Employees' Retirement System of Rhode Island

ACTUARIAL VALUATION

June 30, 1997

Watson Wyatt Worldwide

Watson Wyatt
Worldwide

Watson Wyatt & Company
Suite 2400
2121 San Jacinto Street
Dallas, TX 75201-2772
Telephone 214 978 3400
Fax 214 978 3650

February 22, 1999

Employees' Retirement System of Rhode Island
40 Fountain Street, First Floor
Providence, RI 02903-1854

Dear Members of the Board:

Subject: Actuarial Valuation as of June 30, 1997

This is the June 30, 1997 actuarial valuation of the Employees' Retirement System of Rhode Island (ERSRI), as it applies to state employees and teachers. This report describes the current actuarial condition of ERSRI, determines recommended employer contribution rates, and analyzes changes in these contribution rates. Valuations are prepared annually, as of June 30, the last day of the ERSRI plan year. Not covered in this report are the Municipal Employees' Retirement System, the State Police Retirement Benefits Trust, the Judicial Retirement Benefits Trust, or the Teachers Survivors Plan, even though assets for ERSRI and these other programs are commingled for investment purposes.

Under Rhode Island General Laws, the employer contribution rates for state employees and for teachers are certified annually by the Employees' Retirement Board. These rates are determined actuarially, based on the plan provisions in effect as of the valuation date, the actuarial assumptions adopted by the Board, and the methodology set forth in the statutes. The Board's current policy is that the contribution rates determined by a given actuarial valuation become effective two years after the valuation date. For example, the rates determined by this June 30, 1997 actuarial valuation will be applicable for the year beginning July 1, 1999 and ending June 30, 2000.

Financing objectives and funding policy

The actuarial cost method and the amortization periods are set by statute. The frozen entry age cost method (also called the frozen initial liability method) is mandated. The frozen liability is amortized over a period of 30-years from July 1, 1985. In the case of certain significant changes in plan provisions, assumptions or methodology, a new amortization base is created, and this base is amortized over thirty years from the creation date. More minor changes in provisions, assumptions or methods are included with the existing frozen actuarial liability and amortized over the remaining period. Amortization payments are determined as a level percent of expected payroll. Gains and losses from experience—i.e., from differences between actual experience and the actuarial assumptions—are included in the normal cost. This should produce relatively level contribution rates over time.

Progress toward realization of financing objectives

The funded ratio (the ratio of the actuarial value of assets to the frozen actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches 100%. For the state employees, the funded ratio increased from 77.5% to 78.3%, while for teachers the rate decreased from 74.0% to 73.4%. This decrease for teachers was the result of the adoption of the new actuarial assumptions, discussed below, which were much more significant for teachers than for state employees.

The employer contribution rate decreased for state employees, from 9.85% to 8.57%, while it increased for teachers, from 11.52% to 14.64%. These changes reflect the combined impact of (i) significant actuarial asset gains for the prior year, (ii) the adoption of the new actuarial assumptions, and (iii) the modification of the asset valuation method. The impact of each of these items is shown on Table 11.

Benefit provisions

The benefit provisions reflected in this valuation are those which were in effect on June 30, 1997. There were no material changes adopted since the previous actuarial valuation. The benefit provisions are summarized in Appendix B.

Assumptions and methods

In connection with this valuation, we carried out a review of actual plan experience for the last several years. Based on this review, we recommended a number of changes in the actuarial assumptions, and the Board generally adopted these. The one exception was that we recommended leaving the investment return assumption unchanged at 8.00%, but the Board adopted an 8.25% investment return assumption instead. This report was prepared using the 8.25% rate adopted by the Board. Among the other assumptions changed were:

- Future salary increase rates
- Mortality rates
- Retirement rates
- Termination rates
- Disability rates
- Inflation rate

In addition, the actuarial value of assets was left at market value rather than being changed back to a smoothed value. This was a change we recommended. Beginning with the next valuation, the actuarial value of assets should be determined using a smoothing technique.

Normally we would have recommended moving back to a smoothed actuarial value with this valuation. However, because this work was not completed until the end of the 1998 fiscal year, we knew that there were going to be significant asset gains that would partially offset the impact of the assumption changes. Rather than allow the contribution rates to increase dramatically this year, followed by a decrease in the following year due to asset gains, we recommended using the market value of assets as the actuarial value for one additional year.

Appendix A summarizes the actuarial assumptions and methods.

Data

The System's staff supplied member data for retired, active and inactive members as of June 30, 1997. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. The System's staff also supplied asset data as of June 30, 1997.

Certification

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of Rhode Island state law and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries. Both are Enrolled Actuaries and Members of the American Academy of Actuaries, and both are experienced in performing valuations for large public retirement systems.

Sincerely,

J. Christian Conradi

J. Christian Conradi, ASA, EA, MAAA
Actuary

W Michael Carter

W. Michael Carter, FSA, EA, MAAA
Vice President

Executive Summary (State Employees)

Item	1997	1996
Membership		
• Number of:		
- Active members	12,865	12,976
- Retirees and beneficiaries	8,881	8,617
- Inactive members	1,723	2,327
- Total	23,469	23,920
• Payroll supplied by ERSRI	$ 425,870,695	$ 452,862,400
Contribution rates		
• Member	8.75%	8.75%
• Employer	8.57%	9.85%
Assets		
• Market value	$ 1,810,447,649	$ 1,529,403,200
• Actuarial value	1,810,447,649	1,529,403,200
• Return on market value	19.1%	13.7%
• Employer contribution	$ 45,408,588	Not available
Actuarial Information		
• Normal cost %	-1.60%	3.14%
• Unamortized frozen actuarial liability (UFAL)	$ 502,116,116	$ 444,814,700
• Amortization percentage	10.17%	6.71%
• Funding period	18 years	19 years
• GASB funded ratio	78.3%	77.5%
Projected employer contribution		
• Fiscal year ending June 30,	2000	1999
• Projected payroll (millions)	$ 475.3	$ 494.3
• Projected employer contribution (millions)	$ 40.7	$ 48.7

Executive Summary (Teachers)

Item	1997	1996
Membership		
• Number of:		
- Active members	12,681	12,391
- Retirees and beneficiaries	5,512	5,229
- Inactive members	1,148	1,173
- Total	19,341	18,793
• Payroll supplied by ERSRI	$ 573,096,816	$ 543,964,900
Contribution rates		
• * Member	9.50%	9.50%
• Employer	14.64%	11.52%
• State share	6.21%	4.90%
• * Local employer share	8.43%	6.62%
Assets		
• Market value	$ 2,626,621,502	$ 2,181,535,900
• Actuarial value	2,626,621,502	2,181,535,900
• Return on market value	19.1%	13.7%
• Employer contribution (state & local)	$ 83,639,720	Not available
Actuarial Information		
• Normal cost %	1.09%	2.36%
• Unamortized frozen actuarial liability (UFAL)	$ 953,031,035	$ 797,893,900
• Amortization percentage	13.55%	9.16%
• Funding period	19 years	19 years
• GASB funded ratio	73.4%	74.0%
Projected employer contribution		
• Fiscal year ending June 30,	2000	1999
• Projected payroll (millions)	$ 647.1	$ 607.3
• Projected employer contribution (millions)	$ 94.7	$ 70.0
• State share (millions)	$ 40.2	$ 29.8
• Local employer share (millions)	$ 54.5	$ 40.2

Contribution Rates

The employer contribution rates for ERSRI are determined actuarially. Separate rates are determined for State Employees and for Teachers. The rates determined in this valuation become effective two years after the valuation date, i.e., as of July 1, 1999.

The rate consists of two pieces: the normal cost rate and the amortization rate. Under the Frozen Entry Age actuarial cost method, the actuarial accrued liability determined under the Entry Age cost method as of July 1, 1985, is being amortized over 30 years as a level percent of pay. Certain subsequent changes in provisions or assumptions are also being amortized separately, either over the same period or over a new 30-year period. The sum of these payments, expressed as a percentage of payroll, is the amortization rate. All other liabilities for future benefits are reflected in the normal cost. The normal cost is the percentage of pay which, in combination with the member contributions and current assets, will be needed to fund these other liabilities over the working lifetimes of the current active members.

For the Teachers, the State of Rhode Island pays 40% of the rate, adjusted so that the State pays the entire amortization charges for the 1990/91 and 1991/92 deferrals, and the town or city employing the teacher pays the balance.

	Local	State	Total	
Normal cost	0.65%	0.44%	1.09%	
Deferral	0.00%	0.59%	0.59%	
Other amortization	7.78%	5.18%	12.96%	
Total	8.43%	6.21%	*14.64%	14.05%

Five towns or cities—Burrillville, East Greenwich, Little Compton, New Shoreham, and North Smithfield—did not participate in the 1990 early retirement window for teachers, and an adjusted contribution rate is charged for these:

	Local	State	Total
Normal cost	0.65%	0.44%	1.09%
Deferral	0.00%	0.59%	0.59%
Other amortization	6.54%	4.35%	10.89%
Total	7.19%	5.38%	12.57%

Financial Data and Experience

Assets for ERSRI are held in trust and are commingled with those of several other plans and programs for investment purposes. The State Treasurer is responsible for setting the asset allocation policy and for investing the funds. The ERSRI assets are then allocated by the system's staff among State Employees, Teachers, and the Teachers' Survivor Benefits Plan.

Table 7 shows the net plan assets for ERSRI in total, and it shows the breakdown between State Employees, Teachers and the Teachers' Survivor Benefit Plan. Table 8 shows a reconciliation of the assets for State Employees and Teachers between the previous valuation and this valuation. Table 9 shows the distribution of investments by category—over 62% of assets are held in equities—and Table 10 shows a historical summary of the return rates. (The fund earned over 19% during the year ending June 30, 1997.)

Normally, a separate actuarial value of assets would be determined. The actuarial value would be an adjusted market value, with differences between actual and expected returns being phased in over a three- to five-year period. Doing this usually dampens some of the year-to-year fluctuations in the calculated contribution rates.

However, the Board had "marked to market" at June 30, 1996. I.e., the actuarial value was set equal to the market value. The intent was to return to a smoothed value in this valuation, but we recommended, and the Board approved, delaying this for one more year, so that the impact of the new actuarial assumptions, discussed below, would be partially offset. Because this decision was made after actual returns for the 1998 fiscal year were known, we viewed this as having minimal risk.

On Table 11, the impact of actual asset experience shown in Line 2b is based on the actuarial value using a three-year phase-in, while Line 2d shows the effect of marking to market again at June 30, 1997.

The System's staff provided all of the financial information used in this report.

Member Data

The ERSRI staff supplied member data on computer tape as of June 30, 1997. While we did not audit this data, we did perform various tests to ensure that it was internally consistent, consistent with the prior year's data, and was reasonable overall. Information provided for active members includes: name, social security number, sex, a code indicating whether the member was active or inactive, a code indicating employee type (state employee or teacher), date of birth, date of hire, equated date of hire, salary, and accumulated member contributions without interest. For retired members, data includes: name, social security number, sex, date of birth, date of retirement, amount of benefit, the amount of adjustment after age 62 for anyone electing the Social Security option, a code indicating the option elected and the type of retiree (service retiree, disabled retiree, beneficiary), and if applicable, the joint pensioner's date of birth and sex.

Tables 12A and 12B show the number of members by category (active, inactive, retired, etc.). Table 13 shows a historical summary of active member statistics, and Tables 14A and 14B show the distribution of active members by age and service.

The total payroll shown on the statistical tables is the amount that was supplied by ERSRI, annualized if necessary. For the cost calculations, the pays were adjusted in accordance with the actuarial assumptions to reflect one year's salary increase.

The source of the pay information for state employees changed between 1996 and 1997, accounting for the apparent inconsistency between the 1996 and 1997 total payroll figures on Table 12A, line 1c. In 1996 the state provided to ERSRI an estimate of the member's pay during the upcoming fiscal year. This procedure has now been abandoned, and ERSRI supplies pay information for all active members based on actual amounts paid for the fiscal year ending on the valuation date.

Benefit Provisions

Appendix B includes a summary of the benefit provisions for ERSRI. There were no material changes in the benefit provisions since the preceding valuation.

There are no ancillary benefits—e.g., cost of living benefits—that are currently provided by a source independent of ERSRI but that might be deemed an ERSRI liability if continued beyond the availability of funding by the current funding source.

Actuarial Methods and Assumptions

Appendix A includes a summary of the actuarial assumptions and methods used in this valuation. Costs are determined using the Frozen Entry Age actuarial cost method. The assumed investment return rate is 8.25%. The Board has adopted a number of new actuarial assumptions in connection with this valuation, based on an analysis of recent plan experience.

The expected inflation rate was set at 3.50%. The payroll growth rate, used in determining the payments needed to amortize the unfunded frozen actuarial liability, was also set at 3.50%. (The assumed payroll growth rate does not reflect any future growth in the number of members.)

As noted in the cover letter, we recommended that the expected investment return rate be left unchanged at 8.00%, but the Board decided to increase the rate to 8.25%.

Salary increase rates were modified. A more modern mortality table was adopted. Termination rates (for causes other than death, disability and retirement) were revised. New disability and retirement rates were adopted. All of these changes were made because our analysis indicated significant differences between the prior assumptions and actual plan experience.

GASB 25 and Funding Progress

Accounting requirements for ERSRI are set by Governmental Accounting Standards Board Statement No. 25 (GASB 25). Table 4 shows a historical summary of the funded ratios and other information for ERSRI. Tables 5 and 6 show other information needed in connection with disclosure under GASB 25.

As shown on Table 4, the funded ratio for State Employees improved from 77.5% to 78.3%, but the funded ratio for Teachers decreased from 74.0% to 73.4%. The decrease for Teachers was due to the significant changes made to the actuarial assumptions.

GASB 25 requires that plans calculate an Annual Required Contribution (ARC), and, if actual contributions received are less than the ARC, this must be disclosed. The ARC must be calculated in accordance with certain parameters. In particular, it must include a payment to amortize the UAAL. This amortization payment eventually will have to be computed using a funding period no greater than 30 years, but a 40-year maximum amortization period may be used during a ten-year transition period. Further, the amortization payment included in the ARC may be computed as a level amount, or it may be computed as an amount that increases with payroll. However, if payments are computed on a level-percent of payroll approach, the payroll growth assumption may not anticipate future membership growth.

For ERSRI, the calculated contribution rates from Tables 1A and 1B are the ARCs for State Employees and Teachers, respectively. Table 5 demonstrates that the average amortization period is less than 30 years. The payroll growth rate used in the amortization calculations is set equal to the assumed inflation rate, and does not include any allowance for membership growth.

Development of Contribution Rate (State Employees)

	June 30, 1997	June 30, 1996
1. Compensation		
(a) Supplied by ERSRI	$ 425,870,695	$ 452,608,500
(b) Adjusted for one-year's pay increase	443,709,290	431,964,600
2. Actuarial present value of future compensation	2,777,739,200	3,942,792,000
3. Actuarial present value of future benefits (Table 3)	2,511,281,491	2,444,133,500
4. Unamortized frozen actuarial liability	502,116,116	444,814,700
5. Actuarial present value of future employee contributions	243,052,180	344,994,300
6. Actuarial value of assets	1,810,447,649	1,529,403,200
7. Actuarial present value of future employer normal costs (3 - 4 - 5 - 6)	(44,334,454)	124,921,300
8. Employer normal cost ((7 / 2) * 1(b))	(7,099,349)	13,693,300
9. Payroll projected for two-year delay	475,312,484	494,259,800
10. Projected contributions, adjusted for mid-year payments		
a. Normal cost	(7,605,000)	15,575,144
b. Amortization payments	48,329,996	33,152,600
c. Total	40,724,996	48,727,744
11. Employer contribution rate as percent of payroll		
a. Normal cost	-1.60%	3.14%
b. Amortization payments	10.17%	6.71%
c. Total	8.57%	9.85%

Development of Contribution Rate (Teachers)

	June 30, 1997	June 30, 1996
1. Compensation		
(a) Supplied by ERSRI	$ 573,096,816	$ 543,964,900
(b) Adjusted for one-year's pay increase	604,076,573	540,880,100
2. Actuarial present value of future compensation	5,130,105,484	5,104,249,900
3. Actuarial present value of future benefits (Table 3)	4,122,792,755	3,553,080,300
4. Unamortized frozen actuarial liability	953,031,035	767,893,900
5. Actuarial present value of future employee contributions	487,360,021	484,903,700
6. Actuarial value of assets	2,626,621,502	2,181,535,900
7. Actuarial present value of future employer normal costs (3 - 4 - 5 - 6)	55,780,197	118,746,800
8. Employer normal cost ((7 / 2) * 1(b))	6,584,435	12,602,506
9. Payroll projected for two-year delay	647,101,927	607,290,900
10. Projected contributions, adjusted for mid-year payments		
a. Normal cost	7,053,411	14,336,920
b. Amortization payments	87,683,643	55,631,992
c. Total	94,737,054	69,968,912
11. Employer contribution rate as percent of payroll		
a. Normal cost	1.09%	2.36%
b. Amortization payments	13.55%	9.16%
c. Total	14.64%	11.52%

Frozen Actuarial Accrued Liability (State Employees)

	Base	Amortization	Payment
Bases at July 1, 1997			
(a) Original	$ 499,931,028	18	$ 39,589,200
(b) 1989 base	(56,317,248)	22	(3,939,000)
(c) 1989 early retirement window	56,581,848	23	3,856,900
(d) 1991 bases			
- Assumption and Method changes	(140,630,904)	24	(9,358,900)
-1990 early retirement window	56,252,880	24	3,743,600
(e) 1990/91 deferral	8,552,304	18	677,300
(f) 1991/92 deferral	21,602,268	18	1,710,700
(g) New 1997 assumption change base	56,143,940	30	3,330,300
(h) Total	$ 502,116,116		$ 39,610,100

Frozen Actuarial Accrued Liability (Teachers)

	Base	Amortization	Payment
Bases at July 1, 1997			
(a) Original	$ 778,458,492	18	$ 61,645,600
(b) 1991 bases			
- Assumption and Method changes	(185,383,836)	18	(14,680,400)
-1990 early retirement window	138,641,760	18	10,978,900
(c) 1990/91 deferral	17,447,508	18	1,381,700
(d) 1991/92 deferral	22,389,804	18	1,773,000
(e) New 1997 assumption change base	181,477,307	30	10,764,600
(f) Total	$ 953,031,035		$ 71,863,400

Actuarial Present Value of Future Benefits (State Employees)

	June 30, 1997 (1)	June 30, 1996 (2)
1. Active members		
a. Service retirement benefits	$ 1,019,120,417	$ -
b. Deferred termination benefits	249,907,529	-
c. Refunds	47,791,221	-
d. Pre-retirement death benefits	43,777,740	-
e. Disability retirement benefits	46,147,368	-
f. Post-retirement death benefits	3,797,430	-
g. Total	$ 1,410,541,705	$ 1,379,220,600
2. Retired members		
a. Service retirements	$ 944,578,700	$ -
b. Disability retirements	45,494,953	-
c. Beneficiaries	74,966,305	-
d. Post-retirement death benefit	13,901,281	-
e. Total	$ 1,078,941,239	$ 998,442,500
3. Inactive members	$ 21,798,547	66,470,400
4. Total actuarial present value of future benefits	$ 2,511,281,491	$ 2,444,133,500

Note : Detail for 1996 not available

Actuarial Present Value of Future Benefits (Teachers)

		June 30, 1997 (1)	June 30, 1996 (2)
1.	Active members		
	a. Service retirement benefits	$ 2,278,979,325	$ -
	b. Deferred termination benefits	199,301,015	-
	c. Refunds	22,606,925	-
	d. Pre-retirement death benefits	58,962,497	-
	e. Disability retirement benefits	45,938,902	-
	f. Post-retirement death benefits	3,240,749	-
	g. Total	$ 2,609,029,413	$ 2,247,061,500
2.	Retired members		
	a. Service retirements	$ 1,419,911,290	$ -
	b. Disability retirements	28,887,126	-
	c. Beneficiaries	32,679,906	-
	d. Post-retirement death benefit	7,478,594	-
	e. Total	$ 1,488,956,916	$ 1,268,424,700
3.	Inactive members	$ 24,806,426	37,594,100
4.	Total actuarial present value of future benefits	$ 4,122,792,755	$ 3,553,080,300

Note : Detail for 1996 not available

Schedule of Funding Progress
(As required by GASB #25)

Valuation Date	Actuarial Value of Assets (AVA)	Unfunded Frozen Actuarial Liability (UFAL)	Frozen Actuarial Liability (3) + (2)	Funded Ratio (2)/(4)	Annual Covered Payroll	UFAL as % of Payroll (3)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
State Employees						
June 30, 1992	$1,056,085,500	$428,793,000	$1,484,878,500	71.1%	$418,683,300	102.4%
June 30, 1993	1,151,128,700	434,225,700	1,585,354,400	72.6%	444,572,000	97.7%
June 30, 1994	1,234,373,500	438,794,100	1,673,167,600	73.8%	454,687,000	96.5%
June 30, 1995	1,345,530,000	442,370,600	1,787,900,600	75.3%	440,574,000	100.4%
June 30, 1996	1,529,403,200	444,814,700	1,974,217,900	77.5%	452,608,500	98.3%
June 30, 1997	1,810,447,649	502,116,116	2,312,563,765	78.3%	443,709,290	113.2%
Teachers						
June 30, 1992	$1,352,892,300	$735,319,400	$2,088,211,700	64.8%	$458,958,600	160.2%
June 30, 1993	1,492,915,800	745,698,400	2,238,614,200	66.7%	473,295,000	157.6%
June 30, 1994	1,642,292,300	754,727,900	2,397,020,200	68.5%	485,325,000	155.5%
June 30, 1995	1,824,102,300	762,202,100	2,586,304,400	70.5%	507,125,000	150.3%
June 30, 1996	2,181,535,900	767,893,900	2,949,429,800	74.0%	556,114,500	138.1%
June 30, 1997	2,626,621,502	953,031,035	3,579,652,537	73.4%	604,076,573	157.8%

Determination of the Equivalent Single Amortization Period

State Employees

		Original Base	1989 Assumption Changes	1989 Early Retirement Window	1991 Assumption Changes	1990 Early Retirement Window	90/91 Deferral	91/92 Deferral	1997 Assumption Changes	Total
1.	Projected covered payroll 1999-2000									$ 475,312,484
2.	Unamortized amount	$ 499,931,028	$ (56,317,248)	$ 56,581,848	$ (140,630,904)	$ 56,252,880	$ 8,552,304	$ 21,602,268	$ 56,143,940	$ 502,116,116
3.	Remaining amortization period	18	22	23	24	24	18	18	30	
4.	Amortization factor	12.63	14.30	14.67	15.03	15.03	12.63	12.63	16.86	
5.	Amortization payment (2)/(4)	39,589,200	(3,939,000)	3,856,900	(9,358,900)	3,743,600	677,300	1,710,700	3,330,300	$ 39,610,100
6.	Payment as level % of payroll (5)/(1)	8.33%	-0.83%	0.81%	-1.97%	0.79%	0.14%	0.36%	0.70%	8.33%
7.	Weighted average amortization factor (2)/(5)									12.68
8.	Equivalent single amortization period (nearest whole year)									18

Teachers

		Original Base	1991 Assumption Changes	1990 Early Retirement Window	90/91 Deferral	91/92 Deferral	1997 Assumption Changes	Total
1.	Projected covered payroll 1999-2000							$647,101,927
2.	Unamortized amount	$ 778,458,492	$(185,383,836)	$138,641,760	$ 17,447,508	$ 22,389,804	$ 181,477,307	$953,031,035
3.	Remaining amortization period	18	18	18	18	18	30	
4.	Amortization factor	12.63	12.63	12.63	12.63	12.63	16.86	
5.	Amortization payment (2)/(4)	61,645,600	(14,680,400)	10,978,900	1,381,700	1,773,000	10,764,600	$ 71,863,400
6.	Payment as level % of payroll (5)/(1)	12.97%	-3.09%	2.31%	0.29%	0.37%	2.26%	15.12%
7.	Weighted average amortization factor (2)/(5)							13.26
8.	Equivalent single amortization period (nearest whole year)							19

Notes to Required Supplementary Information
(as required by GASB #25)

Item (1)	State Employees (2)	Teachers (3)
Valuation date	June 30, 1997	June 30, 1997
Actuarial cost method	Frozen Entry Age	Frozen Entry Age
Amortization method	Level percentage, closed	Level percentage, closed
Remaining amortization period	18 years	19 years
Asset valuation method	Market value of assets	Market value of assets
Actuarial assumptions:		
Investment rate of return *	8.25%	8.25%
Projected salary increase *	4.75% to 8.75%	4.25% to 13.25%
* Includes inflation at:	3.50%	3.50%
Cost of living adjustment	3.00%	3.00%

Plan Net Assets
(Assets at Market or Fair Value)

Item	June 30, 1997	June 30, 1996
(1)	(2)	(3)
A. Total ERSRI assets		
1. Cash and cash equivalents	$ 3,619,352	$ -
2. Receivables:		
a. Employer and member contributions	$ 23,408,132	$ -
b. Due from state for teachers	10,537,737	-
c. Net investment income and other	467	-
d. Total receivables	$ 33,946,336	$ -
3. Investments		
a. Short-term investment fund	$ 2,718,705	$ -
b. Pooled trust	4,519,456,878	-
c. Plan specific investments	27,898,511	-
d. Total	$ 4,550,074,094	$ -
4. Total assets	$ 4,587,639,782	$ -
5. Liabilities		
a. Benefits payable	$ 1,005,488	$ -
b. Accounts and vouches payable	2,995,157	-
e. Total liabilities	$ 4,000,645	$ -
7. Total market value of assets available for benefits Total (Item 4 - Item 5)	$ 4,583,639,137	$ 3,880,958,833
B. Breakdown		
1. State employees	$ 1,810,447,649	$ 1,552,758,430
2. Teachers	2,626,621,502	2,206,359,146
3. Teachers' survivors benefits	147,678,066	122,949,339
4. Reserve for certain employees	(1,108,080)	(1,108,082)
5. Total	$ 4,583,639,137	$ 3,880,958,833

Note : Detail for 1996 is not available

Reconciliation of Plan Net Assets

Item (1)	Year Ending 06/30/1997 State Employees (2)	Year Ending 06/30/1997 Teachers (3)
1. Market value of assets at beginning of year	$ 1,552,758,430	$ 2,206,359,146
2. Contributions		
a. Members	$ 39,621,974	$ 56,009,820
b. State	45,408,588	35,002,040
c. Local employers	-	48,637,680
d. Service purchases	1,028,229	332,295
e. Total	$ 86,058,791	$ 139,981,835
3. Investment earnings, net of investment and administrative expenses	$ 288,316,685	$ 422,383,132
4. Expenditures for the year		
a. Benefit payments	$ (86,308,122)	$ (109,425,700)
b. Cost-of-living adjustments	(20,602,602)	(23,666,154)
c. Post-retirement death benefits	(1,529,421)	(619,681)
d. Pre-retirement death benefits	(480,000)	(28,800)
e. Social security supplements	(3,591,553)	(7,504,646)
f. Supplemental pensions	(273,292)	(468,837)
g. Refunds	(4,263,616)	(848,753)
h. Total expenditures	$ (117,048,606)	$ (142,562,571)
5. Transfers and other adjustments	$ 362,349	$ 459,960
6. Market value of assets at end of year	$ 1,810,447,649	$ 2,626,621,502

Distribution of Assets at Market Value
(Percentage of Total Investments)

Item (1)	June 30, 1997 (2)	June 30, 1996 (3)
Cash & cash equivalents	3.7%	5.0%
U.S. government & agency securities	24.7%	32.4%
Corporate bonds & notes	5.0%	2.2%
Foreign bonds	1.0%	0.2%
U.S. equity securities	48.1%	47.1%
Foreign equity securities	12.5%	9.2%
Emerging markets equity	2.0%	0.0%
Real estate, venture capital, other	3.0%	3.9%
Total investments	100.0%	100.0%

History of Investment Return Rates

Year Ending June 30 of	Market	Actuarial
(1)	(2)	(3)
1994	4.0%	-
1995	17.0%	10.2%
1996	13.7%	13.7%
1997	19.1%	19.1%

Analysis of Change in Employer Cost

Basis	State Employees	Teachers
(1)	(2)	(3)
1. Employer fiscal 1999 cost	9.85%	11.52%
2. Impact of changes, gains and losses		
a. Liability experience (gain)/loss	0.02%	0.42%
b. Asset experience (gain)/loss	(1.46%)	(1.56%)
c. Assumption changes		
i. Investment return rate	(1.22%)	(1.62%)
ii. Mortality rates	1.19%	2.88%
iii. Termination rates	(2.26%)	(0.04%)
iv. Payroll growth rate	0.41%	1.21%
v. Salary increase rates	2.71%	1.11%
vi. Retirement and disability rates	2.09%	2.39%
vii. Other corrections, changes	1.21%	1.52%
viii. Total	4.13%	7.45%
d. Asset method change	(3.97%)	(3.19%)
e. Changes in provisions	0.00%	0.00%
f. Total	(1.28%)	3.12%
3. Employer fiscal 2000 cost	8.57%	14.64%

Membership Data (State Employees)

	June 30, 1997 (1)	June 30, 1996 (2)
1. Active members		
a. Number	12,865	12,976
b. Number vested	7,921	7,586
c. Total payroll supplied by ERSRI	$ 425,870,695	$ 452,862,400
d. Average salary	33,103	34,900
e. Average age	45.7	45.5
f. Average service	14.0	13.7
2. Inactive members		
a. Number	1,723	2,327
3. Service retirees[1]		
a. Number	7,477	7,884
b. Total annual benefits	$ 99,191,714	$ 98,203,104
c. Average annual benefit	13,266	12,456
d. Average age	72.7	72.0
4. Disabled retirees		
a. Number	559	-
b. Total annual benefits	$ 5,044,856	-
c. Average annual benefit	9,025	-
d. Average age	63.1	-
5. Beneficiaries and spouses		
a. Number	845	733
b. Total annual benefits	$ 8,069,354	$ 6,658,572
c. Average annual benefit	9,550	9,084
d. Average age	72.4	72.0

[1]The count and benefits include disabled retirees for 1996

Membership Data (Teachers)

	June 30, 1997 (1)	June 30, 1996 (2)
1. Active members		
a. Number	12,681	12,391
b. Number vested	7,113	7,251
c. Total payroll supplied by ERSRI	$ 573,096,816	$ 543,964,900
d. Average salary	45,193	43,900
e. Average age	45.1	44.9
f. Average service	15.1	15.5
2. Inactive members		
a. Number	1,148	1,173
3. Service retirees[1]		
a. Number	5,079	5,013
b. Total annual benefits	$ 135,365,186	$ 125,485,416
c. Average annual benefit	26,652	25,032
d. Average age	69.7	69.0
4. Disabled retirees		
a. Number	200	-
b. Total annual benefits	$ 3,292,722	-
c. Average annual benefit	16,464	-
d. Average age	61.7	-
5. Beneficiaries and spouses		
a. Number	233	216
b. Total annual benefits	$ 3,253,736	$ 2,908,224
c. Average annual benefit	13,965	13,464
d. Average age	69.6	69.0

[1]The count and benefits include disabled retirees for 1996

TABLE 13

Historical Summary of Active Member Data

Valuation as of June 30,	Active Members		Covered Payroll		Average Salary			
	Number	Percent Increase	Amount in $ Millions	Percent Increase	$ Amount	Percent Increase	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
State Employees								
1995	13,550	---	$451	---	33,300	---	45.1	13.0
1996	12,976	(4.2%)	453	0.4%	34,900	4.8%	45.5	13.7
1997	12,865	(0.9%)	426	(6.0%)	33,103	(5.1%)	45.7	14.0
Teachers								
1995	12,079	---	$496	---	41,100	---	44.8	15.9
1996	12,391	2.6%	544	9.6%	43,900	6.8%	44.9	15.5
1997	12,681	2.3%	573	5.4%	45,193	2.9%	45.1	15.1

Distribution of Active Members by Age and by Years of Service (State Employees)
As of 06/30/1997

	Years of Credited Service													
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35-39 Count & Avg. Comp.	40 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 25	48	21	12	7	3	3	0	0	0	0	0	0	0	94
	$9,610	$20,868	$25,359	$17,729	$22,615	$21,978	$0	$0	$0	$0	$0	$0	$0	$15,550
25-29	100	45	70	35	79	298	11	0	0	0	0	0	0	638
	$9,512	$27,261	$25,491	$28,478	$25,661	$27,462	$24,446	$0	$0	$0	$0	$0	$0	$24,199
30-34	72	50	56	46	113	668	287	22	0	0	0	0	0	1,314
	$12,105	$28,584	$31,977	$29,537	$28,665	$30,160	$28,563	$26,985	$0	$0	$0	$0	$0	$28,636
35-39	73	31	41	32	108	555	545	366	73	0	0	0	0	1,824
	$13,968	$27,654	$33,433	$33,796	$31,312	$30,352	$33,402	$31,372	$29,545	$0	$0	$0	$0	$30,921
40-44	39	27	44	46	83	492	412	507	554	77	0	0	0	2,281
	$15,415	$30,627	$31,920	$32,006	$29,190	$31,566	$34,465	$36,356	$33,823	$32,068	$0	$0	$0	$33,362
45-49	38	35	31	40	69	407	374	409	596	351	21	0	0	2,371
	$10,486	$30,528	$30,892	$34,435	$30,949	$30,817	$35,110	$38,198	$41,141	$39,938	$38,801	$0	$0	$36,519
50-54	33	24	24	20	53	366	343	343	366	318	105	5	0	2,000
	$14,516	$28,904	$33,296	$32,887	$29,126	$31,533	$32,504	$36,461	$39,686	$45,951	$40,496	$45,323	$0	$36,493
55-59	10	9	16	13	33	220	244	254	244	180	62	16	5	1,306
	$21,761	$34,314	$34,303	$25,035	$30,156	$28,652	$31,347	$34,629	$35,882	$38,597	$43,764	$37,705	$35,086	$33,950
60-64	2	3	4	5	14	126	133	146	122	77	30	7	4	673
	$15,698	$37,909	$32,037	$32,016	$31,884	$26,580	$31,567	$34,858	$36,228	$38,106	$40,272	$45,984	$32,837	$33,480
65-69	2	0	1	0	2	47	57	52	50	22	9	5	6	253
	$3,679	$0	$30,054	$0	$28,253	$31,797	$31,469	$34,110	$32,468	$39,510	$54,501	$45,659	$49,379	$34,243
70 & Over	4	0	0	0	1	6	18	28	27	14	6	5	2	111
	$3,387	$0	$0	$0	$22,454	$50,681	$30,771	$33,395	$30,911	$36,104	$37,845	$50,764	$44,332	$33,681
Total	421	245	299	244	558	3,188	2,424	2,127	2,032	1,039	233	38	17	12,865
	$12,001	$28,421	$30,496	$30,959	$29,280	$30,209	$32,733	$35,370	$37,192	$40,766	$41,656	$42,997	$40,689	$33,103

Distribution of Active Members by Age and by Years of Service (Teachers)
As of 06/30/1997

	Years of Credited Service													
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35-39 Count & Avg. Comp.	40 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 25	93 $22,342	41 $25,555	14 $29,286	1 $31,782	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	149 $23,942
25-29	233 $24,789	216 $27,041	159 $30,399	131 $31,647	82 $34,152	139 $37,319	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	0 $0	960 $29,775
30-34	88 $27,747	97 $29,454	94 $32,961	64 $33,263	63 $34,819	543 $41,445	59 $45,898	7 $43,903	0 $0	0 $0	0 $0	0 $0	0 $0	1,015 $37,675
35-39	102 $27,354	71 $33,165	58 $35,050	36 $36,988	59 $38,578	412 $43,765	218 $47,426	97 $47,010	2 $48,859	0 $0	0 $0	0 $0	0 $0	1,055 $41,529
40-44	101 $28,465	107 $33,027	77 $37,215	74 $38,161	72 $39,638	491 $45,476	235 $48,203	415 $48,820	291 $49,740	9 $49,286	0 $0	0 $0	0 $0	1,872 $44,758
45-49	147 $30,004	126 $35,957	99 $37,923	72 $40,513	74 $41,000	656 $46,151	273 $49,254	305 $49,341	988 $50,435	1,125 $51,095	37 $49,860	0 $0	0 $0	3,902 $47,815
50-54	42 $36,477	40 $40,154	40 $44,097	34 $45,270	31 $40,817	256 $48,863	173 $48,666	197 $50,122	230 $51,244	1,036 $52,027	382 $53,008	8 $57,277	0 $0	2,469 $50,588
55-59	15 $37,371	13 $43,670	14 $43,489	12 $46,073	9 $54,592	113 $47,153	74 $49,075	83 $50,511	121 $50,721	170 $51,656	211 $53,282	40 $58,295	0 $0	875 $50,773
60-64	7 $28,657	3 $34,599	3 $47,359	0 $0	3 $53,965	26 $46,350	19 $52,975	25 $49,030	50 $50,904	57 $49,801	34 $52,183	21 $53,830	3 $53,680	251 $49,782
65-69	1 $76,734	1 $20,916	2 $63,135	0 $0	2 $40,633	9 $50,344	9 $47,627	9 $48,711	11 $52,213	20 $50,158	18 $50,312	4 $52,783	9 $53,644	95 $50,551
70 & Over	0 $0	0 $0	1 $44,089	0 $0	0 $0	5 $54,787	2 $51,688	1 $29,038	6 $50,727	12 $48,082	4 $50,474	0 $0	7 $53,367	38 $50,191
Total	829 $27,432	715 $31,417	561 $35,080	424 $36,488	395 $38,375	2,650 $44,565	1,062 $48,409	1,139 $49,110	1,699 $50,470	2,429 $51,472	686 $52,796	73 $56,597	19 $53,548	12,681 $45,193

SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

I. Valuation Date

The valuation date is June 30th of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

II. Actuarial Cost Method

The actuarial valuation uses the Frozen Entry Age actuarial cost method. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) a rate that will amortize the frozen liability.

The initial frozen liability was set equal to the unfunded actuarial accrued liability, determined as of June 30, 1985, under the Entry Age Normal actuarial cost method. It is being amortized over a 30-year period from June 30, 1985. The amortization rate is determined as a level percentage of payroll. Payroll is assumed to increase at the payroll growth rate. Whenever the plan provisions or actuarial assumptions are changed, an additional frozen amount is determined, equal to the increase in the actuarial accrued liability under the Entry Age Normal method due to the change. These additional frozen amounts are either treated as new amortization bases, or combined with the initial base, or included in the normal cost calculation, as described below.

The employer normal cost rate is the level percentage of compensation that has an actuarial present value equal to (i) the actuarial present value of all future benefits, less the sum of (ii) the actuarial value of assets, (iii) the sum of the unamortized frozen liability bases, and (iv) the actuarial present value of future member contributions. Gains and losses due to plan experience differing from assumptions are included in the calculation of the employer normal cost rate.

This methodology is required by statute (General Laws Sections 36-10-2 and 36-10-2.1).

Changes to the unfunded liability due to changes to benefits or actuarial assumptions are amortized either over a new 30-year period or over the remaining initial amortization period depending on how large the total change to the unfunded liability is relative to the existing unfunded liability.

The following table illustrates the amortization method:

Change in Unfunded Liability	Amortization Period
Less than 1% of existing Unfunded	No new base setp up (existing Unfunded not changed)
Between 1% and 10% of existing Unfunded	The change to Unfunded is amortized over current remaining period i.e., aggregated with existing Unfunded
Over 10% of existing Unfunded	A separate base equal to change in Unfunded is set up and amortized over a new 30 year period

The contribution rate determined by this valuation will not be effective until two-years later, and the determination of the rate reflects this deferral. It is assumed that there will be no change in the employer normal cost rate due to the deferral, and it is assumed that payments are, on average, made at mid-year.

III. Actuarial Value of Assets

The actuarial value of assets is equal to the market value of assets.

IV. Actuarial Assumptions

A. Economic Assumptions

1. Investment return: 8.25% per year, compounded annually, composed of an assumed 3.50% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of all investment and administrative expenses.

2. Salary increase rate: A service-related component, plus a 3.50% inflation component, plus a general increase, as follows:

State Employees		
Years of Service	Service-related Component	Total Annual Rate of Increase Including 3.50% Inflation Component and 1.25% General Increase Rate
(1)	(2)	(3)
0	4.00%	8.75%
1	3.25	8.00
2	2.50	7.25
3	2.25	7.00
4	2.00	6.75
5	1.75	6.50
6	1.50	6.25
7	1.25	6.00
8	1.00	5.75
9	0.75	5.50
10	0.50	5.25
11	0.25	5.00
12	0.25	5.00
13	0.25	5.00
14 or more	0.00	4.75

Teachers		
Years of Service	Service-related Component	Total Annual Rate of Increase Including 3.50% Inflation Component and 0.75% General Increase Rate
(1)	(2)	(3)
0	9.00%	13.25%
1	7.25	11.50
2	5.75	10.00
3	4.50	8.75
4	3.50	7.75
5	2.75	7.00
6	2.25	6.50
7	1.75	6.00
8	1.50	5.75
9	1.25	5.50
10	1.00	5.25
11	0.75	5.00
12	0.50	4.75
13	0.25	4.50
14 or more	0.00	4.25

Salary increases are assumed to occur once a year, on July 1. Therefore the pay used for the period between the valuation date and the first anniversary of the valuation date is equal to the reported pay for the prior year, annualized if necessary, and then increased by the salary increase assumption.

3. Payroll growth rate: In the amortization of the unfunded frozen liability, payroll is assumed to increase 3.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

B. <u>Demographic Assumptions</u>

1. Mortality rates (for active and retired members)

   a. Healthy males – Based on the 1994 Uninsured Pensioner mortality table for males. Rates for teachers are set back one year, while rates for all others, including beneficiaries, are set forward one year.

   b. Healthy females - Based on the 1994 Uninsured Pensioner mortality table for females. Rates for teachers are set back one year, while rates for all others, including beneficiaries, are set forward one year.

   c. Disabled males - PBGC Table Va for disabled males eligible for Social Security disability benefits

   d. Disabled females - PBGC Table VIa for disabled females eligible for Social Security disability benefits.

Sample rates are shown below:

	Expected Deaths per 100 Lives					
Age	Healthy Males (Non-teachers)	Healthy Females (Non-teachers)	Healthy Males (Teachers)	Healthy Females (Teachers)	Disabled Males	Disabled Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)
25	0.08	0.03	0.07	0.03	4.83	2.63
30	0.09	0.04	0.08	0.04	3.62	2.37
35	0.09	0.06	0.09	0.05	2.78	2.14
40	0.12	0.08	0.11	0.07	2.82	2.09
45	0.19	0.11	0.16	0.10	3.22	2.24
50	0.31	0.17	0.25	0.14	3.83	2.57
55	0.53	0.28	0.43	0.22	4.82	2.95
60	0.97	0.55	0.76	0.42	6.03	3.31
65	1.75	1.04	1.39	0.82	6.78	3.70
70	2.79	1.61	2.34	1.37	7.39	4.11
75	4.39	2.72	3.66	2.19	8.42	4.92
80	7.38	4.73	6.01	3.80	11.28	7.46

2. Disability rates: Disability is assumed to occur in accordance with the following table, with 35% of disability being occupational.

	Expected Disabilities per 100 Lives	
Age	State	Teachers
(1)	(2)	(3)
25	.05	.02
30	.06	.03
35	.08	.04
40	.11	.06
45	.18	.09
50	.31	.15
55	.51	.25
60	.71	.35
65	.00	.00

3. Termination rates (for causes other than death, disability or retirement):

Termination rates are a function of the member's sex, age and service. Termination rates are not applied after a member becomes eligible for a retirement benefit. Rates at selected ages are shown:

	Active Male Members - State Employees					
	Years of Service					
Age	0	1	2	3	4	5+
20	0.3610	0.2686	0.2050	0.1671	0.1468	0.0932
25	0.3438	0.2483	0.1797	0.1339	0.1127	0.0660
30	0.3310	0.2161	0.1441	0.0970	0.0824	0.0495
35	0.3379	0.2064	0.1214	0.0729	0.0624	0.0438
40	0.3618	0.2153	0.1095	0.0592	0.0520	0.0503
45	0.3990	0.2428	0.1103	0.0564	0.0514	0.0696
50	0.4469	0.2891	0.1249	0.0645	0.0606	0.1016
55	0.5036	0.3540	0.1536	0.0832	0.0793	0.1451
60	0.5688	0.4371	0.1965	0.1122	0.1074	0.1999
65	0.6421	0.5391	0.2548	0.1529	0.1458	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	Active Female Members - State Employees					
	Years of Service					
Age	0	1	2	3	4	5+
20	0.3082	0.2069	0.1681	0.1567	0.1354	0.1282
25	0.2346	0.1696	0.1429	0.1283	0.1111	0.0916
30	0.1865	0.1459	0.1237	0.1068	0.0931	0.0671
35	0.1620	0.1348	0.1117	0.0936	0.0830	0.0554
40	0.1572	0.1343	0.1089	0.0915	0.0833	0.0574
45	0.1684	0.1427	0.1169	0.1023	0.0958	0.0734
50	0.1927	0.1589	0.1391	0.1322	0.1251	0.1046
55	0.2286	0.1802	0.1636	0.1547	0.1412	0.1151
60	0.2515	0.1974	0.1778	0.1677	0.1537	0.1256
65	0.2743	0.2151	0.1936	0.1824	0.1667	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

3. Termination rates (continued):

	Active Male Members – Teachers					
	Years of Service					
Age	0	1	2	3	4	5+
20	0.0883	0.0421	0.0360	0.0308	0.0276	0.0203
25	0.0718	0.0360	0.0324	0.0300	0.0269	0.0143
30	0.0614	0.0312	0.0309	0.0312	0.0284	0.0100
35	0.0458	0.0321	0.0319	0.0304	0.0271	0.0115
40	0.0431	0.0373	0.0354	0.0334	0.0315	0.0211
45	0.0660	0.0498	0.0471	0.0417	0.0392	0.0368
50	0.1067	0.0759	0.0658	0.0521	0.0491	0.0577
55	0.1653	0.1107	0.0914	0.0663	0.0623	0.0834
60	0.2419	0.1472	0.1128	0.0763	0.0698	0.0917
65	0.2660	0.1596	0.1222	0.0834	0.0765	0.1009
70	0.2927	0.0000	0.0000	0.0000	0.0000	0.0000

	Active Female Members -Teachers					
	Years of Service					
Age	0	1	2	3	4	5+
20	0.0787	0.0603	0.0551	0.0525	0.0503	0.0565
25	0.0709	0.0546	0.0511	0.0503	0.0501	0.0340
30	0.0491	0.0463	0.0437	0.0425	0.0415	0.0159
35	0.0381	0.0379	0.0376	0.0379	0.0380	0.0105
40	0.0435	0.0413	0.0395	0.0392	0.0357	0.0133
45	0.0509	0.0452	0.0435	0.0369	0.0322	0.0247
50	0.0781	0.0710	0.0552	0.0321	0.0280	0.0429
55	0.1199	0.1096	0.0729	0.0254	0.0219	0.0673
60	0.1769	0.1527	0.0936	0.0263	0.0249	0.0815
65	0.2141	0.1647	0.1083	0.0308	0.0281	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4. Retirement rates: Separate male and female rates, based on age. Sample rates are shown below:

	Expected Retirements per 100 Lives			
	State Employees		Teachers	
Age	Males	Females	Males	Females
(1)	(2)	(3)	(4)	(5)
45	10	10	10	5
46	10	10	10	5
47	10	10	10	5
48	10	10	10	5
49	10	10	10	5
50	10	10	11	6
51	11	11	12	7
52	12	12	13	8
53	13	13	14	9
54	14	14	15	10
55	16	15	16	12
56	18	16	17	14
57	20	17	18	16
58	22	18	19	18
59	24	19	20	20
60	35	40	40	30
61	15	15	15	20
62	35	40	45	25
63	25	25	15	20
64	20	20	25	25
65	35	40	50	40
66	20	20	25	25
67	20	20	25	25
68	20	20	25	25
69	20	20	25	25
70	100	100	100	100

C. Other Assumptions

1. Percent married: 100% of employees are assumed to be married.

2. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.

3. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.

4. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit, whichever is more valuable at the time of termination.

5. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available.

6. Administrative expenses: The assumed investment return rate represents the anticipated net return after payment of all investment and administrative expenses.

7. Inactive members: Liabilities for inactive members were approximated as a multiple of their member contribution account balances. For nonvested members, the multiple was one, and for vested inactive members, the multiple was between three and eight, depending on age and service.

D. Participant Data

Participant data was supplied on magnetic tape for active and inactive members and for members and beneficiaries receiving benefits.

The data for an active members included birthdate, sex, equated date of hire, salary and employee contribution account balance. For retired members and beneficiaries, the data included date of birth, sex, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and a form of payment code.

Salary supplied for the current year was based on the earnings for the June preceding the valuation date. This salary was adjusted by the salary increase rate for one year.

Assumptions were made to correct for missing, bad, or inconsistent data. These had no material impact on the results presented.

Summary of Benefit Provisions

1. Effective Date and Authority: The Employees' Retirement System of Rhode Island (ERSRI) became effective on July 1, 1936 for state employees and on July 1, 1949 for teachers. Benefits for state employees are described in Rhode Island General Laws, Title 36, Chapters 8-10, and benefits for teachers are described in Rhode Island General Laws, Title 16, Chapters 15-17.

2. Plan Year: A twelve-month period ending June 30th.

3. Administration: ERSRI is administered by the Employees' Retirement Board. However, the State Treasurer is responsible for the investment of the trust assets, including the establishment of the asset allocation policy.

4. Type of Plan: ERSRI is a qualified governmental defined benefit retirement plan. Separate contribution rates are determined for state employees and for teachers. For Governmental Accounting Standards Board purposes, it is a cost-sharing multiple employer plan.

5. Eligibility: Most Rhode Island state employees and certified public school teachers participate in ERSRI. State police officers, state judges, and teachers and administrators in the public colleges and universities are covered by their own separate systems, and are therefore excluded. Certain elected state officials are excluded unless they make an election to join ERSRI. Superintendents, principals, business agents and other administrators participate as teachers. Non-certified public school employees, such as teacher's aides, janitors, secretaries, and bus drivers, cannot participate in ERSRI, although they may be covered by the Municipal Employees Retirement System (MERS) or a separate plan maintained by the town or city. Eligible employees become members at their date of employment.

6. Employee Contributions: State employees generally contribute 8.75% of their salary per year, although members of the General Assembly who elect to participate contribute 30.0% of salary per year. Teachers contribute 9.50% per year. The state "picks up" the members' contributions for its employees under the provisions of Internal Revenue Code (IRC) Section 414(h). At their option, the city or town employing a teacher may also pick up their members' contributions.

7. Salary: Salary includes the member's base earnings plus any payments under a regular longevity or incentive plan. Salary excludes overtime, unused sick and vacation leave, severance pay, and other extraordinary compensation. Certain amounts that are excluded from taxable wages, such as amounts sheltered under a Section 125 plan or amounts picked up by the employer under IRC Section 414(h), are not excluded from salary.

8. Employer Contributions: For state employees, the state contributes an actuarially determined percentage of the member's salary. For teachers, the state contributes 40% of the employer contribution rate and the city, town or other local employer contributes the remaining 60%. (This basic 40-60 split is further adjusted, since the state bears the cost of repaying certain amounts taken from the trust in the early 1990's.) Contributions determined in a given actuarial valuation go into effect two years after the actuarial valuation.

9. Service: Employees receive credit for service while a member. In addition, a member may purchase credit for certain periods, such as time spent teaching at a public school in another state, by making an additional contribution to purchase the additional service. Special rules and limits govern the purchase of additional service and the contribution required.

10. Final Average Compensation (FAC): The average of the member's highest three consecutive annual salaries. Monthly benefits are based on one-twelfth of this amount.

11. Retirement

    a. Eligibility: All members are eligible for retirement on or after age 60 if they have credit for 10 years of service, or at any age if they have credit for 28 years of service. Correctional officers are also eligible for retirement if they have reached age 50 and have credit for 20 years of service. Members of the General Assembly who elect to participate may are eligible for retirement if they have reached age 55 and have credit for 8 years of service, or at any age if they have credit for 20 years of service.

b. Monthly Benefit: For most state employees and for all teachers, the retirement benefit is a percentage of the member's monthly FAC. This percentage is a function of the member's service, determined using the following schedule:

For Service In:	Years	Benefit Percentage Earned
The first 10 years of service	1 – 10	1.7% per year
The next 10 years of service	11 – 20	1.9% per year
The next 14 years of service	21 – 34	3.0% per year
The next 1 year of service	35	2.0% per year

The maximum benefit is 80% of FAC.

Correctional Officers receive a benefit computed under a different formula:

For Service In:	Years	Benefit Percentage Earned
The first 30 years of service	1 – 30	2.0% per year
The next 1 year of service	31	6.0% per year
The next 1 year of service	32	5.0% per year
The next 1 year of service	33	4.0% per year
The next 1 year of service	34	3.0% per year
The next 14 years of service	35	2.0% per year

The maximum benefit for correctional officers is also 80% of FAC.

Finally, members of the General Assembly who elect to participate receive $50 per month for each year of service, up to a maximum benefit of $1,000 per month, i.e., a maximum of 20 years of service.

c. Payment Form: Benefits are paid as a monthly life annuity. Optional forms of payment are available; see below.

d. Death benefit: After retirement, death benefits are based on the form of annuity elected. If no option is elected, i.e., if payments are made as a life annuity, there is a minimum death benefit equal to the sum of the member's contributions without interest, less the sum of the monthly benefit payments made before the member's death. In addition, a lump-sum death benefit is payable upon the death of any retired member, regardless of option elected. This lump sum is equal to a percentage of the lump-sum death benefit that was available to the member at the time of retirement. The percentage is 100% in the first year of retirement, 75% in the second year, 50% in the third year, and 25% in the fourth and subsequent years of retirement. However, in no event will the lump sum death benefit be less than $4,000.

12. Disability Retirement

a. Eligibility: A member is eligible provided he/she has credit for at least five years of service or if the disability is work-related.

b. Ordinary Disability Benefit: The benefit payable under the retirement formula, using FAC and service at the time of disability, but not less than 10 years of service.

c. Occupational Disability Benefit: An annual annuity equal to two-thirds of salary at the time of disability.

d. Payment Form: The disability benefit commences immediately upon the member's retirement. Benefits cease upon recovery or reemployment. Disability benefits are payable as a monthly life annuity with a guarantee that, at the member's death, the sum of the member's contributions plus interest as of the date of retirement will be paid in a lump-sum to the member's beneficiary. All alternative forms of payment except for the Social Security Option are permitted in the case of disability retirement.

13. Deferred Termination Benefit

a. Eligibility: A member with at least ten years of service (eight years for members of the general Assembly) is vested. A vested member who does not withdraw his/her contributions from the fund is eligible for a deferred termination benefit.

b. Monthly Benefit: The monthly benefit is based on the retirement formula described above. Both FAC and service are determined at the time the member leaves active employment. Benefits may commence at age 60 or at such earlier age that the member has met the requirements for a retirement benefit.

c. Payment Form: The same as for Retirement above.

d. Death Benefit before retirement: A member who dies after leaving active service but before retiring is entitled to receive a benefit as described below in item 15.

e. Death Benefit after Retirement: The same as for Retirement above.

14. Withdrawal (Refund) Benefit

a. Eligibility: All members leaving covered employment with less than ten years of service are eligible. Optionally, vested members (those with ten or more years of service) may withdraw their accumulated contributions in lieu of the deferred benefits otherwise due.

b. Benefit: The member who withdraws receives a lump-sum payment of equal to the sum of his/her employee contributions. No interest is credited on these contributions.

15. Death Benefit of Active or Inactive Members

a. Eligibility: Death must have occurred while an active or an inactive, non-retired member.

b. Basic Benefit: Upon the death of a nonvested member, or upon the death of an inactive, vested member, or upon the death of an active, unmarried member, a refund of the member's contributions (without interest) is paid. Upon the death of a vested, married, active member, the spouse may elect (i) the refund benefit described above, or (ii) a life annuity paid to the spouse or beneficiary. The amount of the annuity is equal to the amount which would have been paid had the member retired at the time of his death and elected the Joint and 100% Survivor option. If the member was not eligible for retirement, the annuity benefit is reduced 6% per year from the date at which the member would have been eligible had he or she remained in service.

c. Lump-sum Benefit: $800 per year of service, with a maximum benefit of $16,000 and a minimum of $4,000.

d. Accidental Duty-related Death Benefit: If a member dies as the result of an accident while in the course of his or her duties, in lieu of the above benefits the member's spouse may elect to receive (i) a refund of all contributions made (including interest), and (ii) an annual life annuity equal to 50% of the member's salary at the time of death. The annuity benefit stops when the spouse remarries or dies, although it may be continued to any children under age 18 or to any dependent parents.

16. Optional Forms of Payment: In addition to a life annuity, ERSRI offers members these optional forms of payment on an actuarially equivalent basis:

a. Option 1 (Joint and 100% Survivor) - A life annuity payable while either the participant or his beneficiary is alive.

b. Option 2 (Joint and 50% Survivor) - A life annuity payable to the member while both the member and beneficiary are alive, reducing to 50% of this amount if the member predeceases the beneficiary.

c. Social Security Option – An annuity paid at one amount prior to age 62, and at a reduced amount after age 62, designed to provide a level total income when combined with the member's age 62 Social Security benefit. Benefits cease upon the member's death.

Actuarial equivalence is based on tables adopted by the Employees' Retirement Board.

17. Post-retirement Benefit Increase: Members receive a 3% compound increase in their retirement benefit each year, beginning January 1 following the third anniversary of the member's retirement. This increase is not tied in any way to actual increases in the cost of living.