

JUNE, 2003

# Analysis of Early Retirement Incentive Program (ERIP)

for the Springfield Water and Sewer Commission



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# INTRODUCTION

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The Public Employee Retirement Administration Commission (PERAC) is pleased to release our analysis of Chapter 115 of the Acts of 2002, *An Act Providing for an Early Retirement Incentive Program (ERIP) for Certain Employees of the Springfield Water and Sewer Commission*. Section 2 of the law directed PERAC to complete an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the Act and submit a report to the Joint Committee on Public Service by July 1, 2003.

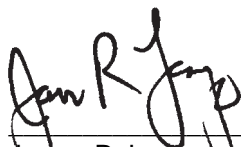
The law provides that retirement allowances of members who participated in the ERIP be determined by adding up to 5 years to the member's age and/or creditable service (any combination in full years up to a maximum of 5 years). A member's enhanced benefit cannot exceed 80% of the average rate of annual compensation used in his/her calculation. Members retiring under the program began receiving retirement benefits during 2002 and payments were retroactive to September 30, 2000, the date of termination for those members.

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 board. We previously reviewed the December 31, 2001 data as part of the 2002 data submission process. We reviewed each member's data as both an active and retired member for reasonableness and consistency.

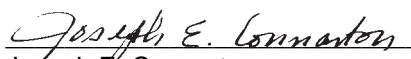
We used the investment return assumption used in the most recent actuarial valuation report. For all other assumptions, we used the standard PERAC assumption set for performing actuarial valuations as of January 1, 2002. These assumptions differ from the assumptions used in your last actuarial valuation performed as of January 1, 2001. 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 retirement system. This analysis 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.

Respectfully submitted,  
Public Employee Retirement Administration Commission



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Joseph E. Connarton  
Executive Director

Dated: June 12, 2003

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# COST ANALYSIS

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## Methodology

Our analysis of the cost of the ERIP consisted of measuring the change in both the actuarial accrued liability and normal cost before and after the application of the enhanced benefit. The amortization of the increase in actuarial accrued liability and the normal cost form the basis of the impact of the ERIP on the plan's funding schedule. These items are discussed below.

### Actuarial Accrued Liability

We measured the increase in actuarial accrued liability due to the incentive for each member who retired under the program. First, we valued the group as active members on January 1, 2002 (including any changes to reflect service adjustments made after January 1, 2002, such as service buy-backs). This calculation determines the liability attributable to the employees who elected the ERIP exclusive of the additional liability associated with the incentive program. These results were then brought forward on an actuarial basis to reflect the estimated accrued liability as of the July 1, 2002.

We then valued the same group as retirees after the application of the ERIP. These liabilities were determined as of July 1, 2002. Also, since retirement benefits were paid retroactively under this bill, we added the value of the benefits already paid to this liability to determine the total retiree liability.

The accrued liability for the members as retirees including the ERIP less the accrued liability for the members as active employees excluding the ERIP represents the increase in accrued liability due to the ERIP. This increase will be amortized as part of the system's funding schedule and will be a component of the system's annual appropriation.

### Normal Cost

The increase in actuarial liability is somewhat offset by a decrease in normal cost. The normal cost, or actuarial cost for the current year for active members, is shown as of January 1, 2002. There is no normal cost for retired members. Any decrease in normal cost for a retiring member would only be expected to last for a few years (the period the member would have remained in active service if the ERIP were not implemented).

## COST ANALYSIS *(continued)*

### Springfield Water and Sewer Commission

Actives		Retirees	
Number of Members	7	Number of Members	7
Average Service	28.9	Average Age	55.1
Average Compensation	\$37,714	Average Annual Benefit	\$20,331

	As Actives	As Retirees
Total Regular Compensation	\$264,000	N/A
Total Normal Cost	\$18,200	N/A
Employee Contributions	\$13,700	N/A
Net Employer Normal Cost	\$4,500	N/A
Actuarial Liability (as of July 1, 2002)	\$1,305,600	\$1,940,600

Increase in Actuarial Liability (as of July 1, 2002)	\$635,000
Amortization of Increase (assumed payment January 1)	
12 year level basis (payments begin in FY04 and end in FY15)	\$90,100
11 year level basis (payments begin in FY05 and end in FY15)	\$103,100

The above results provide a measure of the increase in actuarial accrued liability and decrease in normal cost due to the ERIP. The actuarial liability and normal cost were determined as active members (before the implementation of the ERIP) and as retired members (with the enhanced ERIP benefit).

For active members, average service reflects service as of January 1, 2002 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2002.

Chapter 115 indicates that the Springfield Retirement Board shall prepare a funding schedule that reflects the costs of this program. The schedule should reduce the additional unfunded liability to zero by June 30, 2015. Above, we have shown both a 12-year schedule with payments commencing in FY04 and an 11-year schedule with payments commencing in FY05. The Board should select one of these schedules or contact PERAC to discuss alternatives. The payment schedule adopted by the Board should then be included in system's overall funding schedule.

# ACTUARIAL ASSUMPTIONS

Actuarial Cost Method                      Entry Age Normal

Investment Return                              8.5% 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 (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 and 90% are job-related for Group 4 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.

Service	Group 1	Group 2	Group 4
0	7.00%	7.00%	8.00%
1	6.50%	6.50%	7.50%
2	6.50%	6.50%	7.00%
3	6.00%	6.00%	6.50%
4	6.00%	6.00%	6.00%
5	5.50%	5.50%	6.00%
6	5.50%	5.50%	5.50%
7	5.00%	5.00%	5.50%
8	5.00%	5.00%	5.25%
9	4.75%	5.00%	5.25%
10+	4.75%	5.00%	5.25%

## ACTUARIAL ASSUMPTIONS *(continued)*

### Retirement

Age	Groups 1 & 2		Group 4
	Male	Female	
45	0.000	0.000	0.010
46	0.000	0.000	0.010
47	0.000	0.000	0.010
48	0.000	0.000	0.010
49	0.000	0.000	0.010
50	0.010	0.015	0.020
51	0.010	0.015	0.020
52	0.010	0.020	0.020
53	0.010	0.025	0.050
54	0.020	0.025	0.075
55	0.020	0.055	0.150
56	0.025	0.065	0.100
57	0.025	0.065	0.100
58	0.050	0.065	0.100
59	0.065	0.065	0.150
60	0.120	0.050	0.200
61	0.200	0.130	0.200
62	0.300	0.150	0.250
63	0.250	0.125	0.250
64	0.220	0.180	0.300
65	0.400	0.150	1.000
66	0.250	0.200	1.000
67	0.250	0.200	1.000
68	0.300	0.250	1.000
69	0.300	0.200	1.000
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	<u>Groups 1 &amp; 2</u>	Group 4
20	0.00010	0.0010
30	0.00030	0.0030
40	0.00101	0.0030
50	0.00192	0.0125
60	0.00280	0.0085

Based on an analysis of past experience. It is also assumed that the percentage of job-related disabilities is 55% for Groups 1 & 2 and 90% for Group 4.

### Withdrawal

Based on analysis of past experience. Annual rates are based on years of service. Sample annual rates for Groups 1 and 2 are shown below. For Group 4 members the rate is 0.015 each year for service up to and including 10 years. No withdrawal is assumed thereafter.

### Groups 1 & 2

Service	Groups 1 & 2
0	0.150
5	0.076
10	0.054
15	0.033
20	0.020

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