

**ACTUARIAL VALUATION OF THE  
EMPLOYEES' RETIREMENT SYSTEM  
OF THE STATE OF RHODE ISLAND**

**AS OF JUNE 30, 1996**

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## HIGHLIGHTS

The following table presents highlighted results.

	<u>State Employees Plan</u>	<u>Teachers Plan</u>
Employer Contribution Rate	9.85%	11.52% *
Employee Contribution Rate	8.75%	9.50%
Market Value of Assets	\$ 1,529,403,211	\$ 2,181,535,867
Actuarial Value of Assets	1,529,403,211**	2,181,535,867**
Unfunded Liability	\$ 444,814,700	\$767,893,900
Unfunded Liability Cost	31,877,500	53,492,300
Unfunded Liability Cost (% of payroll)	6.71%	9.16%
Employer Normal Cost as a % of payroll (net of Employee Contributions)	3.15%	2.36%
Estimated Projected Payroll for Fiscal 1999	\$494,259,800	\$607,290,900
Estimated Employer Pension Contribution for Fiscal 1999 (adjusted for monthly payment)	\$ 48,727,700	\$ 69,968,900***
Estimated Employee Pension Contribution for Fiscal 1999 (adjusted for monthly payment)	\$44,977,600	60,000,300
Estimated Employer Contribution for Postretirement Medical Benefits for Fiscal 1999	\$ 4,620,000	--

\* State portion: 4.90%

\*\* Reflects change in asset valuation method effective June 30, 1996

\*\*\* State portion: \$29,757,300

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## SECTION I - SUMMARY OF VALUATION RESULTS

### Contribution Requirements

#### Retirement Income

The contribution requirements for fiscal 1999 for the State Employees' Retirement Plan and the Teachers' Retirement Plan are set out below. Effective with this June 30, 1996 valuation, the actuarial value of assets was re-established at market value. For comparison the contribution requirements for the previous two fiscal years are also shown.

	<u>Fiscal 1999</u>	<u>Fiscal 1998</u>	<u>Fiscal 1997</u>
<b>State Employees Plan:</b>			
Normal Cost	11.89%	12.98%	12.69%
Unfunded Liability Cost	<u>6.71%</u>	<u>6.60%</u>	<u>6.11%</u>
Total Cost	18.60%	19.58%	18.80%
Less Employee Contribution	<u>8.75%</u>	<u>8.75%</u>	<u>8.75%</u>
Employer Cost*	9.85%	10.83%	10.05%
<b>Teachers Plan:</b>			
Normal Cost	11.86%	14.14%	14.46%
Unfunded Liability Cost	<u>9.16%</u>	<u>9.61%</u>	<u>9.61%</u>
Total Cost	21.02%	23.75%	24.07%
Less Employee Contribution	<u>9.50%</u>	<u>9.50%</u>	<u>9.50%</u>
Employer Cost	11.52%	<u>14.25%</u>	14.57%

- \* The employer pension cost is calculated based on an employee contribution rate of 8.75% of salary. We have therefore assumed that the State will pay the entire cost for retiree medical benefits. Any funds contributed to a 401(h) account have been ignored in determining the contribution results shown above.

In 1993 the Retirement Board elected to compute future fiscal year costs one extra year in advance to assist the fiscal budget process. Therefore employer costs for fiscal years ending in 1997, 1998, and 1999 are based on the valuation results and data as of June 30, 1994, June 30, 1995, and June 30, 1996 respectively.

For fiscal 1999, the Teachers' Plan rate is to be paid 40% by the State and 60% by the cities and towns. The overall rate of 11.52% includes the cost of State contribution deferrals in prior fiscal years. The deferral represents 0.48% of the rate and is payable by the State. The cities' and towns' share is therefore 60% of 11.04%, or 6.62%, and the State will contribute the balance of the 11.52%, or 4.90%.

## **SECTION I - Summary of Valuation Results (cont'd)**

### **Towns which did not Participate in the 1990 Early Retirement Incentive Program**

There were a number of towns which did not participate in the 1990 early retirement incentive program. These were:

Code Number:	2003	Burillville
	2009	East Greenwich
	2018	Little Compton
	2022	New Shoreham
	2025	North Smithfield

As a result the contribution requirement for these towns is reduced by the cost of the early retirement incentive program. The overall contribution requirement for fiscal 1999 of the group is 9.87% (i.e., 11.52% minus the cost of the 1990 early retirement incentive program of 1.65%) and, as above, the State will meet the full cost of prior fiscal year deferrals of 0.48%. The contribution for these towns is therefore 5.63% and the State contributes the balance of 4.24%.

### **Plan Experience**

The employer costs for fiscal 1999 have changed from the costs for fiscal 1998 due to a number of factors:

#### **State Employees**

- Average pay increased by 7.17% for State Employees employed continuously throughout the entire year versus the assumed rate of 4.5%. This caused costs to increase by approximately 1.0% of payroll. It should be noted that much of this pay increase can be attributed to the fact that pay was reported in a different manner this year than last. The pay reported this year includes anticipated increases for the fiscal year beginning on the valuation date, whereas the pay reported for the prior year did not.
- The actuarial value of assets prior to being re-established (utilized to calculate the employer contribution) returned 11.4% for the year compared with an expected return of 8% - this leads to a reduction in the employer cost for State Employees of approximately 1.1% of payroll. Re-establishment of the actuarial value of assets at market value reduced the employer cost by 1.48% of payroll.

## **SECTION I - Summary of Valuation Results (cont'd)**

- Demographic experience caused the employer cost to increase by approximately 0.5% of payroll. This experience included fewer retirements than expected and more staff turnover than expected, and increases in average age and service.
- Total payroll increased less than expected. Since the unfunded liability cost increases each year by the expected rate of increase in payroll, the smaller than expected payroll caused an increase of approximately 0.1% in the unfunded liability cost as a percentage of actual payroll.
- In conclusion, the net effect of the plan experience caused the employer cost to decrease by 0.98% from 10.83% to 9.85% of payroll.

### **Teachers**

- Average pay increased by 5.6% for Teachers employed continuously throughout the entire year, versus the assumed rate of 4.5%. This factor leads to an increase in cost of approximately 1.0% of payroll.
- The actuarial value of assets prior to being re-established returned 11.4% for the year compared with an expected return of 8% - this leads to a reduction in the employer cost for Teachers of approximately 1.3% of payroll. Re-establishment of the actuarial value of assets at market value reduced the employer cost by 2.85% of payroll.
- Demographic experience caused the employer cost to increase by approximately 0.9% of payroll. These changes included slightly more retirements and pensioner deaths than expected, but significantly fewer terminations than expected.
- Total payroll increased more than expected. Since the unfunded liability cost increases each year by the expected rate of increases in payroll, the greater than expected payroll caused a decrease of approximately 0.5% in the unfunded cost as a percentage of actual payroll.
- In conclusion, the net effect of the plan experience for Teachers caused the employer cost to decrease by 2.73% from 14.25% to 11.52% of payroll.

When assessing the relative impact of the above factors, it is appropriate to compare year to year changes in the total cost of benefits including employee contributions. When looked at in this manner, the change from year to year is a smaller proportion of the total cost than the change in the employer cost net of employee contributions. Due to the fact that employee contributions are a constant percentage of payroll, any gains or losses are passed on to the employer's share of the cost.

**SECTION I - Summary of Valuation Results (cont'd)**

**Funded Status of the System**

There are several measures commonly used to describe the funded status of the plan. The following tables summarize two measures which are described below.

**Projected Benefits/Actuarial Asset Value**

The ratio of assets to the projected benefit liability (under the Entry Age Normal Actuarial Funding Method) compares the actuarial value of assets to the value of accrued benefits with projected salary increases to retirement.

The projected benefit ratio increased between 1995 and 1996. This is mainly attributable to the re-establishment of the actuarial value of assets at market value, and contributions and investment return in excess of the value of benefits attributable to the prior year with projected salary increases to retirement.

	<b><u>Ratio of Assets to Liabilities</u></b>		
	<b><u>June 30, 1996</u></b>	<b><u>June 30, 1995</u></b>	<b><u>June 30, 1994</u></b>
<b>State Employees</b>	72.47%	68.52%	64.85%
<b>Teachers</b>	71.24%	65.04%	61.15%

**Vested Benefits/Market Value of Assets**

The ratio of assets to the vested benefit liability compares the value of vested benefits to the market value of assets. Vested benefits are:

- Participants with more than 10 years of service and pensioners - value of accrued benefit but not less than the value of accumulated employee contributions.
- Participants with less than 10 years of service - value of accumulated employee contributions.

## **SECTION I - Summary of Valuation Results (cont'd)**

The vested benefit ratio has increased since the last year. For this ratio, salaries are not projected and liabilities are compared to the market value of assets. The increase in the ratio reflects the better than anticipated asset return. The market value of assets returned approximately 13.72% compared with an assumed return of 8%.

	<b>Ratio of Assets to Liabilities</b>		
	<b><u>June 30, 1996</u></b>	<b><u>June 30, 1995</u></b>	<b><u>June 30, 1994</u></b>
<b>State Employees</b>	85.35%	82.51%	81.04%
<b>Teachers</b>	85.02%	82.06%	78.34%

### **The Early Retirement Incentive Program of 1989**

The incentive program allowed participants with 25 or more years of service (or if over age 60, 10 or more years of service) to retire and receive a 10% enhancement in their benefit service. The program was only available to State employees and approximately 750 State employees took the incentive offered. The cost of the incentive is spread over 30 years, as a dollar amount which will increase in proportion with expected payroll (see Appendix for a description of the funding method) commencing in fiscal year 1992. The cost of the program is 0.70% of payroll.

### **The Early Retirement Incentive Program of 1990**

Unlike the 1989 program, the 1990 program was available to both State employees and Teachers. Participants with 23 or more years of service could retire and receive a 10% enhancement in their benefit service. In addition, the benefit was based on the final year's salary (rather than a three year average). Approximately 500 State employees and 800 Teachers retired under the 1990 incentive program.

For the State Employees' Plan, the cost of the incentive is spread over 30 years, as a dollar amount which will increase in proportion with expected payroll, commencing in the fiscal year 1993. The cost for the State Employees' Plan is 0.67% of payroll.



## SECTION I - Summary of Valuation (cont'd)

For the Teachers' Plan, the cost is spread over a 24 year period (see Exhibit III for a description of the funding method) commencing in the fiscal year 1993 and is equal to 1.65% of payroll.

### Assets of the Retirement System

Section III describes the assets of the retirement system, analyzes the cash flow during the previous fiscal year and shows the proportion of funds invested in each of the major investment categories.

The table below provides a plan year summary of certain key statistics of the performance and transactions of the retirement fund:

	<u>7/1/95 to 6/30/96</u>	<u>7/1/94 to 6/30/95</u>	<u>7/1/93 to 6/30/94</u>
<b>Dollar-weighted return on market value of assets*</b>	13.7%	17.0%	4.0%
<b>Market Value of Assets at end of period</b>	\$ 3,828,916,000	\$ 3,388,547,000	\$ 2,916,977,000
<b>Actuarial Value of Assets at end of period</b>	\$ 3,828,916,000**	\$ 3,266,316,000	\$ 2,965,214,000
<b>Total Contribution</b>	\$ 218,555,000	\$ 223,395,000	\$ 203,025,000
<b>Total Benefit Payments</b>	\$ 241,528,000	\$ 224,690,000	\$ 211,050,000

The return achieved by the fund should be compared with the assumed return of 8%.

\* Estimated investment return as calculated by Mercer.

\*\* Reflects change in asset valuation method effective with the June 30, 1996 valuation.

## **SECTION I - Summary of Valuation (cont'd)**

The actuarial value of assets recognizes one-third of the investment gains or losses in excess of the assumed return of 8% and also a one-third portion of previous gains or losses as yet unrecognized. As a result, the actuarial value of assets of the fund returned approximately 11.4% during fiscal 1996, prior to being re-established at market value. Future years' investment gains and losses will continue to be spread over a three year period, thereby helping to reduce volatility in the plan's contribution requirements.

The contribution income was still less than the benefit outgo during fiscal 1996. The shortfall of contribution income against benefit outgo of \$ 23.0 million was more than in previous years. However, the income from investments, when accumulated with contributions received, exceeded the net outgo by \$ 350.3 million (see Table 4) and therefore monies were available for reinvestment.

### **Actuarial Method and Assumptions**

Exhibit III describes the actuarial method adopted to calculate the contribution requirement and also the assumptions utilized in the calculation. There were no changes in the method and assumptions as of June 30, 1996 utilized to determine plan costs.

### **Plan Benefit Structure**

The plan benefit structure is described in detail in Exhibit IV. There have been no changes to the standard benefit provisions since the June 30, 1995 valuation.

**SECTION II - EMPLOYEE DATA**

**Active Employees**

The pertinent information for active employees as of June 30, 1996, can be summarized as follows:

	<u>State Employees</u>		<u>Teachers</u>	
	<u>June 30, 1996</u>	<u>June 30, 1995</u>	<u>June 30, 1996</u>	<u>June 30, 1995</u>
<b>Number of Covered Employees</b>	12,976	13,550	12,391	12,079
<b>Average Annual Salary</b>	\$34,900	\$33,300	\$43,900	\$41,100
<b>Average Age (years)</b>	45.5	45.1	44.9	44.8
<b>Average Service (years)</b>	13.7	13.0	15.5	15.9
<b>Number of Vested Active Employees</b>	7,586	7,656	7,251	7,474
<b>Number of Employees Eligible for Retirement</b>	1,300	1,343	1,497	1,053

Please note that below we discuss the change in the average salary level for all employees. In Section I we discussed the increase in the average salary level for employees who were participants on both June 30, 1995 and June 30, 1996. The cost of benefits is directly impacted by the increase to salaries for the group of employees who were employed continuously during the plan year.

The average annual salary for State employees rose from \$33,300 to \$34,900. This represents an increase of 4.80%, and is down from the 6.4% average increase from June, 1994 to June, 1995. Average age for State employees increased by 0.4 years, and average years of service increased by 0.7 years. There were 574 fewer employees at June 30, 1996 than at June 30, 1995. The increase in average salary for the remaining employees indicates that much of the attrition affected lower paid shorter service employees.

The average annual salary for Teachers increased from \$41,100 to \$43,900 or 6.8%. The average age for Teachers increased by 0.1 years, and average years of service decreased by 0.4 years.

There were 312 more employees at June 30, 1996 than at June 30, 1995 despite significant turnover. Given the distortion in average pay discussed on page 3, the increase in average pay indicates that new employee's salaries are less than those who left employment.

## **SECTION II - Employee Data (cont'd)**

Missing data was estimated by using averages for similar employees with available data. For example, a person missing a date of hire, would be given an estimated date of hire based upon his date of birth compared to other similar employees. For active employees missing salaries, employee contribution balances and prior salary history were used to calculate estimated salaries. In our opinion, in light of the large populations we are dealing with and the reliability of our estimation techniques, the amount of missing data that required estimation does not have a material impact on the results of the valuation.

Tables 1A and 1B provide a distribution of employees by age and service for State employees and Teachers, respectively.

**SECTION II - Employee Data (cont'd)**

**Retirees and Beneficiaries**

The data provided for analysis of retiree and beneficiary liability included date of retirement, sex, monthly benefit, type of benefit, and payment option. The more significant statistics for retirees and beneficiaries are summarized as follows:

	<u>State Employees</u>		<u>Teachers</u>	
	<u>June 30, 1996</u>	<u>June 30, 1995</u>	<u>June 30, 1996</u>	<u>June 30, 1995</u>
<b>Pensioners</b>				
Number	7,884	7,967	5,013	4,804
Average Age	72.0	71.6	69.0	69.9
Average Monthly Benefit	\$1,038	\$991	\$2,086	\$1,977
<b>Beneficiaries</b>				
Number	733	682	216	207
Average Age	72.0	71.9	69.0	68.8
Average Monthly Benefit	\$757	\$736	\$1,122	\$1,062

The number of pensioners and beneficiaries decreased by 0.4% for the State Plan and increased by 4.4% for the Teachers Plan. Average benefits grew by 4.4% for the State Plan and by 5.5% for the Teachers' Plan. The increases in average benefits are partly attributable to the Cost of Living Adjustments and partially attributable to retirees retiring with larger benefits than in prior years.

Tables 2A and 2B show distributions for pensions in payment status as of June 30, 1996 by age and pension type. These tables also indicate total monthly pension payments by age, average payments by age, and total monthly payments by type.

Table 1A - Distribution of State Employees in Active Service

Age	Years of Service and Average Annual Earnings										Total			
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+					
0-19	2											2	\$18,900	
20-24	71	5											76	\$22,826
25-29	281	351	2										634	\$29,422
30-34	332	694	255	28									1,309	\$31,185
35-39	277	622	487	371	73								1,830	\$33,141
40-44	275	533	353	542	536	53							2,292	\$34,631
45-49	238	458	363	456	603	308	13						2,439	\$37,987
50-54	166	380	317	358	337	253	64	1					1,876	\$37,851
55-59	92	261	229	249	265	124	46	14	2				1,282	\$35,017
60-64	34	153	152	187	140	77	26	8	3				780	\$34,623
65-69	11	67	71	84	55	15	11	7	7				328	\$34,781
70-74	3	11	18	27	18	10	6	3	2				98	\$34,956
75+	20,830	\$42,752	\$30,186	\$32,947	\$38,655	\$34,954	\$37,220	\$34,143	\$44,441				30	\$31,580
	2	2	5	7	11	1	1	2	1				30	\$31,580
	\$17,553	\$17,553	\$27,379	\$33,013	\$28,857	\$29,615	\$28,236	\$65,068	\$38,891				\$31,580	\$31,580
Total	1,782	3,537	2,252	2,309	2,038	841	167	35	15				12,976	\$34,880
Average Pay	\$31,000	\$31,605	\$34,466	\$36,559	\$38,745	\$41,582	\$44,929	\$44,327	\$37,523				\$34,880	\$34,880

Table 1B - Distribution of Teachers in Active Service

Years of Service and Average Annual Earnings

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
0-19										0
20-24	99 20,401									99 20,401
25-29	644 25,691	184 34,868								828 27,730
30-34	293 27,176	589 38,817	78 44,243	2 43,094						962 35,720
35-39	339 27,878	446 41,295	232 45,950	99 45,351	4 43,115					1,120 38,563
40-44	315 31,196	584 42,233	248 46,366	463 47,304	392 48,229	14 48,542				2,016 43,391
45-49	251 33,603	566 44,131	287 47,279	305 47,872	1,026 49,056	1,298 49,405	38 48,547			3,771 47,172
50-54	114 34,575	238 45,302	166 47,081	150 48,401	251 49,830	959 50,633	391 51,757	10 52,621		2,279 48,980
55-59	41 37,276	108 45,250	65 48,553	77 48,320	119 49,781	175 49,919	207 52,389	69 55,070	1 52,095	862 49,476
60-64	12 36,765	26 44,067	20 50,388	24 48,066	66 49,050	66 50,311	41 50,238	22 53,969	6 52,427	283 49,002
65-69	5 21,656	8 39,986	8 47,214	11 49,009	17 52,912	32 48,976	20 49,600	9 48,837	7 56,266	117 48,180
70-74	1 43,446	4 49,244	2 49,472	3 57,165	6 48,808	15 48,875	3 56,112	1 47,311	5 53,667	40 50,520
75+	9 24,846	1 48,435	1 47,954	1 47,671	1 47,671	1 27,120			1 47,976	14 31,626
Total	2,123	2,754	1,107	1,134	1,882	2,560	700	111	20	12,391
Average Pay	28,509	41,655	46,687	47,552	49,053	49,902	51,638	54,056	53,842	43,914

Table 2A - Distribution of Pensioners - State Employees

Number of Pensioners and Total Monthly Pensions Paid by Age

Age	Pension Type							Total by Age	Percent of Pensioners/ Average Pension
	Service Retirements	Beneficiaries	Legislator's Pension	Accidental Disabilities	Ordinary Disabilities	Total by Age	Percent of Pensioners/ Average Pension		
< 30	0	3	0	1	0	0	4	0.05%	
	\$	\$ 2,595	\$ 0	\$ 1,528	\$ 0	\$ 0	\$ 4,123	\$ 1,030.75	
30-39	0	3	0	18	7	0	28	0.32%	
	\$	\$ 4,075	\$ 0	\$ 29,427	\$ 2,631	\$ 0	\$ 36,133	\$ 1,290.46	
40-49	32	37	5	27	41	142	154,687	1.65%	
	\$	\$ 21,861	\$ 5,090	\$ 42,765	\$ 23,982	\$ 154,687	\$ 154,687	\$ 1,089.35	
50-54	118	24	6	17	38	203	203	2.36%	
	\$	\$ 18,459	\$ 5,805	\$ 24,392	\$ 23,870	\$ 347,645	\$ 347,645	\$ 1,712.54	
55-59	269	37	20	7	41	374	374	4.34%	
	\$	\$ 35,051	\$ 16,829	\$ 9,121	\$ 26,235	\$ 791,632	\$ 791,632	\$ 2,116.66	
60-64	730	51	17	21	68	887	887	10.29%	
	\$	\$ 46,144	\$ 14,831	\$ 24,447	\$ 41,088	\$ 1,271,412	\$ 1,271,412	\$ 1,433.38	
65-69	1,435	103	41	25	66	1,670	1,670	19.38%	
	\$	\$ 87,415	\$ 41,255	\$ 27,336	\$ 32,647	\$ 1,780,609	\$ 1,780,609	\$ 1,066.23	
70-74	1,752	132	28	14	52	1,978	1,978	22.96%	
	\$	\$ 87,436	\$ 30,616	\$ 14,172	\$ 27,341	\$ 1,849,833	\$ 1,849,833	\$ 935.20	
75-79	1,369	139	28	10	50	1,596	1,596	18.52%	
	\$	\$ 105,393	\$ 29,651	\$ 5,699	\$ 20,563	\$ 1,297,319	\$ 1,297,319	\$ 812.86	
80-84	876	108	24	4	29	1,041	1,041	12.08%	
	\$	\$ 77,122	\$ 29,179	\$ 3,211	\$ 9,988	\$ 755,198	\$ 755,198	\$ 725.45	
85-89	424	61	9	4	9	507	507	5.88%	
	\$	\$ 45,048	\$ 9,485	\$ 3,843	\$ 3,482	\$ 325,618	\$ 325,618	\$ 642.24	
90-94	123	30	1	1	1	156	156	1.81%	
	\$	\$ 21,426	\$ 623	\$ 903	\$ 179	\$ 98,470	\$ 98,470	\$ 631.22	
95-99	25	5	1	0	0	31	31	0.36%	
	\$	\$ 17,837	\$ 1,558	\$ 0	\$ 0	\$ 22,088	\$ 22,088	\$ 712.52	
Total	7,153	733	180	149	402	8,617	8,617	100%	
	\$ 7,596,277	\$ 554,718	\$ 184,922	\$ 186,844	\$ 212,006	\$ 8,734,767	\$ 8,734,767	\$ 1,013.67	



Table 2B - Distribution of Pensioners - Teachers

Number of Pensioners and Total Monthly Pensions Paid by Age

Age	Pension Type					Total by Age	Percent of Pensioners/ Average Pension
	Service Retirements	Beneficiaries	Accidental Disabilities	Ordinary Disabilities			
< 30	0	4	0	0	0	4	0.08%
	\$	\$ 3,343	\$	\$	\$	\$ 3,343	\$ 835.75
30-39	0	5	1	1	1	7	0.13%
	\$	\$ 4,388	\$ 2,397	\$	\$ 402	\$ 7,187	\$ 1,026.71
40-49	4	10	7	26	47	47	0.90%
	\$	\$ 9,557	\$ 13,930	\$	\$ 32,360	\$ 64,869	\$ 1,380.19
50-54	310	21	8	19	358	358	6.85%
	\$	\$ 887,871	\$ 19,974	\$	\$ 25,547	\$ 956,366	\$ 2,671.41
55-59	599	15	4	18	636	636	12.16%
	\$	\$ 1,886,487	\$ 5,667	\$	\$ 20,876	\$ 1,934,529	\$ 3,041.71
60-64	742	25	8	25	800	800	15.30%
	\$	\$ 1,965,142	\$ 16,326	\$	\$ 32,524	\$ 2,043,395	\$ 2,554.24
65-69	861	24	8	21	914	914	17.47%
	\$	\$ 1,863,972	\$ 32,922	\$	\$ 23,508	\$ 1,935,243	\$ 2,117.33
70-74	718	36	2	21	777	777	14.86%
	\$	\$ 1,325,644	\$ 47,305	\$	\$ 20,306	\$ 1,395,474	\$ 1,795.98
75-79	631	21	2	12	666	666	12.74%
	\$	\$ 955,352	\$ 20,029	\$	\$ 10,962	\$ 989,529	\$ 1,485.78
80-84	408	30	2	4	444	444	8.49%
	\$	\$ 573,135	\$ 30,497	\$	\$ 3,794	\$ 610,043	\$ 1,373.97
85-89	357	14	0	2	373	373	7.13%
	\$	\$ 494,376	\$ 12,699	\$	\$ 1,353	\$ 508,428	\$ 1,363.08
90-94	152	11	0	1	164	164	3.14%
	\$	\$ 196,455	\$ 7,778	\$	\$ 1,093	\$ 205,326	\$ 1,251.99
95-99	35	0	0	1	36	36	0.69%
	\$	\$ 42,884	\$	\$	\$ 713	\$ 43,597	\$ 1,211.03
100+	3	0	0	0	3	3	0.06%
	\$	\$ 3,577	\$	\$	\$	\$ 3,577	\$ 1,192.33
Total	4,820	216	42	151	5,229	5,229	100.00%
	\$10,203,917	\$ 242,394	\$ 81,157	\$ 173,438	\$ 10,700,906	\$ 2,046.45	

### SECTION III - PLAN ASSETS

#### Market Value of Assets

The Employees' Retirement Fund receives all member and employer contributions. The assets are invested by the State Investment Commission, with the income being added to the Fund and available for reinvestment. Payments from the Fund are primarily for refunds of employee contributions, lump sum death benefits, pension payments, and administrative expenses. Contribution refunds occur when an employee terminates employment before completing ten years of service and elects to take a refund, or when he dies after retirement without having received payments from the Fund equal to his total contributions.

Table 4 shows a summary of income and expenditures for the years ended June 30, 1996 and 1995. For the plan year ending June 30, 1996, the Employees' Retirement Fund showed a net income of \$350,330,767.

The total market value of assets as of June 30, 1996 was \$3,828,915,979. This is divided among the plans as follows (pro rata based on the Book Value of assets as supplied by the State of Rhode Island Treasurer's Office).

<b>State Employees</b>	\$	1,529,403,211	39.9%
<b>Teachers</b>		2,181,535,867	57.0%
<b>Teachers' Survivors</b>		<u>117,976,901</u>	<u>3.1%</u>
<b>Total</b>	\$	3,828,915,979	100.0%

Table 5 shows the composition of the investments of the fund.

Table 6 shows the allocation of reserves to the State Employees' Plan, Teachers' Plan, and Teacher's Survivors Plan as of June 30, 1996 and 1995. The reserve allocations are based on the book value of assets.

**SECTION III - Plan Assets (cont'd)**

**Actuarial Value of Assets**

As of the June 30, 1991 valuation, a new method to calculate the actuarial value of assets was employed. The new method allows for a three year spread of gains and losses in the Market Value.

The actuarial value of assets was reset to equal the market value of assets as of June 30, 1996. A reconciliation of the market value of assets is shown in Table 3.

Prior to being re-established, the actuarial value of assets returned approximately 11.4% compared with an 8% assumed return. The total Actuarial Value of Assets at June 30, 1996 was \$3,828,915,979 and is divided among the plans based on a pro rata share of the book value of assets as follows:

State Employees	\$ 1,529,403,211	39.9%
Teachers	2,181,535,867	57.0%
Teachers' Survivors	<u>117,976,901</u>	<u>3.1%</u>
Total	\$ 3,828,915,979	100.0%

**Table 3 - Calculation of Actuarial Asset Value at June 30, 1996**

1.	Market Asset Value at June 30, 1995	\$	3,388,547,130
2.	Contributions		
	(a) Employees		92,864,658
	(b) State		74,740,651
	(c) Municipal		49,392,816
	(d) Miscellaneous		<u>1,557,260</u>
	(e) Total	\$	218,555,385
3.	Benefit Payments and Other Disbursements		
	(a) Pension Benefit	\$	182,942,823
	(b) Cost of Living Adjustments		39,574,797
	(c) Death Benefits		2,692,219
	(d) Refund of Contributions, Social Security Supplements and other Miscellaneous expenses		<u>16,318,086</u>
	(e) Total	\$	241,527,925
4.	Investment Income*	\$	373,303,307
5.	Unrealized Gains/(Losses)	\$	90,038,082
6.	Market Value on June 30, 1996	\$	3,828,915,979
7.	Actuarial Asset Value on June 30, 1996	\$	3,828,915,979

\* Excludes unrealized gains/(losses)

**Table 4 - Summary Statement of Income and Expenses**

	1996	1995
Employer contributions	\$ 125,690,727	\$ 142,237,599
Member contributions	<u>92,864,658</u>	<u>81,157,696</u>
Total contributions	\$ 218,555,385	\$ 223,395,295
Investment income:		
Dividends	\$ 37,077,551	\$ 34,903,463
Interest	97,635,217	95,771,483
Capital gains (and losses)	208,378,560	146,806,107
Other	<u>30,211,979</u>	<u>19,954,715</u>
Net investment income	<u>373,303,307</u>	<u>297,435,768</u>
Total income available for benefit payments	\$ 591,858,692	\$ 520,831,063
Benefit payments:		
Pension benefits	\$ 222,517,620	\$ 206,486,626
Death benefits	2,692,219	2,190,163
Contribution refunds and other payments	<u>16,318,086</u>	<u>16,013,647</u>
Total benefit payments	<u>241,527,925</u>	<u>224,690,436</u>
Excess of income over expenses	\$ <u>350,330,767</u>	\$ <u>296,140,627</u>

Note: Detail figures may not add to totals shown because of rounding.

**Table 5 - Composition of Assets as of June 30, 1996**

	<u>Market Value</u>	<u>Percent of Holdings</u>
Cash/Short Term Investments Short Term Investment Fund Money Market Instruments	\$ 192,943,243	5.0%
Equities - Domestic	1,802,126,217	47.1%
Equities - International	351,776,268	9.2%
Fixed Income - Government	1,242,095,950	32.4%
Foreign Bonds	9,027,578	0.2%
Fixed Income - Corporate	83,159,836	2.2%
Repurchase Agreements	1,000,000	0.1%
Real Estate and Venture Capital	145,917,077	3.8%
Commercial Paper	<u>869,810</u>	<u>0.0%</u>
<b>Total Fund Investments</b>	<b>\$ 3,828,915,979</b>	<b>100.00%</b>

Note: Detail figures may not add to total shown due to rounding.

**Table 6 - Allocation of Book Value Assets by Plan - Reserve Values**

	1996	1995
State Employees:		
Employer reserves	\$ 952,689,672	\$ 862,550,308
Member reserves	<u>310,455,806</u>	<u>283,595,004</u>
Total State Employees reserves	\$ 1,263,145,478	\$ 1,146,145,312
Teachers:		
Employer reserves	\$ 1,368,835,499	\$ 1,191,249,294
Member reserves	<u>432,911,186</u>	<u>400,588,864</u>
Total Teacher reserves	1,801,746,685	1,591,838,158
Teachers Survivors:		
Employer reserves	\$ 85,447,605	\$ 73,954,259
Member reserves	<u>11,990,395</u>	<u>11,617,508</u>
Total Teachers Survivors reserves	<u>97,438,000</u>	<u>85,571,767</u>
Total Book Value of Assets	\$ 3,162,330,163	\$ 2,823,555,238

Note: Detail figures may not add to totals shown because of rounding.

## SECTION IV - RESULTS OF THE VALUATION

The funding statute calls for the contribution requirement to be calculated as the normal cost of the plan plus the total of the amortization payment for each unfunded cost element. The table below shows the development of the contribution requirement for the State Employees' Plan and the Teachers' Plan. Effective with this June 30, 1996 valuation, to actuarial value of assets was re-established at market value. The costs below reflect this change.

	<u>State Employees' Plan</u>	<u>Teachers' Plan</u>
<b>Normal Cost</b>	11.89%	11.86%
<b>Less Employee Contributions</b>	<u>8.75%</u>	<u>9.50%</u>
<b>Employer Normal Cost</b>	3.14%	2.36%
<b>Unfunded Cost due to:</b>		
<b>Original Unfunded</b>	7.29%	9.23%
<b>1989 Assumption Changes</b>	(0.71%)	0.00%*
<b>1989 Early Retirement Incentive</b>	0.70%	None
<b>1990 Early Retirement Incentive</b>	0.67%	1.65%
<b>1991 Assumption and Method Changes</b>	(1.68%)	(2.20%)
<b>Fiscal 1990-91 Deferral</b>	0.12%	0.21%
<b>Fiscal 1991-92 Deferral</b>	<u>0.32%</u>	<u>0.27%</u>
<b>Total Unfunded</b>	6.71%	9.16%
<b>Total Cost as a percentage of payroll</b>	9.85%	11.52%

\* The effect of the 1989 assumption changes in the Teachers' Plan was less than the minimum threshold for setting up a separate base. Thus, the effect was aggregated with the existing unfunded. See Exhibit III for a description of the amortization method.

The contributions are assumed to be made on a monthly basis. The amounts of the unfunded liabilities in respect of each of the above cost elements, together with the remaining amortization period, are shown in detail in Exhibit I, parts A3 and B3.

The Teachers' Plan cost is paid 60% by the cities and towns and 40% by the State. However, the State will pay the total cost of 0.48% for the contribution deferrals. This results in a contribution requirement for cities and towns of 6.62% and a contribution requirement for the State of 4.90%.

As described in Section I, certain towns elected not to participate in the 1990 early retirement incentive program. The contribution requirement for these towns is 5.63% and for the State is 4.24%.



#### **SECTION IV - Results of the Valuation (cont'd)**

The State Employee's Plan fiscal 1999 contribution requirement of 9.85% compares to the fiscal 1998 contribution requirement of 10.83%. The decrease in the contribution requirement is discussed in Section I, and a complete development of the fiscal 1999 contribution is presented in Exhibit I, parts A1, A2 and A3.

The Teachers' Plan fiscal 1999 contribution requirement of 11.52% compares to the fiscal 1998 contribution requirement of 14.25%. The decrease in the contribution requirement is discussed in Section I, and a complete development of the contribution for Teachers for fiscal 1999 is presented in Exhibit I, parts B1, B2 and B3.

**EMPLOYEES' RETIREMENT SYSTEM OF THE STATE OF RHODE ISLAND**

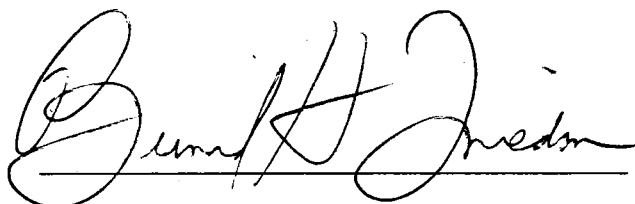
**CERTIFICATE OF ACTUARIAL VALUATION**

This is to certify that we have prepared an actuarial valuation of the plan as of June 30, 1996.

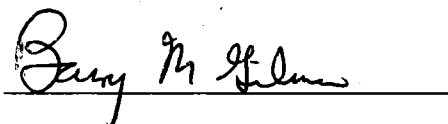
This certificate contains the following attached exhibits:

- EXHIBIT I - Actuarial Cost Development of Fiscal Year 1998-99 Contribution Percentage
- A. State Employees
  - B. Teachers
- EXHIBIT II - Financial Disclosure Under GAS #25
- EXHIBIT III - Actuarial Method and Assumptions
- EXHIBIT IV - Summary of Plan Provisions

To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate and in our opinion each individual assumption used (a) is reasonably related to the experience of the plan and to reasonable expectations and (b) represents our best estimate of anticipated experience under the plan.



Bernard H. Friedman, A.S.A., M.A.A.A.



Barry M. Gilman, F.S.A., M.A.A.A.

## EXHIBIT I - DEVELOPMENT OF CONTRIBUTION PERCENTAGES

### A1. State Employees - Development of Normal Cost

The valuation was made with respect to the following data supplied to us by the Retirement Board:

- 12,976 active participants (including 7,586 fully vested)
- 2,327 inactive participants
- 8,617 pensioners (including 733 beneficiaries of deceased pensioners and active employees)

The actuarial factors as of the valuation date are as follows:

1. Actuarial present value of benefits	
(a) Active employees	\$ 1,379,220,600
(b) Inactive employees	66,470,400
(c) Retirees and beneficiaries	998,442,500
(d) Total	\$ 2,444,133,500
2. Actuarial value of assets	1,529,403,200
3. Frozen Initial Liability (unfunded liability)	444,814,700
4. Present value of future employee contributions	344,994,300
5. Present value of future employer normal costs (1.(d) - 2. - 3. - 4.)	124,921,300
6. Actuarial present value of future compensation	3,942,792,000
7. Covered Payroll - Employees under Retirement Age	431,964,600
8. Employer Normal Cost, ((5. ÷ 6.) x 7.)	\$ 13,693,300

**EXHIBIT I - Development of Contribution Percentages (cont'd)**

**A2. State Employees - Development of Employer Cost**

1.	Total Covered Payroll for fiscal 1997	\$	452,608,500
2.	Employer Normal Cost		13,693,300
3.	Amortization of Frozen Initial Liability		31,877,500
4.	Projected 1998-99 Covered Payroll		494,259,800
5.	1998-99 Employer Normal Cost ((2. ÷ 1.) x 4.)		14,976,100
6.	Total annual cost if paid on July 1, 1998 (3. + 5.)		46,853,600
7.	Total annual cost if paid in uniform installments throughout the year (6. plus one-half year's interest)	\$	48,727,700
8.	a. Employer Normal Cost percentage		3.14%
	b. Employer Unfunded Cost percentage		6.71%
	c. Employer fiscal 1999 Cost (a + b)		9.85%

**EXHIBIT I - Development of Contribution Percentages (cont'd)**

**A3. State Employees - Determination of Frozen Initial Liability**

	<u>Base</u>	<u>Amortization Period</u>	<u>Payment</u>
1. Bases at July 1, 1994			
(a) Original	\$ 472,983,700	21	\$ 30,698,800
(b) 1989 Base	(53,715,000)	25	(3,102,300)
(c) 1989 Early Retirement Window	53,699,900	26	3,024,800
(d) New 1991 Bases			
- Assumption and Method changes	(132,861,500)	27	(7,309,100)
- 1990 Early Retirement Window	53,145,000	27	2,923,600
(e) 1990/91 Deferral	24,410,900	21	1,584,400
(f) 1991/92 Deferral	21,131,100	21	1,371,500
(g) Total	\$ 438,794,100		\$ 29,191,700
2. Bases at July 1, 1995			
(a) Original	\$ 493,871,700	20	\$ 33,168,300
(b) 1989 Base	(54,661,700)	24	(3,241,900)
(c) 1989 Early Retirement Window	54,729,100	25	3,160,900
(d) New 1991 Bases			
- Assumption and Method changes	(135,596,600)	26	(7,637,900)
- 1990 Early Retirement Window	54,239,100	26	3,055,200
(e) 1990/91 Deferral	8,448,600	20	567,400
(f) 1991/92 Deferral	21,340,400	20	1,433,200
(g) Total	\$ 442,370,600		\$ 30,505,200
3. Bases at July 1, 1996			
(a) Original	\$ 497,559,700	19	\$ 34,660,600
(b) 1989 Base	(55,533,400)	23	(3,387,800)
(c) 1989 Early Retirement Window	55,693,700	24	3,303,100
(d) New 1991 Bases			
- Assumption and Method changes	(138,195,400)	25	(7,981,600)
- 1990 Early Retirement Window	55,278,600	25	3,192,600
(e) 1990/91 Deferral	8,511,700	19	592,900
(f) 1991/92 Deferral	21,499,800	19	1,497,700
(g) Total	\$ 444,814,700		\$ 31,877,500

- Notes: (1) Following the funding method, if the change in unfunded liability is greater than 10% of the existing amount of unfunded liability, the change in unfunded liability is separately amortized over a 30-year period.
- (2) The contribution deferral amounts are being separately amortized over the remaining amortization period of 24 years. This is an exception to the normal funding method where the contribution deferral amounts would be added to the other 1991 bases and then amortized together. The 90/91 deferral base was reduced at July 1, 1995 in accordance with the IRS closing agreement.

**EXHIBIT I - Development of Contribution Percentages (cont'd)**

**B1. Teachers - Development of Normal Cost**

The valuation was made with respect to the following data supplied to us by the Retirement Board:

- 12,391 active participants (including 7,251 fully vested)
- 1,173 inactive participants
- 5,229 pensioners (including 216 beneficiaries of deceased pensioners and active employees)

The actuarial factors as of the valuation date are as follows:

1. Actuarial present value of benefits	
(a) Active employees	\$ 2,247,061,500
(b) Inactive employees	37,594,100
(c) Retirees and beneficiaries	1,268,424,700
(d) Total	\$ 3,553,080,300
2. Actuarial value of assets	2,181,535,900
3. Frozen Initial Liability (unfunded liability)	767,893,900
4. Present value of future employee contributions	484,903,700
5. Present value of future employer normal costs (1.(d) - 2. - 3. - 4.)	118,746,800
6. Actuarial present value of future compensation	5,104,249,900
7. Covered Payroll - Employees under Retirement Age	540,880,100
8. Normal Cost, ((5. ÷ 6.) x 7.)	\$ 12,602,500

**EXHIBIT I - Development of Contribution Percentages (cont'd)**

**B2. Teachers - Development of Employer Cost**

1.	Total Covered Payroll for fiscal 1997	\$	556,114,500
2.	Employer Normal Cost		12,602,500
3.	Amortization of Frozen Initial Liability		53,492,300
4.	Projected 1998-99 Covered Payroll		607,290,900
5.	1998-99 Employer Normal Cost ((2. ÷ 1.) x 4.)		13,785,500
6.	Total annual cost if paid on July 1, 1998 (3. + 5.)		67,277,800
7.	Total annual cost if paid in uniform installments throughout the year (6. plus one-half year's interest)	\$	69,968,900
8.	a. Employer Normal Cost percentage		2.36%
	b. Employer Unfunded Cost percentage		9.16%
	c. Employer fiscal 1999 Cost (a + b)		11.52%

**EXHIBIT I - Development of Contribution Percentages (cont'd)**

**B3. Teachers - Determination of Frozen Initial Liability**

	<u>Base</u>	<u>Amortization Period</u>	<u>Payment</u>
1. Bases at July 1, 1994			
(a) Original	\$ 755,298,500	21	\$ 49,022,300
(b) New 1991 Bases			
- Assumption and Method changes	(181,341,100)	21	(11,769,900)
- 1990 Early Retirement Window	135,618,300	21	8,802,200
(c) 1990/91 Deferral	23,250,600	21	1,509,100
(d) 1991/92 Deferral	21,901,600	21	1,421,500
(e) Total	\$ 754,727,900		\$ 48,985,200
2. Bases at July 1, 1995			
(a) Original	\$ 769,022,400	20	\$ 51,647,400
(b) New 1991 Bases			
- Assumption and Method changes	(183,136,900)	20	(12,299,400)
- 1990 Early Retirement Window	136,961,400	20	9,198,300
(c) 1990/91 Deferral	17,236,000	20	1,157,600
(d) 1991/92 Deferral	22,118,500	20	1,485,500
(e) Total	\$ 762,202,100		\$ 51,189,200
3. Bases at July 1, 1996			
(a) Original	\$ 774,766,000	19	\$ 53,971,100
(b) New 1991 Bases			
- Assumption and Method changes	(184,504,500)	19	(12,852,800)
- 1990 Early Retirement Window	137,984,100	19	9,612,100
(c) 1990/91 Deferral	17,364,700	19	1,209,600
(d) 1991/92 Deferral	22,283,600	19	1,552,300
(e) Total	767,893,900		53,492,300

- Notes: (1) If the change in the unfunded liability is less than 10% of the existing unfunded liability, the change in the unfunded liability is amortized over the remaining amortization period of the original unfunded liability.
- (2) The contribution deferral amounts are being separately amortized over the remaining amortization period of 24 years. This is an exception to the normal funding method where the contribution deferral amounts would be added to the other 1991 bases and then amortized together with the original unfunded. The 90/91 deferral base was reduced at July 1, 1995 in accordance with the IRS closing agreement.



**EXHIBIT II - FINANCIAL DISCLOSURE UNDER GAS #25**

The Supplementary Information required under GAS #25 is provided in the following schedules

**Schedules of Employer Contributions\*  
(in millions of dollars)**

	State Employees		Teachers (State)		Teachers (Municipalities)	
	Annual Required Contribution	Percentage Contributed	Annual Required Contribution	Percentage Contributed	Annual Required Contribution	Percentage Contributed
Fiscal 1996	\$43.2	100%	\$31.6	100%	\$49.4	100%
Fiscal 1995	50.7**	100%	37.7**	100%	50.3	100%
Fiscal 1994	47.1	100%	34.1	100%	45.3	100%

\*Shown above are the last three fiscal years of information, which meets GAS #25 requirements. GAS #25 requires disclosure for the last six consecutive fiscal years, unless information is unavailable.

\*\*Amounts include \$16.7 million and \$5.2 million for State Employees and Teachers, respectively, attributable to agreement with IRS.

**EXHIBIT II - FINANCIAL DISCLOSURE UNDER GAS #25 (cont'd)**

**Schedule of Funding Progress\***

**State Employees**

Actuarial Valuation Date	Actuarial Value of Assets (a)	Unfunded Frozen Actuarial Liability (b)	Frozen Initial Liability (c) = (a) + (b)	Funded Ratio (a)/(c)	Covered Payroll	Unfunded Frozen Actuarial Liability as a % of Covered Payroll
7/1/96	\$1,529,403,200 a)	\$444,814,700	\$1,974,217,900	77.5%	\$452,608,500	98.3%
7/1/95	1,345,530,000	442,370,600	1,787,900,600	75.3	440,574,000	100.4
7/1/94	1,234,373,500	438,794,100	1,673,167,600	73.8	454,687,000	96.5
7/1/93	1,151,128,700	434,225,700	1,585,354,400	72.6	444,572,000	97.7
7/1/92	1,056,085,500	428,793,000	1,484,878,500	71.1	418,683,300	102.4

**Teachers**

Actuarial Valuation Date	Actuarial Value of Assets (a)	Unfunded Frozen Actuarial Liability (b)	Frozen Initial Liability (c) = (a) + (b)	Funded Ratio (a)/(c)	Covered Payroll	Unfunded Frozen Actuarial Liability as a % of Covered Payroll
7/1/96	\$2,181,535,900 a)	\$767,893,900	\$2,949,429,800	74.0%	\$556,114,500	138.1%
7/1/95	1,824,102,300	762,202,100	2,586,304,400	70.5%	507,125,000	150.3
7/1/94	1,642,292,300	754,727,900	2,397,020,200	68.5	485,325,000	155.5
7/1/93	1,492,915,800	745,698,400	2,238,614,200	66.7	473,295,000	157.6
7/1/92	1,352,892,300	735,319,400	2,088,211,700	64.8	458,958,600	160.2

Shown above are the last five fiscal years of information, which meets GAS #25 requirements. GAS #25 requires disclosure for the last six consecutive years, unless information is unavailable.

a) Reflects change in asset valuation method effective July 1, 1996

**EXHIBIT II - FINANCIAL DISCLOSURE UNDER GAS #25 (cont'd)**

**Demonstration That Equivalent Single Amortization Period is Within the Maximum Acceptable Time**

- Amortization is required as a level percentage of projected payroll
- All figures are expressed for fiscal 1999 based on the results of the July 1, 1996 valuation

**State Employees**

	Original Base	1989 Assumption Changes	1989 Early Retirement Window	1991 Assumption Changes	1990 Early Retirement Window	90/91 Deferral	91/92 Deferral	Total
1. Covered Projected Payroll 1998 -99								\$494,259,800
2. Remaining Amount of Base	\$497,559,700	\$ (55,533,400)	\$55,693,700	\$ (138,195,400)	\$55,278,600	\$8,511,700	\$21,499,800	\$444,814,700
3. Remaining Amortization Years	19	23	24	25	25	19	19	
4. Amortization Factor based on (3)	14.36	16.39	16.86	17.31	17.31	14.36	14.36	
5. Payment (2)/(4)	\$ 34,660,600	\$ (3,387,800)	\$ 3,303,100	\$ (7,981,600)	\$ 3,192,600	\$ 592,900	\$ 1,497,700	\$ 31,877,500
6. Payment as Level % of Payroll (5)/(1)	7.29%	(.71%)	(.70%)	(1.68%)	.67%	.12%	.32%	6.71%
Equivalent Single Period Weighted Average Amortization Factor (2)/(5)								13.95
8. Equivalent Single Amortization Period (Nearest whole year)								19

The equivalent single amortization period is 19 years, which is within the 40 year required maximum period.

**EXHIBIT II - FINANCIAL DISCLOSURE UNDER GAS #25 (cont'd)**

**Demonstration That Equivalent Single Amortization Period is Within the Maximum Acceptable Time**

- Amortization is required as a level percentage of projected payroll
- All figures are expressed for fiscal 1999 based on the results of the July 1, 1996 valuation

**Teachers**

	Original Base	1991 Assumption Change	1990 Early Retirement Windows	90/91 Deferral	91/92 Deferral	Total
1. Covered Projected Payroll, 1998-99						\$607,290,900
2. Remaining Amount of Base	\$774,766,000	\$(184,504,500)	\$137,984,100	\$17,364,700	\$22,283,600	767,893,900
3. Remaining Amortization Years	19	19	19	19	19	
4. Amortization Factor based on (3)	14.36	14.36	14.36	14.36	14.36	
5. Payment (2)/(4)	\$ 53,971,100	\$ (12,852,800)	\$ 9,612,100	\$ 1,209,600	\$ 1,552,300	\$ 53,492,300
6. Payment as Level % of Payroll (5)/(1)	9.23%	(2.20%)	1.65%	.21%	.27%	9.16%
Equivalent Single Period						
7. Weighted Average Amortization Factor (2)/(5)						14.36
8. Equivalent Single Amortization Period (Nearest whole year)						19

The equivalent single amortization period is 19 years, which is within the 40 year required maximum period.

**EXHIBIT II - FINANCIAL DISCLOSURE UNDER GAS #25 (cont'd)**

**Employees Retirement System of the State of Rhode Island  
Illustrative Financial Disclosure Under GAS #25**

The information presented in the required supplementary schedule was determined as part of the actuarial valuation at the dates indicated below. Additional information as of the latest actuarial valuation follows:

	<b>State Employees</b>	<b>Teachers</b>
Valuation Date	7/1/96	7/1/96
Actuarial Cost Method	Frozen Entry Age	Frozen Entry Age
Amortization Method	Level Percentage Closed	Level Percentage Closed
Equivalent Single Remaining Amortization Period	19 years	19 years
Asset Valuation Method	3-Year Smoothed Market	3-Year Smoothed Market
<b>Actuarial Assumptions</b>		
Investment Rate of Return	8.0%	8.0%
Projected Salary Increases	4.5%	4.5%
Inflation	3.0%	3.0%
Cost of Living Adjustments	3.0%	3.0%

**EXHIBIT III - ACTUARIAL METHOD AND ASSUMPTIONS**

a. **Actuarial Funding Method**

*Actuarial Funding Method* - Frozen initial liability method. This method is alternatively referred to as the entry age normal cost method with frozen initial liability.

*Entry Age* - The employee's age at the time he or she would have commenced participation if the plan had always been in existence.

*Frozen actuarial liability* - At the time this funding method was introduced June 30, 1985 the unfunded liability was calculated and called the Frozen Actuarial Liability. This amount was originally to be funded over a 30 year period by the sum-of-the-digits amortization method. Effective from 1989, however the outstanding balance, referred to as the Unfunded Liability, is to be amortized over the remaining amortization period using a level percent of salary funding. (ref. General Laws section 36-10-2 and 36-10-2.1). Subsequent 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 for each fiscal year is relative to the existing unfunded liability. The following table illustrates the amortization method:

<u>Change in Unfunded Liability</u>	<u>Amortization Period</u>
Less than 1% of existing Unfunded	No new base set 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

**EXHIBIT III - Actuarial Method and Assumptions (cont'd)**

**b. Actuarial Assumptions Concerning Future Events**

*Mortality* - 1971 Group Annuity Mortality Table with Mortality for disabled persons set equal to the age 65 mortality under 1971 Group Annuity Mortality Table.

<u>Age</u>	<u>Sample Rates</u>		<u>Expected Life</u>	
	<u>Mortality</u>	<u>Mortality</u>	<u>Males</u>	<u>Females</u>
	<u>Males</u>	<u>Females</u>		
20	.050%	.026%	55.3 yrs.	61.6 yrs.
25	.062	.035	50.4	56.7
30	.081	.047	45.6	51.8
35	.112	.065	40.8	47.0
40	.163	.094	36.1	42.1
45	.292	.140	31.4	37.4
50	.529	.215	26.9	32.6
55	.852	.326	22.8	28.0
60	1.312	.549	18.8	23.5
65	2.126	.956	15.2	19.3
70	3.611	1.648	11.9	15.3

*Investment Return* - 8.0%, compounded annually.

*Salary Increases* - Salaried will increase at a rate of 4.5%, compounded annually.

*Retirement Age* - State employees are assumed to retire at the later of age 62-1/2 or completion of the service requirements. Teachers are assumed to retire at the later of age 61 or completion of the service requirements.

*Disability* - Disability is assumed to occur in accordance with the following table with 15% of disabilities being occupational.

<u>Disability - Sample Rates</u>	
<u>Age</u>	<u>Rate of Disability</u>
20	.06%
25	.09
30	.11
35	.15
40	.22
45	.36
50	.61
55	1.01
60	1.41

**EXHIBIT III - Actuarial Method and Assumptions (cont'd)**

*Withdrawal* - Termination of service for reasons other than death, retirement, or disability will be in accordance with the following tables.

Sample Withdrawal Rates

<u>Age</u>	<u>State Employees</u>	<u>Teachers</u>
20	21.20%	12.39%
25	15.80%	9.70%
30	11.60%	7.50%
35	8.40%	5.66%
40	6.20%	4.14%
45	4.20%	2.75%
50	2.60%	1.35%
55	--	--
60	--	--

*Cost of Living Adjustments* - 3% compounded annually beginning on the January 1st following a participant's third anniversary of retirement.

*Actuarial Value of Assets* - The actuarial value of assets spreads investment gains and losses over a 3-year period. The actuarial value of assets was reset to equal the market value of assets as of June 30, 1996.

*Estimation of Unknown Employee Characteristics* - Missing dates for participants are estimated using a band-type averaging method assigning band grouped average dates to those individuals with missing dates of birth or hire. For example, an employee missing a date of hire is given an estimated date of hire based on the average of known dates of hire for persons in his age band. For Employees who are missing salaries, salaries are estimated based on employee contributions for the year ending June 30, 1996 and with regard to employee salary history, where this information was insufficient, average salaries were used. For State Employees this is \$34,900, and for Teachers it is \$43,900 for the salary year July 1, 1995 to June 30, 1996.



**EXHIBIT IV - SUMMARY OF PLAN PROVISIONS**

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PLAN NAME Employees' Retirement System of the State of Rhode Island

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FINAL AVERAGE SALARY Final average salary is the three highest consecutive years of earned salary exclusive of overtime, bonuses, or severance pay.

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NORMAL RETIREMENT Age and Service Requirements

**General Employees and Teachers** may retire with full accrued benefits at age 60 with 10 years of service or after 28 years of service regardless of age.

**Correctional Officers** may retire with unreduced accrued benefits at age 50 with 20 years of service.

**Legislators** may retire with unreduced accrued benefits at age 55 with 8 years of service or after 20 years of service with no restriction on age.

Amount of Retirement Benefits

For State Employees and Teachers:

1.7% of final average salary times service up to 10 years, plus

1.9% of final average salary times service in excess of ten years through 20 years, plus

3.0% of final average salary times service in excess of 20 years up to the 34th year of service, plus

2.0% of final average salary for the 35th year.  
Maximum benefit is 80% of final average salary.

**EXHIBIT IV - Summary of Plan Provisions (cont'd)**

For Correctional Officers:

2.0% of final average salary for the first 30 years of service, plus  
6.0% of final average salary for the 31st year, plus  
5.0% of final average salary for the 32nd year, plus  
4.0% of final average salary for the 33rd year, plus  
3.0% of final average salary for the 34th year, plus  
2.0% of final average salary for the 35th year.  
Maximum benefit is 80% of final average salary.

For Legislators:

\$600 per year of service.  
Maximum benefit is \$10,000.

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**DISABILITY BENEFIT**

Non-occupational

Service Requirement: 5 years

Amount of Benefit: Regular pension benefit based on service to disability and final average salary at time of disability. The minimum benefit is 17% of final average salary.

Occupational

There is no age or service requirements for the occupational disability benefit.

Amount of Benefit: Two thirds of final salary at time of disability, payable immediately.

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**VESTING**

Employees are vested in their retirement benefits on completion of 10 years of service. Payments commence at Normal Retirement Age.

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**EXHIBIT IV - Summary of Plan Provisions (cont'd)**

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**PRE-RETIREMENT DEATH  
BENEFITS**

Lump Sum Benefit

There are no age or service requirements for this benefit.

Amount of Benefit:

- (a) \$800 per year of service with a minimum of \$4,000 and a maximum of \$16,000, plus
- (b) Refund of employee contributions.

Joint and Survivor Benefit

Service Requirement: 10 years for General Employees and Correctional officers, 8 years for Legislators.

Amount of Benefit: In lieu of the lump sum benefit, the beneficiary may elect to receive the benefit the employee would have received had he/she retired the day before he/she died and chosen the joint and survivor option.

Occupational Death Benefit

This benefit has no age or service requirement.

Amount of benefit:

- (a) 50% of salary to spouse or children of employees under age 18, less workmen's compensation, plus
  - (b) refund of employee contributions.
-

**EXHIBIT IV - Summary of Plan Provisions (cont'd)**

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**POST-RETIREMENT  
DEATH BENEFITS**

Lump sum in the amount of:

- (a) 100% of employee contributions less benefits paid, plus
  - (b) Pre-retirement death benefit, reduced 25% per year of retirement, with a minimum of \$4,000.
- 

**EMPLOYEE CONTRIBUTIONS**

State Employees: 8.75%  
Teachers: 9.50%  
Legislators: 30.00%

Contributions are refunded upon non-vested termination of employment. If benefit payments made prior to death are less than contributions, the excess is refunded to the retiree's beneficiary.

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**AVAILABLE BENEFIT OPTIONS**

Joint and Survivor: Actuarially Equivalent Benefit paying either 100% or 50%, depending on option selected, of retirement benefit to surviving beneficiary.

Social Security: Pays an increased benefit until age 62 and a reduced benefit thereafter to provide a level benefit when Social Security payments are accounted for.

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**POST-RETIREMENT  
COST OF LIVING  
ADJUSTMENT**

Retirees' benefits are adjusted annually by 3%, compounded, to allow for increases in cost of living.

Cost of living adjustments begin on the January 1st following the third anniversary of an employee's retirement.

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**APPENDIX - Model Letter to Cities and Towns Participating in the  
Teacher's Retirement Plan**

The (city) (town) of \_\_\_\_\_ provides retirement benefits to its public school teachers through its participation in the Rhode Island Retirement System. The system is a statutory, mandatory, state-wide, multiple retirement system, which first covered Rhode Island teachers on July 1, 1949. It is administered by the State Retirement Board, the composition of which is set forth in the pertinent state statute. The assets are held in the custody of the State Treasurer as an undivided single fund.

The actuarial costs of the retirement benefits are partially funded by teacher contributions of 9-1/2 percent of pay effective August, 1995. The net employer actuarial costs are determined annually by the actuary and, as provided by statute, are certified by the Retirement Board to the Department of Administration. Contributions are reported as a percent of payroll, payable in part by the State of Rhode Island and in part by the (city) (town). The split between the State and Municipality is specified in the statute. For fiscal year 1998-99, by statute the State will pay 40% and the Municipality will pay 60%.

The actuarial valuation prepared by William M. Mercer, Incorporated uses the entry age normal cost method with the frozen initial liability. The valuation assumes an 8 percent interest return on assets and assumes an annual salary increase of 4.5%. In addition, other actuarial assumptions are made for post-retirement increases and other contingencies as set forth in the published annual reports of the Retirement Board. Following are comparative highlights of the last three years for the Teachers system as a whole:

	<u>Year Beginning July 1,</u>		
	<u>1996</u>	<u>1995</u>	<u>1994</u>
Active participants	12,391	12,079	11,378
Pensioners and beneficiaries	5,229	5,011	4,898
Inactive participants	1,173	1,248	1,600
Liability for accrued vested benefits	\$ 2,565,941,000	\$ 2,328,100,000	\$ 2,062,260,000
Net assets at actuarial value	2,181,535,900	1,824,102,300	1,642,292,340

As shown in State's  
financial statements:

	<u>Year Ended June 30,</u>		
	<u>1996</u>	<u>1995</u>	<u>1994</u>
Employer contributions	\$ 80,590,039	\$ 84,750,442	\$ 76,229,307
Member contributions	52,849,114	44,742,402	42,411,591
Miscellaneous contributions	<u>957,000</u>	<u>1,218,170</u>	<u>834,335</u>
Total contributions	\$ 134,396,153	\$ 130,711,014	\$ 119,475,233
Investment income	<u>205,629,629</u>	<u>158,776,218</u>	<u>110,691,621</u>
Total income available for benefit payments	\$ 340,025,782	\$ 289,487,232	\$ 230,166,854
Benefit payments	<u>130,060,935</u>	<u>116,563,671</u>	<u>109,025,246</u>
Excess of income over expenses	\$ <u>172,923,561</u>	\$ <u>121,141,608</u>	\$ <u>209,964,847</u>

Note: Detail figures may not add to totals shown because of rounding.

Actuarial costs and liabilities, as shown in the summary presentation, are determined in the aggregate for the Teachers System. Accordingly, employer contributions are first determined in the aggregate for all participating employers in this multiple employer system and are then expressed as a percentage of the aggregate participating payroll. Each participating City or Town for 1999 fiscal year will apply 60% of this factor to its participating payroll (the remaining forty percent of the employer cost is contributed by the State as well as the full cost of deferred contributions by the State).

Employer contributions by the (city) (town) of \_\_\_\_\_ for each of the last 2 years (together with the amount for the current year, based on the promulgated rate percent of 6.62%\*) are as follows:

	<u>1994</u>	<u>Year Ended June 30,</u> <u>1995</u>	<u>1996</u>
<b>Participating payroll</b>			
<b>Employer contributions</b>			

With respect to the Teachers Retirement System, William M. Mercer, Incorporated, independent actuaries advising the Retirement Board, have stated:

"We believe that the funding program set forth in the state statute is a reasonable basis for funding the Rhode Island Teachers Retirement System. If the statutory funding program is followed without change, the System will be fully funded - that is, the assets will equal the actuarial liability on June 30, 2022. In the interim, the assets are projected to be sufficient at all times to meet the cash requirements for projected benefit payments."

According to the statutory funding schedule, the combined contributions required each year by the (city) (town) of \_\_\_\_\_ and the State will remain relatively level as a percent of payroll as the System moves toward funding the full actuarial liability.

Ultimately, however, because the actuarial funding results in the accumulation of reserves that are invested, the required appropriation will be significantly less than would be required if this System were on a pay-as-you-go basis.

- \* The promulgated rate percent for certain towns which did not participant in the 1990 early retirement incentive program is 5.63%. These towns are listed below:

Code	2003	Burillville
	2009	East Greenwich
	2018	Little Compton
	2022	New Shoreham
	2025	North Smithfield