
The Report of the
June 30, 2003 Actuarial Valuation
of the
Public School Retirement
System of Missouri

Gabriel, Roeder, Smith & Company



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October 22, 2003

Board of Trustees
Public School Retirement System of Missouri
3210 West Truman Boulevard
Jefferson City, MO. 65109

Dear Members of the Board:

We are pleased to present the report of the actuarial valuation of the Public School Retirement System of Missouri ("PSRS") as of June 30, 2003.

This valuation provides data on the funding status of PSRS. The results of the valuation show that the current contribution level will no longer fund the current benefits of PSRS within the framework of your funding policy.

This valuation is based on the provisions of PSRS in effect as of June 30, 2003, data on the PSRS membership and information on the asset value of the trust fund. All member data and asset information were provided by PSRS staff. While certain checks for reasonableness were performed, the data was used unaudited.

The actuarial assumptions and actuarial cost method used in this valuation are those used in the prior actuarial valuation of PSRS, except that, for this valuation, the actuarial value of assets has been marked to market. Next year we will begin to phase in, prospectively, the five year smoothing method which has been used in recent years.

To the best of our knowledge, this actuarial statement is complete and accurate, and has been prepared in accordance with generally accepted actuarial principles and practice.

Respectfully submitted,

Gabriel, Roeder, Smith & Company

A handwritten signature in black ink, appearing to read 'Norman S. Losk'.

Norman S. Losk, F.S.A
Senior Consultant

A handwritten signature in black ink, appearing to read 'Alex Rivera'.

Alex Rivera, A.S.A
Senior Consultant

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SUMMARY OF THE VALUATION



Purposes of the Actuarial Valuation

At your request we have performed the actuarial valuation of the Public School Retirement System of Missouri ("PSRS") as of June 30, 2003.

The purposes of an actuarial valuation are as follows:

- To determine the funding status of PSRS as of the valuation date,
- To determine whether the current contribution level of PSRS will fund the current benefit provisions within the framework of your funding policy, and
- To provide accounting and other data required by PSRS.

Report Highlights

The key results of the valuation are summarized in the following table and compared to comparable values from the prior valuation report:

		June 30, 2002	June 30, 2003
		(\$ in Millions)	
A. Summary of Results			
(1)	Present Value of Future Benefits for:		
	(a) Active Members	\$18,658.8	\$19,514.2
	(b) Retired members	\$10,589.5	\$11,387.5
	(c) Inactive Members and Other Liabilities	\$296.4	\$337.4
	(d) Total	\$29,544.7	\$31,239.1
(2)	Present Value of Future Normal Costs	\$6,210.8	\$6,519.7
(3)	Actuarial Accrued Liability: (1) – (2)	\$23,333.9	\$24,719.4
(4)	Actuarial Value of Assets	\$22,236.1	\$20,048.0
(5)	Unfunded Actuarial Accrued Liability: (3) – (4)	\$1,097.8	\$4,671.4
(6)	Total Contribution Rate, Member + Employer	21.00%	21.00%
(7)	Normal Cost Rate	20.57%	20.92%
(8)	Approximate Rate Available for Unfunded Actuarial Accrued Liability: (6) – (7)	0.43%	0.08%
(9)	Number of Years Required to Amortize (5) if Compensation Increases 5.0% per year	Never	Never*
(10)	30-Year Contribution Rate	22.22%	27.75%
*While the current contribution rate will not fund the UAAL, the funding process is designed to fund that item over time.			

	June 30, 2002	June 30, 2003
B. Highlights of Report		
(1) Actuarial Accrued Liability Funding Ratio:		
(a) Actuarial Value of Assets	\$22,236.1	\$20,048.0
(b) Actuarial Accrued Liability	23,333.9	24,719.4
(c) Funding Ratio: (a) / (b)	95.3%	81.1%
(2) Active Members:		
(a) Number:		
Male	17,353	17,379
Female	<u>56,320</u>	<u>56,968</u>
Total	73,673	74,347
(b) Total Compensation for Fiscal Year (for Active Members at end of year):		
Male	\$848.0	\$877.0
Female	<u>2,365.5</u>	<u>2,496.0</u>
Total	3,213.5	3,373.1
(c) Average Age:		
Male	42.7	42.7
Female	42.2	42.4
Total	42.3	42.4
(d) Average Service:		
Male	11.9	11.7
Female	<u>11.0</u>	<u>11.1</u>
Total	11.2	11.3
(e) Average Compensation for Fiscal Year (not in millions):		
Male	\$48,866	\$50,464
Female	<u>42,001</u>	<u>43,815</u>
Total	\$43,618	\$45,369
(f) Average Amount of Assets per Active Member (based on actuarial value, not in millions)	\$154,061	\$111,949
(3) Retired Members and Beneficiaries		
(a) Number Service Retired:		
Life Annuities	15,791	16,151
Options	<u>12,337</u>	<u>13,272</u>
Total	28,128	29,423
(b) Number Disability Retired	597	604
(c) Number Survivors, Beneficiaries	2,140	2,222
(d) Total Persons Receiving Benefits	30,865	32,249
(e) Average Monthly Pension Being Paid at Valuation Date for New Service Retired, Including Options (not in millions)	\$2,835	\$2,846
(f) Average Amount of Assets per Retired Member (based on actuarial value, not in millions)	\$343,092	\$353,112
(g) Average Amount of Assets per New Service Retired (based on actuarial value, not in millions)	\$489,984	\$500,768

Membership Characteristics

ACTIVE AND INACTIVE MEMBERSHIP

A total of 84,678 active and inactive members of PSRS are included in this 2003 actuarial valuation.

Active members	74,347
Inactive members	<u>10,331</u>
Total active and inactive members	84,678

Between the 2002 and 2003 actuarial valuations, the number of active employees increased by 674 or 0.9%. The average annual salaries of employees increased by 4.0% to \$45,369.

Summary of Changes in Membership			
	Male	Female	Total
Active and Inactive Members 7/1/2002	19,063	63,986	83,049
New Membership 7/1/2002 to 6/30/2003	1,390	4,370	5,760
Total Membership Before Decreases	20,453	68,356	88,809
Decreases:			
Service Retirements	644	1,396	2,040
Disability Retirements	6	31	37
Withdrawals	440	1,087	1,527
Deaths	26	45	71
Other Terminations	81	330	411
Previous Memberships Voided	8	37	45
Reciprocity	0	0	0
Subtotal	1,205	2,926	4,131
Net membership 6/30/2003 (includes Inactive Members)	19,248	65,430	84,678

Benefit Recipients

On June 30, 2003, PSRS was paying benefits to a total of 32,249 retired members, beneficiaries and survivors. The total number of benefit recipients increased 4.5% from 30,865 on June 30, 2002. The benefit recipients were comprised of 29,423 service retirees, 604 disability retirees, 2,222 beneficiaries and survivors.

There are two classes of retired members – members retired because of service and members retired because of disability.

The changes among the retired group of members during the 2002-2003 year were as follows:

	Service Retirements	Disability Retirements	Beneficiaries	Total
Retired Members, July 1, 2002	28,128	597	2,140	30,865
Added During Year	2,057	37	194	2,288
Died During Year	(776)	(29)	(98)	(903)
Resumed Retirement During Year	21	0	3	24
Resumed Employment During Year	(7)	(1)	(17)	(25)
Retired Members, June 30, 2003	29,423	604	2,222	32,249

As of June 30, 2003, the average monthly benefit payable to service retirees was \$2,482 compared to \$2,414 as of June 30, 2002. These average benefit amounts and the amounts shown in the tables that follow include all post-retirement benefit increases.

Actuarial Assumptions and Methods

The actuarial cost method and assumptions used in this valuation are the same as those disclosed in the actuarial valuation report as of June 30, 2002. This set of assumptions and methods is described in Appendix E.

The actuarial value of assets has been marked to the market value effective as of June 30, 2003. Next year the five year smoothing method used in recent years will begin to be phased in. For example, in next year's valuation and each of the four succeeding valuations we will recognize 20% of the difference between the actual return at market for FY 2004 and the assumed 8.0%. A new layer of gain or loss will be added each year until we have five layers.

Experience During FY 2003

Overall the system experienced a net actuarial loss of about \$721.7 million.

The total net actuarial loss for the year ending June 30, 2003 is shown below:

	<u>(\$ in millions)</u>
1. Actuarial (Gain) or Loss on Assets (at actuarial value)	\$888.6
2. Actuarial (Gain) or Loss on Liabilities	<u>(\$166.9)</u>
3. Total Actuarial (Gain) or Loss (1+2)	\$721.7

For the plan year ending June 30, 2003, the funds experienced an asset loss of \$888.6 million. The use of the five year smoothing method to determine the actuarial value of assets would only have recognized 20% of this loss (and 40% of the FY 2002 loss).

For this actuarial valuation we are marking assets to market. That is, the actuarial value of assets for this valuation is the market value. We will begin the use of the smoothing technique to determine the actuarial value of assets in the 2004 valuation by recognizing only 20% of the gain or loss from investments in the fiscal year ending June 30, 2004.

As a result, the full impact of losses deferred from prior years are being recognized. Thus, we will have an additional actuarial loss of \$2,840 million in this valuation due to recognizing those losses from prior years which had not yet been recognized

In addition to the loss from investment activities, there was a gain of \$166.9 million on liabilities.

That is, actual experience in areas other than investment return deviated from the actuarial assumptions in ways that reduced the actuarial liability by \$166.9 million when compared to the value expected using our assumptions. Most of this gain was due to pay increases less than assumed by an average of about 0.4% (actual increases of about 6.0% against assumed increases of about 6.4%).

PSRS Benefits

A summary of the current benefit provisions appears in Appendix F. Several changes in the benefit provisions of PSRS were enacted in the 2003 session of the Legislature. The following provisions were added:

1. Extension of the 25-and-out provision to 2008,
2. A Partial Lump Sum Option,
3. Changes in the procedure and the cost of purchasing service, and
4. A limited work after retirement provision.

Except for the 25-and-out provision, which carries a minor cost impact, these changes are expected to have no impact on the results of PSRS actuarial valuations.

Asset Information

The market value of the assets of the fund, which are available for benefits, has increased from \$19.4 billion at the end of FY 2002 to \$20.1 billion at the end of FY 2003. Due to the smoothing process used in the determination of the actuarial value of assets, before marking assets to market, there was a slight increase in the actuarial value of assets from \$22.2 billion to about \$22.9 billion. As of June 30, 2003, the actuarial value of assets has been marked to the market value of \$20.1 billion.

Based on the actuarial value, the assets of the fund returned about 3.98%. This is due to investment gains of prior years whose recognition had been deferred.

The detailed determinations of asset values utilized in this valuation and asset growth in the last year are set out in Appendix B.

Funding Status

The funding status of PSRS is measured by the Funding Ratio. The Funding Ratio is the ratio of the assets available for benefits to a benefit liability measure for the System. While there are several such measures that could be appropriately used, the measure that ties most closely to your funding plan is the Actuarial Accrued Liability (“AAL”).

The PSRS actuarial accrued liability funding ratio fell from 99.4% at June 30, 2001 (after the 2001 legislation) to 95.3% at June 30, 2002, and to 81.1% as of June 30, 2003 using assets marked to market.

GASB Disclosure

PSRS produces its accounting statements under the terms of GASB Statement Number 25. In Table 20, you will find Required Supplemental Information mandated by that statement.

Funding Process

In the 2003 session of the Legislature the funding provisions of PSRS were amended. The following changes were adopted:

1. The limitation on the total contribution rate (22% of pay) was eliminated.
2. Contribution rates will now be established by actuarial valuation.
3. The annual increase in the total contribution rate may not exceed 1% of pay.

APPENDICES



APPENDIX A

MEMBERSHIP DATA



Table 1					
Number, Average Age-Service-Salary, and Total Payroll of Active Members Included in Actuarial Valuations					
Male					
Actuarial Valuation as of June 30					
Item	1999	2000	2001	2002	2003
Number	17,197	17,267	17,283	17,353	17,379
Average Age	43.1	43.0	42.8	42.7	42.7
Average Years of Service	12.9	12.7	12.1	11.9	11.7
Average Annual Salary	\$43,233	\$44,521	\$45,928	\$48,866	\$50,464
Total Payroll (000's)	\$743,478	\$768,210	\$793,780	\$847,977	\$877,009
Female					
Actuarial Valuation as of June 30					
Item	1999	2000	2001	2002	2003
Number	52,895	54,439	55,405	56,320	56,968
Average Age	42.3	42.3	42.2	42.2	42.4
Average Years of Service	11.3	11.2	11.1	11.0	11.1
Average Annual Salary	\$36,806	\$38,014	\$39,496	\$42,001	\$43,815
Total Payroll (000's)	\$1,946,875	\$2,067,848	\$2,188,271	\$2,365,484	\$2,496,049
Total					
Actuarial Valuation as of June 30					
Item	1999	2000	2001	2002	2003
Number	70,092	71,706	72,688	73,673	74,347
Average Age	42.5	42.5	42.4	42.3	42.4
Average Years of Service	11.7	11.6	11.3	11.2	11.3
Average Annual Salary	\$38,383	\$39,581	\$41,025	\$43,618	\$45,369
Total Payroll (000's)	\$2,690,353	\$2,836,058	\$2,982,051	\$3,213,461	\$3,373,058

Table 2								
Employee Distribution by Age and Years of Service								
June 30, 2003								
Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30 &	
20-24	1,791	0	0	0	0	0	0	1,791
25-29	8,034	1,795	0	0	0	0	0	9,829
30-34	3,724	5,522	951	0	0	0	0	10,197
35-39	2,320	2,412	2,960	754	0	0	0	8,446
40-44	2,161	2,056	1,713	2,556	842	1	0	9,329
45-49	1,893	2,112	1,768	1,627	2,581	1,259	0	11,240
50-54	1,518	1,904	1,876	1,900	1,791	3,102	929	13,020
55-59	906	1,041	1,093	1,287	1,200	991	1,086	7,604
60-64	333	324	287	423	386	292	333	2,378
65 & Over	88	77	55	74	71	66	82	513
Total	22,768	17,243	10,703	8,621	6,871	5,711	2,430	74,347

Table 3			
Salary Distribution			
Employees in Active Service			
on June 30, 2003			
	Annual Salary	Number	Percent
	Under \$20,000	2,206	3.0%
	\$20,000-24,499	1,167	1.6%
	\$25,000-29,999	4,271	5.7%
	\$30,000-34,999	10,376	14.0%
	\$35,000-39,999	13,182	17.7%
	\$40,000-44,999	11,693	15.7%
	\$45,000-49,999	9,045	12.2%
	\$50,000-54,999	6,405	8.6%
	\$55,000-59,999	4,413	5.9%
	\$60,000 & Over	<u>11,589</u>	<u>15.6%</u>
	Total	74,347	100.0%
Based on compensation actually paid during the plan year.			

Table 4			
Salary Increase Rates by Service Group			
Employees in Both 2002 & 2003 Actuarial Valuations			
Service in 2002	Number	Percent Increase In Average Salary	
		Expected	Actual
1-4	19,282	8.4%	7.1%
5-9	15,581	6.8%	6.6%
10-14	10,048	5.0%	5.9%
15-19	7,966	5.0%	5.1%
20 & Over	<u>13,646</u>	<u>5.0%</u>	<u>4.4%</u>
Total	66,523	6.4%	6.0%

Table 5					
History of System's Growth					
Active and Inactive Membership					
<u>June 30</u>	<u>Females</u>	<u>Males</u>	<u>Inactives</u>	<u>Total</u>	
1947	15,787	4,412	0	20,199	
1948	14,754	4,854	4,039	23,647	
1949	15,120	5,502	6,601	27,223	
1950	15,104	6,195	7,483	28,782	
1955	16,397	6,365	3,923	26,685	
1960	18,644	8,690	2,925	30,259	
1965	22,191	12,018	2,990	37,199	
1970	29,374	16,206	4,246	49,826	
1975	33,465	20,148	3,354	56,967	
1980	35,758	19,949	3,613	59,320	
1985	36,056	18,407	3,005	57,468	
1986	36,693	18,221	3,035	57,949	
1987	37,639	18,159	3,141	58,939	
1988	37,911	16,117	3,537	57,565	
1989	39,021	16,177	3,543	58,741	
1990	39,802	16,086	3,773	59,661	
1991	40,882	16,026	4,067	60,975	
1992	41,853	15,858	4,335	62,046	
1993	42,825	15,668	4,705	63,198	
1994	44,714	15,881	5,009	65,604	
1995	46,681	16,173	5,328	68,182	
1996	48,184	16,440	5,894	70,518	
1997	49,800	16,656	6,373	72,829	
1998	51,706	17,003	6,799	75,508	
1999	52,895	17,197	7,278	77,370	
2000	54,439	17,267	7,739	79,445	
2001	55,405	17,283	8,930	81,618	
2002	56,320	17,353	9,376	83,049	
2003	56,968	17,379	10,331	84,678	

Table 6

**Pensions in Force on June 30, 2003
by Type and Monthly Amount**

Monthly Amount	Service	Disability	Beneficiary	Survivor	Total
Less than \$500	970	6	98	21	1,095
\$500 - 999	1,932	76	373	315	2,696
\$1,000 - 1,499	2,842	200	405	56	3,503
\$1,500 - 1,999	5,158	172	289	16	5,635
\$2,000 - 2,499	4,961	93	242	2	5,298
\$2,500 - 2,999	4,586	43	167	0	4,796
\$3,000 - 3,499	3,654	8	122	0	3,784
\$3,500 & Over	<u>5,320</u>	<u>6</u>	<u>116</u>	<u>0</u>	<u>5,442</u>
Total	29,423	604	1,812	410	32,249

Table 7					
Pensions in Force on June 30, 2003					
by Type and Age					
Age	Service	Disability	Beneficiary	Survivor	Total
Under 55	1,523	168	117	140	1,948
55-59	4,867	115	113	17	5,112
60-64	5,929	76	151	36	6,192
65-69	4,839	69	227	61	5,196
70-74	4,091	64	294	48	4,497
75-79	2,995	42	346	37	3,420
80-84	2,255	31	253	33	2,572
85-89	1,577	22	181	21	1,801
90 & Over	<u>1,347</u>	<u>17</u>	<u>130</u>	<u>17</u>	<u>1,511</u>
Total	29,423	604	1,812	410	32,249

Table 8						
Cost of Living Increases to Retired Members						
June 30, 2003						
Retirement In	First Increase Effective Date	First % Increase	Total Increases Through January 2002	January 2003 Increase	Total Increases Through January 2003	Number of Retired Members at 6/30/03
1973 & Earlier	Jan. 1977	2.00%	80.00%	0.00%	80.00%	752
1974	Jan. 1978	2.00%	80.00%	0.00%	80.00%	235
1975	Jan. 1979	2.00%	80.00%	0.00%	80.00%	295
1976	Jan. 1980	2.00%	80.00%	0.00%	80.00%	431
1977	Jan. 1981	4.00%	80.00%	0.00%	80.00%	394
1978	Jan. 1982	4.00%	80.00%	0.00%	80.00%	457
1979	Jan. 1983	4.00%	80.00%	0.00%	80.00%	419
1980	Jan. 1984	2.60%	78.42%	0.89%	80.00%	446
1981	Jan. 1985	4.00%	74.67%	2.10%	78.34%	574
1982	Jan. 1986	3.70%	68.90%	2.10%	72.45%	638
1983	Jan. 1987	1.70%	63.57%	2.10%	67.00%	528
1984	Jan. 1988	3.70%	61.18%	2.10%	64.56%	578
1985	Jan. 1989	4.00%	55.70%	2.10%	58.97%	674
1986	Jan. 1990	4.00%	50.00%	2.10%	53.15%	787
1987	Jan. 1991	4.00%	44.23%	2.10%	47.26%	769
1988	Jan. 1992	4.70%	38.68%	2.10%	41.59%	936
1989	Jan. 1993	3.10%	32.46%	2.10%	35.24%	832
1990	Jan. 1994	3.00%	28.48%	2.10%	31.18%	948
1991	Jan. 1995	2.50%	24.74%	2.10%	27.36%	1,015
1992	Jan. 1996	3.00%	21.69%	2.10%	24.25%	1,174
1993	Jan. 1997	2.80%	18.09%	2.10%	20.57%	981
1994	Jan. 1998	2.30%	14.93%	2.10%	17.34%	1,086
1995	Jan. 1999	1.70%	12.34%	2.10%	14.70%	1,290
1996	Jan. 2000	2.00%	10.46%	2.10%	12.78%	1,743
1997	Jan. 2001	3.70%	8.30%	2.10%	10.57%	1,702
1998	Jan. 2002	3.30%	4.44%	2.10%	6.63%	1,922
1999	Jan. 2003	1.10%	1.10%	2.10%	3.22%	2,110
2000 – after 7/1	Jan. 2003	1.10%	1.10%	2.10%	3.22%	2,625
2001 – after 7/1	Jan. 2003	1.10%	1.10%	2.10%	3.22%	2,262
2002	Jan. 2004			2.10%	2.10%	1,305
2003						119
Total						30,027

Table 9				
Analysis of Retired Membership by Type of Benefit				
(Dollar Amounts in Millions)				
June 30, 2003				
Type of Benefit		Number	Annual Benefit	Total Liability
Service Retirees				
Options 1 & 10 (Life Only)		16,151	441.6	4,896.2
Options 2 & 21 (100% J&S with Pop-Up)		7,077	232.9	3,343.0
Option 3 & 31 (75% J&S with Pop-Up)		1,190	43.9	647.5
Option 4 & 41(50% J&S with Pop-Up)		2,696	89.9	1,181.6
Option 5 (10 Years Certain & Life)		447	14.8	205.6
Option 6 (5 Years Certain & Life)		95	2.9	40.8
Option 20 (100% J & S)		1,171	33.8	372.3
Option 30 (75% J & S)		27	1.2	15.6
Option 40 (50% J & S)		<u>569</u>	<u>15.3</u>	<u>123.9</u>
Total		29,423	\$876.2	\$10,826.5
Disability Retirees		604	\$11.9	\$108.4
Beneficiaries of Retiree Deaths		1,812	\$38.2	\$370.4
Survivors of Active Deaths		410	\$5.2	\$30.0
Note: Excludes retirees returned to teaching and additional deposit annuities.				

Table 10

**History of System's Growth
Service Retired**

June 30	Females	Males	Total Retired	Total Monthly Pensions	Average Monthly Pension	Average New Pension Granted
1947	225	87	312	\$10,400	\$33.33	
1948	297	129	426	14,028	32.93	
1949	364	148	512	16,392	32.02	
1950	404	147	551	18,469	33.52	
1955	919	296	1,215	62,552	51.48	
1960	1,642	447	2,089	175,481	84.00	
1965	2,536	621	3,157	387,400	122.71	
1970	4,410	979	5,389	1,031,403	191.39	
1975	7,591	1,539	9,130	2,780,854	304.58	\$417 Mo.
1980	10,056	2,243	12,299	4,950,552	402.52	565
1985	11,307	3,227	14,534	8,153,600	561.00	900
1986	11,488	3,476	14,964	9,026,630	603.22	994
1987	11,684	3,810	15,494	10,099,084	651.81	1,123
1988	11,857	4,054	15,911	11,202,662	704.08	1,191
1989	12,117	4,345	16,462	12,412,178	753.99	1,142
1990	12,288	4,591	16,879	13,926,237	825.06	1,338
1991	12,500	4,883	17,383	15,535,235	893.70	1,442
1992	12,695	5,208	17,903	17,748,286	991.36	1,555
1993	13,071	5,547	18,618	19,647,453	1,055.29	1,549
1994	13,166	5,797	18,963	21,564,088	1,137.17	1,673
1995	13,343	6,081	19,424	23,563,044	1,213.09	1,898
1996	13,658	6,417	20,275	27,698,314	1,379.74	2,007
1997	14,716	6,424	21,140	31,431,017	1,486.80	2,005
1998	14,805	7,364	22,169	37,876,023	1,708.51	2,300
1999	15,551	7,835	23,386	45,132,257	1,929.88	2,488
2000	16,360	8,399	24,759	51,928,849	2,097.37	2,684
2001	17,584	9,055	26,639	61,434,862	2,306.20	2,775
2002	18,598	9,530	28,128	67,894,473	2,413.77	2,835
2003	19,440	9,983	29,423	73,017,878	2,481.66	2,846

Notes: Excludes retirees returned to teaching. Counts and amounts reported as being paid at valuation date, including options.

Table 11

**History of System's Growth
Disability Retired**

June 30	Females	Males	Total Retired	Total Monthly Pensions	Average Monthly Pension	Average New Pension Granted
1947	7	4	11	\$262	\$23.82	
1948	10	3	13	303	23.31	
1949	18	4	22	567	25.77	
1950	27	5	32	817	25.53	
1955	65	23	88	4,762	54.11	
1960	117	29	146	13,453	92.14	
1965	172	41	213	26,928	126.42	
1970	211	55	266	47,228	177.55	
1975	308	96	404	123,569	305.86	\$420 Mo.
1980	367	125	492	191,695	389.62	524
1985	406	143	549	291,619	531.18	834
1986	412	139	551	309,378	561.48	916
1987	413	143	556	323,649	582.10	884
1988	400	142	542	339,710	626.77	1,096
1989	394	149	543	362,423	667.45	1,088
1990	396	156	552	394,564	714.79	1,061
1991	402	153	555	420,031	756.81	1,257
1992	391	154	545	449,376	824.54	1,144
1993	400	160	560	484,265	864.76	1,178
1994	392	164	556	511,353	919.70	1,281
1995	395	163	558	533,106	955.39	1,377
1996	407	160	567	605,823	1,068.47	1,424
1997	413	153	566	626,626	1,107.11	1,366
1998	413	148	561	695,710	1,240.12	1,483
1999	424	145	569	776,500	1,364.67	1,740
2000	439	141	580	837,745	1,444.39	1,550
2001	456	140	596	929,492	1,559.55	1,728
2002	461	136	597	965,816	1,617.78	1,846
2003	466	138	604	987,727	1,635.31	1,672

Notes: Excludes retirees returned to teaching. Counts and amounts reported as being paid at valuation date, including options.

APPENDIX B

ASSET INFORMATION



Table 12		
Market Value of Assets		
Balance Sheet		
	June 30, 2002	June 30, 2003
Assets:		
Cash	\$ 27,773,096	\$ 55,520,755
Contribution Receivable	111,666,847	109,067,460
Accrued Interest and Dividends	89,720,380	73,777,171
Investments	19,806,384,374	20,888,654,730
Trades Pending	434,393,341	1,065,714,969
Other Assets	335,312	309,185
Furniture & Equipment	9,747,433	9,369,445
Due from NTRS	79,234	94,105
Total	\$20,480,100,017	\$22,202,507,820
Liabilities:		
Accounts Payable	6,516,231	7,048,880
Employer-Pay Liability	267,223	187,522
Interest Payable	311,133	1,474,387
Trades Pending	1,069,508,913	2,145,805,458
Other Liabilities	19,619	10,036
Total	\$1,076,623,119	\$2,154,526,283
Net Assets	\$19,403,476,898	\$20,047,981,537

Table 13		
Statement of Revenue and Expenses		
Market Value Reconciliation For Fiscal Year Ended June 30, 2003		
Operating Revenues		Amount
	<i>Contributions:</i>	
	Employers	\$ 355,979,027
	Members	<u>378,434,127</u>
	Total Contributions	734,413,154
	<i>Net Investment Income:</i>	
	Interest	298,196,852
	Dividends	133,210,704
	Net Income from Security Lending Activities	<u>12,129,376</u>
	Total Investment Income	443,536,932
	Net Capital Appreciation (Depreciation)	456,091,771
	Less: Investment Expenses	<u>(26,289,195)</u>
	Total Investment Return	873,339,508
	<i>Other Income</i>	<u>351,533</u>
	Total Operating Revenues	<u>1,608,104,195</u>
	Operating Expenses	
	Benefit Payments	930,449,641
	Refunds to Members	28,474,288
	Administrative Expenses	4,674,174
	Other Expense	<u>1,453</u>
	Total Operating Expenses	<u>963,599,556</u>
	Excess of Revenues over Expenses	644,504,639
	Fund Balance, June 30, 2002	<u>19,403,476,898</u>
	Fund Balance, June 30, 2003	<u>20,047,981,537</u>

Table 14

**Growth of Cash Flow
(In Thousands)**

Year Ending June 30	Contributions for the Year	Payments During the Year			External Cash Flow for the Year	Covered Payroll	Payments as Percent of Covered Payroll
		Benefit Payments and Refund of Contributions	Expenses	Total			
1985	\$225,110	(\$126,132)	(1,619)	(\$127,751)	\$97,359	\$1,217,900	10.5 %
1986	244,906	(139,297)	(1,780)	(141,077)	103,829	1,319,801	10.7
1987	264,224	(150,138)	(2,120)	(152,258)	111,966	1,429,429	10.7
1988	293,698	(266,431)	(2,377)	(268,808)	24,890	1,446,485	18.6
1989	309,266	(180,012)	(3,357)	(183,369)	125,897	1,556,775	11.8
1990	328,173	(215,429)	(3,850)	(219,279)	108,894	1,652,719	13.3
1991	345,827	(229,330)	(4,800)	(234,130)	111,697	1,750,191	13.4
1992	359,208	(245,365)	(5,583)	(250,948)	108,260	1,809,458	13.9
1993	370,317	(270,529)	(6,556)	(277,085)	93,232	1,867,948	14.8
1994	397,622	(290,636)	(7,623)	(298,259)	99,363	1,996,908	14.9
1995	433,990	(320,343)	(9,760)	(330,103)	103,887	2,137,134	15.4
1996	488,484	(372,954)	(12,468)	(385,422)	103,062	2,283,994	16.9
1997	516,694	(426,029)	(3,867)	(429,896)	86,798	2,427,429	17.7
1998	562,350	(471,259)	(2,827)	(474,086)	88,264	2,577,594	18.4
1999	589,882	(565,662)	(3,141)	(568,803)	21,079	2,690,007	21.1
2000	624,524	(675,079)	(3,712)	(678,791)	(54,267)	2,836,065	23.9
2001	658,801	(784,938)	(4,009)	(788,947)	(130,146)	2,982,051	26.5
2002	696,685	(892,214)	(4,486)	(896,700)	(200,015)	3,213,461	27.9
2003	734,413	(958,924)	(4,676)	(963,600)	(229,187)	3,373,058	28.6

Table 15			
Development of the Actuarial Value of Assets			
1. Valuation Assets June 30, 2002			\$22,236,105,216
2. Activity for FY 2003			
a. Contributions		\$734,413,154	
b. Benefits and Expenses		<u>(963,599,556)</u>	
c. Net Cash Flow		(229,186,402)	
3. Expected Returns		1,769,897,324	
4. Assets Before Allocation of G/L (1+2+3)			23,776,816,138
5. Actual Returns for 2003		873,691,041	
6. Excess Returns for 2003 (5-3)		(896,206,283)	
7. Recognized Excess Returns			
	2003	(179,241,257)	
	2002	(453,363,069)	
	2001	(391,416,658)	
	2000	16,068,450	
	1999	119,365,867	
Total			(888,586,666)
8. Actuarial Value of Assets June 30, 2003			
Before Fresh Start to Market Value			\$22,888,229,471
9. Actuarial Value of Assets June 30, 2003			
After Fresh Start to Market Value			\$20,047,981,537

Table 16**History of System's Reserve Funds**

June 30	Accumulated Employee Contributions	General Reserves Contributed by Employers	Total Funds
1947	\$742,243	\$708,600	\$1,450,843
1948	1,935,821	1,852,813	3,788,634
1949	3,126,017	3,088,379	6,214,396
1950	4,369,302	4,408,943	8,778,245
1955	13,385,088	15,759,437	29,144,525
1960	36,020,644	41,003,061	77,023,705
1965	77,557,922	92,561,889	170,119,811
1970	153,235,184	205,806,370	359,041,554
1975	298,115,841	438,387,902	736,503,743
1980	595,125,851	817,002,549	1,412,128,400
1985	1,074,474,872	1,779,172,019	2,853,646,891
1986	1,199,080,656	2,073,456,154	3,272,536,810
1987	1,333,786,497	2,415,732,721	3,749,519,218
1988	1,427,755,173	2,745,290,213	4,173,045,386
1989	1,605,331,167	3,164,741,308	4,770,072,475
1990	1,780,289,109	3,625,499,691	5,405,788,800
1991	1,983,630,527	4,095,234,736	6,078,865,263
1992	2,191,277,064	4,663,290,911	6,854,567,975
1993	2,384,406,117	5,378,325,303	7,762,731,420
1994	2,616,067,465	6,561,002,730	9,177,070,195
1995	2,856,389,033	7,336,694,489	10,193,083,522
1996	3,098,447,617	8,412,177,685	11,510,625,302
1997	3,312,090,156	9,787,128,615	13,099,218,771
1998	3,541,459,187	11,437,899,111	14,979,358,298
1999	3,765,853,678	13,444,016,205	17,209,869,883
2000	3,976,059,124	15,461,163,652	19,437,222,776
2001	4,129,190,609	17,017,103,699	21,146,294,308
2002	4,354,506,588	17,881,598,628	22,236,105,216
2003	4,687,227,277	15,360,754,260	20,047,981,537
Book Value prior to 1994, five-year average of adjusted market values after 1993.			

APPENDIX C

ACTUARIAL DETERMINATIONS



Table 17

**Ten Year Historical Summary
(All Dollar Figures in Thousands)**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Active Members	60,595	62,854	64,624	66,456	68,709	70,092	71,706	72,688	73,673	74,347
Retired Members	19,982	20,642	21,706	22,730	23,955	25,339	27,238	29,234	30,865	32,249
Actuarial Assets	\$9,177,070	\$10,193,084	\$11,510,625	\$13,099,219	\$14,979,358	\$17,209,870	\$19,437,223	\$21,146,294	\$22,236,105	\$20,047,982
UAAL	\$792,689	\$788,738	\$721,121	(\$650,041)	(\$508,309)	(\$836,726)	(\$1,158,110)	\$135,909	\$1,097,832	\$4,671,468
Benefit Payments And Refunds	(\$290,636)	(\$320,343)	(\$372,954)	(\$425,848)	(\$474,087)	(\$568,803)	(\$675,079)	(\$784,938)	(\$892,214)	(\$958,924)
Accumulated Members' Contributions	\$2,616,067	\$2,856,389	\$3,098,448	\$3,312,090	\$3,541,459	\$3,765,854	\$3,976,059	\$4,129,191	\$4,354,507	\$4,687,227
APV of Retirees' Benefits	\$3,206,061	\$3,705,807	\$4,265,851	\$4,553,628	\$5,523,768	\$6,603,148	\$7,801,845	\$9,504,921	\$10,589,546	\$11,387,543

Table 18				
Determination of Normal Cost				
June 30, 2003				
For the 2003 - 2004 Plan Year				
		Dollar	Rate	
Active Members				
	Retirement Benefits	\$632,170,187		19.07%
	Termination Benefits	47,898,723		1.44%
	Death Benefits	6,962,161		0.21%
	Disability Benefits	6,646,870		0.20%
Total Normal Cost		\$693,677,941		20.92%
Estimated Employee Contributions		347,987,936		
Employer Normal Cost		\$345,690,005		
(Total Normal Cost less Employee Contributions)				

Table 19			
Determination of the Unfunded Actuarial Accrued Liability			
June 30, 2003			
Actives Members:			
	Service Retirement		\$12,922,497,771
	Death Benefits		67,922,458
	Disability Benefits		60,145,382
	Termination Benefits		(56,102,040)
	Inactives		337,443,518
Total for Active and Inactives Members			13,331,907,089
Pay Status Members:			
	Service Retirees		10,835,557,272
	Disability Retirees		108,417,686
	Survivors		400,378,594
	Tax-sheltered Annuitants		1,292,088
	Death Benefit		41,897,255
Total for Pay Status Members			11,387,542,895
Total Actuarial Accrued Liability			24,719,449,984
Actuarial Value of Assets			20,047,981,537
Total Unfunded Actuarial Accrued Liability			4,671,468,447

Table 20

**Schedule of Funding Progress
(In Thousands)**

Actuarial Valuation Date	Value of Assets (a)	Actuarial Accrued			Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
		Liability (AAL)	Unfunded	Funded			
		Entry Age (b)	AAL (UAAL) (b-a)	Ratio (a/b)			
6/30/1996	11,510,625	12,231,746	721,121	94.1%	2,283,994	31.6%	
6/30/1997	13,099,219	12,449,178	(650,041)	105.2%	2,427,429	-26.8%	
6/30/1998	14,979,358	14,471,049	(508,309)	103.5%	2,577,594	-19.7%	
6/30/1999	17,209,870	16,373,144	(836,726)	105.1%	2,690,007	-31.1%	
6/30/2000	19,437,223	18,279,113	(1,158,110)	106.3%	2,836,062	-40.8%	
6/30/2001	21,146,294	21,282,203	135,909	99.4%	2,982,051	4.6%	
6/30/2002	22,236,105	23,333,937	1,097,832	95.3%	3,213,461	34.2%	
6/30/2003	20,047,982	24,719,450	4,671,468	81.1%	3,373,058	138.5%	

Schedule of Employer Contributions

Actuarial Valuation Date	Annual Required Contribution	Percentage Contributed
6/30/1996	238,630,542	100.0%
6/30/1997	251,957,622	100.0%
6/30/1998	273,125,719	100.0%
6/30/1999	287,698,736	100.0%
6/30/2000	304,944,352	100.0%
6/30/2001	324,525,673	100.0%
6/30/2002	340,000,556	100.0%
6/30/2003	355,979,027	94.5%

Notes in Trend Data

Information:	Data
Valuation Date	6/30/2003
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percent, Open
Remaining Amortization Period	30
Asset Valuation Method	5-Year Smoothed Market Marked to Market as of June 30, 2003
Actuarial	
Investment rate of return	8.0%
Projected salary increases	5.0% - 10.0%
Cost-of-living adjustments	3.5%

Table 21

**Calculation of Unfunded Actuarial Accrued Liability
June 30, 2003**

				Amount
(1) Present Value of Future Benefits for:				
	Active Members			\$19,514,213,303
	Service Retirees			10,835,557,272
	Disability Retirees			108,417,686
	Tax-sheltered Annuitants			1,292,088
	Survivors			400,378,594
	Death Benefits			41,897,255
	Inactive Members			337,443,518
	Total			31,239,199,716
(2) Present Value of Future Normal Costs				6,519,749,732
(3) Actuarial Accrued Liability ((1)-(2))				24,719,449,984
(4) Actuarial Value of Assets				20,047,981,537
(5) Unfunded Actuarial Accrued Liability ((3)-(4))				\$4,671,468,447

**Required Contribution Rate & Amortization of Unfunded Liability
June 30, 2003**

				Percentage of Payroll
(1) Total Contribution Rate, Member + Employer				21.00%
(2) Normal Cost Rate				20.92%
(3) Approximate Rate Available for Unfunded Actuarial Accrued Liability ((1)-(2))				0.08%
(4) Number of Years Required to Amortized Unfunded Actuarial Accrued Liability				Never*
(5) Benchmark Contribution Rate - Normal Cost Plus a Rate to fund UAAL over 30 Years				27.75%

*While the current contribution rate will not fund the UAAL, the funding process is designed to fund that item over time.

Table 22		
Analysis of Actuarial Gains and Losses		
(\$ in 000's)		
		Amount
1.	Unfunded Actuarial Liability as of June 30, 2002	1,097,832
2.	Normal Cost for 2003 Plan Year	661,202
3.	Contribution Received during Year	(734,413)
4.	Interest to Year End @ 8.00% on 1., 2., and 3.	84,955
5.	Expected Unfunded Actuarial Liability as of June 30, 2003	1,109,576
6.	Actuarial (Gain)/Loss During the Year	
a.	From Investment	888,586
b.	From Actuarial Liabilities	(166,942)
c.	Total	721,644
7.	Change in Asset Method, Fresh Start to MV as of June 30, 2003	2,840,248
8.	Actuarial Unfunded Actuarial Liability as of June 30, 2003	4,671,468

APPENDIX D

ADDITIONAL DATA



Table 23

Schedule of Active Member Valuation Data

Actuarial Valuation Date	Number of Members	Covered Annual Payroll (000)	Average Annual Salary	% Increase in Average Salary	Average Attained Age	Average Years of Service
6/30/1991	56,908	\$1,750,191	\$30,755	4.0%	42	12.1
6/30/1992	57,711	1,809,458	31,354	1.9%	42.2	12.2
6/30/1993	58,493	1,867,948	31,935	1.9%	42.3	12.3
6/30/1994	60,595	1,996,908	32,955	3.2%	42.5	12.3
6/30/1995	62,854	2,137,134	34,002	3.2%	42.5	12.3
6/30/1996	64,624	2,283,994	35,343	3.9%	42.6	12.3
6/30/1997	66,456	2,427,429	36,527	3.3%	42.5	12.1
6/30/1998	68,709	2,577,594	37,514	2.7%	42.5	11.9
6/30/1999	70,092	2,690,353	38,383	2.3%	42.5	11.7
6/30/2000	71,706	2,836,062	39,581	3.1%	42.5	11.6
6/30/2001	72,688	2,982,051	41,025	3.7%	42.4	11.3
6/30/2002	73,673	3,213,461	43,618	6.3%	42.3	11.2
6/30/2003	74,347	3,373,058	45,369	4.0%	42.4	11.3

Table 24

**Solvency Test
(\$ in 000's)**

Actuarial Accrued Liability							
Actuarial Valuation Date	Member Contributions (1)	Current Retirees & Beneficiaries (2)	Active & Inactive Members. Employer Financed Portion (3)	Net Assets Available for Benefits	Percentage of Actuarial Liabilities Covered by Net Assets for:		
					(1)	(2)	(3)
6/30/1992	2,191,277	2,635,808	3,544,964	6,878,981	100.0%	100.0%	57.9%
6/30/1993	2,384,406	2,980,210	3,591,872	7,787,379	100.0%	100.0%	67.5%
6/30/1994	2,616,067	3,206,061	4,147,631	9,177,070	100.0%	100.0%	80.9%
6/30/1995	2,856,389	3,705,807	4,419,626	10,193,084	100.0%	100.0%	82.2%
6/30/1996	3,098,448	4,265,851	4,867,447	11,510,625	100.0%	100.0%	85.2%
6/30/1997	3,312,090	4,553,628	4,583,460	13,099,219	100.0%	100.0%	114.2%
6/30/1998	3,541,459	5,523,768	5,405,822	14,979,358	100.0%	100.0%	109.4%
6/30/1999	3,765,854	6,602,915	5,305,210	17,209,870	100.0%	100.0%	129.0%
6/30/2000	3,976,059	7,801,845	6,501,209	19,437,223	100.0%	100.0%	117.8%
6/30/2001	4,129,191	9,504,921	7,648,091	21,146,294	100.0%	100.0%	98.2%
6/30/2002	4,354,507	10,589,546	8,389,885	22,236,105	100.0%	100.0%	86.9%
6/30/2003	4,687,227	11,387,543	8,644,680	20,047,982	100.0%	100.0%	46.0%

Table 25

**Schedule of Retirees and Beneficiaries Added to
and Removed From Retirement rolls**

Actuarial Valuation Date	Service Retirees			Disability Retirees			Beneficiaries		
	Added to Rolls	Removed from Rolls	Rolls End of Year	Added to Rolls	Removed from Rolls	Rolls End of Year	Added to Rolls	Removed from Rolls	Rolls End of
6/30/1989	1,064	513	16,462	31	30	543	N/A	N/A	N/A
6/30/1990	949	532	16,879	37	28	552	N/A	N/A	N/A
6/30/1991	1,067	563	17,383	28	25	555	N/A	N/A	N/A
6/30/1992	1,119	599	17,903	33	43	545	N/A	N/A	N/A
6/30/1993	1,269	554	18,618	45	30	560	110	63	1,259
6/30/1994	1,021	676	18,963	35	39	556	130	63	1,326
6/30/1995	1,141	680	19,424	34	32	558	152	66	1,412
6/30/1996	1,344	693	20,075	44	35	567	150	72	1,490
6/30/1997	1,797	732	21,140	30	31	566	170	74	1,586
6/30/1998	1,757	728	22,169	27	32	561	187	82	1,691
6/30/1999	1,965	748	23,386	41	33	569	182	82	1,791
6/30/2000	2,136	763	24,759	43	32	580	187	79	1,899
6/30/2001	2,639	759	26,639	45	29	596	189	89	1,999
6/30/2002	2,262	773	28,128	42	41	597	248	107	2,140
6/30/2003	2,078	783	29,423	37	30	604	197	115	2,222

Table 26						
Schedule of Retirees by Type						
(\$ in 000's)						
Actuarial Valuation Date	Service Retirees		Disability		Beneficiaries	
	Number	Benefits	Number	Benefits	Number	Benefits
6/30/1991	17,383	184,744	555	4,995	1,196	7,078
6/30/1992	17,903	210,379	545	5,392	1,262	8,149
6/30/1993	18,618	234,933	560	5,826	1,303	9,299
6/30/1994	18,963	254,957	556	6,102	1,372	10,373
6/30/1995	19,424	281,897	558	6,427	1,412	11,821
6/30/1996	20,075	329,115	567	7,180	1,490	13,403
6/30/1997	21,140	377,172	566	7,520	1,586	15,874
6/30/1998	22,169	454,512	561	8,349	1,691	20,048
6/30/1999	23,386	542,071	569	9,338	1,793	29,625
6/30/2000	24,759	623,827	580	10,088	1,899	30,843
6/30/2001	26,639	737,218	596	11,154	1,999	36,769
6/30/2002	28,128	737,218	597	11,590	2,140	40,743
6/30/2003	29,423	876,196	604	11,853	2,222	43,449
Average New Retiree Statistics						
Actuarial Valuation Date	Regular Retirement Benefit		% Increase From Previous Year		Age	Creditable Service
6/30/1991	1,763.43		8		59.5	28.4
6/30/1992	1,716.78		(3)		59.3	27.8
6/30/1993	1,854.29		8		59.0	26.8
6/30/1994	2,096.35		13		58.8	27.8
6/30/1995	2,013.36		(4)		58.7	26.8
6/30/1996	2,182.88		8		56.3	27.8
6/30/1997	2,005.00		(8)		56.4	N/A
6/30/1998	2,300.19		15		57.1	N/A
6/30/1999	2,488.36		8		57.0	N/A
6/30/2000	2,683.72		8		57.0	25.6
6/30/2001	2,775.17		3		56.7	26.5
6/30/2002	2,834.93		2		56.6	26.5
6/30/2003	2,845.98		3		56.8	26.0

APPENDIX E

ACTUARIAL METHOD AND ASSUMPTIONS



Statement of Funding Policy

In order to establish long-term, consistent methods in the funding of the System, the Board of Trustees has adopted this statement of its funding policy. The funding of the System shall be carried out in such a way that the burden of paying retirement costs shall be shared equitably by present and succeeding generations of members and taxpayers. To this end, the following principles shall apply:

1. The Board of Trustees shall adopt actuarial assumptions, each of which individually represents a reasonable long-term estimate of anticipated experience under the System, derived from experience studies conducted every fifth year.
2. The actuarial funding method used shall be the Entry Age Normal Method with normal costs calculated as a percentage of payroll.
3. It shall be the general objective to maintain an amortization period of 30 years or less in the funding of the Unfunded Actuarial Accrued Liability. Whenever a change is made in the System's benefit and contribution rate structures, the amortization period for the System after this change should not exceed 30 years initially.
4. If an escalation in future payroll is assumed in determining the amortization payments toward the Unfunded Actuarial Accrued Liability, then the annual rate of such escalation shall not exceed the expected rate of expansion in total System payroll based upon the actuarial assumptions.
5. Assets used in the actuarial valuation shall be valued using adjusted market values averaged over a period of five years.
6. Annual actuarial valuations shall be made of the System's assets and liabilities. The contribution rate shall be established based on the results of these valuations.

Actuarial Assumptions

(Adopted for use with the June 30, 2001 Valuation)

Investment Return

It is assumed that investments of the System will return, on average, a yield of 8% per annum compound.

Salary and Payroll Increases

Salaries are assumed to increase each year at the rate of 5%. Longevity adjustments are made for those with less than 10 years of service, as follows:

Service	Longevity Adjustment	Total Increase
0	5.00%	10.00%
1	5.00	10.00
2	3.25	8.25
3	2.50	7.50
4	2.50	7.50
5	2.25	7.25
6	2.00	7.00
7	1.75	6.75
8	1.50	6.50
9	1.00	6.00
10 & Over	0.00	5.00

Total covered payroll of the entire membership is assumed to increase 5.0% per year in the future.

Retirement Rates

Retirement is assumed in accordance with the following rates per 1,000 eligible members:

For All Member With at Least Five Years of Service	
Age	Retirement Rates
BelowAge60	0
60	250
61	250
62	250
63	250
64	300
65	400
66	300
67	300
68	300
69	300
70 and Over	1,000

For Members Who Are Below Age 60 With 30 Years of Service or Satisfy the Rule of 80

Service	Males and Females
30	500
31 and Over	250

For Members Below Age 60 with Less Than 30 Years but with at Least 25 Years of Service, Who are at Least Age 55

	Males and Females
1 st Year Eligible	400
Thereafter	200

For Members who have at least 25 years of service and are below age 55 during the 1999-2003 Period:

Service	Males and Females
25	80
26	40
27	45
28	50
29	75

For Members who do not fall into the above categories but are at least age 55 with 5 years of Service

	Males and Females
All Years Eligible	30

Withdrawal Rates

Termination of membership prior to eligibility for retirement from all causes other than death, disability or retirement is assumed in accordance with the following illustrative rates per 1,000 members:

Years of Service	Rate
0	125.0
1	95.0
2	75.0
3	60.0
4	52.5
5	45.0
10	22.5
15	13.0
20	6.0

It is assumed that 70% of those leaving after earning 5 years of service leave their contributions in the fund and receive a vested benefit.

Disability Rates

Retirement for disability prior to age 60 is assumed in accordance with the following illustrative rates per 1,000 eligible members:

<u>Age</u>	<u>Rates</u>
35	-
40	0.263
45	0.394
50	0.788
55	1.446

Mortality Rates

Mortality Rates for nondisabled retirees are based on the 1994 Group Annuity Mortality Table with male ages set back three years and female ages set back one year. Mortality for active members are based on the following percentages of retiree mortality:

Male	70%
Female	62%

Illustrative rates per 1,000 members at various ages are as follows:

Service Retired Members, Beneficiaries and Survivors

<u>Age</u>	<u>Male</u>	<u>Female</u>
20	0.430	0.280
30	0.727	0.331
40	0.891	0.652
50	1.899	1.310
60	5.581	3.863
70	18.034	12.709
80	45.171	35.362
90	115.671	104.594
100	268.815	256.712
110	441.935	464.469

Disability Retirees, Male and Female

<u>Age</u>	<u>Rate</u>
40	24.075
50	26.175
60	31.500
70	44.625
80	76.650
90	173.276
100	507.128

Interest on Member Accounts

6% per year

Service Purchases

Incremental service credits attributable to the purchase of service are not valued until all payments for the purchase of service have been made.

Rehire Liability

Inactive member liability is carried until a series of five one-year breaks in service.

Cost of Living Adjustments

The cost of living adjustment assumed in the valuation is 3.5% per year, and applies to service retirements and beneficiary annuities. The COLA does not apply to the benefits for in-service death payable to spouses (where the spouse is over age 60), and does not apply to the spouse with children pre-retirement death benefit, the dependent children pre-retirement death benefit, nor the dependent parent death benefit. The total lifetime COLA cannot exceed 80% of the original benefit.

Asset Valuation Method

The Actuarial Value of Assets is based on a five-year average of adjusted market value returns. The actuarial value for a year is computed by taking the actuarial value at June 30 of the prior year, subtracting all expenses (including benefit payments), and adding contributions and expected investment return at 8% of actuarial value of assets. The difference between the actual returns at market value for the year and expected returns is determined. Twenty percent (20%) of that difference is added to the actuarial value along with corresponding amounts from each of the prior four years.

Provisions for Expenses

There is no specific provision for expenses. The implicit assumption is that administrative expenses are paid from investment income in excess of 8% per annum.

APPENDIX F
SUMMARY OF BENEFIT PROVISIONS OF
PSRS

Member Contributions

Half the total PSRS contribution rate. The current PSRS contribution rate is 21% of pay.

Normal (Unreduced) Retirement

ELIGIBILITY

Attainment of age 60 with at least five years of Creditable Service, or
Attainment of age 55 and the total of age and Creditable Service is at least 80, or
Completion of 30 years of Creditable Service at any age.

BENEFIT

2.5% of Final Average Salary for each year of Membership Service. Members retiring before July 1, 2008 with at least 31 years of service will receive a benefit based on 2.55%. A year of Prior Service is the equivalent of .6 year of Membership Service.

FINAL AVERAGE SALARY

Average monthly salary over the Member's three highest consecutive years of service.

MEMBERSHIP SERVICE

Service while a participating member of PSRS. Service is measured each year in relation to full contract salary for that year.

PRIOR SERVICE

Service in a covered position prior to July 1, 1946.

CREDITABLE SERVICE

Membership service plus any service rendered prior to PSRS inception.

NORMAL FORM OF BENEFIT

Single Life Annuity

Additional options available include joint and survivor (50%, 75%, or 100%) and term certain (60 or 120 months) and life thereafter.

Early (Age Reduced) Retirement

ELIGIBILITY

Attainment of age 55 and under age 60 with at least five years of creditable service, or at any age with at least 25 years of creditable service.

BENEFIT

Normal retirement benefit accrued to the date of early retirement, actuarially reduced from age 60.

Special Normal Retirement – Under Modified Formula

ELIGIBILITY

Retirement on or before 7-1-2008 at an age under 55 and with at least 25 years of creditable service but not eligible for the Rule of 80.

BENEFIT

Based on a percentage of final average salary per year of creditable service. Percentages are as follows:

<u>Years of Service</u>	<u>Benefit Percentage</u>
25-25.9	2.20%
26-26.9	2.25
27-27.9	2.30
28-28.9	2.35
29-29.9	2.40

POST-RETIREMENT DEATH BENEFIT

Regardless of the form of benefit selected, a lump sum benefit of \$5,000 is paid at the death of the retiree.

COLA Adjustments

In any year in which the Board determines that the CPI has increased, the Board may provide for annual increases in the current benefit of up to 5%. For any member retiring on or after July 1, 2001 such adjustments commence in the second January after commencement of benefits. The total of such increases may not exceed 80% of the original benefit for any member.

Disability Benefits

DEFINITION OF DISABILITY

Incapacitation for performance of gainful employment after completion of five years of creditable service and before age 60.

BENEFIT

Lifetime benefit equal to 90% of accrued normal retirement benefit. This benefit level is subject to a minimum of 50% salary in the last full year of membership but not greater than the member's accrued normal retirement benefit assuming continuous employment to age 60 at current pay. COLA adjustments similar to those provided retirees are provided on this benefit.

FORM OF BENEFIT

If eligible, surviving designated spouse or dependent child or parent may elect a monthly survivor benefit.

Vesting

ELIGIBILITY

Accrual of five years of creditable service.

BENEFIT

Accrued normal retirement benefit payable at earliest retirement age based on service at date of termination. Benefit is based on formula in effect at commencement of benefit.

Death / Survivor Benefits

REFUND

Refund of accumulated member contributions with interest

DEPENDENT BASED SURVIVOR BENEFITS

In lieu of the refund, survivors of a member with at least 2 years of service at death may elect the following survivor benefit package:

1. Spouse who was married to the deceased member for at least three years and with no dependent children – up to \$600 / month payable after spouse age 60 (immediately if spouse is disabled) and prior to remarriage.
2. Spouse with dependent children
 - a. Up to \$600 per month payable to spouse with at least one dependent child under age 18.
 - b. Up to an additional \$300 per month payable for each child under age 18. Benefits continue to the spouse after the child reaches age 18, up to age 22, if the child is a full time student.
 - c. Family maximum - \$1,500 per month.
3. If no surviving spouse, each eligible child receives up to \$500 per month payable as in 2.b. above, subject to a family maximum of \$1,500.
4. If no surviving spouse or children, a benefit of up to \$500 is payable to a dependent parent over age 65, subject to a maximum of \$1,000.

No COLA adjustments apply to this benefit.

RETIREMENT BASED SURVIVOR BENEFITS

In lieu of the benefits described above, if the member has at least 5 years of membership service at date of death, the designated spouse may receive a survivor benefit based on 100% J & S equivalent of the benefit accrued to date of death. The benefit may commence:

1. immediately if member is eligible to retire at date of death, or
2. at a future retirement date of the deceased member.

The benefit may be reduced for early commencement if the deceased member would not have been eligible for unreduced retirement at that date based on service to date of death.

COLA adjustments similar to those provided retirees are provided on these benefits.