

**Analysis of Early Retirement Incentive Program (ERIP)**  
for the Beverly Retirement System  
October, 2004



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# INTRODUCTION

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The Public Employee Retirement Administration Commission (PERAC) is pleased to release our analysis of Section 116 of Chapter 46 of the Acts of 2003, *An Act Providing Relief and Flexibility to Municipal Officials* which established a local option to allow cities, towns, counties, authorities, and districts to offer an Early Retirement Incentive Program (ERIP). The ERIP was adopted by the City and the Housing Authority. Subsection 8 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 board by December 31, 2004.

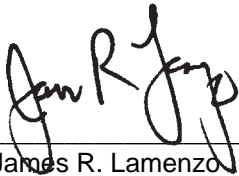
The law provides that retirement allowances of members who participated in the ERIP be determined by adding up to 5 years to the member's age and/or creditable service (any combination in full years up to a maximum of 5 years). A member's enhanced benefit cannot exceed 80% of the average rate of annual compensation used in his/her calculation. Members retiring under the program had effective dates of retirement between November 1, 2003 and December 1, 2003.

This study was based on active member data as of December 31, 2002, 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, 2002 data as part of the 2003 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, 2003. These assumptions are the same as the assumptions used in your most recent actuarial valuation performed as of January 1, 2004. The assumptions are shown at the back of this report.

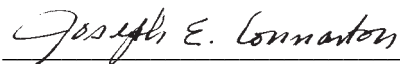
We believe this report represents an accurate appraisal of the costs and liabilities of the ERIP for the retirement system. This analysis was performed in accordance with generally accepted actuarial principles and practices relating to pension plans. In our opinion, the actuarial assumptions used in 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



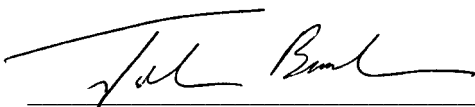
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James R. Lamenz  
*Member of the American Academy of Actuaries  
Associate of the Society of Actuaries  
Enrolled Actuary Number 02-4709*



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Joseph E. Connarton  
*Executive Director*



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John F. Boorack  
*Senior Actuarial Analyst*

Dated: October 1, 2004

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# COST ANALYSIS BY GOVERNMENTAL UNIT

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## Methodology

The results of our analysis for each governmental unit that accepted the ERIP are presented on the following pages. Participating units had the option to limit the number of years and/or the number of members eligible to retire under the program. Such limitations are noted.

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 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, 2003 (including any changes to reflect service adjustments made after January 1, 2003, 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 retirement date (November 1, 2003 for the City and December 1, 2003 for the Housing Authority).

We then valued the same group as retirees after the application of the ERIP. These liabilities were determined as of November 1, 2003 for the City and December 1, 2003 for the Housing Authority.

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. We assumed the amortization of the increase in liability would begin with the FY06 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, 2003. 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 BY GOVERNMENTAL UNIT *(continued)*

## City of Beverly – Limited to 1 employee

| Actives              |          |
|----------------------|----------|
| Number of Members    | 1        |
| Average Service      | 28.3     |
| Average Compensation | \$47,470 |

| Retirees               |          |
|------------------------|----------|
| Number of Members      | 1        |
| Average Age            | 59.7     |
| Average Annual Benefit | \$34,241 |

|  | As Actives | As Retirees |
|--|------------|-------------|
| Total Regular Compensation                   | \$47,470   | N/A         |
| Total Normal Cost                            | \$4,400    | N/A         |
| Employee Contributions                       | \$3,400    | N/A         |
| Net Employer Normal Cost                     | \$1,000    | N/A         |
| Actuarial Liability (as of November 1, 2003) | \$285,700  | \$365,100   |

|   |          |
|---|----------|
| Increase in Actuarial Liability (as of November 1, 2003)      | \$79,400 |
| Amortization of Increase for FY06 (assumed payment January 1) |          |
| 15-year level basis   | \$10,200 |

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, 2003 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2003.

## COST ANALYSIS BY GOVERNMENTAL UNIT *(continued)*

### Beverly Housing Authority – Limited to 1 employee

| Actives              |          | Retirees               |         |
|----------------------|----------|------------------------|---------|
| Number of Members    | 1        | Number of Members      | 1       |
| Average Service      | 21.3     | Average Age            | 44.2    |
| Average Compensation | \$37,754 | Average Annual Benefit | \$7,578 |

|  | As Actives | As Retirees |
|--|------------|-------------|
| Total Regular Compensation                   | \$37,754   | N/A         |
| Total Normal Cost                            | \$2,500    | N/A         |
| Employee Contributions                       | \$2,800    | N/A         |
| Net Employer Normal Cost                     | (\$300)    | N/A         |
| Actuarial Liability (as of December 1, 2003) | \$123,300  | \$123,300   |

|   |     |
|---|-----|
| Increase in Actuarial Liability (as of December 1, 2003)      | \$0 |
| Amortization of Increase for FY06 (assumed payment January 1) |     |
| 15-year level basis   | \$0 |

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, 2003 but excludes any enhanced service provided by the ERIP. For retired members, the averages are as of December 31, 2003.

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## EFFECT ON FUNDING SCHEDULE

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### Amortization of the Increase in Actuarial Accrued Liability

The bottom section of the cost page for each governmental unit shows the amortization of the increase in actuarial accrued liability on a 15-year, level amortization basis. This basis requires an annual funding amount of \$10,200 from FY06 through FY20. The allocation to each governmental unit is summarized below. Future system appropriations will reflect these unit costs.

| <b>Governmental Unit</b>  | <b>Level, 15-year<br/>Effective FY06</b> |
|---------------------------|--|
| City of Beverly           | \$10,200                                 |
| Beverly Housing Authority | \$0                                      |
| <b>Total</b>              | <b>\$10,200</b>                          |

The legislation did not specify how the increased cost should be amortized under the schedule. The Board indicated that the ERIP will be funded on a 15-year level basis.

### Decrease in Normal Cost

There is a decrease in employer normal cost for all units of approximately \$700 in FY04 for retiring members since normal cost accrues only for active members. This decrease is only expected to last a few years (the period the member would have remained in service if the ERIP were not implemented). This decrease will be partially offset by the normal cost for any members hired to replace retiring members. Any decrease in employer normal cost will be reflected in future actuarial valuations and corresponding funding schedules. We have not estimated the normal cost for new hires as part of this study.





# 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        |

PERAC  
Five Middlesex Avenue  
Third Floor  
Somerville, MA  
02145

*ph* 617 666 4446  
*fax* 617 628 4002  
*tty* 617 591 8917  
*web* [www.mass.gov/perac](http://www.mass.gov/perac)