

# Analysis of Early Retirement Incentive Program for the State Retirement System

November, 2002



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# INTRODUCTION

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The Public Employee Retirement Administration Commission (PERAC) is pleased to release our analysis regarding Chapter 218 of the Acts of 2001, An Act Providing for a Judiciary Retirement Incentive Program, and Chapter 219 of the Acts of 2001, An Act Providing for an Early Retirement Incentive Program (ERIP) for Certain State Employees. Sections 9 and 12 of the respective laws directed PERAC to complete an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the Acts and submit a report to the Secretary of Administration and Finance, the Joint Committee on Public Service, and the House and Senate Committees on Ways and Means by November 30, 2002. For purposes of this report, we will refer to both acts as the ERIP.

The law provides that eligible members who elect to participate in the ERIP have their retirement allowances determined by adding 5 years to their age and/or creditable service (any combination in full years to a maximum of 5 years). The enhanced benefit cannot exceed 80% of the average rate of annual compensation used in the calculation. All members retiring under the program had effective dates of retirement between February 1, 2002 and June 30, 2002.

This study was based on active member data as of December 31, 2001, and additional data for retirees who were eligible for and elected the ERIP. All data was supplied by the State Retirement Board. We previously reviewed the December 31, 2001 data as part of our January 1, 2002 actuarial valuation of the State Retirement System. We reviewed a small sample of the retirees in detail and reviewed the overall retired member data for reasonableness.

The actuarial assumptions used to calculate the accrued liability and the normal cost are the same as those used in the actuarial valuation of the State Retirement System as of January 1, 2002. The assumptions are shown at the back of this report.

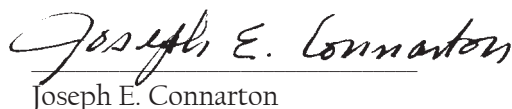
We believe this report represents an accurate appraisal of the costs and liabilities of the ERIP for the State Retirement System and was performed in accordance with generally accepted actuarial principles and practices relating to pension plans. In our opinion, the actuarial assumptions used in this report are reasonable, related to plan experience and expectations, and represent our best estimate of anticipated experience.

We gratefully acknowledge the efforts of the State Retirement Board in completing this project. The Board provided comprehensive retiree information in a timely and efficient manner to allow us to meet our report deadline.

Respectfully submitted,  
Public Employee Retirement Administration Commission



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Dated: November 20, 2002

## COST ANALYSIS

To determine the actuarial accrued liability attributable to the ERIP, we valued the members who elected to retire under the program in two ways. We first valued the group as active (including terminated vested) members on January 1, 2002 including any changes to reflect service adjustments after January 1. This calculation determines liabilities attributable to the employees who elected the ERIP without the application of the incentive. These results were then brought forward to reflect the accrued liability as of July 1, 2002.

The group was then valued as retirees after the application of the ERIP. These liabilities were determined as of July 1, 2002.

The difference between the two calculations reflects the increase in liability due to the ERIP. This amount will be amortized as part of the Commonwealth funding schedule.

The normal cost (actuarial cost for the current year) is shown as of January 1, 2002. There is no normal cost for members who have retired.

Below is a summary of the results (dollars in thousands):

	As Actives	As Retirees
Number of Members		
Active	4,514	
Terminated Vested	70	
Retirees	0	4,575 *
Total	<u>4,584</u>	<u>4,575</u>
Regular Compensation		
Active	\$231,261	N/A
Terminated Vested	\$2,902	N/A
Total	<u>\$234,163</u>	<u>N/A</u>
Total Normal Cost	\$28,232	N/A
Employee Contributions	\$12,904	N/A
Net Employer Normal Cost	\$15,328	N/A
Actuarial Liability (as of July 1, 2002)	\$1,147,651	\$1,459,812

\* reflects 9 deaths after retirement

Note that the above figures reflect only items related to the cost of the pension plan. Analyzing any costs or savings relating to health care, or salaries, for example, is outside the scope of this report.

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## EFFECT ON COMMONWEALTH SCHEDULE

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(Dollars in thousands):

Increase in Actuarial Liability	\$312,161
Amortization of Increase for FY03 (assumed payment January 1)	
15 year level basis	\$35,617
4.15% increasing basis to 2023 (current schedule)	\$22,161

The Commonwealth funding schedule includes liabilities for the State Retirement System, the State Teachers' Retirement System, Boston Teachers, and COLA reimbursements to local systems. The cost of the ERIP will affect this schedule. The schedule adopted earlier this year amortizes the Commonwealth unfunded liability (\$7.4 billion on 1/1/02) until FY2023 on a 4.15% increasing basis.

We have shown the amortization of the increase in actuarial accrued liability on two separate bases. The 15 year level amortization would require an annual funding amount of approximately \$35.6 million from FY03 through FY17. The 4.15% increasing basis until FY23 would require a funding amount of approximately \$22.2 million for FY03 and increasing 4.15% each year until FY23. The amortization payment under this schedule would be approximately \$29.5 million in FY10, \$36.1 million in FY15, \$44.2 million in FY20, and \$50.0 million in FY23.

The legislation did not specify how the increased cost should be amortized under the schedule. We prefer the level 15 year schedule for several reasons. The 15 year schedule is a more conservative measure since the bulk of the cost is paid during the retirees' lifetimes. In addition, the prior early retirement incentive in 1992 amortized the increased cost on a 15 year level basis. However, we emphasize that the increasing schedule is not an unreasonable approach.

There is a decrease in employer normal cost of approximately \$15.3 million in FY03 for retiring members since normal cost accrues only for active members. This decrease will be partially offset by the normal cost for any members who are hired to replace retiring members. Through FY04 there is a limit on the amount of payroll allowable for members hired to replace those who retire under the ERIP. This limit is 20% of actual pay had the retiring members remained in service. We have not estimated the normal cost for these hires as part of this study, but any such hires will be included in the January 1, 2003 actuarial valuations of the State Retirement System and the Commonwealth.

## ACTIVE MEMBER DATA

The following data reflects service at the date of retirement with all other data as of January 1, 2002. Some members eligible for the ERIP were coded as vested terminations on January 1, 2002.

	Actives	Vested Terminations
Number of Members	4,514	70
Average Age	60.6	58.9
Average Service	25.0	23.0
Average Salary	\$51,232	\$41,464
Average Annuity Savings Fund Balance	\$62,432	\$51,058

### Age by Service Distribution of Active Members

Present Age	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+	Total
0 - 24								
25 - 29								
30 - 34								
35 - 39								
40 - 44					6			6
45 - 49				1	34	19	7	61
50 - 54			9	14	93	148	224	488
55 - 59			132	213	277	267	819	1,708
60 - 64			195	308	285	306	308	1,402
65+			178	224	219	200	28	849
Total			514	760	914	940	1,386	4,514

### Salary by Age Distribution of Active Members

Present Age	Number of Members	Total Salary	Average Salary
40 - 44	6	\$314,389	\$52,398
45 - 49	61	\$3,082,950	\$50,540
50 - 54	488	\$26,202,045	\$53,693
55 - 59	1,708	\$91,262,943	\$53,433
60 - 64	1,402	\$70,289,971	\$50,135
65+	849	\$40,108,878	\$47,242
Total	4,514	\$231,261,176	\$51,232

# RETIREE DATA

The following data reflects information as of the date of retirement.

	Total
Number of Members	4,575
Average Age	61.1
Average Annual Benefit	\$29,096
Annuity	\$23,475,513
Pension	\$109,638,131
Total Current Payable	\$133,113,644

## Benefit by Age Distribution

Present Age	Number of Members	Total Benefits	Average Benefits
40 - 44	4	\$45,011	\$11,253
45 - 49	54	\$896,162	\$16,596
50 - 54	392	\$9,977,072	\$25,452
55 - 59	1,646	\$50,825,160	\$30,878
60 - 64	1,549	\$46,490,020	\$30,013
65 - 69	651	\$17,964,217	\$27,595
70 - 74	215	\$5,577,444	\$25,942
75 - 79	50	\$1,066,795	\$21,336
80 - 84	11	\$219,264	\$19,933
85 - 89	3	\$52,500	\$17,500
Totals	4,575	\$133,113,644	\$29,096

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# ACTUARIAL ASSUMPTIONS

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## Actuarial Cost Method

Entry Age Normal

## Investment Return

8.25% per year

## Interest Rate Credited to the Annuity Savings Fund

3.5% per year

## Assumed Rate of Cost of Living Increases (COLA)

3% per year

## Mortality

RP-2000 Healthy Annuitant table projected 10 years with scale AA (gender distinct). This is applicable to both pre-retirement and post-retirement benefits. For disabled members, the mortality rate is assumed to be in accordance with the RP-2000 Table (gender distinct) set forward 3 years for males. It is assumed that 55% of pre-retirement deaths are job-related for Group 1 and 2 members. For members retired under an Accidental Disability, 40% of deaths are assumed to be from the same cause as the disability.

## Salary Increase

Based on an analysis of past experience. Annual rates are shown below.

### Services

0	8.50%
1	8.00%
2	7.50%
3	7.00%
4	6.50%
5	6.00%
6	5.50%
7	5.00%
8	4.75%
9	4.75%
10	4.75%
11	4.75%
12	4.75%
13	4.75%
14-24	4.75%
25+	4.75%

# ACTUARIAL ASSUMPTIONS *(continued)*

## Retirement

Age	Group 1		Group 2
	Male	Female	
45	0.000	0.000	0.000
46	0.000	0.000	0.000
47	0.000	0.000	0.000
48	0.000	0.000	0.000
49	0.000	0.000	0.000
50	0.015	0.030	0.020
51	0.010	0.030	0.020
52	0.010	0.030	0.020
53	0.015	0.025	0.040
54	0.020	0.035	0.050
55	0.040	0.050	0.100
56	0.035	0.060	0.100
57	0.040	0.055	0.100
58	0.045	0.070	0.100
59	0.050	0.090	0.130
60	0.080	0.080	0.150
61	0.100	0.100	0.150
62	0.160	0.160	0.150
63	0.160	0.160	0.150
64	0.160	0.160	0.200
65	0.250	0.250	0.200
66	0.250	0.250	0.200
67	0.250	0.250	0.200
68	0.250	0.250	0.200
69	0.250	0.250	0.200
70	1.000	1.000	1.000



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## ACTUARIAL ASSUMPTIONS *(continued)*

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### Disability

Based on an analysis of past experience. Sample annual rates are shown below.

Age	Group 1	Group 2
20	0.00030	0.00060
30	0.00033	0.00080
40	0.00091	0.00166
50	0.00168	0.00260
60	0.00250	0.00350

It is also assumed that 55% of disabilities will be job-related for Group 1 and 2 members.

### Withdrawal

Based on an analysis of past experience. For Groups 1 and 2, rates are both age and service based for service up to 10 years. After 10 years of service rates are age based. Sample annual rates are shown below.

#### Groups 1 & 2

Age	Service		
	<u>0</u>	<u>5</u>	<u>10+</u>
20	0.180	0.000	0.000
30	0.150	0.090	0.041
40	0.125	0.070	0.031
50	0.100	0.048	0.021

