

*Report
of the
Actuary*

MARTIN E. SEGAL COMPANY

CONSULTANTS AND ACTUARIES

116 HUNTINGTON AVENUE
BOSTON, MASSACHUSETTS 02116-5712
(617) 424-7300
FAX: (617) 262-0097

January 31, 1992

MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM
OF THE STATE OF RHODE ISLAND

Valuation and Review as of
June 30, 1990

Retirement Board of the Municipal
Employees' Retirement System
State of Rhode Island
40 Fountain Street, 8th Floor
Providence, RI 02903

Dear Members of the Board:

We are pleased to submit herewith our Actuarial Valuation of the Municipal Employees' Retirement System as of June 30, 1990.

This report was delayed as a result of the late receipt of the final financial information for the year ended June 30, 1990. We understand this was primarily attributable to a substantial increase in the number of transactions for fiscal 1991 when compared to earlier years.

Our report analyzes the actuarial status of the System, and projects the cost requirements for the Board to certify to each municipality for the fiscal year beginning July 1, 1992.

We would like to take this opportunity to thank those State employees from whom we received a great deal of help in obtaining the information which forms the basis of this report. Mr. James Reilly, Acting Executive Director, and Mr. Louis Capizano, Supervisory Accountant, were available whenever needed to answer any questions and provide any information requested. Indeed, the material they provided on their own initiative anticipated many of our needs.

For convenience, this report is divided into the following sections:

| <u>SECTION</u> | <u>PAGE</u> |
|--|-------------|
| I. SUMMARY | 5 |
| II. EMPLOYEE DATA | 19 |
| III. RETIREE DATA | 26 |
| IV. RETIREMENT FUND | 34 |
| V. ACTUARIAL ASSUMPTIONS AND COST METHOD | 38 |
| VI. RESULTS OF VALUATION | 46 |

Copyright © January, 1992
The Segal Company
All Rights Reserved

MARTIN E. SEGAL COMPANY

ATLANTA / BOSTON / CHICAGO / CLEVELAND / DENVER / EDMONTON / HARTFORD / HOUSTON / LOS ANGELES / NEW ORLEANS
NEW YORK / PHOENIX / SAN FRANCISCO / SEATTLE / TORONTO / WASHINGTON, D.C. / WEST PALM BEACH

Following the report, we have attached our actuarial certificate detailing the cost factors, assumptions, and plan of benefits used for the valuation.

We will be pleased to meet with you to discuss the report at your convenience.

Sincerely yours,

MARTIN E. SEGAL COMPANY, INCORPORATED

By



Sherman G. Sass
Senior Vice President

By



James R. Laws, F.S.A., M.A.A.A.
Senior Vice President and Actuary

SGS/JRL/hva
R19

1. SUMMARY

Benefit Provisions

The Municipal Employees' Retirement System of Rhode Island covers employees of the many municipalities, housing authorities, and school, water and sewer districts which have elected to participate. There is one plan for general employees and two optional plans for police and firemen.* General employees contribute 6 percent of their annual earnings, while police and fire groups that elect the 25-year service pension option contribute 7 percent. The employee contribution rate is increased by 1 percent for groups that elect an optional cost-of-living provision or police and fire departments that elect the 20-year service pension option.

The System generally provides retirement benefits equal to 2% of final average salary per year of service. Such benefits are available to members at least age 58 with 10 years of service or after 30 years at any age. Under the 25-year service pension optional plan, police and firemen may retire at age 55 if they have 10 years of service or after 25 years of service at any age. The benefit accrual rate is 2% of final average salary per year of service. Under the 20-year service pension optional plan, police and firemen may retire at any age with 20 years of service. This optional plan provides a benefit equal to 2-1/2% of final average salary per year of service. Benefits are based on the average of the highest three consecutive years' earnings. The maximum benefit is 75% of such average salary.

The plan also provides non-service-connected disability benefits after 5 years of service, service-connected disability pensions with no minimum service requirement, vested benefits after 10 years of service, survivors' benefits, and certain lump sum death benefits.

*Throughout this report, "general employees" means participants under the regular program and "police and firemen" means participants under one of the optional programs.

More detail on the benefit provisions can be found in Exhibit IV of the Certificate of Actuarial Valuation following this report.

Employee Data

We received data on 5,162 active general employees and 527 police and firemen who were participating in the System as of June 30, 1990. The average salary was \$19,000 for general employees and \$27,200 for police and firemen. On average, the general employees were age 46 1/2 and had 9 years of service; police and firemen were age 35 with 9 years of service.

Retiree Data

We received data on 2,186 pensioners and 103 beneficiaries as of June 30, 1990. The pensioners' average monthly benefit was \$411. Approximately seven percent of the pensioners on the rolls as of June 30, 1990 retired in the year ended June 30, 1990.

Retirement Fund

As of June 30, 1990, the Fund had assets of approximately \$255.0 million available as an offset to the actuarial liabilities for future benefits.

Actuarial Valuation

The valuation was prepared as of June 30, 1990 and was based on what we believe to be reasonable assumptions as to expected future experience. We applied the modified form of the "entry age normal cost" method of funding which was adopted in 1989. This method amortizes unanticipated changes in the unfunded actuarial accrued liability occurring in fiscal 1989-90 or later over the future projected payroll rather than over the fixed amortization period.

All of the actuarial assumptions are the same as applied in the last actuarial valuation. The actuarial assumptions are detailed in Exhibit III of the attached Certificate of Actuarial Valuation.

This valuation reflects the following benefit improvements for the listed plans. All of the benefit improvements are effective on or before July 1, 1992, which is the effective date of the employer contribution rates calculated in this actuarial valuation.

| <u>System</u> | <u>Improvement</u> | <u>Date Effective</u> |
|--------------------------|-------------------------|-----------------------|
| 3002 Bristol | Adopted COLA B | January 1, 1991 |
| 3015 Jamestown | Adopted COLA C | January 1, 1992 |
| 3021 Newport | Adopted COLA B | January 1, 1992 |
| 4064 Primrose Vol. Fire | 20-year service pension | July 1, 1990 |
| 4076 N. Smithfield Pol. | " " " | July 1, 1990 |
| 4077 Tiverton Fire | " " " | July 1, 1990 |
| 4082 Foster Police | " " " | July 1, 1990 |
| 4085 Woonsocket Police | " " " | July 1, 1991 |
| 4087 Hopkinton Police | " " " | July 1, 1991 |
| 4090 Burrillville Police | " " " | July 1, 1991 |

The combined employer normal cost* for all general employees is \$3.9 million. This is 4.0 percent of the payroll of participating general employees. The combined employer normal cost for all police and firemen is \$1.1 million or 8.0% of payroll.

For general employees, the actuarial liability* (the accumulated cost of the benefits assigned to periods before July 1, 1990) is \$225.9 million of which \$91.4 million represents the liability to those already receiving pensions. The unfunded actuarial liability at the end of the year is \$3.5 million after accounting for assets of \$222.4 million. For police and firemen, the actuarial liability is \$33.5 million of which \$9.2 million is for those receiving pensions. The unfunded actuarial liability is \$0.9 million after accounting for police and fire assets of \$32.6 million.

The value of the System's vested benefits for both general employees and police and firemen is approximately \$189.7 million. Assets exceed this amount by \$65.3 million.

*Please refer to the "Actuarial Assumptions and Cost Method" section of the report for definitions of technical terms.

The total annual employer cost as of June 30, 1990 adjusted for monthly payment is \$5.7 million (5.8% of covered payroll) for general employees and \$1.4 million (10.1% for covered payroll) for police and firemen. These amounts are in addition to the required employee contributions. The amortization payments for each municipality are generally based on the period remaining of an initial 25-year funding period. Some of these remaining periods were changed in prior valuations in order to spread the effects of actuarial cost fluctuations.

In cases where a municipality has an increase in its contribution rate from the prior year of more than two percentage points, it may adopt a "smoothed employer contribution rate." The "smoothed rate percent" equals the prior year's contribution rate plus two percentage points plus the cost of any benefit increase adopted. East Providence elected this option for the 1990-1991 fiscal year while no one elected it for the 1991-92 fiscal year. No municipalities are eligible for a smoothed rate for the 1992-1993 fiscal year as determined in the June 30, 1990 actuarial valuation.

II. EMPLOYEE DATA

We received data on 5,162 general employees and 527 police and firemen participating in the System on June 30, 1990. The data included age, service, sex, and salary for each employee. The average salary of the participants was \$19,000 for general employees and \$27,200 for police and firemen.

Tables 1A and 1B give detailed age, service and average salary data on general employees and police and firemen, respectively.

Tables 2A and 2B summarize certain basic statistics as of June 30, 1990 and 1989 on active general employees and police and firemen. Please note that there was a 1-1/2 year decrease in the average age and in the average service for the police and firemen. This is attributable to the addition of new employees groups during the year ended June 30, 1990. Table 2C gives active employee statistical data separately for each participating municipality. This table shows the number of employees, their average age, average service, and average salary as of June 30, 1990. Table 2D shows the same information as of June 30, 1989 and is included for comparison purposes.

Some of the data we received for this valuation was incomplete or had obvious errors. However, for the majority of the municipalities, the data was usable without adjustment. The Retirement System continues to make progress in improving the quality of the data. We urge that the Board continue to stress the importance of good data to the municipalities.

Table 1A
 Number and Average Salaries of Employees in Active Service
 as of June 30, 1990 by Age and by Years of Service
 GENERAL EMPLOYEES

| Age | Total | Years of service | | | | | | | | | |
|-------------|----------|------------------|----------|----------|----------|----------|----------|----------|----------|-------------|----------|
| | | 0 - 4 | 5 - 9 | 10 - 14 | 15 - 19 | 20 - 24 | 25 - 29 | 30 - 34 | 35 - 39 | 40 and over | Unknown |
| Total | 5,162 | 2,187 | 887 | 790 | 653 | 395 | 125 | 44 | 13 | 4 | 64 |
| | \$19,000 | \$17,100 | \$19,200 | \$20,600 | \$20,900 | \$19,800 | \$24,300 | \$23,100 | \$27,500 | \$25,500 | \$22,400 |
| Under 20 | 8 | 8 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | \$17,700 | \$17,700 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 20 - 24 | 154 | 150 | 3 | -- | -- | -- | -- | -- | -- | -- | 1 |
| | 17,900 | 17,800 | \$19,300 | -- | -- | -- | -- | -- | -- | -- | \$22,300 |
| 25 - 29 | 340 | 264 | 63 | 9 | -- | -- | -- | -- | -- | -- | 4 |
| | 19,300 | 18,600 | 21,900 | \$20,200 | -- | -- | -- | -- | -- | -- | 20,000 |
| 30 - 34 | 436 | 266 | 100 | 58 | 9 | -- | -- | -- | -- | -- | 3 |
| | 19,600 | 18,200 | 21,200 | 22,000 | \$23,800 | -- | -- | -- | -- | -- | 23,700 |
| 35 - 39 | 686 | 326 | 143 | 119 | 78 | 10 | -- | -- | -- | -- | 10 |
| | 20,000 | 17,300 | 20,500 | 24,200 | 22,900 | \$23,900 | -- | -- | -- | -- | 25,100 |
| 40 - 44 | 742 | 365 | 150 | 89 | 82 | 41 | 5 | -- | -- | -- | 10 |
| | 19,400 | 16,600 | 18,000 | 22,600 | 25,800 | 27,600 | \$22,400 | -- | -- | -- | 25,200 |
| 45 - 49 | 635 | 248 | 122 | 115 | 85 | 38 | 17 | 1 | -- | -- | 9 |
| | 19,100 | 16,600 | 17,800 | 19,500 | 22,200 | 23,600 | 30,600 | \$23,200 | -- | -- | 28,900 |
| 50 - 54 | 638 | 189 | 97 | 140 | 104 | 59 | 27 | 9 | 4 | -- | 9 |
| | 18,900 | 16,600 | 19,800 | 18,600 | 18,900 | 21,200 | 26,700 | 20,800 | \$28,900 | -- | 17,800 |
| 55 - 59 | 702 | 186 | 106 | 119 | 142 | 99 | 28 | 12 | 2 | -- | 8 |
| | 18,700 | 16,900 | 17,800 | 19,500 | 19,800 | 18,000 | 22,300 | 27,100 | 23,800 | -- | 20,600 |
| 60 - 64 | 541 | 97 | 88 | 105 | 114 | 83 | 32 | 14 | 3 | 2 | 3 |
| | 18,500 | 15,200 | 18,000 | 19,000 | 18,500 | 18,100 | 23,700 | 25,100 | 39,700 | \$26,500 | 16,300 |
| 65 - 69 | 165 | 18 | 12 | 31 | 32 | 52 | 11 | 5 | 2 | 2 | -- |
| | 18,100 | 15,100 | 15,400 | 20,600 | 20,300 | 15,800 | 20,600 | 19,700 | 25,800 | 24,500 | -- |
| 70 and over | 42 | 12 | 1 | 1 | 6 | 12 | 5 | 3 | 2 | -- | -- |
| | 14,800 | 15,800 | 22,900 | 27,800 | 15,000 | 13,800 | 14,100 | 10,000 | 12,000 | -- | -- |
| Unknown | 73 | 58 | 2 | 4 | 1 | 1 | -- | -- | -- | -- | 7 |
| | 14,800 | 13,600 | 22,900 | 20,100 | 18,900 | 23,000 | -- | -- | -- | -- | 17,700 |

RHODE ISLAND MUNICIPAL ERS

Table 1B
 Number and Average Salaries of Employees in Active Service
 as of June 30, 1990 by Age and by Years of Service
 POLICE AND FIREMEN

| Age | Total | Years of service | | | | | | | | |
|----------|----------|------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | 0 - 4 | 5 - 9 | 10 - 14 | 15 - 19 | 20 - 24 | 25 - 29 | 30 - 34 | 35 - 39 | Unknown |
| Total | 527 | 224 | 104 | 53 | 66 | 33 | 22 | 4 | 1 | 20 |
| | \$27,200 | \$24,700 | \$27,800 | \$28,100 | \$29,500 | \$30,000 | \$32,500 | \$37,200 | \$38,000 | \$28,300 |
| Under 20 | 1 | 1 | -- | -- | -- | -- | -- | -- | -- | -- |
| | \$19,700 | \$19,700 | -- | -- | -- | -- | -- | -- | -- | -- |
| 20 - 24 | 66 | 63 | 2 | -- | -- | -- | -- | -- | -- | 1 |
| | 23,900 | 23,700 | \$29,700 | -- | -- | -- | -- | -- | -- | \$25,900 |
| 25 - 29 | 125 | 91 | 32 | -- | -- | -- | -- | -- | -- | 2 |
| | 26,200 | 25,500 | 28,100 | -- | -- | -- | -- | -- | -- | 27,500 |
| 30 - 34 | 116 | 45 | 46 | 14 | 2 | -- | -- | -- | -- | 9 |
| | 26,800 | 24,800 | 27,500 | \$29,000 | \$31,000 | -- | -- | -- | -- | 29,400 |
| 35 - 39 | 74 | 12 | 17 | 25 | 15 | -- | -- | -- | -- | 5 |
| | 27,400 | 22,600 | 27,100 | 28,200 | 30,400 | -- | -- | -- | -- | 26,800 |
| 40 - 44 | 52 | 4 | 4 | 9 | 25 | 9 | -- | -- | -- | 1 |
| | 28,900 | 23,600 | 29,600 | 27,800 | 29,300 | \$30,600 | -- | -- | -- | 30,900 |
| 45 - 49 | 42 | -- | -- | 4 | 15 | 12 | 10 | -- | -- | 1 |
| | 30,100 | -- | -- | 27,200 | 28,900 | 28,800 | \$35,000 | -- | -- | 27,100 |
| 50 - 54 | 25 | 3 | 3 | -- | 7 | 6 | 5 | 1 | -- | -- |
| | 32,100 | 31,600 | 30,900 | -- | 30,100 | 33,600 | 34,600 | \$29,200 | -- | -- |
| 55 - 59 | 12 | 1 | -- | 1 | 2 | 3 | 3 | 1 | 1 | -- |
| | 27,400 | 23,600 | -- | 20,000 | 25,200 | 28,300 | 25,500 | 35,800 | \$38,000 | -- |
| 60 - 64 | 9 | 1 | -- | -- | -- | 3 | 3 | 2 | -- | -- |
| | 32,000 | 36,800 | -- | -- | -- | 27,700 | 28,100 | 41,900 | -- | -- |
| 65 - 69 | 1 | -- | -- | -- | -- | -- | 1 | -- | -- | -- |
| | 31,400 | -- | -- | -- | -- | -- | 31,400 | -- | -- | -- |
| Unknown | 4 | 3 | -- | -- | -- | -- | -- | -- | -- | 1 |
| | 23,700 | 22,400 | -- | -- | -- | -- | -- | -- | -- | 27,700 |

RHODE ISLAND MUNICIPAL ERS

Table 2A
 Statistical Data on Active Employees
 on June 30, 1990 and 1989

GENERAL EMPLOYEES

| | June 30, 1990 | June 30, 1989 |
|--|---------------|---------------|
| Number of covered employees | 5,162 | 4,804 |
| Total annual salary | \$98,210,400 | \$87,126,400 |
| Average annual salary | \$19,000 | \$18,100 |
| Average age | 46 1/2 | 46 1/2 |
| Average years of service | 9 | 9 1/2 |
| Number eligible for service retirement | 700 | 665 |
| Number vested but not eligible to retire | 1,324 | 1,266 |

RHODE ISLAND MUNICIPAL ERS

Table 2B
 Statistical Data on Active Employees
 on June 30, 1990 and 1989

POLICE AND FIREMEN

| | June 30, 1990 | June 30, 1989 |
|--|---------------|---------------|
| Number of covered employees | 527 | 426 |
| Total annual salary | \$14,331,300 | \$11,057,300 |
| Average annual salary | \$27,200 | \$26,000 |
| Average age | 35 | 36 1/2 |
| Average years of service | 9 | 10 1/2 |
| Number eligible for service retirement | 58 | 58 |
| Number vested but not eligible to retire | 121 | 121 |

RHODE ISLAND MUNICIPAL ERS

Table 2C

Statistical Data on Active Employees on June 30, 1990
by Municipality

| Municipality | Number | Average age | Average service | Average salary |
|----------------------------|--------|-------------|-----------------|----------------|
| General Employees | | | | |
| 01 Barrington | 141 | 47 1/2 | 10 1 2 | \$20,300 |
| 02 Bristol | 117 | 45 | 10 1/2 | 20,100 |
| 03 Burrillville | 145 | 45 1/2 | 6 1/2 | 15,900 |
| 04 Central Falls | 46 | 42 | 10 | 21,000 |
| 07 Cranston | 747 | 46 | 9 1/2 | 19,100 |
| 08 Cumberland | 229 | 49 1/2 | 8 1/2 | 17,300 |
| 09 E. Greenwich | 129 | 46 1/2 | 8 1/2 | 18,300 |
| 10 E. Providence | 394 | 47 1/2 | 10 1/2 | 22,000 |
| 11 Exeter-W. Greenwich | 34 | 47 | 9 | 14,400 |
| 12 Foster | 37 | 43 | 5 1/2 | 16,900 |
| 13 Gloucester | 54 | 43 1/2 | 5 | 13,600 |
| 14 Hopkinton | 21 | 43 | 5 1/2 | 18,000 |
| 15 Jamestown | 40 | 41 1/2 | 8 | 21,100 |
| 16 Johnston | 233 | 49 | 10 1/2 | 18,000 |
| 21 Newport | 314 | 44 1/2 | 10 1/2 | 20,800 |
| 22 New Shoreham | 15 | 41 1/2 | 8 1/2 | 16,700 |
| 23 N. Kingstown | 205 | 44 1/2 | 8 1/2 | 21,200 |
| 24 N. Providence | 232 | 47 1/2 | 9 1/2 | 17,400 |
| 25 N. Smithfield | 79 | 47 | 8 1/2 | 16,800 |
| 26 Pawtucket | 684 | 46 1/2 | 10 1/2 | 18,800 |
| 29 Richmond | 15 | 41 | 3 | 9,000 |
| 30 Scituate | 62 | 50 | 11 1/2 | 16,100 |
| 31 Smithfield | 120 | 48 1/2 | 9 | 20,700 |
| 32 S. Kingstown | 225 | 43 | 7 1/2 | 19,100 |
| 33 Tiverton | 82 | 50 | 9 1/2 | 18,900 |
| 34 Warren | 74 | 50 | 11 | 19,700 |
| 36 Westerly | 9 | 56 1/2 | 16 | 25,500 |
| 37 W. Greenwich | 18 | 48 1/2 | 10 1/2 | 16,900 |
| 39 Woonsocket | 388 | 47 | 9 | 19,000 |
| 40 Charho School | 108 | 43 | 4 1/2 | 13,900 |
| 41 Foster-Glocester | 34 | 49 | 8 1/2 | 15,100 |
| 51 Cranston Housing | 5 | 44 1/2 | 5 | 23,700 |
| 52 E. Providence Housing | 12 | 51 | 7 | 20,500 |
| 53 Pawtucket Housing | 38 | 42 1/2 | 6 1/2 | 26,700 |
| 56 Cumberland Housing | 13 | 46 | 6 | 23,500 |
| 57 Lincoln Housing | 7 | 48 1/2 | 8 | 20,500 |
| 59 Bristol Housing | 7 | 46 1/2 | 8 | 21,900 |
| 65 Burrillville Housing | 2 | 47 | 8 1/2 | 25,600 |
| 66 N. Providence Housing | 5 | 47 | 7 | 23,400 |
| 67 E. Smithfield Water | 2 | 54 | 6 1/2 | 29,900 |
| 68 Greenville Water | 5 | 50 1/2 | 9 1/2 | 24,200 |
| 71 Warren Housing | 6 | 54 1/2 | 9 1/2 | 21,200 |
| 72 Johnston Housing | 5 | 51 | 7 | 18,400 |
| 79 Coventry Housing | 6 | 46 | 4 1/2 | 15,400 |
| 83 W. Warwick Housing | 6 | 44 1/2 | 9 1/2 | 22,000 |
| 84 Smithfield Housing | 7 | 33 1/2 | 2 | 17,200 |
| Police and Fire | | | | |
| 50 E. Greenwich Fire | 23 | 34 | 7 | \$ 27,400 |
| 54 E. Greenwich Police | 18 | 39 1/2 | 13 1/2 | 29,400 |
| 55 N. Kingstown Fire | 69 | 39 | 14 | 29,700 |
| 58 N. Providence P&F | 92 | 33 1/2 | 6 | 27,800 |
| 60 Barrington Police | 59 | 38 | 13 1/2 | 28,000 |
| 62 Warren Police | 20 | 37 | 10 1/2 | 27,400 |
| 63 S. Kingstown P&F | 38 | 38 | 13 | 30,100 |
| 64 Primrose Volunteer Fire | 8 | 32 1/2 | 6 | 22,900 |
| 76 N. Smithfield Police | 18 | 35 1/2 | 7 1/2 | 23,000 |
| 77 Tiverton Fire | 18 | 42 1/2 | 13 1/2 | 25,500 |
| 82 Foster Police | 7 | 35 1/2 | 10 | 24,700 |
| 85 Woonsocket Police | 45 | 29 | 5 | 28,700 |
| 86 Charlestown Police | 13 | 33 1/2 | 6 1/2 | 23,500 |
| 87 Hopkinton Police | 10 | 32 1/2 | 2 | 23,900 |
| 88 Gloucester Police | 12 | 37 | 5 1/2 | 22,600 |
| 89 W. Greenwich Police | 18 | 36 | 9 1/2 | 23,300 |
| 90 Burrillville Police | 18 | 37 1/2 | 10 1/2 | 20,800 |
| 91 Cumberland Police | 12 | 26 1/2 | 3 1/2 | 23,700 |
| 92 Washington Fire | 6 | 31 1/2 | 4 1/2 | 23,700 |
| 93 Woonsocket Fire | 34 | 27 1/2 | 4 | 27,200 |

RHODE ISLAND MUNICIPAL ERS

-24-

MARTIN E. SEGAL COMPANY

Table 2D

Statistical Data on Active Employees on June 30, 1989
by Municipality

| Municipality | Number | Average age | Average service | Average salary |
|----------------------------|--------|-------------|-----------------|----------------|
| General Employees | | | | |
| 01 Barrington | 128 | 47 1/2 | 11 | \$19,600 |
| 02 Bristol | 125 | 45 1/2 | 10 1/2 | 18,800 |
| 03 Burrillville | 133 | 46 | 7 | 14,900 |
| 07 Cranston | 682 | 45 1/2 | 9 1/2 | 18,500 |
| 08 Cumberland | 210 | 50 | 9 | 15,900 |
| 09 E. Greenwich | 117 | 47 1/2 | 9 | 17,800 |
| 10 E. Providence | 374 | 47 | 11 | 20,500 |
| 11 Exeter-W. Greenwich | 34 | 46 | 9 | 11,600 |
| 12 Foster | 34 | 42 1/2 | 6 | 14,100 |
| 13 Gloucester | 47 | 43 | 4 1/2 | 13,800 |
| 14 Hopkinton | 17 | 45 | 6 1/2 | 18,200 |
| 15 Jamestown | 37 | 42 1/2 | 8 1/2 | 20,900 |
| 16 Johnston | 224 | 47 1/2 | 10 1/2 | 17,300 |
| 21 Newport | 303 | 44 1/2 | 11 | 19,600 |
| 22 New Shoreham | 18 | 43 | 8 | 16,500 |
| 23 N. Kingstown | 195 | 44 1/2 | 8 | 20,200 |
| 24 N. Providence | 232 | 46 1/2 | 9 1/2 | 16,700 |
| 25 N. Smithfield | 74 | 48 | 8 1/2 | 16,300 |
| 26 Pawtucket | 645 | 46 1/2 | 10 1/2 | 18,600 |
| 29 Richmond | 8 | 46 | 5 | 9,400 |
| 30 Scituate | 62 | 50 | 11 | 15,200 |
| 31 Smithfield | 115 | 49 | 9 1/2 | 19,400 |
| 32 S. Kingstown | 208 | 43 | 7 1/2 | 17,300 |
| 33 Tiverton | 81 | 50 | 9 | 17,100 |
| 34 Warren | 74 | 50 | 11 | 16,500 |
| 36 Westerly | 10 | 54 | 13 1/2 | 20,900 |
| 37 W. Greenwich | 16 | 51 | 11 1/2 | 16,500 |
| 39 Woonsocket | 357 | 47 1/2 | 9 | 18,300 |
| 40 Charho School | 90 | 43 | 5 | 13,000 |
| 41 Foster-Glocester | 33 | 48 1/2 | 10 1/2 | 17,200 |
| 51 Cranston Housing | 15 | 43 1/2 | 4 | 24,400 |
| 52 E. Providence Housing | 11 | 50 | 6 1/2 | 22,500 |
| 53 Pawtucket Housing | 36 | 43 | 6 1/2 | 25,400 |
| 56 Cumberland Housing | 9 | 45 1/2 | 7 1/2 | 24,100 |
| 57 Lincoln Housing | 6 | 49 1/2 | 8 | 23,300 |
| 59 Bristol Housing | 6 | 52 1/2 | 12 1/2 | 21,700 |
| 65 Burrillville Housing | 2 | 46 | 7 1/2 | 24,300 |
| 66 N. Providence Housing | 6 | 44 1/2 | 6 | 21,900 |
| 67 E. Smithfield Water | 2 | 53 | 5 1/2 | 28,500 |
| 68 Greenville Water | 4 | 46 1/2 | 11 | 29,300 |
| 71 Warren Housing | 6 | 53 1/2 | 8 1/2 | 29,300 |
| 72 Johnston Housing | 5 | 47 1/2 | 7 1/2 | 15,800 |
| 79 Coventry Housing | 5 | 43 1/2 | 5 | 16,500 |
| 83 W. Warwick Housing | 6 | 43 1/2 | 8 1/2 | 20,800 |
| 84 Smithfield Housing | 7 | 26 1/2 | 1 | 8,400 |
| Police and Fire | | | | |
| 50 E. Greenwich Fire | 18 | 39 1/2 | 10 1/2 | \$ 29,600 |
| 54 E. Greenwich Police | 25 | 39 | 12 1/2 | 29,200 |
| 55 N. Kingstown Fire | 69 | 38 | 12 1/2 | 28,100 |
| 58 N. Providence P&F | 48 | 36 | 9 1/2 | 27,000 |
| 60 Barrington Police | 60 | 37 | 12 1/2 | 25,000 |
| 62 Warren Police | 20 | 39 | 13 | 26,200 |
| 63 S. Kingstown P&F | 39 | 37 1/2 | 13 | 27,000 |
| 64 Primrose Volunteer Fire | 6 | 33 1/2 | 6 | 20,300 |
| 76 N. Smithfield Police | 16 | 37 | 11 | 25,900 |
| 77 Tiverton Fire | 19 | 42 | 13 | 24,400 |
| 82 Foster Police | 7 | 36 | 10 1/2 | 22,400 |
| 85 Woonsocket Police | 38 | 29 | 6 | 22,400 |
| 86 Charlestown Police | 13 | 34 | 4 1/2 | 24,300 |
| 87 Hopkinton Police | 10 | 32 1/2 | 5 1/2 | 22,600 |
| 88 Gloucester Police | 11 | 36 | 5 1/2 | 22,500 |
| 89 W. Greenwich Police | 18 | 37 1/2 | 10 1/2 | 21,900 |
| 90 Burrillville Police | 16 | 39 | 12 1/2 | 22,000 |
| 91 Cumberland Police | 6 | 29 | 9 1/2 | 20,800 |

RHODE ISLAND MUNICIPAL ERS

-25-

MARTIN E. SEGAL COMPANY

III. RETIREE DATA

The data on retired members and beneficiaries included age, sex, monthly benefit, retirement date, option, and type of pension.

The following are significant statistics on the retired group as of June 30, 1990 and 1989:

| | <u>June 30, 1990</u> | <u>June 30, 1989</u> |
|-------------------------|----------------------|----------------------|
| Pensioners: | | |
| Number | 2,186 | 2,087 |
| Average age | 70 | 70 |
| Average monthly benefit | \$411 | \$385 |
| Beneficiaries: | | |
| Number | 103 | 92 |
| Average age | 67 | 66 |
| Average monthly benefit | \$351 | \$362 |

Table 3 provides a distribution of the 157 pensions (including beneficiaries) awarded during the year ended June 30, 1990 by type of pension and amount. Table 4 provides a similar distribution of these new awards based on age at retirement.

Table 5 provides a distribution of all pensions in force at the end of fiscal 1990 by type and amount. Table 6 provides a distribution of these same pensions by age.

Table 7 provides important statistical information on pensioners and beneficiaries by municipality.

The data we received for those currently on the pension rolls was generally good.

The data on terminated employees with vested rights to a deferred benefit did not include enough information to allow a calculation of their accrued benefits. For such employees with ten or more years of service, we recognized an accrued liability equal to twice their accumulated employee contributions. We continue to recommend that information regarding terminated vested employees be maintained by the System so that their liability can be determined more accurately in future valuations.

Table 3

Pensions Awarded in the Year Ended June 30, 1990
by Type and by Monthly Amount

| Monthly amount | Total | Type of pension | | | |
|----------------|-------|-----------------|---------------------|-----------------------|-------------|
| | | Service | Ordinary disability | Accidental disability | Beneficiary |
| Total | 157 | 146 | 6 | 1 | 4 |
| Under \$ 50 | 4 | 3 | -- | -- | 1 |
| 50 - 99 | 4 | 4 | -- | -- | -- |
| 100 - 149 | 2 | 2 | -- | -- | -- |
| 150 - 199 | 4 | 3 | 1 | -- | -- |
| 200 - 249 | 3 | 3 | -- | -- | -- |
| 250 - 299 | 10 | 9 | 1 | -- | -- |
| 300 - 349 | 10 | 9 | 1 | -- | -- |
| 350 - 399 | 14 | 12 | 1 | -- | 1 |
| 400 - 449 | 10 | 9 | -- | -- | 1 |
| 450 - 499 | 8 | 7 | 1 | -- | -- |
| 500 - 599 | 13 | 12 | 1 | -- | -- |
| 600 - 699 | 14 | 13 | -- | -- | 1 |
| 700 - 799 | 12 | 12 | -- | -- | -- |
| 800 - 899 | 10 | 10 | -- | -- | -- |
| 900 - 999 | 8 | 8 | -- | -- | -- |
| 1,000 - 1,099 | 7 | 6 | -- | 1 | -- |
| 1,100 - 1,199 | 6 | 6 | -- | -- | -- |
| 1,200 - 1,299 | 2 | 2 | -- | -- | -- |
| 1,300 - 1,399 | 1 | 1 | -- | -- | -- |
| 1,400 - 1,499 | 4 | 4 | -- | -- | -- |
| 1,500 - 1,999 | 10 | 10 | -- | -- | -- |
| 2,000 - 2,499 | 1 | 1 | -- | -- | -- |

RHODE ISLAND MUNICIPAL ERS

Table 4

Pensions Awarded in the Year Ended June 30, 1990
by Type and by Age on Effective Date

| Age on effective date | Total | Type of pension | | | |
|-----------------------|-------|-----------------|---------------------|-----------------------|-------------|
| | | Service | Ordinary disability | Accidental disability | Beneficiary |
| Total | 157 | 146 | 6 | 1 | 4 |
| 25 - 29 | | -- | 1 | -- | -- |
| 40 - 44 | 6 | 1 | 1 | -- | 1 |
| 45 - 49 | 2 | 1 | 1 | -- | -- |
| 51 | 2 | 2 | -- | -- | -- |
| 53 | 6 | 1 | -- | -- | -- |
| 54 | 3 | 2 | 1 | -- | -- |
| 55 | 3 | 1 | 1 | -- | 1 |
| 56 | 2 | 1 | -- | 1 | -- |
| 57 | 37 | 1 | 1 | -- | -- |
| 58 | 19 | 19 | -- | -- | -- |
| 59 | 11 | 10 | -- | -- | 1 |
| 60 | 4 | 4 | -- | -- | -- |
| 61 | 12 | 12 | -- | -- | -- |
| 62 | 75 | 31 | -- | -- | -- |
| 63 | 14 | 14 | -- | -- | -- |
| 64 | 14 | 14 | -- | -- | -- |
| 65 | 14 | 14 | -- | -- | -- |
| 66 | 28 | 3 | -- | -- | -- |
| 67 | 2 | 2 | -- | -- | -- |
| 68 | 5 | 5 | -- | -- | -- |
| 69 | 4 | 4 | -- | -- | -- |
| 70 - 74 | 4 | 3 | -- | -- | 1 |
| 75 - 79 | 1 | 1 | -- | -- | -- |

RHODE ISLAND MUNICIPAL ERS

Table 5

Pensions in Payment Status on June 30, 1990
by Type and by Monthly Amount

| Monthly amount | Total | Type of pension | | | |
|----------------|-------|-----------------|---------------------|-----------------------|-------------|
| | | Service | Ordinary disability | Accidental disability | Beneficiary |
| Total | 2,289 | 2,015 | 117 | 54 | 103 |
| Under \$ 50 | 50 | 44 | 4 | -- | 2 |
| 50 - 99 | 139 | 127 | 7 | 1 | 4 |
| 100 - 149 | 187 | 170 | 9 | 1 | 7 |
| 150 - 199 | 270 | 229 | 26 | 1 | 14 |
| 200 - 249 | 239 | 201 | 22 | 2 | 14 |
| 250 - 299 | 206 | 175 | 15 | -- | 16 |
| 300 - 349 | 198 | 178 | 8 | 5 | 7 |
| 350 - 399 | 154 | 139 | 3 | 4 | 8 |
| 400 - 449 | 138 | 122 | 5 | 2 | 9 |
| 450 - 499 | 102 | 91 | 4 | 4 | 3 |
| 500 - 599 | 166 | 144 | 9 | 6 | 7 |
| 600 - 699 | 99 | 86 | 2 | 7 | 4 |
| 700 - 799 | 85 | 83 | 1 | -- | 1 |
| 800 - 899 | 61 | 55 | 1 | 3 | 2 |
| 900 - 999 | 53 | 47 | -- | 3 | 3 |
| 1,000 - 1,099 | 33 | 22 | 1 | 9 | 1 |
| 1,100 - 1,199 | 33 | 29 | -- | 3 | 1 |
| 1,200 - 1,299 | 14 | 14 | -- | -- | -- |
| 1,300 - 1,399 | 12 | 12 | -- | -- | -- |
| 1,400 - 1,499 | 9 | 9 | -- | -- | -- |
| 1,500 - 1,999 | 33 | 30 | -- | 3 | -- |
| 2,000 - 2,499 | 6 | 6 | -- | -- | -- |
| 2,500 - 2,999 | 2 | 2 | -- | -- | -- |

RHODE ISLAND MUNICIPAL ERS

Table 6

Pensions in Payment Status on June 30, 1990
by Type and by Age

| Age on June 30, 1990 | Total | Type of pension | | | |
|----------------------|-------|-----------------|---------------------|-----------------------|-------------|
| | | Service | Ordinary disability | Accidental disability | Beneficiary |
| Total | 2,289 | 2,015 | 117 | 54 | 103 |
| Under 30 | 1 | -- | 1 | -- | -- |
| 30 - 34 | 3 | -- | 1 | 1 | 1 |
| 35 - 39 | 4 | -- | 2 | 1 | 1 |
| 40 - 44 | 9 | 1 | 3 | 2 | 3 |
| 45 - 49 | 18 | 3 | 10 | 3 | 2 |
| 50 - 54 | 40 | 12 | 15 | 9 | 4 |
| 55 - 59 | 109 | 67 | 19 | 11 | 12 |
| 60 - 64 | 376 | 333 | 24 | 8 | 11 |
| 65 - 69 | 663 | 602 | 24 | 10 | 27 |
| 70 - 74 | 499 | 463 | 11 | 4 | 21 |
| 75 - 79 | 321 | 304 | 3 | 3 | 11 |
| 80 - 84 | 164 | 152 | 2 | 1 | 9 |
| 85 - 89 | 66 | 63 | 1 | 1 | 1 |
| 90 - 94 | 12 | 11 | 1 | -- | -- |
| 95 - 99 | 4 | 4 | -- | -- | -- |

RHODE ISLAND MUNICIPAL ERS

Table 7
Pensioners and Beneficiary Statistical Data
as of June 30, 1990 by Municipality

| Municipality | Number | Average age | Average monthly benefit |
|--------------------------|--------|-------------|-------------------------|
| <u>General Employees</u> | | | |
| 01 Barrington | 97 | 71 | |
| 02 Bristol | 56 | 70 1/2 | \$343 |
| 03 Burrillville | 42 | 68 | 342 |
| 04 Central Falls | 4 | 68 | 515 |
| 07 Cranston | 4 | 68 | 557 |
| 08 Cumberland | 322 | 72 | 383 |
| 09 E. Greenwich | 33 | 67 | 410 |
| 10 E. Providence | 49 | 67 1/2 | 393 |
| 11 Exeter-W. Greenwich | 205 | 69 1/2 | 517 |
| 12 Foster | 4 | 65 1/2 | 224 |
| 13 Gloucester | 6 | 68 | 375 |
| 14 Hopkinton | 3 | 67 | 448 |
| 15 Jamestown | 6 | 75 1/2 | 238 |
| 16 Johnston | 14 | 71 | 431 |
| 21 Newport | 70 | 69 | 324 |
| 22 New Shoreham | 155 | 70 1/2 | 442 |
| 23 N. Kingstown | 4 | 68 1/2 | 529 |
| 24 N. Providence | 88 | 69 | 405 |
| 25 N. Smithfield | 78 | 70 1/2 | 271 |
| 26 Pawtucket | 45 | 69 1/2 | 271 |
| 29 Richmond | 355 | 71 | 395 |
| 30 Scituate* | 4 | 67 | 247 |
| 31 Smithfield** | 32 | 72 1/2 | 300 |
| 32 S. Kingstown*** | 54 | 69 | 364 |
| 33 Tiverton | 64 | 71 | 335 |
| 34 Warren | 38 | 70 1/2 | 303 |
| 36 Westerly | 39 | 68 | 307 |
| 37 W. Greenwich | 11 | 71 | 586 |
| 39 Woonsocket | 2 | 66 | 519 |
| 40 Chariho School | 229 | 70 1/2 | 371 |
| 41 Foster-Glocester | 6 | 62 1/2 | 292 |
| 41 Foster-Glocester | 4 | 62 | 652 |
| 51 Cranston Housing | 8 | 71 | 504 |
| 52 E. Providence Housing | 8 | 71 1/2 | 380 |
| 53 Pawtucket Housing | 26 | 70 1/2 | 414 |
| 56 Cumberland Housing | 2 | 65 1/2 | 396 |
| 57 Lincoln Housing | 3 | 67 1/2 | 300 |
| 59 Bristol Housing | 1 | 62 1/2 | 571 |
| 65 Burrillville Housing | -- | -- | -- |

(Continued...)

Table 7
(Continued)

Pensioners and Beneficiary Statistical Data
as of June 30, 1990 by Municipality

| Municipality | Number | Average age | Average monthly benefit |
|----------------------------------|--------|-------------|-------------------------|
| <u>General Employees (Cont.)</u> | | | |
| 66 N. Providence Housing | 1 | 72 1/2 | 239 |
| 67 E. Smithfield Water | 2 | 74 1/2 | 364 |
| 68 Greenville Water | -- | -- | -- |
| 71 Warren Housing | -- | -- | -- |
| 72 Johnston Housing | 2 | 67 1/2 | 619 |
| 79 Coventry Housing | 4 | 64 | 507 |
| 83 W. Warwick Housing | 1 | 66 1/2 | 945 |
| 84 Smithfield Housing | 1 | 66 1/2 | 572 |
| <u>Police and Fire</u> | | | |
| 50 E. Greenwich Fire | 6 | 64 1/2 | 996 |
| 54 E. Greenwich Police | 9 | 65 1/2 | 984 |
| 55 N. Kingstown Fire | 22 | 66 1/2 | 686 |
| 58 N. Providence P&F | 5 | 67 1/2 | 408 |
| 60 Barrington Police | 32 | 60 | 793 |
| 62 Warren Police | 12 | 63 | 738 |
| 63 S. Kingstown P&F | 11 | 58 | 752 |
| 64 Primrose Volunteer Fire | 1 | 76 1/2 | 303 |
| 76 N. Smithfield Police | 3 | 60 | 1,025 |
| 77 Tiverton Fire | 8 | 64 | 685 |
| 82 Foster Police | -- | -- | -- |
| 85 Woonsocket Police | -- | -- | -- |
| 86 Charlestown Police | 1 | 37 1/2 | 581 |
| 87 Hopkinton Police | -- | -- | -- |
| 88 Gloucester Police | -- | -- | -- |
| 89 W. Greenwich Police | -- | -- | -- |
| 90 Burrillville Police | 1 | 47 1/2 | 834 |
| 91 Cumberland Police | -- | -- | -- |
| 92 Washington Fire | -- | -- | -- |
| 93 Woonsocket Fire | -- | -- | -- |

*Includes 1 pensioner formerly covered by the Scituate Police Plan.
**Includes 2 beneficiaries formerly covered by the Smithfield Police and Fire Plan.
***Includes 1 pensioner formerly covered by the South Kingstown Housing Authority.

RHODE ISLAND MUNICIPAL ERS

IV. RETIREMENT FUND

The State maintains the Municipal Employees' Retirement Fund. The Retirement Board provided us with financial statements as of June 30, 1990.

The Fund receives all member and employer contributions. The assets are invested by the State Investment Commission, with the investment earnings being added to the Fund and available for reinvestment. During fiscal 1990, the investment earnings represented 8.33% of the average assets of the Fund, or 0.33% more than the long-term interest assumption of 8.00%. The corresponding investment yield during fiscal 1989 was 17.37%.

Payments from the Fund are primarily for refunds of employee contributions, lump sum death benefits, and pension payments. Contribution refunds occur when an employee terminates employment 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 8 provides a summary of income and expenses for the year ended June 30, 1990.

As of June 30, 1990, assets totalled approximately \$255.0 million. Table 9 provides a distribution of the assets by category of investment. About 47% of the Fund was invested in fixed income securities such as bonds and notes.

The financial statements indicate that 87% of the assets are allocated to general employees and 13% are for police and firemen. There is also a small unallocated reserve for unclaimed benefits. Table 10 shows the allocation of assets in detail.

Table 8

Summary Statement of Income and Expenses
for Year Ended June 30, 1990

| | | |
|---|------------------|---------------------|
| Employer contributions | \$ 8,360,137 | |
| Member contributions | <u>6,907,680</u> | |
| Total contributions | | \$15,267,817 |
| Net miscellaneous items | | 12,674 |
| Investment income: | | |
| Dividends | \$ 4,798,265 | |
| Interest | 11,099,821 | |
| Capital gains | 3,314,761 | |
| Net transfers | 818,428 | |
| Less: Expenses | <u>553,043</u> | |
| Net investment income | | <u>19,478,232</u> |
| Total income available for benefit payments | | \$34,758,723 |
| Benefit payments: | | |
| Pension benefits | \$11,140,311 | |
| Death benefits | 163,200 | |
| Contribution refunds | <u>653,895</u> | |
| Total benefit payments | | <u>11,957,406</u> |
| Excess of income over expenses | | <u>\$22,801,317</u> |

RHODE ISLAND MUNICIPAL ERS

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

Table 9
Assets as of June 30, 1990

| | | |
|-----------------------------|------------------|----------------------|
| Cash | | |
| Accrued interest receivable | | \$ (299,628) |
| Investments: | | 2,249,549 |
| STIF | \$ 17,064,000 | |
| Fixed income | 96,058,191 | |
| Equities | 133,976,370 | |
| Short term paper | <u>5,990,000</u> | |
| Total assets | | <u>253,088,561</u> |
| | | <u>\$255,038,482</u> |

RHODE ISLAND MUNICIPAL ERS

Table 10
Allocation of Assets by Plan
as of June 30, 1990

| | | |
|----------------------------------|-------------------|----------------------|
| General Employees: | | |
| Retirement reserves | \$200,637,124 | |
| Employer reserves | (12,460,429) | |
| Member reserves | <u>34,144,961</u> | |
| Total General Employees Reserves | | \$222,321,656 |
| Police and Fire: | | |
| Retirement reserves | \$ 26,638,433 | |
| Employer reserves | 808,335 | |
| Member reserves | <u>5,231,165</u> | |
| Total Police and Fire Reserves | | 32,677,933 |
| Unallocated: | | |
| Unclaimed benefit reserve | | <u>38,893</u> |
| Total Assets | | <u>\$255,038,482</u> |

RHODE ISLAND MUNICIPAL ERS

V. ACTUARIAL ASSUMPTIONS AND COST METHOD

The actual cost of a pension plan consists of the benefit payments and operating expenses less any investment earnings. An actuarial cost method aims to budget this cost so as to establish a reasonable relationship between employer pension contributions and the employee services that give rise to the pension obligations. A fund accumulates which earns investment income, thus reducing the ultimate cost.

Calculating the appropriate contribution requires that projections, and therefore assumptions, be made as to future experience. Some items, such as mortality rates, can be predicted fairly accurately. Others, such as future salary increases are, of course, subject to considerable variation. It will be useful to identify the assumptions used, particularly since broad questions of fiscal policy are implicit in certain of the assumptions. The assumptions are the same as those used in the June 30, 1989 actuarial valuation.

Mortality Rates

We assumed that mortality rates would conform with the Male and Female 1971 Group Annuity Mortality Tables. These are commonly used tables of pension plan mortality, and we believe they continue to be reasonable for estimating experience under the System. Table 11 gives some life expectancies determined from these tables.

Salary Projections

The System provides benefits that are based on the three highest consecutive years' salary for each employee. To assume that each employee's salary will be the same in the three years before retirement as it is today would seriously understate the System's cost. Accordingly, we use a salary projection to anticipate future increases in earnings. Additionally, it is appropriate to compute pension normal costs which are level as a percentage of payroll rather than level as a dollar amount, and a salary projection is also used for this purpose. If the cost were calculated as a level dollar amount for an individual, the cost would be a high percent of his pay when he or she

is young and a lower percent of his or her higher salary at a later age. Establishing pension costs which remain a level percentage of salary means that pension costs will be incurred at the same rate as salary is paid to an employee.

The projection of future salaries must anticipate, among other items, future general salary increases. Over the long term, it can be expected that these will parallel or slightly exceed the level of inflation. If the salary increase assumption exceeds actual future salary increases, then pension contributions will exceed the actual cost requirement and actuarial gains will develop. Alternatively, if future salary increases exceed the assumption, then pension contributions will be less than the actual cost requirement and actuarial losses will develop.

For purposes of our cost determination, we have made a reasonable allowance for general salary increases in the future of 4.50% per year. We also reflect salary increases as the result of merit, longevity and promotions. The scale has relatively greater increases at the younger ages to correspond with salary schedules. The salary scale factors at sample ages are:

| <u>Age</u> | <u>Present Salary as a % of Age 65 Salary</u> | <u>Annual Increases (Rate %)</u> |
|------------|---|----------------------------------|
| 20 | 9.11 | 6.36 |
| 25 | 12.38 | 6.27 |
| 30 | 16.73 | 6.11 |
| 35 | 22.43 | 5.91 |
| 40 | 29.73 | 5.59 |
| 45 | 38.76 | 5.23 |
| 50 | 49.73 | 4.96 |
| 55 | 63.15 | 4.84 |
| 60 | 80.07 | 4.67 |

The salary scale includes a component which has a parallel in the question of choosing an assumption as to future investment yield and the two are therefore interrelated. Both assumptions include an allowance for the level of inflation in future years (4.50%).

Investment Return

Investment return has a major effect on the ultimate cost of a retirement system. In general, if a system is actuarially funded (so that it has a substantial reserve which is earning an investment yield), a yield of 8 percent - in contrast to a 7 percent yield - will reduce annual costs by 12% or more.

An assumption must be made concerning future yields. It must be a rate that will be valid for the long-run, that is, not only for money invested today or next year, but also for money invested 30 and 40 years from now.

We have employed a long-term investment return assumption of 8% per year in this actuarial valuation. This assumption takes account of probable moderate long-term inflation of approximately 4 1/2% per year and is the same as that employed in the prior valuation.

Termination Rates

In any employee group, many employees will terminate and receive less than full benefits. Employees terminating with less than ten years of active service, for example, receive only a refund of their contributions. The termination assumption anticipates in advance the release of municipal funds that may have been accumulated for such people, thus resulting in a reduced ongoing cost.

We assumed that terminations each year from all causes except retirement would be as follows:

| <u>General Employees Rate (%)</u> | | | | |
|-----------------------------------|---------------|-------------------|-------------------|---------------|
| <u>Age</u> | <u>Death*</u> | <u>Disability</u> | <u>Withdrawal</u> | <u>Total*</u> |
| 20 | .05 | .06 | 21.20 | 21.31 |
| 25 | .06 | .09 | 15.80 | 15.95 |
| 30 | .08 | .11 | 11.60 | 11.79 |
| 35 | .11 | .15 | 8.40 | 8.66 |
| 40 | .16 | .22 | 6.20 | 6.58 |
| 45 | .29 | .36 | 4.20 | 4.85 |
| 50 | .53 | .61 | 2.60 | 3.73 |
| 55 | .85 | 1.01 | -- | 1.86 |
| 60 | 1.31 | -- | -- | 1.31 |

15% of the above disability rates are assumed accidental.

Optional Police and Fire Rate (%)

| <u>Age</u> | <u>Death*</u> | <u>Disability</u> | <u>Withdrawal</u> | <u>Total*</u> |
|------------|---------------|-------------------|-------------------|---------------|
| 20 | .05 | .12 | -- | .17 |
| 25 | .06 | .17 | -- | .23 |
| 30 | .08 | .22 | -- | .30 |
| 35 | .11 | .29 | -- | .41 |
| 40 | .16 | .44 | -- | .60 |
| 45 | .29 | .72 | -- | 1.01 |
| 50 | .53 | 1.21 | -- | 1.74 |
| 55 | .85 | -- | -- | .85 |

50% of the above disability rates are assumed accidental.

*Rates shown are for men; rates for women are slightly lower.

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

Retirement Ages

The System provides unreduced benefits as early as age 58 for general employees and age 55 for police and firemen. Long service employees can get unreduced or reduced benefits at younger ages. We have assumed general employees will retire at age 65, or completion of 10 years of service if later. Police and firemen retirements are assumed to occur when an officer is both age 60 and has 10 years of service. In police and fire departments that have elected the optional plan paying unreduced benefits after 20 years of service, retirements are assumed to occur at the later of age 57 and completion of 10 years of service. In any case where the employee already meets these assumed conditions of age and service, it is assumed that he or she will retire immediately.

Cost Method

In valuations prior to June 30, 1989, we used the "entry age normal cost method" of funding. This method spreads the cost of the benefits to be provided to an individual as a level percentage of his pay from his date of employment to his assumed date of retirement. One component of cost under the entry age normal cost method is the normal cost which can be visualized as the cost of benefits earned during the current year.

The actuarial liability under the entry age normal cost method represents the amount by which the future normal costs fall short of meeting the cost of future benefit payments. It can also be viewed, roughly, as the value of benefits accrued for service prior to the valuation date.

The unfunded actuarial liability under the entry age normal cost method equals the amount by which the actuarial liability exceeds the assets. This amount, for each municipality, was funded over the years remaining on their original or revised amortization period (generally, the original amortization period was 25 years).

In recent years, the System began to experience more year-to-year fluctuations in the contribution rates of certain municipalities primarily because of the shortening of amortization periods over which changes in unfunded actuarial liabilities were funded. As a result, the Retirement Board adopted procedures to allow municipalities with a significant increase in their contribution rate from one year to the next (generally 2% or more) to elect a "smoothed contribution rate" as described in Section I.

In addition to the "smoothed contribution rate" procedure, the Trustees adopted a modification in the basis for amortizing the unfunded actuarial liability of each municipal Plan. The modification generally became effective with the June 30, 1989 valuation (the results of which form the basis for actual contributions during the 1991-92 fiscal year). This modification provides that the unfunded actuarial accrued liability as of June 30, 1988 be amortized based on the scheduled amortization period assuming no gains or losses (either from actuarial sources or due to contributions greater or smaller than expected) or changes in the plan of benefits. Any such changes occurring after June 30, 1988 are funded over the projected future salaries of active members and included as part of the past service payment. If the average projected working lifetime of active members is less than five years, however, such unfunded liability is funded over five years. New municipalities entering the System continue to have a 25-year funding period applied with respect to their initial unfunded liability.

To summarize, the principal effect of the modification to the actuarial cost method is that changes in actuarial accrued liability due to actuarial gains/losses, changes in actuarial assumptions, and benefit improvements are funded over the working lives of active employees rather than over a fixed funding schedule. As we have discussed with you, amortization over the future working lifetime of active members is a commonly applied actuarial funding approach and is the same method that the State and Teachers' Systems use to fund actuarial gains/losses.

Overall Actuarial Basis

The costs for many of the municipalities are slightly lower than those reported last year. This is partially attributable to the slightly favorable investment return.

Other actuarial gains and losses have an effect and that effect can be especially significant with respect to any single municipality. An example may be helpful in explaining this statement. In a large system, if some participants retire earlier than assumed, the impact on the total system is generally not significant. However, the impact on the costs of a municipality can be quite dramatic if the retiree is one of its few employees. As a whole, the assumptions we employ are reasonable for the whole System, but for any one municipality for a given year, the assumptions and the actual experience may differ significantly. When this happens, the individual municipality's pension liabilities and payroll will be substantially affected, resulting in significant yearly cost fluctuations.

We believe that the actuarial assumptions, taken as a whole, are reasonable. To the extent that actual experience is better or worse than assumed, gains or losses will develop, with corresponding decreases or increases in future costs.

Missing Data

It was necessary to make certain "non-actuarial" assumptions where data was missing or incomplete. In all cases, we assumed such individuals had the same characteristics as other participants, taking into account the known

characteristics (e.g., male members age 37 with unknown service were assumed to have the same service distribution as male members age 37 with known service).

Table 11
 Expected Number of Years of Life
 Remaining at Specified Ages

| Age | Male | Female |
|-----|------|--------|
| 55 | 22.7 | 28.0 |
| 56 | 21.9 | 27.1 |
| 57 | 21.1 | 26.2 |
| 58 | 20.3 | 25.3 |
| 59 | 19.5 | 24.4 |
| 60 | 18.8 | 23.5 |
| 61 | 18.0 | 22.6 |
| 62 | 17.3 | 21.8 |
| 63 | 16.5 | 20.9 |
| 64 | 15.8 | 20.1 |
| 65 | 15.1 | 19.2 |
| 66 | 14.4 | 18.4 |
| 67 | 13.8 | 17.6 |
| 68 | 13.1 | 16.8 |
| 69 | 12.5 | 16.0 |
| 70 | 11.9 | 15.3 |
| 71 | 11.3 | 14.5 |
| 72 | 10.8 | 13.8 |
| 73 | 10.3 | 13.1 |
| 74 | 9.7 | 12.4 |
| 75 | 9.2 | 11.7 |

1971 Group Annuity Mortality Tables

RHODE ISLAND MUNICIPAL ERS

VI. RESULTS OF VALUATION

General Employees

The costs for general employees as of June 30, 1990 developed as follows:

| <u>Item</u> | <u>Amount</u> | <u>% of Payroll</u> |
|--|---------------|---------------------|
| (1) Participating payroll | \$98,210,400 | -- |
| (2) Employer normal cost | 3,914,400 | 4.0% |
| (3) Unfunded actuarial liability | 3,547,100 | -- |
| (4) Amortization of unfunded actuarial liability | 1,548,100 | 1.6 |
| (5) Total annual cost if paid July 1, 1990 = (2) + (4) | 5,462,500 | 5.6 |
| (6) Total annual cost payable monthly = (5) plus 1/2 year interest | 5,681,000 | 5.8 |

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

Police and Firemen

The costs for police and firemen as of June 30, 1990 developed as follows:

| <u>Item</u> | <u>Amount</u> | <u>% of Payroll</u> |
|--|---------------|---------------------|
| (1) Participating payroll | \$14,331,300 | -- |
| (2) Employer normal cost | 1,139,300 | 8.0% |
| (3) Unfunded actuarial liability | 905,000 | -- |
| (4) Amortization of unfunded actuarial liability | 248,200 | 1.7 |
| (5) Total annual cost if paid July 1, 1990 = (2) + (4) | 1,387,600 | 9.7 |
| (6) Total annual cost payable monthly = (5) plus 1/2 year interest | 1,443,100 | 10.1 |

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

The actuarial cost method develops costs that assume the employer contributions will be paid into the retirement funds at the beginning of the year, and begin earning interest from that time. In fact, the money is deposited monthly. Thus, about half a year's interest is lost, and the contributions should be increased to reflect this loss. These adjustments are incorporated in line 6 of the charts on the preceding page.

Comments on Results

The costs reported on the preceding page are for the System as a whole. The principal cost factors for each municipality are shown in Table 12. (The total of the unfunded actuarial liabilities shown in Table 12 exceeds the total shown on the preceding page because some municipalities have assets in excess of their actuarial liabilities -- that is, they are "overfunded". Table 12 shows zero balances for these municipalities, but for the System as a whole the overfunding of these municipalities reduces the unfunded actuarial liability.)

The amortization shown on line 4 is the total of the amortization requirements for the individual municipalities. The earliest membership date is 1957 and amortization periods are generally 25 years so that the original groups have completed their amortization schedules. Other groups have more years left. Some of the amortization periods were lengthened several years ago to spread the effects of actuarial losses over a longer period.

Looking at the total cost figures compared to the previous year for general employees, beginning of year costs increased by 0.2 percent of payroll (from 5.4 percent to 5.6 percent). The normal cost percentage increased from 3.9 percent to 4.0 percent and the amortization payment increased from 1.5 percent to 1.6 percent. These small increases are primarily attributable to the adoption of cost-of-living adjustment provisions (COLAs) by three municipalities.

For police and firemen, beginning of year costs increased by 0.5 percent of payroll (from 9.2 percent to 9.7 percent). The normal cost percentage increased from 7.5 percent to 8.0 percent while there was no change in the

amortization payment when expressed as a percent of payroll (1.7 percent). These increases are primarily attributable to the adoption of improved, more costly, plans of benefits by seven police/fire municipalities.

Table 13 shows the recommended rates for each participating municipality. These rates are to be effective for the year beginning July 1, 1992. The total rates are separated into normal cost and unfunded liability amortization components. For comparison, the recommended total rates for the years beginning July 1, 1991 and 1990 are also shown. In addition, the remaining amortization periods for each municipality are presented. Three new groups joined the System this year, Central Falls, Washington Fire, and Woonsocket Fire.

The optional "smoothed contribution rate" is equal to the prior year's contribution rate plus two percentage points plus the cost of any benefit improvement adopted during the year. East Providence chose this option for the 1989-1990 fiscal year based on the results of the June 30, 1987 valuation and for the 1990-1991 fiscal year based on the results of the June 30, 1988 valuation. West Greenwich experienced an increase in the calculated contribution rate from the June 30, 1988 actuarial valuation to the June 30, 1989 valuation in excess of 2.0% and was eligible to adopt a smoothed contribution rate for the 1991-1992 fiscal year but did not do so. No municipalities experienced as much as a 2.0% increase in required contribution rate in this, the June 30, 1990 valuation, so none are eligible for this smoothed rate for the 1992-93 fiscal year.

G.A.S.B. Disclosure Information

For plan years beginning after December 15, 1986, the Retirement System is subject to the disclosure requirements of Statement No. 5 of the Governmental Accounting Standards Board (G.A.S.B.).

The Statement requires the calculation of a standardized measure called the "pension benefit obligation" which is independent of the actuarial funding method. This amount is the actuarial present value of credited projected benefits prorated on service. It differs from the "value of vested benefits"

because future salary increases are taken into account, non-vested benefits are included and because of the proration of benefits uniformly over an employee's total projected service.

For the entire Retirement System, the pension benefit obligation as of June 30, 1990 has been determined to be \$241,767,400. Approximately 57% of this amount is attributable to benefits on behalf of active employees with the balance (43%) attributable to the benefits of pensioners and terminated employees not yet receiving benefits. Exhibit II of the attached actuarial valuation certificate provides additional detail regarding this disclosure amount. Table 14 provides a breakdown of the pension benefit obligation by each participating municipality.

Table 12
Actuarial Cost Factors as of June 30, 1990
by Municipality

| Municipality | Year joined | Employer normal cost | Unfunded actuarial liability | Unfunded value of vested benefits |
|--------------------------|-------------|----------------------|------------------------------|-----------------------------------|
| <u>General Employees</u> | | | | |
| 01 Barrington | 1957 | \$102,500 | -- | -- |
| 02 Bristol (1) | 1957 | 91,200 | -- | -- |
| 03 Burrillville (2) | 1968 | 119,700 | -- | -- |
| 04 Central Falls | 1989 | 25,600 | \$ 513,700 | -- |
| 07 Cranston (1) | 1963 | 607,500 | 1,071,800 | \$522,700 |
| 08 Cumberland | 1985 | 176,200 | -- | -- |
| 09 E. Greenwich | 1957 | 86,400 | 2,420,700 | 536,900 |
| 10 E. Providence (1) | 1961 | 508,200 | -- | -- |
| 11 Exeter-W. Greenwich | 1982 | 20,700 | -- | -- |
| 12 Foster | 1981 | 22,700 | 232,500 | -- |
| 13 Gloucester | 1985 | 29,900 | 249,500 | -- |
| 14 Hopkinton | 1969 | 13,900 | 156,900 | 100 |
| 15 Jamestown (2) | 1964 | 29,800 | -- | -- |
| 16 Johnston | 1968 | 158,600 | -- | -- |
| 21 Newport (1) | 1966 | 211,800 | 5,256,200 | -- |
| 22 New Shoreham | 1980 | 8,600 | 11,200 | -- |
| 23 N. Kingstown | 1957 | 147,500 | -- | -- |
| 24 N. Providence | 1961 | 150,500 | -- | -- |
| 25 N. Smithfield | 1964 | 59,700 | -- | -- |
| 26 Pawtucket | 1962 | 401,900 | 1,237,800 | -- |
| 29 Richmond | 1979 | 6,800 | 43,200 | 12,600 |
| 30 Scituate (1) | 1967 | 46,900 | 323,300 | -- |
| 31 Smithfield | 1959 | 103,100 | -- | -- |
| 32 S. Kingstown | 1957 | 141,200 | -- | -- |
| 33 Tiverton | 1964 | 70,700 | -- | -- |
| 34 Warren | 1957 | 62,900 | -- | -- |
| 36 Westerly | 1976 | 10,000 | -- | -- |
| 37 W. Greenwich | 1988 | 13,100 | 680,600 | 504,500 |
| 39 Woonsocket | 1962 | 281,300 | 438,300 | 277,600 |
| 40 Chariho School | 1981 | 62,500 | -- | -- |
| 41 Foster-Glocester | 1985 | 22,000 | 287,800 | -- |
| 51 Cranston Housing | 1968 | 16,100 | 418,100 | 92,200 |
| 52 E. Providence Hsg. | 1968 | 14,100 | -- | -- |
| 53 Pawtucket Housing | 1968 | 32,900 | -- | -- |
| 56 Cumberland Hsg. | 1969 | 9,100 | -- | -- |
| 57 Lincoln Housing (1) | 1969 | 8,800 | -- | -- |
| 59 Bristol Housing | 1970 | 6,500 | -- | -- |

(Continued...)

Table 12
(Continued)
Actuarial Cost Factors as of June 30, 1990
by Municipality

| Municipality | Year joined | Employer normal cost | Unfunded actuarial liability | Unfunded value of vested benefits |
|----------------------------|-------------|----------------------|------------------------------|-----------------------------------|
| <u>General Employees</u> | | | | |
| (Continued) | | | | |
| 65 Burrillville Hsg. | 1972 | \$ 2,000 | -- | -- |
| 66 N. Providence Hsg. | 1973 | 5,100 | -- | -- |
| 67 E. Smithfield Water | 1973 | 3,900 | \$ 13,400 | -- |
| 68 Greenville Water | 1973 | 2,900 | -- | -- |
| 71 Warren Housing | 1975 | 5,700 | -- | -- |
| 72 Johnston Housing | 1976 | 4,700 | -- | -- |
| 79 Coventry Housing | 1977 | 3,800 | 44,100 | \$ 12,700 |
| 83 W. Warwick Housing | 1981 | 4,600 | 46,100 | -- |
| 84 Smithfield Housing | 1981 | 700 | -- | -- |
| <u>Police and Fire</u> | | | | |
| 50 E. Greenwich Fire (3) | 1967 | 56,700 | -- | -- |
| 54 E. Greenwich Police (3) | 1968 | 46,300 | -- | -- |
| 55 N. Kingstown Fire (3) | 1968 | 169,600 | 690,500 | -- |
| 58 N. Providence P&F (3) | 1968 | 234,100 | 538,800 | -- |
| 60 Barrington Police | 1970 | 94,900 | -- | -- |
| 62 Warren Police (3) | 1970 | 47,500 | 304,200 | -- |
| 63 S. Kingstown P&F | 1971 | 67,500 | -- | -- |
| 64 Primrose Vol. Fire (3) | 1972 | 16,400 | -- | -- |
| 76 N. Smithfield Pol. (3) | 1977 | 37,000 | -- | -- |
| 77 Tiverton Fire (3) | 1977 | 45,200 | 179,900 | -- |
| 82 Foster Police (3) | 1981 | 14,800 | 21,800 | -- |
| 85 Woonsocket Pol. (2) (3) | 1982 | 132,300 | 336,100 | -- |
| 86 Charlestown Police | 1986 | 18,300 | 100,500 | -- |
| 87 Hopkinton Police (3) | 1986 | 21,100 | -- | -- |
| 88 Gloucester Police | 1987 | 20,900 | 36,800 | -- |
| 89 W. Greenwich Police | 1988 | 10,000 | 162,500 | -- |
| 90 Burrillville Police (3) | 1988 | 34,300 | 275,800 | 32,000 |
| 91 Cumberland Police | 1988 | 14,800 | -- | 13,200 |
| 92 Washington Fire | 1989 | 8,800 | -- | -- |
| 93 Woonsocket Fire | 1989 | 48,800 | 71,500 | 10,400 |
| | | | 212,900 | 27,200 |

- (1) Based on COLA Plan B
(2) Based on COLA Plan C
(3) Based on "20-year service pension" optional plan

RHODE ISLAND MUNICIPAL ERS

Table 13

Rhode Island Municipal Employees' Retirement System
Recommended Contribution Rates

| Municipality | YEAR BEGINNING JULY 1, 1992 | | | | TOTAL RATE YEAR BEGINNING JULY 1, | |
|-----------------------------------|-----------------------------|----------------|-----------------|---------------|---|-------|
| | Amortization Period | Normal Cost | Past Service | Total Rate | 1991 | 1990 |
| | | | | | | |
| <u>General Employees</u> | -- | 3.72% | -- | 3.72% | 3.72% | 5.70% |
| 01 Barrington | -- | 4.04 | -- | 4.04 | 5.72 | 3.66 |
| 02 Bristol (1) | -- | 5.40 | 6.38% | 11.78 | 12.60 | 15.49 |
| 03 Burrillville (2) | 3 | 2.76 | 10.18 | 12.94 | 12.01 | 12.01 |
| 04 Central Falls | 24 | 4.42 | -- | 4.42 | 5.42 | 8.55 |
| 07 Cranston (1) | 10 | 4.63 | 5.68 | 10.31 | 10.76 | 13.58 |
| 08 Cumberland | 25 | 3.81 | -- | 3.81 | 3.79 | 4.01 |
| 09 E. Greenwich | 1 | 6.10 | -- | 6.10 | 5.65 | 12.62 |
| 10 E. Providence (1) (4) | -- | 4.38 | 5.01 | 9.39 | 9.21 | 11.12 |
| 11 Exeter-W. Greenwich Sch. Dist. | 17 | 3.77 | 4.39 | 8.16 | 8.55 | 10.31 |
| 12 Foster | 16 | 4.25 | 2.04 | 6.29 | 6.75 | 8.31 |
| 13 Glocester | 20 | 3.85 | -- | 3.85 | 4.49 | 4.80 |
| 14 Hopkinton | 4 | 3.68 | -- | 3.68 | 3.89 | 3.26 |
| 15 Jamestown (2) | -- | 3.94 | -- | 3.94 | 3.96 | 9.62 |
| 16 Johnston | 3 | 3.38 | 9.33 | 12.71 | 12.19 | 8.81 |
| 21 Newport (1) | 12 | 3.56 | .70 | 4.26 | 4.92 | 7.34 |
| 22 New Shoreham | 15 | 3.53 | -- | 3.53 | 3.61 | 3.88 |
| 23 N. Kingstown | -- | 3.89 | -- | 3.89 | 3.53 | 6.29 |
| 24 N. Providence | 12 | 4.67 | -- | 4.67 | 4.78 | 6.36 |
| 25 N. Smithfield | -- | 3.25 | 1.59 | 4.84 | 6.03 | 8.68 |
| 26 Pawtucket | 12 | 5.20 | 4.06 | 9.26 | 9.57 | 8.31 |
| 29 Richmond | 14 | 4.91 | 4.19 | 9.10 | 7.29 | 10.95 |
| 30 Scituate (1) | 12 | 4.31 | -- | 4.31 | 4.47 | 4.99 |
| 31 Smithfield | -- | 4.31 | -- | 4.31 | 4.47 | 4.99 |

Page 1 of 3

Table 13 (Continued)

Rhode Island Municipal Employees' Retirement System
Recommended Contribution Rates

| Municipality | YEAR BEGINNING JULY 1, 1992 | | | | TOTAL RATE YEAR BEGINNING JULY 1, | |
|--------------------------------------|-----------------------------|----------------|-----------------|---------------|---|-------|
| | Amortization Period | Normal Cost | Past Service | Total Rate | 1991 | 1990 |
| | | | | | | |
| <u>General Employees (continued)</u> | -- | 3.42% | -- | 3.42% | 3.38% | 3.86% |
| 32 S. Kingstown | -- | 4.74 | -- | 4.74 | 4.92 | 5.09 |
| 33 Tiverton | -- | 4.48 | -- | 4.48 | 4.41 | 4.62 |
| 34 Warren | -- | 4.54 | 38.35% | 42.89 | 45.32 | 47.73 |
| 36 Westerly | 12 | 4.49 | 13.44 | 17.93 | 19.97 | 17.47 |
| 37 West Greenwich | 23 | 3.98 | -- | 3.98 | 3.89 | 4.36 |
| 39 Woonsocket | -- | 4.35 | 2.04 | 6.39 | 7.96 | 8.80 |
| 40 Chariho Reg. Sch. Dist. | 16 | 4.46 | 7.63 | 12.09 | 14.76 | 16.42 |
| 41 Foster-Glocester | 20 | 4.70 | -- | 4.70 | 4.65 | 3.54 |
| 51 Cranston Housing | 3 | 5.96 | -- | 5.96 | 5.91 | 5.83 |
| 52 E. Providence Housing | 3 | 3.38 | -- | 3.38 | 3.41 | 3.83 |
| 53 Pawtucket Housing | 3 | 3.10 | -- | 3.10 | 3.81 | 6.00 |
| 56 Cumberland Housing | 11 | 6.35 | -- | 6.35 | 6.17 | 11.31 |
| 57 Lincoln Housing (1) | 4 | 4.40 | -- | 4.40 | 4.84 | 5.37 |
| 59 Bristol Housing | 5 | 4.17 | -- | 4.17 | 4.00 | 4.22 |
| 65 Burrillville Housing | 12 | 4.55 | -- | 4.55 | 4.29 | 4.45 |
| 66 N. Providence Housing | 12 | 6.71 | 2.39 | 9.10 | 8.86 | 10.60 |
| 67 E. Smithfield Water | 16 | 2.46 | -- | 2.46 | 3.29 | 4.50 |
| 68 Greenville Water | 12 | 4.69 | -- | 4.69 | 4.68 | 5.35 |
| 71 Warren Housing | 10 | 5.29 | -- | 5.29 | 5.20 | 7.11 |
| 72 Johnston Housing | 12 | 4.29 | 5.90 | 10.19 | 10.76 | 15.08 |
| 79 Coventry Housing | 12 | 3.60 | 4.00 | 7.60 | 7.77 | 10.14 |
| 83 W. Warwick Housing | 16 | 2.24 | -- | 2.24 | 3.97 | 9.43 |
| 84 Smithfield Housing | 16 | | | | | |

Page 2 of 3

Table 13 (Continued)
Rhode Island Municipal Employees' Retirement System
Recommended Contribution Rates

| Municipality | YEAR BEGINNING JULY 1, 1992 | | | | TOTAL RATE YEAR BEGINNING JULY 1, | |
|--------------------------------|-----------------------------|----------------|-----------------|---------------|---|--------|
| | Amortization Period | Normal Cost | Past Service | Total Rate | 1991 | 1990 |
| | | | | | | |
| <u>Police and Fire</u> | | | | | | |
| 50 E. Greenwich Fire (3) | 12 | 9.37% | -- | 9.37% | 11.15% | 10.98% |
| 54 E. Greenwich Police (3) | 12 | 9.09 | -- | 9.09 | 13.00 | 16.37 |
| 55 N. Kingstown Fire (3) | 8 | 8.61 | 2.73% | 11.34 | 10.73 | 14.18 |
| 58 N. Providence Fire (3) | 4 | 9.52 | 2.04 | 11.56 | 13.06 | 9.29 |
| 60 Barrington P & F | 12 | 5.99 | -- | 5.99 | 5.95 | 6.48 |
| 62 Warren Police (3) | 15 | 9.01 | 8.74 | 17.75 | 18.26 | 23.86 |
| 63 S. Kingstown P & F | -- | 6.14 | -- | 6.14 | 6.17 | 6.66 |
| 64 Primrose Volunteer Fire (3) | 7 | 9.28 | -- | 9.28 | 9.56 | 7.18 |
| 76 N. Smithfield Police (3) | 12 | 9.30 | -- | 9.30 | 8.54 | 6.69 |
| 77 Tiverton Fire (3) | 12 | 10.25 | 3.47 | 13.72 | 10.70 | 9.41 |
| 82 Foster Police (3) | 16 | 8.91 | .90 | 9.81 | 9.15 | 7.17 |
| 85 Woonsocket Police (2) (3) | 17 | 10.67 | 1.37 | 12.04 | 11.87 | 8.65 |
| 86 Charlestown Police | 21 | 6.23 | 3.13 | 9.36 | 9.77 | 10.56 |
| 87 Hopkinton Police (3) | 4 | 9.19 | -- | 9.19 | 10.01 | 6.60 |
| 88 Gloucester Police | 22 | 8.00 | 1.55 | 9.55 | 9.61 | 10.52 |
| 89 W. Greenwich Police | 23 | 6.39 | 9.24 | 15.63 | 17.72 | 19.38 |
| 90 Burrillville Police (3) | 23 | 9.54 | 5.25 | 14.79 | 15.66 | 10.00 |
| 91 Cumberland Police | 23 | 5.40 | -- | 5.40 | 5.41 | 5.65 |
| 92 Washington Fire | 24 | 6.44 | 4.51 | 10.95 | 7.17 | 7.17 |
| 93 Woonsocket Fire | 24 | 5.49 | 1.27 | 6.76 | 4.14 | 4.14 |

*"Smoothed employer contribution rate."

- (1) Based on COLA Plan (B)
- (2) Based on COLA Plan (C)
- (3) Based on "20-year service pension" optional plan
- (4) The total rate for the year beginning July 1, 1990 shown on this table is that actually contributed by E. Providence and is based on the "smoothed contribution rate" approach. The rate developed on the standard method was 19.72% for the year beginning July 1, 1990.

RHODE ISLAND MUNICIPAL ERS

Page 3 of 3

Table 14
Pension Benefit Obligation as of June 30, 1990 by Municipality

| Municipality | Participants currently receiving benefits and terminated employees not yet receiving benefits | Current Employees | | | Total Pension Benefit Obligation |
|--------------------------|---|------------------------------------|--------------------------|-----------------------------|----------------------------------|
| | | Accumulated employee contributions | Employer-financed vested | Employer-financed nonvested | |
| <u>General Employees</u> | | | | | |
| 01 Barrington | \$ 3,230,800 | \$1,048,400 | \$1,339,400 | \$1,174,400 | \$ 6,793,000 |
| 02 Bristol (1) | 2,409,000 | 868,200 | 824,000 | 1,500,000 | 5,601,300 |
| 03 Burrillville (2) | 2,236,300 | 630,800 | 625,100 | 1,017,700 | 4,509,900 |
| 04 Central Falls | 297,200 | 53,200 | 456,500 | 400,800 | 1,207,800 |
| 07 Cranston (1) | 15,617,800 | 5,182,600 | 5,030,800 | 7,744,700 | 33,575,900 |
| 08 Cumberland | 1,313,400 | 636,200 | 2,476,800 | 1,398,100 | 5,824,500 |
| 09 E. Greenwich | 1,831,000 | 754,100 | 947,200 | 668,300 | 4,200,600 |
| 10 E. Providence (1) | 13,760,100 | 3,415,600 | 3,403,000 | 5,585,700 | 26,164,400 |
| 11 Exeter-W. Greenwich | 118,000 | 106,900 | 253,500 | 266,400 | 744,800 |
| 12 Foster | 296,500 | 106,300 | 132,200 | 174,700 | 709,700 |
| 13 Gloucester | 130,000 | 114,700 | 144,200 | 190,200 | 579,000 |
| 14 Hopkinton | 187,600 | 94,700 | 79,300 | 99,800 | 461,400 |
| 15 Jamestown (2) | 595,400 | 247,300 | 206,300 | 368,800 | 1,417,800 |
| 16 Johnston | 2,606,700 | 1,418,100 | 2,849,800 | 1,701,400 | 8,576,000 |
| 21 Newport (1) | 8,918,000 | 2,454,000 | 2,476,600 | 4,159,300 | 18,007,900 |
| 22 New Shoreham | 211,500 | 57,900 | 30,800 | 97,500 | 397,800 |
| 23 N. Kingstown | 3,729,200 | 1,363,400 | 1,050,300 | 1,550,400 | 7,693,300 |
| 24 N. Providence | 2,241,400 | 1,277,800 | 1,887,100 | 1,209,000 | 6,615,400 |
| 25 N. Smithfield | 1,349,100 | 467,600 | 538,400 | 508,900 | 2,864,000 |
| 26 Pawtucket | 13,873,400 | 5,031,500 | 5,021,300 | 5,204,100 | 29,130,200 |
| 29 Richmond | 109,900 | 21,900 | 23,400 | 19,400 | 174,700 |
| 30 Scituate (1) | 1,032,900 | 396,000 | 546,900 | 701,800 | 2,677,600 |
| 31 Smithfield | 1,946,700 | 765,600 | 999,600 | 966,900 | 4,678,700 |
| 32 S. Kingstown | 2,037,200 | 1,212,700 | 729,000 | 1,507,400 | 5,486,200 |

Page 1 of 3

Table 14 (Continued)

Pension Benefit Obligation as of June 30, 1990 by Municipality

| Municipality | Participants currently receiving benefits and terminated employees not yet receiving benefits | Current Employees | | | Total Pension Benefit Obligation |
|------------------------|---|------------------------------------|--------------------------|-----------------------------|----------------------------------|
| | | Accumulated employee contributions | Employer-financed vested | Employer-financed nonvested | |
| 33 Tiverton | \$ 1,160,900 | \$ 518,300 | \$ 795,300 | \$ 572,400 | \$ 3,046,900 |
| 34 Warren | 1,251,900 | 498,800 | 1,269,200 | 587,000 | 3,606,900 |
| 36 Westerly | 649,800 | 108,300 | 262,000 | 136,200 | 1,156,300 |
| 37 W. Greenwich | 99,300 | 29,900 | 265,100 | 117,100 | 511,300 |
| 39 Woonsocket | 8,622,600 | 2,408,600 | 2,605,600 | 2,808,900 | 16,445,700 |
| 40 Chariho School | 191,300 | 241,000 | 359,100 | 306,500 | 1,097,800 |
| 41 Foster-Glocester | 261,800 | 109,400 | 225,800 | 231,800 | 828,800 |
| 51 Cranston Hsg. | 406,200 | 68,400 | 39,100 | 49,300 | 563,000 |
| 52 E. Providence Hsg. | 298,100 | 73,600 | 85,900 | 81,000 | 538,600 |
| 53 Pawtucket Hsg. | 1,179,300 | 285,500 | 284,500 | 200,900 | 1,950,200 |
| 56 Cumberland Hsg. | 90,600 | 80,200 | 129,400 | 71,400 | 371,600 |
| 57 Lincoln Housing (1) | 123,900 | 60,500 | 151,900 | 40,200 | 376,600 |
| 59 Bristol Housing | 70,900 | 51,000 | 49,700 | 79,200 | 250,900 |
| 65 Burrillville Hsg. | -- | 20,600 | 1,400 | 28,300 | 50,200 |
| 66 N. Providence Hsg. | 33,500 | 43,800 | 4,500 | 26,500 | 108,300 |
| 67 E. Smithfield Water | 57,300 | 16,900 | 4,000 | 24,200 | 102,400 |
| 68 Greenville Water | -- | 49,900 | 31,400 | 45,800 | 127,100 |
| 71 Warren Housing | -- | 45,200 | 70,700 | 51,100 | 167,000 |
| 72 Johnston Housing | 142,300 | 21,900 | 48,400 | 19,600 | 232,200 |
| 79 Coventry Housing | 178,900 | 21,800 | 40,200 | 21,900 | 262,800 |
| 83 W. Warwick Housing | 106,200 | 44,900 | 25,500 | 48,900 | 225,400 |
| 84 Smithfield Housing | 53,000 | 3,400 | 2,200 | -1,600 | 57,000 |

Page 2 of 3

Table 14 (Continued)

Pension Benefit Obligation as of June 30, 1990 by Municipality

| Municipality | Participants currently receiving benefits and terminated employees not yet receiving benefits | Current Employees | | | Total Pension Benefit Obligation |
|---------------------------|---|------------------------------------|--------------------------|-----------------------------|----------------------------------|
| | | Accumulated employee contributions | Employer-financed vested | Employer-financed nonvested | |
| Police and Fire | | | | | |
| 50 E. Greenwich Fire (3) | \$ 786,500 | \$ 203,000 | \$ 458,300 | \$ 228,900 | \$1,676,700 |
| 54 E. Greenwich Pol. (3) | 988,500 | 289,000 | 568,800 | 461,100 | 2,307,400 |
| 55 N. Kingstown Fire (3) | 1,534,000 | 1,085,600 | 2,402,500 | 1,768,700 | 6,790,800 |
| 58 N. Providence P&F (3) | 206,500 | 624,100 | 1,496,400 | 914,200 | 3,241,300 |
| 60 Barrington Police | 2,766,200 | 876,800 | 937,700 | 1,218,200 | 5,798,800 |
| 62 Warren Police (3) | 968,800 | 269,600 | 325,300 | 461,100 | 2,024,800 |
| 63 S. Kingstown P&F | 1,066,500 | 565,800 | 465,500 | 991,200 | 3,088,900 |
| 64 Primrose Vol. Fire (3) | 28,600 | 54,300 | 50,900 | 103,800 | 237,500 |
| 76 N. Smithfield Pol. (3) | 360,000 | 166,100 | 146,000 | 157,500 | 829,700 |
| 77 Tiverton Fire (3) | 577,900 | 263,600 | 561,200 | 373,900 | 1,776,600 |
| 82 Foster Police (3) | -- | 72,900 | 48,900 | 168,800 | 290,600 |
| 85 Woonsocket Pol. (2)(3) | -- | 325,600 | 172,600 | 578,200 | 1,076,400 |
| 86 Charlestown Police | 59,700 | 59,300 | 48,400 | 172,100 | 339,500 |
| 87 Hopkinton Police (3) | -- | 60,500 | 31,100 | 34,300 | 125,900 |
| 88 Glocester Police | -- | 54,600 | 78,300 | 79,800 | 212,700 |
| 89 W. Greenwich Police | -- | 19,100 | 88,600 | 111,800 | 219,500 |
| 90 Burrillville Pol. (3) | 111,300 | 53,600 | 626,300 | 213,800 | 1,005,000 |
| 91 Cumberland Police | 1,600 | 22,200 | 27,500 | 61,000 | 112,300 |
| 92 Washington Fire | -- | 10,300 | 18,200 | 53,500 | 81,900 |
| 93 Woonsocket Fire | -- | 127,900 | 93,900 | 140,400 | 362,200 |

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

- (1) Based on COLA Plan (B)
(2) Based on COLA Plan (C)
(3) Based on "20-year service pension" optional plan

ACTUARIAL COST FACTORS AS OF JUNE 30, 1990

A. GENERAL EMPLOYEES

January 31, 1992

MUNICIPAL 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, 1990.

This certificate contains the following attached exhibits:

EXHIBIT I - Actuarial Cost Factors as of June 30, 1990

- A. General employees
- B. Police and firemen

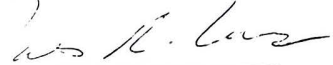
EXHIBIT II - Pension Benefit Obligation

EXHIBIT III - Actuarial Assumptions and Cost Method

EXHIBIT IV - Summary of Plan Provisions

To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate (except as noted in Exhibit I) and in my opinion the assumptions used in the aggregate (a) are reasonably related to the experience of the plan and to reasonable expectations and (b) represent my best estimate of anticipated experience under the plan.

MARTIN E. SEGAL COMPANY, INCORPORATED

By: 
James R. Laws, F.S.A., M.A.A.A.
Senior Vice President and Actuary

JRL/hva
R19

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

- a. 5,162 active participants (including 2,024 fully vested) with total annual salaries of \$98,210,400) (a)
- b. 728 inactive participants
- c. 2,178 pensioners (including 80 beneficiaries of deceased pensioners and active employees)

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

| | |
|--|-----------------|
| 1. Total normal cost | \$ 10,168,200 |
| 2. Projected employee contributions | 6,253,800 |
| 3. Employer normal cost | 3,914,400 |
| 4. Actuarial liability - total | 225,945,800 |
| Active employees | \$130,888,700 |
| Inactive employees | 3,638,800 (b) |
| Pensioners (including beneficiaries of deceased pensioners and active employees) | 91,418,400 |
| 5. Assets | 222,398,800 (c) |
| 6. Unfunded actuarial liability | 3,547,100 |

Liability for accrued vested benefits: \$166,407,000 (d)

- Note: (a) Included are 130 active employees unknown as to age, service, or both.
- (b) The liability included for inactive employees is the sum of (i) accumulated contributions for those with less than 10 years of service and (ii) two times accumulated contributions for those with 10 or more years of service.
- (c) Includes \$83,100 in assets transferred into Scituate from Police and Firemen System (Scituate Police) and -\$6,000 transferred into Smithfield from Police and Firemen System (Smithfield Police).
- (d) The liability for accrued vested benefits is based on the same retirement age assumptions as are costs, following the procedure required by Statement No. 5 of the Governmental Accounting Standards Board.
- (e) Detail figures may not add to totals shown because of rounding.

EXHIBIT I

ACTUARIAL COST FACTORS AS OF JUNE 30, 1990

B. POLICE AND FIREMEN

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

- a. 527 active participants (including 179 fully vested) with total annual salaries of \$14,331,300 (a)
- b. 17 inactive participants
- c. 111 pensioners (including 23 beneficiaries of deceased pensioners and active employees)

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

| | |
|--|----------------|
| 1. Total normal cost | \$ 2,249,900 |
| 2. Projected employee contributions | 1,110,500 |
| 3. Employer normal cost | 1,139,300 |
| 4. Actuarial liability - total | 33,505,800 |
| Active employees | \$24,049,600 |
| Inactive employees | 250,400 (b) |
| Pensioners (including beneficiaries of deceased pensioners and active employees) | 9,205,900 |
| 5. Assets | 32,600,800 (c) |
| 6. Unfunded actuarial liability | 905,000 |

Liability for accrued vested benefits: \$23,306,400 (d)

- Note: (a) Included are 23 active employees unknown as to age, service, or both.
- (b) The liability included for inactive employees is the sum of (i) accumulated contributions for those with less than 10 years of service and (ii) two times accumulated contributions for those with 10 or more years of service.
- (c) Excludes assets of \$83,100 transferred from Scituate Police to a General Employees System (Scituate) and -\$6,000 from Smithfield Police and Fire to a General Employees System (Smithfield).
- (d) The liability for accrued vested benefits is based on the same retirement age assumptions as are costs, following the procedure required by Statement No. 5 of the Governmental Accounting Standards Board.
- (e) Detail figures may not add to totals shown because of rounding.

EXHIBIT II

PENSION BENEFIT OBLIGATION

The value of the pension benefit obligation required for disclosure by Statement No. 5 of the Governmental Accounting Standards Board is shown below as of June 30, 1990.

| | <u>Pension Benefit Obligation</u> | | |
|--|-----------------------------------|---------------------------|-------------------|
| | <u>General Employees</u> | <u>Police and Firemen</u> | <u>Total</u> |
| 1) Participants currently receiving benefits and terminated employees not yet receiving benefits | \$ 95,057,200 | \$ 9,456,300 | \$104,513,400 |
| 2) Current employees | | | |
| Accumulated employee contributions | 32,527,500 | 5,203,800 | 37,731,300 |
| Employer-financed vested | 38,822,300 | 8,646,300 | 47,468,600 |
| Employer-financed nonvested | <u>43,761,900</u> | <u>8,292,200</u> | <u>52,054,100</u> |
| 3) Total pension benefit obligation | \$210,168,900 | \$31,598,600 | \$241,767,400 |

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

EXHIBIT III
ACTUARIAL ASSUMPTIONS AND COST METHOD

Mortality rates -- Male and Female 1971 Group Annuity Mortality Table
Disability mortality before age 65 -- Age 65 mortality under stipulated table
Termination rates before retirement:

| <u>General Employees (Rate %)</u> | | | | |
|-----------------------------------|---------------|-------------------|-------------------|---------------|
| <u>Age</u> | <u>Death*</u> | <u>Disability</u> | <u>Withdrawal</u> | <u>Total*</u> |
| 20 | .05 | .06 | 21.20 | 21.31 |
| 25 | .06 | .09 | 15.80 | 15.95 |
| 30 | .08 | .11 | 11.60 | 11.79 |
| 35 | .11 | .15 | 8.40 | 8.66 |
| 40 | .16 | .22 | 6.20 | 6.58 |
| 45 | .29 | .36 | 4.20 | 4.85 |
| 50 | .53 | .61 | 2.60 | 3.73 |
| 55 | .85 | 1.01 | -- | 1.86 |
| 60 | 1.31 | -- | -- | 1.31 |

15% of the above disability rates are assumed accidental.

| <u>Optional Police and Fire (Rate %)</u> | | | | |
|--|---------------|-------------------|-------------------|---------------|
| <u>Age</u> | <u>Death*</u> | <u>Disability</u> | <u>Withdrawal</u> | <u>Total*</u> |
| 20 | .05 | .12 | -- | .17 |
| 25 | .06 | .17 | -- | .23 |
| 30 | .08 | .22 | -- | .30 |
| 35 | .11 | .29 | -- | .41 |
| 40 | .16 | .44 | -- | .60 |
| 45 | .29 | .72 | -- | 1.01 |
| 50 | .53 | 1.21 | -- | 1.74 |
| 55 | .85 | -- | -- | .85 |

50% of the above disability rates are assumed accidental.

Salary scale:

| <u>Age</u> | <u>Present salary as a percent of salary at 65</u> | <u>Annual increase (Rate %)</u> |
|------------|--|---------------------------------|
| 20 | 9.11 | 6.36 |
| 25 | 12.38 | 6.27 |
| 30 | 16.73 | 6.11 |
| 35 | 22.43 | 5.91 |
| 40 | 29.73 | 5.59 |
| 45 | 38.76 | 5.23 |
| 50 | 49.73 | 4.96 |
| 55 | 63.15 | 4.84 |
| 60 | 80.07 | 4.67 |

Includes allowance for inflation of 4 1/2% per year.

Unknown characteristics of employees: Same as those exhibited by employees with known characteristics.

Retirement age -- General Employees: 65, or completion of service requirement, if later;

Optional Police and Firemen: 60, or completion of service requirement, if later;

Police and Firemen electing 20 year service plan; 57, or completion of service requirement, if later.

Percent married -- Social Security awards during 1972

Net investment return -- 8%

Valuation of assets -- At average cost value as reported by the Retirement System

Actuarial cost method -- Entry age normal cost with part of each municipality's unfunded actuarial liability funded over a fixed amortization period and the balance funded over the projected future payroll of current employees.

*Rates shown for men; rates for women are slightly lower.

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

EXHIBIT IV
SUMMARY OF PLAN PROVISIONS*

Service pension

| | <u>General Employees</u> | | <u>Police and Firemen</u> | | | |
|----------------------|--------------------------|---------|---------------------------|---------|------------|------|
| | | | | | (Optional) | |
| Age requirement | 58 | None | 55 | None | None | None |
| | | or | | or | or | |
| Service requirement: | 10 yrs. | 30 yrs. | 10 yrs. | 25 yrs. | 20 yrs. | |

Amount: 2% (2-1/2% for the 20-year service plan for police and firemen) of final average salary per year of service to a maximum of 75%. Final average salary is defined as the average compensation earned during the highest 3 consecutive years prior to termination. For police and firemen, mandatory retirement is at age 65.

Early Retirement (Police and Firemen only)

Age requirement: 50
Service requirement: 20 years
Amount: Regular pension accrued, reduced by 6% for each year of age less than 55.

Disability

Ordinary:

Age requirement: None
Service requirement: 5 years
Amount: Regular pension accrued but calculated as if participant has at least 10 years of service, payable immediately.

Accidental:

Age requirement: None
Service requirement: None
Amount: 66 2/3% of final salary, payable immediately.

Vesting

Age requirement: None
Service requirement: 10 years
Amount: Regular pension accrued, payable at age 58 for general and at age 55 for police and firemen.

*This exhibit summarizes the major provisions of the Plan as included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

EXHIBIT IV (Continued)

Pre-retirement death benefits

Ordinary death benefits:

Lump sum benefit:

Age requirement: None
Service requirement: None
Amount: (a) \$800 per year of service to a maximum of \$16,000 and with a minimum of \$4,000.
(b) Refund of employee contributions

Joint and survivor benefit (applicable only if elected by employee):

Age requirement: None
Service requirement: 10 years
Amount: Benefit employee would have received had he retired the day before he died and elected the 100% joint and survivor option.

Police and firemen's survivor's benefit:

Age requirement: None
Service requirement: None
Amount: 30% of final average salary to the spouse plus 10% to each child under age 18.

Accidental death benefit:

Age requirement: None
Service requirement: None
Amount: (a) 50% of salary to spouse or children under age 18, less workmen's compensation. Police and firemen also receive 10% for each child under 18 to a maximum of 66 2/3%.
(b) Refund of employee contributions.

Post-retirement death benefit

Lump sum benefit:

(a) 100% of employee contributions, less benefits paid.
(b) Pre-retirement death benefit, reduced 25% per year of retirement, but not less than \$4,000.

Police and firemen's survivor's benefit:

Same as pre-retirement

EXHIBIT IV (Continued)

Employee contribution rate

6% for general employees, 7% for police and firemen, until 75% benefit is accrued. Increased to 7% for general employees and 8% for police and firemen if municipal group elects post-retirement cost-of-living increase. Increased an additional 1% for police and firemen if municipal group elects the 20 year service plan.

Available options

Joint and survivor with 50% or 100% continued to the beneficiary after the death of the employee.

Post-retirement cost-of-living increases

3% of the original amount, not compounded, to pensioners and beneficiaries if municipal group elects this optional provision.