schedules included in the Financial Section of PSERS Comprehensive Annual Financial Report.

## **Changes Since Last Year**

## **Legislative and Administrative Changes**

Act 9 of 2001 amended Section 8509(B) of the PSERS Code. Act 9 created a new Class T-D service as of July 1, 2001 and allows members to have prior school service and intervening military service converted to Class T-D service. Members who are active or inactive as of July 1, 2001 must affirmatively elect Class T-D service by December 31, 2001. The multiplier for members with Class T-D service will increase from 2% to 2.5%. The multiplier for non-school service will remain at 2%.

Effective January 1, 2002, the member contribution rate will increase by 1.25% for members who elect to convert to Class T-D service and for all members enrolled on or after July 1, 2001. Members who were enrolled after July 22, 1983 who elect Class T-D service will pay an employee contribution rate of 7.5%. Members who were enrolled prior to July 22, 1983 who elect Class T-D service will pay an employee contribution rate of 6.5%. In addition, Act 9 reduced the vesting period from 10 years to five years of eligibility points.

Act 38 provides for a split COLA to be paid commencing July 1, 2002 for members retired before July 2, 1990 and commencing July 1, 2003 for members retired from July 2, 1990 through July 1, 2002. Funding for the cost of the COLA will commence July 1 following each effective date.

The benefit provisions and contribution provisions are summarized in Table 13.

### **Actuarial Assumptions and Methods**

The actuarial assumptions are unchanged from the prior valuation with the exception of the actuarial cost method which has been revised in accordance with Act 9 of 2001 and the actuarial asset method which has been revised in accordance with Act 38 of 2002.

Act 38 of 2002 amended the actuarial asset valuation method. The new actuarial value of assets is determined by immediately recognizing the 8.5% actuarial expected investment return and recognizing the difference between the actual and expected investment return over a five-year period. Under the transition rule, the remaining unrecognized gains from the 1999/2000 and 2000/2001 fiscal years under the former three-year smoothing method are immediately recognized.

Under Act 9 the outstanding balance of the unfunded accrued liability as of June 30, 2001 is amortized over a 10-year period, with level dollar funding beginning July 1, 2002. The increase in liability due to new benefits provided by Act 9, the decrease in the unfunded accrued liability due to the new actuarial asset method provided by Act 38, and future actuarial gains and losses are amortized over a 10-year period with level dollar funding.

Act 38 of 2002 amended Section 8328(a) of the PSERS Code. Act 38 established a floor on the total contribution rate equal to 1% plus the premium assistance rate. In addition, Act 38 established a cap on the total contribution rate for the 2002/2003 fiscal year only of 1.15%.

The actuarial assumptions and methods are outlined in Table 12.

#### **Contribution Rates**

The results of the valuation as of June 30, 2001 determine the employer contribution rate for fiscal year 2002/2003. The total contribution rate payable by the employer is 1.15% of payroll as provided by Act 38 of 2002. This includes .18% of payroll for pension benefits plus 0.97% of payroll for the health insurance premium assistance program.

The average contribution rate payable by the members is 7.10%. Effective January 1, 2002 the employee contribution rate for members who elect to have prior school service and intervening military service converted to Class T-D service will increase by 1.25%. The average member contribution rate of 7.10% represents an average of the members who were most recently hired prior to July 22, 1983 contributing 6.50%, and the remaining members who are contributing 7.50%.

#### Reasons for Change in the Rate

The employer contribution rate increased from 1.09% for fiscal year 2001/2002 to 1.15% for fiscal year 2002/2003. The increase of .06% is due to the following reasons:

•	Decrease due to reamortization of the unfunded accrued liability over 10 years	(8.72)%
•	Increase due to Act 9 benefit increases*	10.59
•	Decrease due to change in asset method under Act 38*	(7.50)
•	Increase due to actuarial loss on assets*	2.97
•	Increase due to actuarial loss on liabilities*	.25
•	Decrease due to change in health insurance contribution rate	(.12)
•	Decrease due to zero minimum pension contribution rate for fiscal 2001/2002	(.42)
•	Increase due to floor and cap on contribution rate under Act 38	<u>3.01</u>
•	Total	.06%

<sup>\*</sup> Changes in Unfunded Accrued Liability amortized over 10 years

## **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, 2001. Comparable results from the June 30, 2000 valuation are also shown.

Item	June 30, 2001	June 30, 2000	
Demographics			
Active Members			
Number	243,311	234,210	
Average Annual Pay	\$ 38,695	\$ 38,169	
Annuitants			
Number	132,716	134,058	
Average Annual Benefit Payment	\$ 14,105	\$ 14,029	
Contribution Rates (as a Percentage of			
Payroll)	(Fiscal Year 2002/2003)	(Fiscal Year 2001/2002)	
Employer Contribution Rate:			
Total Pension Contribution Rate	.18%	0.00%	
Health Insurance Contribution Rate	0.97	<u>1.09</u>	
• Total	1.15%	1.09%	
Member Average Contribution Rate	<u>7.10</u>	_5.80	
Total Rate	8.25%	6.89%	
Actuarial Funded Status			
Accrued Liability	\$ 47,917.3 Mil	\$ 39,822.8 Mil	
Actuarial Value of Assets	54,830.3	49,293.0	
Unfunded Accrued Liability	\$ (6,913.0)	\$ (9,470.2)	
Funded Ratio	114.4%	123.8%	

## **Five-Year History of Principal Financial Results**

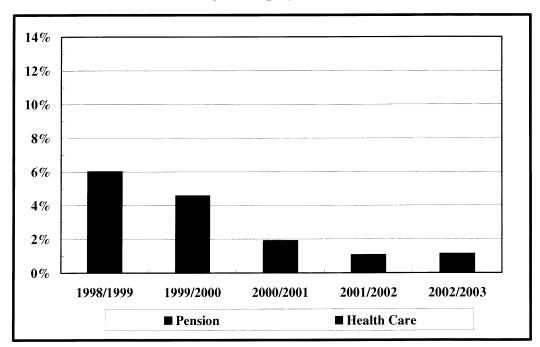
**Five-Year History of Contribution Rates** 

(As a % of Payroll)

		Employer Contributions			
Fiscal Year	Member Contributions	Normal Cost	Unfunded Accrued Liability	Health Care	Total
2002/2003	7.10%	7.20%	(10.03)%	.97%	1.15%
2001/2002	5.80	5.63	(6.05)	1.09	1.09
2000/2001	5.77	6.29	(4.65)	.30	1.94
1999/2000	5.72	6.40	(2.04)	.25	4.61
1998/1999	5.69	6.33	(.44)	.15	6.04

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 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 the amortization schedules as required by the retirement code, i.e., a schedule of 10 years for each change in the unfunded accrued liability.

The total contribution rate of 1.15% of payroll payable by employers, when taken together with the contributions payable by the members and asset returns, is sufficient to achieve the financing objective.

The System's funded status on the funding basis is measured by comparing the actuarial value of assets (based on a 5-year moving average market value) with the accrued liability. The accrued liability is the present value of benefits accumulated to date under the System's funding method and reflects future pay increases for active employees.

On this basis, the System's funded ratio is 114.4% as of June 30, 2001. The funded ratio is based on an actuarial value of assets of \$54.8 billion and an accrued liability of \$47.9 billion.

#### Reasons for Change in the Funded Ratio

The funded ratio decreased from 123.8% as of June 30, 2000 to 114.4% as of June 30, 2001. The decrease is due to the net effect of the Act 9 benefit changes, Act 38 actuarial asset method change, and asset and experience losses.

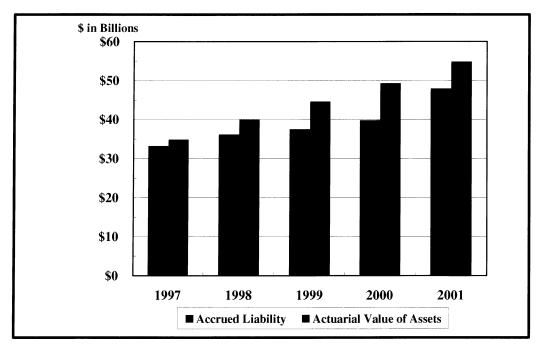
## Five-Year History of Funded Ratio

(\$ results reported in millions)

Valuation as of June 30	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio
2001	\$ 47,917.3	\$ 54,830.3	\$ (6,913.0)	114.4%
2000	39,822.8	49,293.0	(9,470.2)	123.8
1999	37,499.1	44,606.5	(7,107.4)	119.0
1998	36,136.2	39,969.0	(3,832.8)	110.6
1997	33,209.5	34,872.6	(1,663.1)	105.0

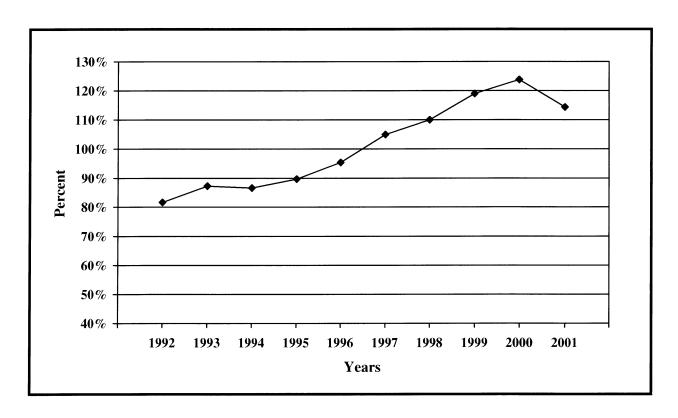
The following chart shows a five-year history of the accrued liability and the actuarial value of assets:

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



The following chart shows a ten-year history of the funded ratio:

Ten-Year History of Funded Ratio (1992 - 2001)



### GASB No. 25 Disclosure

Statement No. 25 of the Governmental Accounting Standards Board established reporting standards for the annual financial reports of defined benefit pension plans. The 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 System's financial statements.

The "schedule of funding progress" shows historical trend information about the System's actuarial value of assets, the actuarial accrued liability and the unfunded actuarial accrued liability. The actuarial funded status is measured by comparing the actuarial value of assets (based on a 5-year moving average market value) with the accrued liability. The accrued liability is the present value of benefits accumulated to date under the System's funding method and reflects future pay increases for active employees. On this basis, the System's funded ratio is 114.4% as of June 30, 2001. The funded ratio is based on an actuarial value of assets of \$54.8 billion and an accrued liability of \$47.9 billion.

The "schedule of employer contributions" shows historical trend information about the annual required contributions (ARC) of the employer and the percentage of the ARC contributed to the System. The ARC is equal to the normal cost plus amortization of the unfunded actuarial accrued liability. The maximum period of amortizing the unfunded actuarial accrued liability permitted by GASB No. 25 is 40 years. The maximum amortization period decreases to 30 years in 2006. The employer contributions to the System are equal to the normal cost plus a 10-year amortization of each change in the unfunded accrued liability. The employer contributions to the System are equal to 100% of the ARC.

#### 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 1996/1997 through 2000/2001 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 assets are the assets recognized for valuation purposes. Actuarial assets are based on a smoothed market value that recognizes investment gains and losses over a period of three 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	Rate of Retu	ırn Based on
Year	Market Value	Actuarial Value
2000/2001	(7.4)%	14.3%
1999/2000	11.9	13.6
1998/1999	12.2	15.1
1997/1998	15.8	16.8
1996/1997	18.3	17.3

## SUMMARY OF RESULTS OF ACTUARIAL VALUATION AS OF JUNE 30, 2001

Item	1	Amount			
Member Data					
1. Number of Members					
a) Active Members		243,311			
<ul><li>b) Inactive Members and Vestees</li><li>c) Annuitants, Beneficiaries and Survivor Annuitants</li></ul>		53,979			
d) Total	l —	132,716 430,006			
u) Total		450,000			
2. Annualized Salaries	\$	9,414,884			
3. Annual Annuities	\$	1,871,995			
Valuation Results					
4. Present Value of Future Pension Benefits					
a) Active Members	\$	44,380,684			
b) Inactive Members and Vestees		542,625			
c) Annuitants, Beneficiaries and Survivor Annuitants		15,755,768			
d) Total	\$	60,679,077			
5. Present Value of Future Pension Normal Cost					
a) Active Members	\$	6,359,294			
b) Employer		6,448,861			
c) Total	\$	12,808,155			
6. Pension Accrued Liability					
a) Active Members (4a) - (5c)	\$	31,572,529			
b) Inactive Members and Vestees		542,625			
c) Annuitants, Beneficiaries and Survivor Annuitants		15,755,768			
d) Total	\$	47,870,922			
7. Health Care Payments	\$	46,372			
8. Total Accrued Liability (6) + (7)	\$	47,917,294			
9. Actuarial Value of Assets	\$	54,830,300			
10. Unfunded Accrued Liability (8) - (9)	\$	(6,913,006)			
11. Total Normal Cost Rate		14.30 %			
12. Member Contribution Rate		7.10 %			
13. Employer Normal Cost Rate (11) - (12)		7.20 %			
Employer Annual Funding Requirement for Fiscal 2002/2003	Employer Annual Funding Requirement for Fiscal 2002/2003				
14. Employer Contribution Rate					
a) Normal		7.20 %			
b) Unfunded Accrued Liability		(10.03)			
c) Preliminary Pension Rate		(2.83) %			
d) Preliminary Pension Rate with 1% Floor		1.00			
e) Health Insurance		0.97			
f) Preliminary Total Rate		1.97 %			
g) Minimum of (f) and 1.15% h) Final Pension Rate (g) - (e)		1.15 0.18			
i) Total Rate (h) + (e)		1.15 %			
1) 10m 1mc (ii) 1 (c)	<u> </u>	1.15 //			

## SUMMARY OF SOURCES OF EMPLOYER CONTRIBUTION RATE AS OF JUNE 30, 2001

	Funding Period	Initial	Outstanding		
	10 Years	Amount of	Balance as of	Annual Pa	yment
	from July 1	Liability	July 1, 2001	Amount	Percent
1. Amortization of:					
a) Initial Unfunded Base	2002	(9,845,207)	(9,845,207)	(1,510,937)	(14.77)%
b) Changes in 2001	2002	2,932,201	2,932,201	484,845	4.74 %
Total Amortization Payments			(6,913,006)	(1,026,093)	(10.03)%
2. Employer Normal Cost Rate					7.20 %
3. Preliminary Pension Rate (1) +	(2)				(2.83)%
4. Prelimary Pension Rate with 1% Floor Maximum of (3) and 1%					1.00 %
5. Health Insurance Rate					0.97 %
6. Preliminary Total Employer Contribution Rate (4) + (5)					
7. Final Total Employer Contribution Rate with 1.15% Cap Minimum of (6) and 1.15%					

## DETERMINATION OF HEALTH INSURANCE CONTRIBUTION RATE FOR FISCAL YEAR 2002/2003

Item	A	Amount
1. Estimated Number of Eligible Annuitants in Fiscal 2003/2004		95,500
2. Estimated Number of Eligible Annuitants Who Elect Coverage		77,355
3. Estimated Annual Health Insurance Payments During Fiscal 2003/2004 (2) x \$100 x 12	\$	92,826
4. Estimated Health Insurance Administrative Expenses During Fiscal 2003/2004		2,084
5. Total Estimated Health Insurance Account Disbursements During Fiscal 2003/2004 (3) + (4)	\$	94,910
6. Estimated Shortfall in Health Insurance Account for Prior Fiscal Year	\$	3,580
7. Estimated Shortfall in Health Insurance Account (5) + (6)	\$	98,490
<ul> <li>8. Required Health Insurance Contribution Rate</li> <li>(a) Estimated 2002/2003 Payroll</li> <li>(b) Required Health Insurance Contribution Rate (7) / (8a)</li> <li>(rounded up)</li> </ul>	\$ 10	0,227,097 0.97%

## SUMMARY OF MARKET VALUE OF PLAN ASSETS AS OF JUNE 30, 2001

Market Value	
1. Market Value of Assets as of June 30, 2000	\$ 53,412,950
2. Contributions During Fiscal 2000/2001	765,566
3. Disbursements During Fiscal 2000/2001	2,157,420
<ul> <li>4. Investment Return During Fiscal 2000/2001</li> <li>a) Net Investment Return</li> <li>b) Administrative Expenses</li> <li>c) Investment Return After Expenses (a) - (b)</li> </ul>	\$ (3,845,437) <u>32,332</u> \$ (3,877,769)
5. Market Value of Assets as of June 30, 2001 (1) + (2) - (3) + (4c)	\$ 48,143,327
6. Rate of Return	(7.36)%
Asset Allocation by Account	
1. Members' Savings Account	\$ 7,464,404
2. Annuity Reserve Account	16,228,976
3. State Accumulation Account	24,403,575
4. Health Care Account	46,372
5. Total $(1) + (2) + (3) + (4)$	\$ 48,143,327

## <u>DERIVATION OF ACTUARIAL VALUE OF ASSETS</u> <u>AS OF JUNE 30, 2001</u>

1. Market Value of Assets as of June 30, 2001					\$ 48,143,327
2. Determination of Deferred Gain (Loss)					
		Return o	n Assets		
<u>Year</u>	Actual	Expected	Difference	% Deferred	Deferred <u>Amount</u>
2001	\$ (3,877,769)	\$ 4,480,947	\$ (8,358,716)	80%	\$ (6,686,973)
3. Actuarial Value of Assets (1) - (2)					\$ 54,830,300
4. Actuarial Rate of Return *					14.26%

<sup>\*</sup> The actuarial rate of return is the investment return on the increase in the actuarial value of assets from the June 30, 2000 to the June 30, 2001

## ANALYSIS OF CHANGE IN UNFUNDED ACCRUED LIABILITY AS OF JUNE 30, 2001

Item	Amount
1. Unfunded Accrued Liability at June 30, 2000	\$ (9,470,215)
2. Interest Credit at 8.50% to June 30, 2001	(804,968)
3. Contributions Toward Unfunded Accrued Liability	(429,976)
4. Change due to Act 9	5,578,700
6. Change due to Act 38	(4,638,306)
7. Expected Unfunded Accrued Liability at June 30, 2001 (1) + (2) - (3) + (4) + (5)	\$ (8,904,813)
8. Actual Unfunded Accrued Liability at June 30, 2001	\$ (6,913,006)
9. Increase (Decrease) from Expected (7) - (8)	\$ 1,991,807
10. Reasons for Increase (Decrease)	
(a) Experience (Gains) Losses	
(i) Loss from Investment Return on Actuarial Value of Assets	\$ 1,839,954
(ii) Gain from Salary Increases Less than Expected	(27,891)
(iii) Loss from Retirement and Other Separation Experience	128,321
(iv) Loss from Annuitants' Mortality Experience	51,423
Subtotal	\$ 1,991,807
(b) Change in Assumptions	\$ -
(c) Grand Total	\$ 1,991,807

## SCHEDULE OF FUNDING PROGRESS GASB STATEMENT No. 25 DISCLOSURE

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	
2001	\$ 54,830,300	\$ 47,917,294	\$ (6,913,006)	114.4 %	\$ 9,414,884	73.4 %	
2000	49,293,047	39,822,832	(9,470,215)	123.8	8,939,598	105.9	
1999	44,606,526	37,499,115	(7,107,411)	119.0	8,247,602	86.2	
1998	39,968,957	36,136,163	(3,832,794)	110.6	8,091,481	47.4	
1997	34,872,643	33,209,493	(1,663,150)	105.0	7,745,001	21.5	
1996	30,170,885	31,629,822	1,458,937	95.4	7,616,585	(19.2)	

## SCHEDULE OF EMPLOYER CONTRIBUTIONS GASB STATEMENT No. 25 DISCLOSURE

(\$ Amounts in Thousands)

Fiscal Year Ended June 30	Annual Required Contribution	Percentage Contributed
2001	\$ 158,193	100 %
2000	390,504	100
1999	513,940	100
1998	718,431	100
1997	796,205	100
1996	860,898	100

The information presented above was determined as part of the actuarial valuation as of two years prior to the dates indicated (i.e. the contribution determined by the valuation completed as of June 30, 1999 was contributed in the fiscal year ending June 30, 2001).

Additional information as of the latest actuarial valuation follows:

Valuation Date: 6/30/2001 Actuarial Cost Method: Entry Age Amortization Method: Level percent closed Remaining Amortization Period: 10 Years Asset Valuation Method: 5-year smoothed market Actuarial Assumptions: - Investment Rate of Return \* 8.50% -Projected Salaried Increases \* 6.25% \* Includes Inflation at: 3.50%

## SOLVENCY TEST COMPARATIVE SUMMARY OF ACCRUED LIABILITY AND ACTUARIAL VALUE OF ASSETS

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)		
2001	\$ 7,464,404	\$ 15,802,140	\$ 24,650,750	\$ 54,830,300	100 %	100 %	100 %
2000	6,775,934	16,036,880	17,010,018	49,293,047	100	100	100
1999	6,298,483	15,275,756	15,924,876	44,606,526	100	100	100
1998	6,113,312	13,734,388	16,288,463	39,968,957	100	100	100
1997	5,755,010	12,078,982	15,375,501	34,872,643	100	100	100
1996	5,498,624	10,599,998	15,531,200	30,170,885	100	100	91

TABLE 10

HISTORY AND PROJECTION OF CONTRIBUTION RATES
(-4.5% FY 2001-2002 Assumed Rate of Return)

			Cantribu	tion Dates		
			Contribu	tion Rates	<u></u>	<u> </u>
				Preliminary		Total
Fiscal Year		Employer	Unfunded	Employer	Health Care	Employer
<b>Ending June</b>	Employee	Normal Cost	Liability Rate	Pension Rate	Contribution	Rate
1993/1994	5.51 %	7.34 %	5.58 %	12.92 %	0.25 %	13.17 %
1994/1995	5.55	6.43	4.18	10.61	0.45	11.06
1995/1996	5.59	6.43	4.67	11.10	0.62	11.72
1996/1997	5.62	6.44	3.56	10.00	0.60	10.60
1997/1998	5.65	6.44	2.17	8.61	0.15	8.76
1998/1999	5.69	6.33	(0.44)	5.89	0.15	6.04
1999/2000	5.72	6.40	(2.04)	4.36	0.25	4.61
2000/2001	5.77	6.29	(4.65)	1.64	0.30	1.94
2001/2002	6.43	5.63	(6.05)	(0.42)	1.09	1.09
2002/2003	7.10	7.20	(10.03)	1.00	0.97	1.15
2003/2004	7.11	7.19	(4.26)	2.93	0.92	3.85
2004/2005	7.13	7.17	1.44	8.61	0.92	9.53
2005/2006	7.16	7.15	6.33	13.48	0.93	14.41
2006/2007	7.18	7.13	11.09	18.22	0.92	19.14
2007/2008	7.21	7.10	13.33	20.43	0.93	21.36
2008/2009	7.24	7.08	13.65	20.73	0.94	21.67
2009/2010	7.27	7.05	13.74	20.79	0.94	21.73
2010/2011	7.30	7.02	13.65	20.67	0.93	21.60
2011/2012	7.33	7.00	13.43	20.43	0.94	21.37
2012/2013	7.36	6.97	20.88	27.85	0.92	28.77

The return on the market value of assets is assumed to be -4.5% for FY 2001-2002 and 8.5% for subsequent fiscal years. Otherwise, the projection of contribution rates is based on the assumption that there are no actuarial gains or losses, no changes in demographics or economic assumptions and no changes in benefit provisions.

TABLE 11

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

	1			·		
				Beneficiaries	Total Annuitants,	
		Annuitant		and Survivor	Beneficiaries and	
Valuation as	New Annuitants	Deaths During	Annuitants at	Annuitants at	Survivor	
of June 30	During the Year	the Year	End of Year	End of Year	Annuitants	Active Members
1992			100,265	4,761	105,026	202,991
1992				· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· ·
			108,444	4,768	113,212	197,997
1994			109,813	5,218	115,031	206,540
1995			110,509	5,451	115,960	210,783
1996			113,007	5,719	118,726	213,906
1997			118,137	5,987	124,124	215,077
1998			120,665	6,149	126,814	220,703
1999			126,448	6,421	132,869	223,495
2000	·		127,404	6,654	134,058	234,210
2001			125,880	6,836	132,716	243,311
2002	11,000	3,890	132,990	7,260	140,250	241,384
2003	9,719	4,057	138,652	7,655	146,307	241,384
2004	10,175	4,206	144,621	8,006	152,627	241,384
2005	10,759	4,348	151,032	8,316	159,348	241,384
2006	11,233	4,502	157,763	8,595	166,358	241,384
2007	11,352	4,644	164,471	8,840	173,311	241,384
2008	11,689	4,793	171,367	9,055	180,422	241,384
2009	11,876	4,942	178,301	9,244	187,545	241,384
2010	11,828	5,075	185,054	9,408	194,462	241,384
2011	11,675	5,224	191,505	9,551	201,056	241,384

#### DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS

#### **ASSUMPTIONS**

Interest Rate:  $8\frac{1}{2}\%$  per annum, compounded annually (adopted as of June 30, 1990). The components are  $3\frac{1}{2}\%$  for inflation and 5% 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 as follows (adopted in 2000):

		,,		Annual Rate of	of:		<b></b>			
		Vested W	ithdrawal*							
		Less Than	10 or More							
	Non-Vested	10 Years of	Years of			Early	Superannuation			
Age	Withdrawal	Service	Service	Death	Disability	Retirement**	Retirement			
Males										
25	13.00%	5.50%	1.40%	.05%	.02%					
30	11.00	3.00	1.40	.05	.02					
35	11.00	3.00	1.10	.05	.10					
40	11.00	3.00	.80	.07	.18	.13%				
45	11.00	3.00	.50	.10	.18	.15				
50	9.00	3.00	1.78	.16	.28	1.56	24.00%			
55	9.00	3.00	3.50	.25	.43	10.00	24.00			
60	9.00	2.40	4.50	.46	.58	10.00	28.00			
65				.90			20.00			
69				1.44			20.00			
				FEMALES						
25	13.00%	9.50%	4.00%	.01%	.04%					
30	13.00	7.50	4.00	.02	.04					
35	13.00	5.50	2.00	.03	.08					
40	10.00	3.50	1.00	.04	.13	.60%				
45	10.00	3.00	.55	.07	.18	.60				
50	10.00	3.00	1.50	.10	.25	1.74	10.00%			
55	10.00	3.00	3.00	.15	.35	10.00	10.00			
60	10.00	3.50	5.90	.23	.45	15.00	25.00			
65	10.00	3.50	5.50	.48		15.00	28.00			
69				.88			20.00			

<sup>\*</sup> Vested Withdrawal – At least 5 years service but not eligible for Early or Superannuation retirement.

**Death After Retirement:** The 1995 George B. Buck Mortality Tables, rated forward one year for males and unadjusted for females, adopted in 2000, are used to project mortality for healthy annuitants and for dependent beneficiaries. Special mortality tables based on PSERS' experience are used for disability retirements. (The 1995 George B. Buck Mortality Tables, rated forward one year for males and unadjusted for females, adopted in 2000, are used to determine actuarial equivalent benefits.)

<sup>\*\*</sup> Early Retirement – Age 55 with 25 years service, but not eligible for Superannuation retirement.

## DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS

(Continued)

**Salary Increase:** Effective average of 6½% per annum, compounded annually. The components are 3½% for inflation, 1% for real wage growth and 1¾% for merit or seniority increases (adopted as of June 30, 1995). Representative values are as follows:

Age	Annual Rate of Salary Increase
20 30 40 50 55 60 65 70	10.00% 9.50 7.25 5.00 4.75 4.50 4.50

#### **MISCELLANEOUS**

**Option 4 Elections:** 100% of 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.

#### **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 reasonably based on the actual experience of the System.

Actuarial Cost Method: Entry Age Normal Cost Method. The outstanding balance of the June 30, 2001 unfunded accrued liability is to be amortized over a 10 year period commencing July 1, 2002, with level dollar funding. Changes in the unfunded accrued liability, including actuarial gains and losses, subsequent to June 30, 2001 are to be amortized over a period of 10 years from the first day of July next following the change, with level dollar funding.

## DESCRIPTION OF ACTUARIAL ASSUMPTIONS AND METHODS

(Continued)

Asset Valuation Method: A five-year moving market average value of assets that recognizes the 8½% actuarial expected investment return immediately and spreads the difference between the actual and expected return (beginning with the 2000/2001 fiscal year) over a period of five years (adopted as of June 30, 2001).

**Determination of Health Care Contribution Rate:** Rate necessary to establish reserves sufficient to provide premium assistance payments for all participating eligible annuitants for the subsequent fiscal year.

#### **DATA**

Census and Assets: The valuation was based on members of the System as of June 30, 2001 and does not take into account future members. All census data was supplied by the System and was subject to reasonable consistency checks. Asset data was supplied by the System.

#### SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

#### **MEMBERSHIP**

For valuation purposes, all employees are considered to be full coverage and assumed to elect coverage under Class T-D. 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.

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 and for members who do not elect Class T-D coverage. 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).

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.

### **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.

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.

#### SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

(Continued)

#### Withdrawal Annuity

Eligibility

5 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 the 1995 George B. Buck mortality tables, rated forward one year for males and unadjusted for females.

#### **Disability Annuity**

Eligibility

5 years of service.

Amount

The standard single life annuity if the total number 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.

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**

Eligibility

Death of an active member or vestee who was eligible to

receive an annuity.

Amount

The present value of the annuity which would have been effective if the member retired on the day before death. Option 1 (see next page) assumed payable if no other option elected.

#### SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

(Continued)

Normal and Optional Forms of Benefits

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.

#### **Health Care Premium Assistance**

Eligibility

Retired members who:

- (a) have  $24\frac{1}{2}$  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 \$55 per month (\$100 per month effective January 1, 2002) or the actual monthly premium. All administrative expenses necessary to operate the health insurance premium assistance program are to be funded by the Health Insurance Account. The Health Insurance Account is credited with contributions of the Commonwealth and the employers.

## SUMMARY OF BENEFIT AND CONTRIBUTION PROVISIONS

(Continued)

#### **CONTRIBUTIONS**

By Members

Members who elect coverage under Class T-D and who were hired prior to July 22, 1983 contribute at a rate of 6½% of compensation, while members who elect coverage under Class T-D who were most recently hired on or after July 22, 1983 contribute at a rate of 7½% of compensation. Members who do not elect coverage under Class T-D and who were hired prior to July 22, 1983 contribute at a rate of 5½% of compensation, while members who do not elect coverage under Class T-D who were most recently hired on or after July 22, 1983 contributed at a rate of 6¼% of compensation. Reduction for a joint coverage member of 40% of Social Security tax, exclusive of disability and medical coverage portion.

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 Districts.

## SUMMARY OF MEMBERSHIP DATA AS OF JUNE 30, 2001

#### **Active Members\***

Item	Male	Female	Total
Number of Members	70,329	172,982	243,311
Annual Salaries**	\$ 3,213,059	\$ 6,201,825	\$ 9,414,884
Average Age	45.5	44.9	45.1
Average Service	14.6	11.6	12.5

- \* Excludes 53,979 inactive members and vestees.
- \*\* These salaries shown in the table above represent a rate of pay as of the valuation date and are the approximate average of the salaries of \$9,156,268 reported for the fiscal year ended June 30, 2001 and the expected salaries for the fiscal year ended June 30, 2002.

#### **Annuitants and Beneficiaries**

Item	Number	Annual Annuities	Average Annuities	Average Age
Annuitants (Normal, Early and Withdrawal)	120,108	\$ 1,760,219	\$ 14,655	70.6
Survivors and Beneficiaries	6,835	46,098	6,744	75.9
Disabled Annuitants	5,773	65,678	11,377	<u>62.4</u>
Total	132,716	\$ 1,871,995	\$ 14,105	70.5

EXHIBIT I

ACTIVE MEMBERSHIP DATA AS OF JUNE 30, 2001
NUMBER AND AVERAGE ANNUAL SALARY

					Service			······································		·
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
Under 25	6,218 \$24,792	17 \$24,318								6,235 \$24,791
25-29	16,366 \$30,806	3,305 \$38,770	44 \$31,187							19,715 \$32,142
30-34	10,666 \$27,871	9,300 \$41,154	2,329 \$44,522	48 \$32,671						22,343 \$35,146
35-39	10,587 \$20,466	5,144 \$36,248	5,665 \$46,265	1,928 \$47,601	121 \$34,232					23,445 \$32,465
40-44	12,997 \$18,945	6,444 \$29,951	4,906 \$42,057	4,755 \$51,111	2,973 \$52,544	141 \$37,897				32,216 \$32,597
45-49	10,720 \$20,892	7,669 \$29,938	6,611 \$39,321	4,396 \$48,448	8,561 \$57,735	7,140 \$59,690	87 \$36,219			45,184 \$40,946
50-54	6,196 \$21,642	5,438 \$29,441	6,236 \$37,260	4,848 \$44,613	4,891 \$53,411	13,077 \$62,222	9,938 \$64,131	53 \$36,260		50,677 \$48,484
55-59	3,222 \$19,894	2,552 \$25,496	3,300 \$32,079	3,148 \$38,373	3,229 \$43,392	3,281 \$53,650	5,520 \$64,676	2,317 \$66,986	14 \$38,729	26,583 \$44,567
60-64	1,653 \$16,630	1,289 \$22,145	1,581 \$27,886	1,522 \$31,572	1,785 \$35,136	1,690 \$44,589	904 \$53,821	916 \$65,870	241 \$62,824	11,581 \$35,435
Over 64	1,232 \$13,040	832 \$16,624	889 \$20,629	647 \$24,289	579 \$28,303	530 \$32,280	311 \$40,023	128 \$50,684	184 \$62,499	5,332 \$23,984
Total	79,857 \$23,595	41,990 \$33,053	31,561 \$39,101	21,292 \$44,627	22,139 \$51,271	25,859 \$58,537	16,760 \$63,162	3,414 \$65,598	439 \$61,919	243,311 \$38,695

## EXHIBIT II

## THE NUMBER AND AVERAGE ANNUAL ANNUITY AS OF JUNE 30, 2001

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

				Yea	rs of Ser	vice				
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
Under 50			1,654 \$1,039	490 \$2,851	193 \$6,846	34 \$11,614	2 \$12,120			2,373 \$2,046
50-54			2,162 \$1,039	833 \$2,884	447 \$7,328	417 \$14,269	997 \$29,779	4 \$29,415		4,860 \$8,988
55-59		1 \$2,050	1,960 \$1,317	1,132 \$3,354	640 \$7,054	764 \$16,751	6,903 \$31,616	726 \$36,800	1 \$16,126	12,127 \$22,155
60-64	76	148	1,759	1,534	1,468	1,853	5,325	3,714	160	16,037
	\$575	\$1,813	\$2,419	\$5,013	\$9,284	\$17,732	\$29,440	\$35,959	\$39,082	\$22,156
65-69	360	. 714	2,571	2,443	2,819	3,012	3,988	3,132	1,507	20,546
	\$520	\$1,872	\$3,015	\$5,590	\$9,801	\$15,980	\$24,149	\$32,326	\$37,507	\$17,169
70-74	595	1,120	2,849	2,956	3,292	3,339	3,460	2,337	1,460	21,408
	\$485	\$1,642	\$3,080	\$5,522	\$9,748	\$14,939	\$21,423	\$28,392	\$36,890	\$14,179
75-79	584	1,206	2,865	2,954	2,723	2,537	2,038	1,860	773	17,540
	\$465	\$1,477	\$2,997	\$5,450	\$9,323	\$13,526	\$17,909	\$22,697	\$32,947	\$10,868
80-84	450	1,034	2,393	2,118	1,815	1,588	1,222	1,408	492	12,520
	\$503	\$1,473	\$2,971	\$5,298	\$8,143	\$11,566	\$15,580	\$18,943	\$25,581	\$8,908
85-89	294	748	1,262	1,182	985	928	767	1,015	596	7,777
	\$581	\$1,677	\$3,186	\$5,428	\$8,382	\$11,139	\$14,767	\$17,840	\$20,936	\$9,305
Over 89	40	374	532	569	507	628	528	779	963	4,920
	\$779	\$2,091	\$3,851	\$6,121	\$9,182	\$10,855	\$13,880	\$16,509	\$19,600	\$11,561
Total	2,399	5,345	20,007	16,211	14,889	15,100	25,230	14,975	5,952	120,108
	\$508	\$1,644	\$2,454	\$5,088	\$9,103	\$14,560	\$25,737	\$28,570	\$31,260	\$14,655

## **EXHIBIT III**

## THE NUMBER AND AVERAGE ANNUAL ANNUITY AS OF JUNE 30, 2001

### BENEFICIARIES AND SURVIVOR ANNUITANTS

				Yea	rs of Ser	vice	· · · · · · · · · · · · · · · · · · ·			
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
Under 50	1	17	43	34	40	28	15	8	15	201
	\$217	\$859	\$1,444	\$2,315	\$4,810	\$7,122	\$8,525	\$6,848	\$11,267	\$4,473
50-54	2	2	20	21	24	25	41	18	13	166
	\$291	\$2,184	\$1,598	\$2,348	\$4,900	\$9,475	\$10,736	\$10,617	\$11,385	\$7,349
55-59	2	7	25	30	26	41	78	41	14	264
	\$381	\$1,358	\$1,980	\$3,107	\$4,791	\$10,342	\$13,277	\$14,178	\$6,202	\$9,111
60-64	3	7	51	49	46	43	101	88	36	424
	\$178	\$1,293	\$2,900	\$3,540	\$5,481	\$9,117	\$12,973	\$15,805	\$15,927	\$10,022
65-69	9	17	76	69	72	66	128	106	60	603
	\$535	\$1,620	\$2,410	\$3,791	\$5,604	\$8,752	\$11,415	\$14,622	\$16,675	\$9,071
70-74	17	49	116	131	112	124	141	186	93	969
	\$726	\$1,194	\$2,441	\$3,461	\$5,423	\$7,124	\$10,563	\$11,646	\$15,968	\$7,677
75-79	14	75	183	182	153	173	178	245	95	1,298
	\$746	\$1,226	\$2,232	\$3,331	\$5,529	\$7,401	\$8,849	\$10,074	\$12,665	\$6,541
80-84	20	119	190	152	150	129	176	250	158	1,344
	\$503	\$1,073	\$1,958	\$3,136	\$4,712	\$6,515	\$7,174	\$8,964	\$10,061	\$5,675
85-89	9	77	113	95	87	74	121	196	184	956
	\$574	\$1,107	\$1,870	\$2,979	\$4,229	\$4,856	\$5,899	\$7,391	\$8,523	\$5,275
Over 89	5 \$1,516	27 \$895	50 \$1,927	38 \$2,698	35 \$3,670	46 \$5,043	65 \$5,762		200 \$6,938	609 \$5,347
Total	82 \$640	397 \$1,140	867 \$2,129	801 \$3,219			1,044 \$9,378	•	il.	6,834 \$6,745

### EXHIBIT IV

# THE NUMBER AND AVERAGE ANNUAL ANNUITIES AS OF JUNE 30, 2001

### RETIRED ON ACCOUNT OF DISABILITY

	Years of Service							· · · · · · · · · · · · · · · · · · ·		
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
Under 50		188	187	99	89	18				581
		\$7,587	\$9,472	\$12,765	\$18,225	\$24,410				\$11,227
50-54		156	167	129	192	228	24			896
		\$6,411	\$9,107	\$11,904	\$19,439	\$27,895	\$31,244			\$16,628
55-59		159	212	172	220	228	35			1,026
		\$6,373	\$7,674	\$10,258	\$16,790	\$25,478	\$33,883			\$14,711
60-64		162	259	230	206	125	17	2		1,001
		\$4,859	\$6,914	\$9,232	\$13,696	\$22,881	\$26,800	\$40,265		\$10,908
65-69		153	216	180	145	93	18	1		806
		\$3,941	\$5,958	\$7,940	\$12,009	\$18,213	\$25,002	\$40,167		\$8,988
70-74		125	176	112	116	65	9	1	1	605
		\$3,254	\$4,984	\$7,568	\$11,789	\$16,022	\$20,384	\$22,501	\$50,092	\$7,928
75-79		97	109	78	71	48	18	1		422
		\$3,062	\$5,025	\$6,442	\$9,723	\$13,691	\$16,020	\$25,335		\$7,129
80-84		47	69	51	47	26	27			267
		\$2,597	\$4,749	\$6,729	\$8,558	\$12,334	\$17,214			\$7,418
85-89		10	34	35	18	16	9			122
		\$2,669	\$4,697	\$6,364	\$8,041	\$12,232	\$13,210			\$7,119
Over 89			15	12	8	10	2			47
			\$5,175	\$5,851	\$8,714	\$10,590	\$11,073			\$7,353
Total	***************************************	1,097	1,444	1,098	1,112	857	159	5	1	5,773
		\$5,180			\$14,645				•	\$11,377

#### **EXHIBIT V**

## THE NUMBER AND AVERAGE ANNUAL ANNUITY AS OF JUNE 30, 2001

### THOSE IN RECEIPT OF A REFUND ANNUITY

				Yea	rs of Ser	vice				
Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
Under 50										
50-54										
55-59										
60-64										
65-69										
70-74										
75-79 80-84										
85-89										
Over 89	1 \$53									1 \$53
Total	1 \$53									1 \$53

#### **EXHIBIT VI**

## ANNUITANT AND BENEFICIARY MEMBERSHIP DATA AS OF JUNE 30, 2001

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

Age Last Birthday	Number	Annual Benefit (Thousands)	Average Annual Benefit
Annuitants (Normal, Early and Withdrawal)			
Under 60 60 - 64 65 - 69 70 - 74 75 - 79 Over 79	19,360 16,037 20,546 21,408 17,540 25,217	\$ 317,209 355,318 352,762 303,535 190,624 240,771	\$ 16,385 22,156 17,169 14,179 10,868 9,548
Total	120,108	\$ 1,760,219	\$ 14,655
Survivors and Beneficiaries			
Under 60 60 - 64 65 - 69 70 - 74 75 - 79 Over 79	631 424 603 969 1,298 2,910	\$ 4,524 4,250 5,470 7,439 8,490 15,926 \$ 46,098	\$ 7,170 10,022 9,071 7,677 6,541 5,473 \$ 6,744
Disabled Annuitants			
Under 60 60 - 64 65 - 69 70 - 74 75 - 79 Over 79	2,503 1,001 806 605 422 436	\$ 36,515 10,919 7,244 4,797 3,008 3,195	\$ 14,588 10,908 8,988 7,928 7,129 7,327
Total	5,773	\$ 65,678	\$ 11,377
Grand Total Average Annual Benefit	132,716	\$ 1,871,995	\$ 14,105

### EXHIBIT VII

### 10-YEAR HISTORY OF MEMBERSHIP DATA

#### **ACTIVE MEMBERS**

Valuation as of June 30	Number of Active Members	Percentage Change in Membership	Total Annual Payroll (Thousands)	Percentage Change in Payroll
2001	243,311	3.89%	\$ 9,414,884	5.32%
2000	234,210	4.79%	8,939,598	8.39%
1999	223,495	1.27%	8,247,602	1.93%
1998	220,703	2.62%	8,091,481	4.47%
1997	215,077	0.55%	7,745,001	1.69%
1996	213,906	1.48%	7,616,585	3.23%
1995	210,783	2.05%	7,378,342	7.16%
1994	206,540	4.31%	6,885,337	8.46%
1993	197,997	(2.46%)	6,348,565	4.11%
1992	202,991	0.18%	6,098,222	6.15%

### ANNUITANT AND SURVIVOR ANNUITANT MEMBERS

Year Ended June 30	Number on roll	Additions	Deletions	Percentage Change in Membership	Annual Annuities (Millions)	Percentage Change in Annuities
2001	132,716	3,140	4,482	-1.00%	\$ 1,872.0	-0.46%
2000	134,058	5,923	4,734	0.89%	1,880.6	2.73%
1999	132,869	10,609	4,554	4.77%	1,830.6	10.77%
1998	126,814	7,132	4,442	2.17%	1,652.6	14.21%
1997	124,124	9,787	4,389	4.55%	1,447.0	11.74%
1996	118,726	7,047	4,281	2.39%	1,295.0	6.05%
1995	115,960	4,923	3,994	0.81%	1,221.1	2.99%
1994	115,031	4,866	3,047	1.61%	1,185.6	12.06%
1993	113,212	12,258	4,072	7.79%	1,058.0	22.65%
1992	105,026	5,811	3,709	2.04%	862.6	5.66%

### **EXHIBIT VIII**

## DETAILED TABULATIONS OF THE DATA

TABLE 1

# THE NUMBER AND ANNUAL SALARIES OF MEMBERS IN ACTIVE SERVICE DISTRIBUTED BY AGE AS OF JUNE 30, 2001

		Males	T	Females
Age	Number	Salaries	Number	Salaries
17	3	\$ 10,067	2	\$ 12,451
18	11	91,179	13	\$ 123,584
19	41	582,622	65	637,884
20	75	1,198,222	91	899,709
21	111	1,756,468	150	1,895,161
22	174	3,838,566	538	11,369,128
23	503	12,681,072	1,473	36,928,760
24	811	22,663,339	2,174	59,881,193
25	1,008	30,839,500	2,436	71,650,930
26	1,069	33,988,265	2,716	83,088,582
27	1,142	38,575,480	2,742	86,375,463
28	1,274	44,136,764	2,790	92,041,799
29	1,427	50,829,754	3,111	102,148,642
30	1,486	54,549,560	3,380	113,494,635
31	1,483	55,872,479	3,259	111,930,686
32	1,392	53,994,700	2,981	100,752,060
33	1,358	53,675,833	2,853	93,581,431
34	1,292	53,148,201	2,859	94,263,970
35	1,333	53,614,599	2,876	88,489,048
36	1,271	51,366,123	3,154	96,988,768
37	1,359	54,980,996	3,392	96,090,526
38	1,329	53,395,369	3,531	101,550,005
39	1,308	53,314,613	3,892	111,349,136
40	1,444	58,343,943	4,280	120,895,723
41	1,446	59,136,714	4,299	119,455,382
42	1,552	62,638,458	4,653	134,079,939
43	1,590	68,701,488	5,398	165,056,990
44	1,815	80,625,147	5,739	181,215,406
45	1,808	81,334,029	5,866	197,086,220
46	2,034	93,786,123	6,341	222,877,427
47	2,111	101,326,090	6,890	261,004,727
48	2,462	123,805,139	7,169	292,413,272
49	2,705	142,728,220	7,798	333,740,184
50	2,868	158,002,335	7,593	337,732,776
51	2,974	166,201,122	7,119	321,459,291
52	3,179	182,392,858	6,940	315,625,133
53	3,305	189,263,661	6,587	294,915,517
54	3,388	194,459,570	6,724	296,950,190
55	2,188	123,611,843	4,048	174,641,387
56	1,887	102,051,193	3,815	160,272,219

TABLE 1

# THE NUMBER AND ANNUAL SALARIES OF MEMBERS IN ACTIVE SERVICE DISTRIBUTED BY AGE AS OF JUNE 30, 2001

		Males		Females
Age	Number	Salaries	Number	Salaries
57	1,705	\$ 89,665,625	3,448	\$ 135,583,642
58	1,803	94,281,658	3,529	136,937,087
59	1,353	65,515,461	2,807	102,164,330
60	1,055	49,064,112	2,366	81,815,975
61	902	37,299,014	2,031	67,672,747
62	665	26,262,767	1,599	51,736,993
63	516	19,698,976	1,139	35,967,233
64	418	14,715,242	890	26,144,967
65	344	11,549,796	741	20,645,589
66	259	7,081,923	504	12,036,765
67	220	5,973,715	415	10,363,098
68	195	5,122,301	304	7,495,019
69	167	4,146,531	300	6,451,010
70	133	3,204,875	238	5,212,782
71	113	2,695,443	187	3,525,136
72	94	1,961,172	169	3,304,352
73	87	1,888,235	132	2,359,498
74	82	1,616,858	118	1,929,738
75	56	1,158,379	86	1,297,007
76	34	601,898	73	1,286,629
77	27	436,835	49	874,044
78	31	478,993	31	500,674
79	20	455,926	34	691,881
80	13	226,689	20	403,559
81	8	153,837	17	246,975
82	5	68,234	9	111,385
83	3	112,946	6	70,558
84			2	19,428
85	4	84,729	1	11,396
86				
87	1	25,088		
Total	70,329	\$ 3,213,058,962	172,982	\$ 6,201,824,831

TABLE 2

THE NUMBER AND ANNUAL SALARIES
OF MEMBERS IN ACTIVE SERVICE DISTRIBUTED BY
YEARS OF CREDITED SERVICE AS OF JUNE 30, 2001

		Males	1	Females
Service	Number	Salaries	Number	Salaries
0	3,292	\$ 66,168,082	11,829	\$ 185,331,344
1	4,312	107,895,551	14,502	277,791,589
2	4,813	149,353,111	14,359	343,283,659
3	3,693	120,553,858	10,460	262,430,275
4	3,500	122,710,088	9,097	248,689,457
5	2,640	95,978,496	7,278	207,350,737
6	2,362	87,551,621	6,529	193,373,847
7	2,129	80,713,077	5,745	179,438,328
8	2,530	103,257,397	6,074	202,484,166
9	1,724	68,590,241	4,979	169,145,445
10	1,618	66,222,514	4,702	163,276,782
11	1,783	74,870,313	4,842	175,535,874
12	1,726	73,436,241	4,839	183,248,815
13	1,605	71,965,480	4,621	182,711,675
14	1,537	69,334,951	4,288	173,475,741
15	1,415	66,984,694	3,979	165,739,202
16	1,235	57,766,086	3,488	150,981,181
17	1,094	51,818,273	2,969	129,798,238
18	960	45,902,443	2,513	113,773,143
19	938	45,355,682	2,701	122,080,545
20	965	49,042,321	2,904	133,871,145
21	1,161	62,018,056	3,299	158,830,282
22	1,248	67,965,314	3,460	172,706,700
23	1,245	71,997,316	3,304	170,808,724
24	1,288	74,569,058	3,265	173,269,487
25	1,507	87,267,720	3,413	185,667,423
26	1,618	97,342,463	3,379	187,522,756
27	1,913	118,194,294	3,496	198,160,255
28	1,979	126,274,413	3,353	194,977,301
29	2,126	137,506,501	3,075	180,787,718
30	2,022	132,245,475	2,801	166,322,326
31	2,061	135,265,901	2,519	152,894,706
. 32	1,659	111,453,693	1,454	87,429,003
33	1,359	90,843,303	1,078	65,996,301
34	1,027	68,932,699	780	47,218,959
35	810	55,595,616	576	33,959,100
36	520	36,284,194	330	20,132,814
37	341	24,316,615	238	14,419,764
38	220	15,133,289	149	9,017,502
39	139	9,498,923	91	5,593,656

TABLE 2

# THE NUMBER AND ANNUAL SALARIES OF MEMBERS IN ACTIVE SERVICE DISTRIBUTED BY YEARS OF CREDITED SERVICE AS OF JUNE 30, 2001

		Males		Females
Service	Number	Salaries	Number	Salaries
40	79	5,300,053	68	3,790,892
41	43	3,053,785	40	2,303,536
42	35	2,462,378	31	1,822,702
43	18	1,228,712	25	1,212,685
44	13	885,663	11	555,525
45	12	842,375	11	636,053
46	8	550,802	10	588,391
47	4	268,857	8	402,897
48	1	145,040	5	202,505
49			5	312,667
50			1	51,390
51			3	138,368
52	1	95,000	1	45,893
53			3	153,946
54	1	50,934		
55			1	50,368
56			1	31,048
Total	70,329	\$ 3,213,058,962	172,982	\$ 6,201,824,831

TABLE 3

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

		Male		Female
Age	Number	Annuities	Number	Annuities
29	1	\$ 273		
30	1	750	ļ	
31	3	2,909	2	1,227
32			2	1,758
33	5	3,694	7	4,074
34	8	8,425	14	16,043
35	13	12,117	24	23,475
36	15	11,295	25	24,466
37	20	29,330	36	39,359
38	27	30,485	36	34,337
39	24	32,046	35	39,942
40	25	30,351	47	64,446
41	47	83,548	65	86,648
42	44	67,014	77	127,470
43	66	104,100	86	160,710
44	70	136,361	117	196,187
45	67	140,603	124	256,351
46	75	139,068	150	345,156
47	91	203,935	186	384,038
48	106	312,758	223	606,690
49	134	399,245	275	694,677
50	183	578,522	418	1,334,931
51	203	821,194	485	1,644,764
52	221	1,013,381	516	2,297,606
53	363	2,766,976	593	4,413,128
54	853	14,360,398	1,025	14,450,352
55	971	21,213,825	1,068	18,388,311
56	995	22,367,328	1,079	19,912,568
57	1,095	27,663,423	1,159	22,702,951
58	1,368	36,673,191	1,411	28,498,559
59	1,474	40,473,098	1,507	30,779,095
60	1,291	35,734,668	1,495	30,868,539
61	1,269	37,094,592	1,489	30,630,861
62	1,222	34,149,455	1,679	30,674,018
63	1,504	40,509,884	2,155	37,631,128
64	1,589	40,939,362	2,344	37,085,194
65	1,589	38,738,294	2,363	36,798,335
66	1,588	35,694,061	2,523	35,351,018
67	1,588	35,039,191	2,419	33,966,304
68	1,644	34,649,315	2,447	32,072,466

TABLE 3

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

		Male		Female
Age	Number	Annuities	Number	Annuities
69	1,686	35,041,893	2,699	35,411,546
70	1,621	\$ 34,489,816	2,802	\$ 36,997,915
71	1,649	31,411,523	2,737	34,549,439
72	1,456	25,904,194	2,645	30,199,651
73	1,476	25,449,987	2,858	31,909,451
74	1,472	23,368,810	2,692	29,254,480
75	1,334	21,107,421	2,621	27,321,069
76	1,317	19,768,412	2,377	22,665,144
77	1,197	16,532,526	2,383	21,866,954
78	1,099	14,255,232	2,151	18,291,912
79	932	11,123,165	2,129	17,691,982
80	815	9,594,856	2,096	17,668,083
81	796	8,520,221	2,020	16,792,014
82	567	6,056,113	1,664	13,630,781
83	619	5,974,668	1,775	14,607,611
84	537	4,986,679	1,631	13,692,246
85	486	4,883,780	1,469	12,216,452
86	388	3,626,135	1,303	11,035,537
87	339	3,613,233	1,235	11,501,644
88	297	3,048,698	1,061	10,124,473
89	226	2,203,257	973	10,114,023
90	176	1,920,733	873	9,285,102
91	134	1,798,040	751	8,375,268
92	123	1,304,907	672	7,738,965
93	78	976,402	588	6,823,508
94	69	796,431	436	5,481,069
95	50	656,302	308	3,714,121
96	29	394,152	228	2,660,884
97	22	268,855	117	1,442,645
98	8	117,975	90	990,675
99	9	138,536	73	906,098
100	3 .	37,028	27	367,579
101	3	23,253	21	250,576
102			16	211,173
103			7	102,292
104	1	19,527	2	21,121
105			3	32,382
106			1	2,593
107			1	14,844
108				

#### TABLE 3

# THE NUMBER AND ANNUAL ANNUITIES OF ANNUITANTS ON THE RETIRED LIST AS OF JUNE 30, 2001

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

		Male	Female		
Age	Number	Annuities	Number	Annuities	
109			1	7,535	
Total	42,866	\$ 821,641,226	77,242	\$ 938,578,018	

#### TABLE 3

#### THE NUMBER AND ANNUAL ANNUITIES OF ANNUITANTS ON THE RETIRED LIST AS OF JUNE 30, 2001

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

<u>OPTION</u>				
Maximum	24,668	\$ 526,095,290	59,928	\$ 752,978,667
1A	15	213,818	85	1,026,335
1B	11	119,916	47	464,366
1C	4,375	50,409,596	8,801	70,987,383
2	6,476	86,244,548	3,876	42,510,593
3	6,831	143,928,053	4,320	66,248,902
4	<u>490</u>	14,630,005	<u>185</u>	4,361,772
	42,866	\$ 821,641,226	77,242	\$ 938,578,018

#### **DEFINITIONS OF OPTIONS**

- Option 1A A life annuity to the member with a guaranteed payment to the beneficiary equal to the member's contributions and interest at retirement less any amounts paid to the member from the employee annuity portion of the retirement benefit prior to death. This option was discontinued in 1975.
- Option 1B A life annuity to the member with a guaranteed payment to the beneficiary equal to the present value of the employer portion of the annuity less any amounts paid to the member from the reduced state portion of the retirement benefit prior to death. This option was discontinued in 1975.
- Option 1C 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 for a designated beneficiary.

TABLE 4

THE NUMBER AND ANNUAL ANNUITIES
OF BENEFICIARIES AND SURVIVOR ANNUITANTS
AS OF JUNE 30, 2000

		Male		Female	
Age	Number	Annuities	Number	Annuities	
12	1	\$ 1,497			
13			1	3,484	
14	1	1,533	1	1,497	
15	1	2,483			
17	1	669			
19	1	2,514	2	17,961	
20	1	7,883	2	3,084	
21			1	1,312	
22	2	1,996			
23			1	1,070	
24			2	2,368	
25	1	1,108			
26	1	8,215			
27	2	4,533	2	7,069	
28			3	6,156	
29	1	23,464			
30			2	4,702	
32	2	14,075	1	8,188	
33	1	1,284	2	5,810	
34	5	21,278	4	23,579	
35	2	1,010	1	3,459	
36		·	3	4,316	
37	4	19,022	5	17,047	
38	1	4,098	3	19,034	
39	4	37,661	2	4,419	
40	1	3,045	1	, and the second	
41	3	15,630	4	23,239	
42	2	5,820	13	62,652	
43	2	10,918	10	40,898	
44	4	23,383	11	46,067	
45	5	6,835	5	14,951	
46	3	23,243	14	59,761	
47	7	32,296	11	51,394	
48	5	23,081	14	82,503	
49	7	28,313	10	56,212	
50	3	12,891	7	63,270	
51	8	38,828	22	132,781	
52	7	48,573	28	273,502	
53	9	40,336	29	238,256	
54	11	76,133	42	295,407	

TABLE 4

THE NUMBER AND ANNUAL ANNUITIES
OF BENEFICIARIES AND SURVIVOR ANNUITANTS
AS OF JUNE 30, 2000

		Male	Female		
Age	Number	Annuities	Number	Annuities	
55	11	72,918	34	286,784	
56	5	42,817	34	260,611	
57	14	173,386	29	292,693	
58	19	102,745	45	311,765	
59	14	107,579	59	753,983	
60	11	119,675	53	535,696	
61	15	101,263	63	543,121	
62	13	77,539	68	840,339	
63	12	104,315	71	764,308	
64	13	53,918	105	1,109,354	
65	12	99,359	88	816,748	
66	18	136,487	90	888,449	
67	18	131,951	103	959,066	
68	20	114,841	117	1,206,589	
69	15	116,934	122	999,300	
70	15	111,461	142	1,221,849	
71	30	249,118	162	1,278,026	
72	17	116,874	171	1,354,194	
73	27	146,535	173	1,186,298	
74	21	154,138	211	1,620,165	
75	32	245,075	212	1,432,168	
76	33	235,157	203	1,359,570	
77	39	377,904	233	1,364,855	
78	43	355,157	215	1,300,540	
79	43	305,725	245	1,513,604	
80	44	327,049	244	1,425,952	
81	43	262,711	259	1,462,667	
82	28	220,152	195	1,066,383	
83	36	228,120	244	1,259,106	
84	33	193,010	218	1,181,953	
85	35	157,733	186	934,490	
86	37	192,993	186	1,033,820	
87	19	90,566	156	859,817	
88	32	159,908	149	800,107	
89	16	67,435	140	745,721	
90	19	112,007	116	606,959	
91	19	104,995	92	587,595	
92	14	84,070	72	422,060	
93	18	116,724	67	378,964	
94	12	61,799	48	256,828	

TABLE 4

# THE NUMBER AND ANNUAL ANNUITIES OF BENEFICIARIES AND SURVIVOR ANNUITANTS AS OF JUNE 30, 2000

	,	Male	Female		
Age	Number	Annuities	Number	Annuities	
95	5	40,082	34	156,300	
96	8	30,657	26	105,629	
97	4	15,345	16	48,127	
98	1	3,000	11	23,885	
99	2	5,460	7	43,844	
100	2	4,777	3	8,691	
101			3	5,293	
102	1	1,137	3	11,307	
103	1	1,534	2	11,740	
104			1	4,320	
105			1	1,747	
107	1	1,419			
Total	1,049	\$ 6,879,203	5,785	\$ 39,218,832	

TABLE 5

### RETIRED ON ACCOUNT OF DISABILITY

		Male	Female		
Age	Number	Annuities	Number	Annuities	
28	1	\$ 11,205			
31	2	23,128	1	11,954	
32	2	23,469			
33	- 1	10,982	1	7,608	
34			2	29,683	
35	2	9,927	5	45,907	
36	2	18,712	8	70,710	
37	3	29,199	9	86,946	
38	7	73,110	8	87,549	
39	5	49,473	7	74,928	
40	3	29,658	7	66,923	
41	5	38,603	11	127,345	
42	9	90,063	24	229,236	
43	17	167,927	26	223,412	
44	16	181,695	15	125,244	
45	22	203,040	31	271,983	
46	18	192,880	32	360,657	
47	22	273,315	31	339,240	
48	36	430,902	68	874,971	
49	45	561,312	77	1,069,801	
50	37	603,414	88	1,263,716	
51	52	892,297	92	1,397,439	
52	69	1,168,229	117	1,953,814	
53	69	1,343,801	138	2,381,169	
54	80	1,416,646	154	2,478,359	
55	67	1,160,893	141	2,258,497	
56	71	1,317,541	115	1,635,332	
57	69	1,152,697	113	1,491,453	
58	80	1,207,282	129	1,594,636	
59	82	1,281,455	159	1,993,483	
60	66	843,184	147	1,554,450	
61	67	873,585	158	1,663,992	
62	73	934,433	118	1,288,399	
63	77	809,060	122	1,110,393	
64	48	575,014	125	1,266,532	
65	52	541,840	110	993,451	
66	54	589,992	131	1,072,095	
67	53	516,594	104	882,988	
68	56	639,196	96	670,938	
69	37	334,953	113	1,002,297	

TABLE 5

### RETIRED ON ACCOUNT OF DISABILITY

		Male	Female		
Age	Number	Annuities	Number	Annuities	
70	43	372,361	89	682,143	
71	37	349,845	98	681,501	
72	37	400,106	90	669,623	
73	25	210,594	93	647,364	
74	41	432,973	52	350,013	
75	38	299,219	70	520,794	
76	34	279,224	61	442,157	
77	15	98,833	52	323,201	
78	17	168,467	52	354,485	
79	24	169,364	59	352,629	
80	14	137,948	53	361,654	
81	19	123,873	47	347,709	
82	14	159,528	38	230,555	
83	9	79,602	34	260,583	
84	6	52,627	33	226,508	
85	6	42,583	26	173,301	
86	4	37,339	31	214,968	
87	3	17,122	16	100,142	
88	3	18,112	19	144,256	
89	1	12,402	13	108,248	
90	2	15,960	6	45,369	
91			6	52,045	
92			3	18,978	
93			9	66,301	
94	1	9,576	7	50,786	
95	1	4,250	6	43,426	
96			1	11,186	
97			1	4,429	
98			3	16,715	
99			1	6,561	
Total	1,871	\$ 24,112,617	3,902	\$ 41,565,162	

#### TABLE 6

# THE NUMBER AND ANNUAL ANNUITIES OF ANNUITANTS ON THE RETIRED LIST AS OF JUNE 30, 2001

#### RECEIVING A REFUND ANNUITY

		Male Female			ale	
Age	Number	Annuities		Number	A	Annuities
91				1		53
Total	0	\$	0	1	\$	53

#### EXHIBIT IX

#### **GLOSSARY**

**Accrued Liability** 

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."

**Accrued Service** 

The service credited under the plan which was rendered before the date of the actuarial valuation.

**Actuarial Assumptions** 

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.

**Actuarial Cost Method** 

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."

Actuarial Equivalent

A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.

**Actuarial Value of Assets** 

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 three years.

Amortization

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.

**Experience Gain (Loss)** 

A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

**Normal Cost** 

The annual cost assumed, under the actuarial funding method, for current and subsequent plan years. Sometimes referred to as "current service cost."

### **EXHIBIT IX**

#### **GLOSSARY**

(Continued)

**Present Value** 

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.

**Unfunded Accrued Liability** 

The difference between the actuarial accrued liability and valuation assets.