

# **Actuarial Report II**

REPORT ON AN ACTUARIAL VALUATION  
OF THE  
MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM  
AS OF JUNE 30, 1975

An annual actuarial valuation of the system was completed as of June 30, 1975. The results of the valuation are presented in this report. Such a valuation is undertaken to establish the financial condition of the system from an actuarial standpoint reflecting accruing requirements. From the results of such valuation, the current progress of the system may be measured and determined. In such an actuarial valuation, effect is given to all accrued liabilities and accruing costs under the prescribed benefit schedule.

In an actuarial valuation an analysis is made of the changes in the active membership among the several participating municipalities. In this process, account is taken of the additions to membership during the year and the basic characteristics thereof, the separations from service due to resignation, death and retirement, and other pertinent factors of significance. The experience of the system among retirements is studied and evaluated. In his report on the valuation, the actuary attempts to point up the factors and conditions that are basic in the valuation procedure and reviews other problems of special import in the operations of the system.

Part 1. ACTUARIAL ASSUMPTIONS

1. Mortality expectancy: The 1951 Group Annuity Table (modified)

2. Interest rate: 5% per annum

3. Turnover factors: Assumed annual rates of withdrawal from all causes -

| Age         | Rate per 1,000 |        |
|-------------|----------------|--------|
|             | Male           | Female |
|             | 182            | 219    |
| 20          | 167            | 196    |
| 25          | 121            | 143    |
| 30          | 92             | 110    |
| 35          | 63             | 75     |
| 40          | 48             | 57     |
| 45          | 22             | 26     |
| 50          | 10             | 12     |
| 55          | Mortality only |        |
| 60 and over |                |        |

4. Future salary increments: Assumed annual compound rate for the long term - 3-1/2% per year

5. Average age at retirement: Male - 66 years  
Female - 64 years

6. Disability rates: Actual operating experience. It was assumed that 12-1/2% of all disablements would occur in line of duty

7. Marital status: 85% of employees in service were assumed to be married with the average of the wives 4 years younger than the employees; 75% of the employees retiring on pension were assumed to be married

8. Administrative expense: None

Part 2. MEMBERSHIP STATISTICS

| Code Reference       | City or Town                      | Number of Active Members | Number of Pensioners |        | Total Membership |
|----------------------|-----------------------------------|--------------------------|----------------------|--------|------------------|
|                      |                                   |                          | Male                 | Female |                  |
| 1                    | Barrington                        | 131                      | 28                   | 9      | 168              |
| 2                    | Bristol                           | 111                      | 14                   | 3      | 128              |
| 3                    | Burrillville                      | 96                       | --                   | --     | 96               |
| 7                    | Cranston                          | 509                      | 86                   | 65     | 660              |
| 9                    | East Greenwich                    | 115                      | 4                    | 3      | 122              |
| 10                   | East Providence                   | 273                      | 68                   | 22     | 363              |
| 14                   | Hopkinton                         | 22                       | 5                    | --     | 27               |
| 15                   | Jamestown                         | 48                       | 4                    | 2      | 54               |
| 16                   | Johnston                          | 207                      | 3                    | 1      | 211              |
| 21                   | Newport                           | 278                      | 55                   | 8      | 341              |
| 23                   | North Kingstown                   | 173                      | 21                   | 6      | 200              |
| 24                   | North Providence                  | 119                      | 26                   | 6      | 151              |
| 25                   | North Smithfield                  | 72                       | 7                    | 2      | 81               |
| 26                   | Pawtucket                         | 608                      | 156                  | 35     | 799              |
| 30                   | Scituate                          | 68                       | 15                   | 2      | 85               |
| 31                   | Smithfield                        | 99                       | 8                    | 2      | 109              |
| 32                   | South Kingstown                   | 141                      | 7                    | 8      | 156              |
| 33                   | Tiverton                          | 89                       | 13                   | 2      | 104              |
| 34                   | Warren                            | 75                       | 15                   | 2      | 92               |
| 39                   | Woonsocket                        | 314                      | 68                   | 16     | 398              |
| <u>SPECIAL UNITS</u> |                                   |                          |                      |        |                  |
| 50                   | East Greenwich Fire District      | 9                        | --                   | --     | 9                |
| 51                   | Cranston Housing Authority        | 12                       | --                   | --     | 12               |
| 52                   | East Providence Housing Authority | 10                       | --                   | --     | 10               |
| 53                   | Pawtucket Housing Authority       | 33                       | 8                    | --     | 41               |
|                      | Carried forward                   | 3,612                    | 611                  | 194    | 4,417            |

| Code Reference | City or Town                       | Number of Active Members | Number of Pensioners |        | Total Membership |
|----------------|------------------------------------|--------------------------|----------------------|--------|------------------|
|                |                                    |                          | Male                 | Female |                  |
|                | Brought forward                    | 3,612                    | 611                  | 194    | 4,417            |
| 54             | East Greenwich Police              | 20                       | 5                    | --     | 25               |
| 55             | North Kingstown Police and Fire    | 72                       | 6                    | --     | 78               |
| 56             | Cumberland Housing Authority       | 3                        | --                   | --     | 3                |
| 57             | Lincoln Housing Authority          | 6                        | --                   | --     | 6                |
| 58             | North Providence Police            | 47                       | 4                    | --     | 51               |
| 59             | Bristol Housing Authority          | 4                        | --                   | --     | 4                |
| 60             | Barrington Police and Fire         | 59                       | 6                    | --     | 65               |
| 61             | Smithfield Police and Fire         | 48                       | 3                    | --     | 51               |
| 62             | Warren Police                      | 19                       | 2                    | --     | 21               |
| 63             | South Kingstown Police and Fire    | 35                       | --                   | 1      | 36               |
| 64             | North Smithfield Fire              | 8                        | --                   | --     | 8                |
| 65             | Burrillville Housing Authority     | 2                        | --                   | --     | 2                |
| 66             | North Providence Housing Authority | 4                        | --                   | --     | 4                |
| 67             | East Smithfield Water District     | 2                        | 1                    | --     | 3                |
| 68             | Greenville Water District          | 4                        | --                   | --     | 4                |
|                | Totals                             | 3,945                    | 638                  | 195    | 4,778            |

Part 3. UNFUNDED ACCRUED LIABILITY AT JUNE 30, 1975

| Code                       | Municipality                       | Year of Entry | Plan  | Unfunded Accrued Liability |
|----------------------------|------------------------------------|---------------|-------|----------------------------|
| <u>General Employees</u>   |                                    |               |       |                            |
|                            |                                    | 1957          | 2%    | \$ 228,436                 |
| 1                          | Barrington                         | 1957          | 2     | 121,072                    |
| 2                          | Bristol                            | 1968          | 1-2/3 | 218,148                    |
| 3                          | Burrillville                       | 1963          | 2     | 1,697,788                  |
| 7                          | Cranston                           | 1957          | 2     | 137,181                    |
| 9                          | East Greenwich                     |               |       |                            |
|                            |                                    | 1961          | 2     | 622,331                    |
| 10                         | East Providence                    | 1969          | 1-2/3 | 101,773                    |
| 14                         | Hopkinton                          | 1964          | 2     | 121,638                    |
| 15                         | Jamestown                          | 1968          | 2     | 381,177                    |
| 16                         | Johnston                           | 1966          | 1-2/3 | 1,011,602                  |
| 21                         | Newport                            |               |       |                            |
|                            |                                    | 1957          | 2     | 261,166                    |
| 23                         | North Kingstown                    | 1961          | 2     | 310,305                    |
| 24                         | North Providence                   | 1964          | 2     | 142,411                    |
| 25                         | North Smithfield                   | 1962          | 2     | 2,042,592                  |
| 26                         | Pawtucket                          | 1967          | 2     | 327,648                    |
| 30                         | Scituate                           |               |       |                            |
|                            |                                    | 1959          | 2     | 102,722                    |
| 31                         | Smithfield                         | 1957          | 2     | 77,402                     |
| 32                         | South Kingstown                    | 1964          | 1-2/3 | 237,336                    |
| 33                         | Tiverton                           | 1957          | 2     | 168,619                    |
| 34                         | Warren                             | 1962          | 1-2/3 | 1,255,127                  |
| 39                         | Woonsocket                         |               |       |                            |
| <u>Special Authorities</u> |                                    |               |       |                            |
| 51                         | Cranston Housing Authority         | 1968          | 2     | 40,072                     |
| 52                         | East Providence Housing Authority  | 1968          | 2     | 33,798                     |
| 53                         | Pawtucket Housing Authority        | 1968          | 1-2/3 | 226,064                    |
| 56                         | Cumberland Housing Authority       | 1969          | 1-2/3 | 9,021                      |
| 57                         | Lincoln Housing Authority          | 1969          | 1-2/3 | 9,617                      |
| 59                         | Bristol Housing Authority          | 1970          | 2     | 8,388                      |
| 65                         | Burrillville Housing Authority     | 1972          | 2     | 9,007                      |
| 66                         | North Providence Housing Authority | 1973          | 2     | 738                        |
| 67                         | East Smithfield Water District     | 1973          | 2     | 13,706                     |
| 68                         | Greenville Water District          | 1973          | 2     | 15,227                     |
|                            | Carried forward                    |               |       | \$ 9,932,112               |



| Code | Municipality                     | Year of Entry | Plan | Unfunded Accrued Liability |
|------|----------------------------------|---------------|------|----------------------------|
|      | Brought forward                  |               |      | \$ 9,932,112               |
|      | <u>Police &amp; Fire</u>         |               |      |                            |
| 50   | East Greenwich Fire District     | 1967          | 2%   | 45,311                     |
| 54   | East Greenwich Police            | 1968          | 2    | 61,712                     |
| 55   | North Kingstown Police and Fire  | 1968          | 2    | 270,198                    |
| 58   | North Providence Police          | 1969          | 2    | 101,823                    |
| 60   | Barrington Police and Fire       | 1970          | 2    | 115,831                    |
| 62   | Warren Police                    | 1970          | 2    | 45,787                     |
| 63   | South Kingstown Police and Fire  | 1971          | 2    | 92,188                     |
| 61   | Smithfield Police and Fire       | 1972          | 2    | 107,973                    |
| 64   | North Smithfield Police and Fire | 1972          | 2    | 37,019                     |
|      | <u>Total</u>                     |               |      | <u>\$10,809,954</u>        |

Part 4. RECOMMENDED RATES OF CONTRIBUTION FOR PARTICIPATING MUNICIPALITIES

| Code                       | City or Town     | Year of Membership | Rate of Pension Credit | Per cent of Payroll for Employer's Contributions |                   |        |
|----------------------------|------------------|--------------------|------------------------|--|-------------------|--------|
|                            |                  |                    |                        | Normal Cost                                      | Accrued Liability | Total  |
| <u>General Employees</u>   |                  |                    |                        |  |                   |        |
| 1                          | Barrington       | 1957               | 2%                     | 10.70%   | 1.40%             | 12.10% |
| 2                          | Bristol          | 1957               | 2                      | 11.50  | 1.30              | 12.80  |
| 3                          | Burrillville     | 1968               | 1-2/3                  | 8.36   | --                | 8.36   |
| 7                          | Cranston         | 1963               | 2                      | 8.02   | 6.19              | 14.21  |
| 9                          | East Greenwich   | 1957               | 2                      | 10.80  | 1.50              | 12.30  |
| 10                         | East Providence  | 1961               | 2                      | 7.80   | 7.18              | 14.98  |
| 14                         | Hopkinton        | 1969               | 1-2/3                  | 8.60   | 8.20              | 16.80  |
| 15                         | Jamestown        | 1964               | 2                      | 8.84   | 4.19              | 13.03  |
| 16                         | Johnston         | 1968               | 2                      | 8.16   | 3.83              | 11.99  |
| 21                         | Newport          | 1966               | 1-2/3                  | 6.78   | 5.77              | 12.55  |
| 23                         | North Kingstown  | 1957               | 2                      | 8.90   | 1.20              | 10.10  |
| 24                         | North Providence | 1961               | 2                      | 6.67   | 4.68              | 11.35  |
| 25                         | North Smithfield | 1964               | 2                      | 8.65   | 4.41              | 13.06  |
| 26                         | Pawtucket        | 1962               | 2                      | 6.12   | 5.67              | 11.79  |
| 30                         | Scituate         | 1967               | 2                      | 8.93   | 8.55              | 17.48  |
| 31                         | Smithfield       | 1959               | 2                      | 8.70   | 1.00              | 9.70   |
| 32                         | South Kingstown  | 1957               | 2                      | 9.00   | 0.40              | 9.40   |
| 33                         | Tiverton         | 1964               | 1-2/3                  | 6.08   | 6.88              | 12.96  |
| 34                         | Warren           | 1957               | 2                      | 9.90   | 2.40              | 12.30  |
| 39                         | Woonsocket       | 1962               | 1-2/3                  | 5.03   | 7.90              | 12.93  |
| <u>Housing Authorities</u> |                  |                    |                        |  |                   |        |
| 51                         | Cranston         | 1968               | 2%                     | 8.42%  | 1.52%             | 9.94%  |
| 52                         | East Providence  | 1968               | 2                      | 8.11   | 1.41              | 9.52   |
| 53                         | Pawtucket        | 1968               | 1-2/3                  | 8.70   | 8.30              | 17.00  |
| 56                         | Cumberland       | 1969               | 1-2/3                  | 4.20   | 1.10              | 5.30   |
| 57                         | Lincoln          | 1969               | 1-2/3                  | 4.70   | 1.20              | 5.90   |
| 59                         | Bristol          | 1970               | 2                      | 8.40   | 1.30              | 9.70   |
| 65                         | Burrillville     | 1972               | 2                      | 6.30   | 2.50              | 8.80   |
| 66                         | North Providence | 1973               | 2                      | 5.80   | 0.20              | 6.00   |
| <u>Water Districts</u>     |                  |                    |                        |  |                   |        |
| 67                         | East Smithfield  | 1973               | 2                      | 12.20  | 6.60              | 18.80  |
| 68                         | Greenville       | 1973               | 2                      | 4.50   | 5.10              | 9.60   |

| Code | City or Town                     |        | Year of Membership | Rate of Pension Credit | Total Employer's Contributions |
|------|----------------------------------|--------|--------------------|------------------------|--------------------------------|
|      | Police                           | & Fire |                    |                        |                                |
| 50   | East Greenwich Fire District     |        | 1967               | 2%                     | 14.00%                         |
| 54   | East Greenwich Police            |        | 1968               | 2                      | 14.00                          |
| 55   | North Kingstown Police and Fire  |        | 1968               | 2                      | 14.00                          |
| 58   | North Providence Police          |        | 1968               | 2                      | 14.00                          |
| 60   | Barrington Police and Fire       |        | 1970               | 2                      | 14.00                          |
| 62   | Warren Police                    |        | 1970               | 2                      | 14.00                          |
| 63   | South Kingstown Police and Fire  |        | 1971               | 2                      | 14.00                          |
| 61   | Smithfield Police and Fire       |        | 1972               | 2                      | 14.00                          |
| 64   | North Smithfield Police and Fire |        | 1972               | 2                      | 14.00                          |

The aforesaid rates are applicable to the budgeted payroll for each fiscal year on the employees participating in the system. By this method sufficient revenues may be provided currently to meet the system's annual accruing requirements. These requirements consist of the cost incurred for current service, referred to as the "normal Cost", plus the annual amortization payment on the "Unfunded Accrued Liability".

Part 5. VALUATION OF PENSION ROLL

The pension roll at the close of the year and a valuation thereof was as follows:

|                                | <u>Male</u>  | <u>Female</u> |
|--------------------------------|--------------|---------------|
| Number on pension roll         | 638          | 195           |
| Proportion of total            | 76.6%        | 23.4%         |
| Annual payments                | \$1,457,846  | \$382,733     |
| Average annual payment         | \$2,285      | \$1,963       |
| Average age                    | 65.7         | 64.8          |
| Actuarial reserve requirements | \$14,837,923 | \$4,172,361   |

The actuarial reserve requirements on pensioners as established at June 30, 1975 amounted to \$19,010,284. This compares with the balance in the "Retirement Reserve" at that date of \$21,235,095. This determination indicates relative financial stability according to the actuarial criteria used in this valuation.

Part 6. OBLIGATIONS OF MUNICIPALITIES

In subscribing to membership in the system on behalf of their employees, the cities and towns and the several special governmental units participating in the system have undertaken pension obligations consisting of (a) the accrued liabilities for service rendered by the employees prior to the effective dates of participation referred to as "prior service"; and (b) the accruing cost for future service generally known as "normal cost" or the current year's pension liability.

Prior service. The liability for pension credit in the case of each municipality for service by their employees prior to the date of participation was computed at the time participation was applied for. A prior service contribution rate was fixed as a percentage of payroll, as required by law, at a rate that would bring about the amortization of the total accrued liability over a period of 25 years from the effective dates of participation. This period for amortization purposes was fixed since, on the average, the prior service or accrued liability is expected to be fully amortized by the time the employees in service at the beginning date of participation became separated from service by resignation, death or retirement.

Current service. Normal cost was determined upon the basis of the total membership with full effect to the particular age,

service and salary characteristics of the participating employees. As required, this rate was calculated as a percentage of payroll. The normal cost rate is to be applied to the current payroll budget for each municipality on the employees participating in the system.

Unfunded accrued liability. Prior service cost and normal cost contribution rates are presented in a statement in the succeeding pages of this report. The statement shows the unfunded accrued liability at June 30, 1975 for the several participating municipalities and special governmental units. This liability in the case of each participating entity represents the amount of its unpaid indebtedness to the system on account of prior service and includes the deficiencies in cost requirements for future service. Part of these deficiencies was due to the variations between the established contribution rates for such service reflecting our actuarial assumptions and the actual operating experience of each participating municipality. A part thereof, however, may be attributed to liberalizing changes in the benefit schedule which occurred since the dates when the initial contribution rates were established.



The procedures involved in an actuarial valuation are briefly described. Such a valuation represents basically a statistical analysis of data reflecting the mortality and service experience among the active and retired membership. The data includes (1) the current additions to membership, (2) separations from service due to resignation or dismissal without right to a retirement annuity, (3) rate of retirement, that is, the number of members who will survive at retirement and qualify for retirement, (4) deaths among active members, (5) disability occurring before attainment of retirement age, and (6) deaths among retired members and beneficiaries.

All of the foregoing factors are active and interactive in the calculation of costs and liabilities. These factors and others are considered in the formulation of contribution rate schedules that are designed for the purpose of accumulating reserves to meet the ultimate pension and benefit payouts to employees and beneficiaries who may qualify for benefits.

Since the financial effect of these factors on the system varies with the ages of the members, exposure tables are prepared for the factors of new entrants, deaths and separations from service. Separate tables are formulated for male and female members in order to give effect to the special characteristics affecting the respective categories of members.

The ratio of actual terminations to the number of members exposed to termination for each of the several causes, at the various ages, results in rates of termination. These rates are generally leveled out to eliminate any marked variances between ages that may occur in cases where the data is limited in scope or is fragmentary in form.

Thus, the actuary can test the rates as developed in the actuarial valuation by applying prior rates to the exposures developed in the current year's valuation. By comparing the expected deaths and terminations under the aforesaid procedure with actual terminations for each of the several causes during the period covered by the actuarial valuation, the accuracy of the newly established termination or separation rates may be checked. Revisions or changes may be made currently, if necessary.

Such a valuation, therefore, provides the basis for making appropriate assumptions with respect to the following data for use in actuarial valuations and cost determinations.

1. New members. Incoming members form a part of the exposure study and constitute a basic element in the formulation of rates of separation from service. This factor has a direct effect on the financing of a system particularly if the underlying trend is toward more advanced ages at entry into service since it may mean higher costs.



2. Separation from service. These rates are used to forecast the number of active members who will withdraw from service without right to pensions and apply for a refund of their contribution credits.

3. Deaths among members. Rates of death among the active members are subject to measurement for the purpose of forecasting the probable number of separations due to death thus releasing liabilities for accumulated pension credits and establishing the liability for survivors' annuities.

4. Rates of service retirement. These rates are established at the ages at which employees may be expected to become superannuated and retire on a service retirement annuity beginning at the prescribed ages for service retirement.

5. Disability claims. The number of active members who may become disabled and qualify for disability retirement, for occupational or non-occupational causes, and the ages at which these incidents may occur are compiled. Rates of the probability of disability are formulated to measure this factor for cost and liability purposes.

6. Deaths among beneficiaries. Mortality rates among service retirement and the survivors of active and retired members entitled to pension benefits are formulated for the purpose of facilitating the calculation of liabilities and costs that may be incurred on account of this item.

7. Salary scale. The retirement annuities are predicated upon a "final average salary" base which is the average earnings for the 3 highest consecutive years of service within the last 10 years of service. A salary scale is prepared, therefore, showing rates of earnings progression to assumed ages of retirement which is applied in the calculation of costs and liabilities. Thus, the total liability may be established on the amounts of annuities to be paid subject to such adjustments that will give effect to releases resulting from separations and deaths occurring prior to retirement.

8. Rates of earnings on the system's assets. An interest factor is basic in all actuarial procedure. The reserve liabilities, if fully covered by assets reflecting the actuarial reserve principle, which are to be invested, would be expected to earn a certain assumed rate of income. Under the law, this rate must be fixed by the Board of Trustees upon the basis of the average effective rate of earnings for the "long term". By the long term is meant the average productive life of the active members plus the assumed average life on retirement. The total period comprising the long term may be as much as 35 or 40 years.

9. General. While all of the foregoing factors are prominent in cost calculations, the last two factors are especially important in periodic actuarial valuations and cost studies particularly at this time under current economic

conditions. The current trend with respect to these factors must be continuously analyzed and evaluated. Adjustments are generally made in the results of current actuarial valuations to give effect to possible marked variations from the assumed basic trend. This applies particularly in the case of the earnings progression rates since these rates are frequently influenced by the employer's current personnel policies, economic changes or other local factors.

Part 8. RE-EVALUATION OF THE RATES OF CONTRIBUTION OF CITIES AND TOWNS

As part of the annual actuarial valuation, a check is made of the rates of contribution for the cities and towns who have been participants in the Municipal Employees' Retirement System for a reasonably long period of time. This review is made of cities and towns having at least 10 years of membership in the System. As participating units attain this status, their operating experience is evaluated in order to establish the adequacy or inadequacy of the applicable contribution rates. A current adjustment or revision of these rates, if necessary, is recommended.

Participating cities subject to review. The following cities and towns participating in the System have been subject to this evaluation during the fiscal year covered by this report.

| <u>Name of City or Town</u> | <u>Date of Participation</u> | <u>Number of Members</u> |                   |
|-----------------------------|------------------------------|--------------------------|-------------------|
|                             |                              | <u>June 30, 1975</u>     |                   |
|                             |                              | <u>Employees</u>         | <u>Pensioners</u> |
| Jamestown                   | 1964                         | 48                       | 6                 |
| North Smithfield            | 1964                         | 72                       | 9                 |
| Tiverton                    | 1964                         | 89                       | 15                |

Of the foregoing 3 cities and towns, Jamestown and North Smithfield have a 2% per year rate of retirement annuity. The Town of Tiverton maintains a 1-2/3% annuity rate.

Only one additional city is to be considered next year in this check who will have been participants in the System for at

least 10 years, namely, the City of Newport whose date of participation was 1966.

Basic factors. Pension obligations are of long term character, maturing many years after the obligations are initiated. These obligations, therefore, must be evaluated on a long term basis. Transitory factors or short term fluctuations cannot be considered in an evaluation of their cost aspects. For this reason, a revaluation or reexamination of contribution rates is made for those cities and towns that have been participants for at least 10 years.

A period of 10 years is regarded as a reasonable period to allow for any unusual or abnormal changes in basic factors. These factors include mortality among active and retired members, turnover rates, ages at retirement, salary trends and others that are pertinent in a determination of actuarial costs and liabilities. As participating units acquire increased operating experience, a review of their contribution rates is undertaken and adjustments there of proposed, as required.

Results of re-evaluation. The valuation discloses the cost of financing the currently accruing pension obligation designated as the "normal cost", and the requirements for the amortization of the accrued liability. Each of these items is expressed as a percentage of payroll.

Amortization of accrued liabilities. It has been suggested that a longer period of amortization be provided for the accrued liabilities than the remaining period of 25 years from the initial dates of participation of the cities and towns in the retirement system. There is some merit to this suggestion. A number of substantive amendments have been made during the last several years in the law governing the Municipal Employees' Retirement System. These new amendments have increased current costs and accrued liabilities. While it is desirable that the accrued liabilities be liquidated within a reasonable period of time in order to establish a full funded financial status for the retirement system with respect to all participating cities and towns, this objective may still be maintained according to recognized standards by apportioning the existing unfunded accrued liabilities over a somewhat longer term as has been proposed.

Accordingly, in the calculation of the rates of contribution hereinabove set forth, a 25-year period of amortization, dating from July 1, 1974, has been used and a 5% interest rate assumption was applied. This rate of interest may be considered a reasonable investment return expectancy for the long term under the prescribed investment authority, and the progressive investment management policies maintained by the Retirement Board.



Name of Participating  
City or Town

|                  | Percent of Payroll - 7-1-1976 |                   |                   |
|------------------|-------------------------------|-------------------|-------------------|
|                  | Normal Cost                   | Accrued Liability | Total Annual Cost |
| Jamestown        | 9.26%                         | 2.55%             | 11.81%            |
| North Smithfield | 8.65                          | 2.52              | 11.17             |
| Tiverton         | 7.42                          | 3.47              | 10.89             |

These costs were computed as of June 30, 1975 based upon the provisions of the law in force at that date.

Recommendation. The foregoing rates, as a percentage of employees' payroll, are hereby recommended to the Retirement Board of the Employees' Retirement System for certification to the applicable cities and towns of the State as the rates of contribution effective as of July 1, 1976

It should be noted that for the most part little change has occurred in the total rate of contribution for these cities and towns. While some reduction in the total rate was realized as the result of an extension of the period of time for the amortization of the unfunded accrued liabilities, this reduction was substantially offset by increased costs and liabilities due principally to the following factors: (1) improvements in the benefit schedule during recent years as evidenced by actual operating experience, the full effect of which had not been previously expressed in the current rates; (2) increases in salaries during recent years at somewhat higher rates than were applied in cost determinations to give

effect to the "3-year final average salary" formula used in the computation of the retirement annuity; (3) improved mortality among active members and pensioners; and (4) a reduced turnover in employment.

The recommended rates realistically reflect the employer's share of the cost of the retirement system under the established benefit schedule after giving effect to operating results to date and assumptions as to possible future experience.

Part 9. RESERVE ACCOUNTS

The reserve accounts maintained by the system are intended as an accounting technique to record the pension credits established for active members and pensioners, respectively. These reserves represent contributions made by the members and by the participating cities and towns, and the special governmental units.

With these reserve accounts it is possible to evaluate more closely the current progress of the system in the accumulation of assets to meet the accrued and accruing liabilities for future benefit payouts in the case of members who qualify for retirement and other benefits.

A negative balance exists in the "Employers' Contribution Reserve" for several cities and towns. This has come about principally by the retirement of aged employees shortly after the commencement of participation in the system for the applicable city or town. With additional revenues that will result from continued operations of the system, these negative balances should eventually be removed. In the course of time, with further operations, these negative balances should be removed and a credit balance should be established for all participating cities and towns which will represent the reserves required to meet the liabilities on account of the membership. These reserves will consist of the pension credits earned by the members during services rendered.

Part 10. FUTURE PENSION AND BENEFIT PAYOUTS

To illustrate the importance of adequate funding of pension obligations on a systematic basis, in accordance with the accruing aspects of pension cost, a projection of future payouts is presented in this report. Such a projection serves to point up the full meaning of the pension obligations in terms that may be more readily understood by the officials of government having the responsibility of formulating budgets and more particularly by members of legislative bodies.

The following projection of future payouts shows the persistent upward trend in pension and benefit expenditures by the system for a number of years:

| <u>Fiscal<br/>Year<br/>Ended<br/>June 30</u> | <u>Estimate of future<br/>benefit and pension<br/>payouts<br/>(in millions)</u> |
|--|---|
| 1975   | \$1.9   |
| 1980   | 3.6   |
| 1985   | 5.8   |
| 1990   | 7.7   |
| 1995   | 9.6   |

The foregoing projection will be reviewed and reexamined in future years in the preparation of the annual reports in the light of additional operating experience as disclosed by the current results of operations.

Part 11. FINANCING PENSION COST

The financing of pension cost by the governmental employer is simply a matter of current budgeting in the same manner as other current operating expenses of government. Such cost is basically deferred salary. The cost of pensions to an employer in any year is represented by the value of the pension credits earned during the year by the active members. These yearly pension credits form a proportionate part of the ultimate retirement benefits which would become due and payable as the members qualify for retirement by fulfilling the prescribed age and service conditions.

The pension and benefit payments to retired employees, therefore, are derived from a combination or accumulation of earned pension credits covering a number of productive years which represent the periods of service rendered by employees. It is the accumulation of these pension credits for the service rendered by the members which constitutes the total reserve required for meeting the pension payments to the qualifying members. This current accumulation of pension credits represents the real cost of the pension benefits in any fiscal period.

The foregoing illustrates the accrual or reserve principle that underlies a retirement system. Actuarial criteria reflects the accrual concept. This concept governs all

retirement system operations. Even if a retirement plan did not specifically spell out the methods of financing the pension credits, the accrual principle would be implicit in its basic provisions. Rates of contribution are formulated with the view of accumulating the reserves to meet the earned pension credits and the ultimate payouts for the retirement and other benefits. Current revenues from these rates are substantially in excess of the current expenditures for benefits. This excess represents the reserve to meet the future pension and benefit payments to employees who qualify for retirement.

It is this reserve which is created by the application of these contribution rates that is frequently a source of temptation to officials of government, particularly those having to do with the formulation of budgets. This has brought about, in some instances, the withholding of revenues from the retirement system by means of arbitrary cut-backs in appropriations below the requirements for the accruing pension credits. Pressures also arise from time to time for the application or diversion of a part or all of the accumulated reserves of a system for other governmental purposes.

In its true concept, pension cost is a current operating expense of government. It is an obligation which cannot logically be deferred. It has a direct and immediate relationship to the entire fiscal operations of government. There is no short cut method or formula for financing this



cost. A retirement plan is now considered to be an integral part of a legitimate employee welfare program of governmental concern. The principle that government should bear a measure of responsibility for employees whose productivity has become impaired due to old age or disability is now generally accepted. Since this is the case, government should face up to its responsibility for proper financing. It should be willing to meet the cost of pensions on the most practical and economical basis. The only real method of meeting such cost is the one that reflects the accruing or current budgeting concept.

Actuarial funding methods. Several actuarial cost methods are currently recognized for the computation of pension costs and liabilities. In the case of a fixed benefit formula such as that in effect for the Municipal Employees' Retirement System, two specific methods are commonly used, namely, the "Accrued Benefit Method" and "Projected Benefit Method".

The accrued benefit method is otherwise referred to as the "Unit credit", "step-rate" or "single premium" method. It involves the determination of each year's earned pension credit as a present value figure as of the attained ages of the members. Obviously, as the ages of the employees advance, the yearly pension credit costs increase correspondingly. However, the increases in aggregate costs may be somewhat curtailed or may partially be offset by other

compensating factors in the complexion of the membership occasioned by separations or deaths.

The "projected benefit method", frequently referred to as the "entry-age normal-cost" or "aggregate level cost", provides for the projection of the benefits to be earned by the employees and the contributions to be made to finance these benefits. This is the method employed in the financing of the Municipal Employees' Retirement System. Supplemental liabilities are provided for accrued pension credits previously earned by the members which are unfunded. The cost of ancillary benefits such as disability or death may be financed on a one-year term premium basis considering the insurance character of these benefits.

Part 12. CONCLUDING COMMENT

This report reflects progress during the year in the operations of the system. Some adjustments in the accrued liabilities were necessary to give effect to salary increases above the assumed projected rates. Management and administrative policies of the Retirement Board are in accord with progressive methods of procedure thus effectuating fully the basic objectives and purposes of the retirement system.

The policies of the Board governing the investment of the system's reserves reflect prudent management of the investment account. An excellent record of performance has been demonstrated over the years. High quality securities have been acquired producing reasonable rates of income to the system. The methods of administration in force are geared to the objective of providing the members a high standard of service.

A. A. Weinberg  
Actuary

## Financial Statements III

Comparative Financial Balance Sheet

June 30

| <u>Assets</u>  | <u>1975</u>          | <u>1974</u>          |
|--|----------------------|----------------------|
| Cash   | \$ 318,088           | \$ 152,203           |
| Accrued Interest Receivable  | 337,308              | 317,082              |
| Investments (At Amortized Book Value<br>for Bonds and Cost for Stocks) | <u>30,623,325</u>    | <u>25,703,149</u>    |
| Total Assets   | <u>\$ 31,278,721</u> | <u>\$ 26,172,434</u> |
| <br><u>Liabilities &amp; Reserves</u>                                  |                      |                      |
| <u>Current Liabilities</u>   |                      |                      |
| Unclaimed Benefits   | \$ 11,110            | \$ 11,110            |
| <u>Reserves - General Employees</u>                                    |                      |                      |
| Members Contribution   | 7,727,616            | 6,729,320            |
| Employers Accumulation   | 732,804              | 547,625              |
| Retirement   | <u>19,484,747</u>    | <u>16,282,119</u>    |
| Total Reserves-General Employees                                       | 27,945,167           | 23,559,064           |
| <u>Reserves - Police &amp; Fire</u>                                    |                      |                      |
| Members Contribution   | 1,246,516            | 1,043,383            |
| Employers Accumulation   | 325,579              | 207,316              |
| Retirement   | <u>1,750,349</u>     | <u>1,351,561</u>     |
| Total Reserve-Police & Fire  | <u>\$ 3,322,444</u>  | <u>\$ 2,602,260</u>  |
| Total Liabilities & Reserves   | <u>\$ 31,278,721</u> | <u>\$ 26,172,434</u> |



Analysis of Revenue & Expenditures  
Fiscal Year Ended - June 30, 1975

REVENUES

|                         | General Employees<br>Amount | %            | Police & Fire<br>Amount | %            | Total               |
|-------------------------|-----------------------------|--------------|-------------------------|--------------|---------------------|
| Members Contributions   | \$ 1,638,755                | 25.2         | \$ 254,164              | 29.2         | \$ 1,892,919        |
| Employers Contributions | 3,298,043                   | 50.8         | 437,998                 | 50.3         | 3,736,041           |
| Investment Earnings     | 1,540,273                   | 23.7         | 177,248                 | 20.3         | 1,717,521           |
| Other                   | 20,474                      | 0.3          | 1,387                   | 0.2          | 21,861              |
| <b>Total Revenues</b>   | <b>\$ 6,497,545</b>         | <b>100.0</b> | <b>\$ 870,797</b>       | <b>100.0</b> | <b>\$ 7,368,342</b> |

EXPENDITURES

|   |                     |             |                   |             |                     |
|---|---------------------|-------------|-------------------|-------------|---------------------|
| Monthly Pensions                              | \$ 1,605,317        | 24.7        | \$ 79,406         | 9.1         | \$ 1,684,723        |
| Survivor Benefits                             |                     |             | 19,518            | 2.2         | 19,518              |
| Death Retirement Allowances                   | 195,434             | 3.0         | 14,800            | 1.7         | 210,234             |
| Refunds of Contributions                      | 297,965             | 4.6         | 34,585            | 4.0         | 332,550             |
| Other   | 15,030              | 0.2         |                   |             | 15,030              |
| <b>Total Expenditures</b>                     | <b>\$ 2,113,746</b> | <b>32.5</b> | <b>\$ 148,309</b> | <b>17.0</b> | <b>\$ 2,262,055</b> |
| Excess Revenues over Expenditures to Reserves | \$ 4,383,799        | 67.5        | 722,488           | 83.0        | \$ 5,106,287        |

Distribution of Excess Revenue

General Employees

|                               |            |
|-------------------------------|------------|
| Members Contribution Reserve  | \$ 998,297 |
| Employees Accumulated Reserve | 185,178    |
| Retirement Reserve            | 3,202,629  |

Police & Fire

|                               |         |
|-------------------------------|---------|
| Member Contribution Reserve   | 203,133 |
| Employers Accumulated Reserve | 118,263 |
| Retirement Reserve            | 398,787 |

Total Distribution

\$ 5,106,287

Analysis of Investment Income

Fiscal Year Ended - June 30, 1975

|                                |                |                     |
|--------------------------------|----------------|---------------------|
| Investment Income - Interest   |                | \$ 883,535          |
| Add:                           |                |                     |
| Accrued Interest June 30, 1975 | \$ 337,307     |                     |
| Accrued Interest July 1, 1974  | <u>317,082</u> |                     |
|                                | 20,225         |                     |
| Discounts Amortized            | <u>366,588</u> |                     |
| <u>Total Additions</u>         |                | <u>386,813</u>      |
| <b>Total</b>                   |                | <b>\$ 1,270,348</b> |
| Less:                          |                |                     |
| Accrued Interest Purchased     | \$ 34,594      |                     |
| Premiums Amortized             | <u>20,994</u>  |                     |
| <u>Total Deductions</u>        |                | <u>55,588</u>       |
| Net Interest Earned            |                | \$ 1,214,760        |
| Dividends                      |                | <u>502,798</u>      |
| Total Earned on Investments    |                | \$ 1,717,558        |
| Capital Gain                   |                | <u>-</u>            |
| <b>Total Investment Income</b> |                | <b>\$ 1,717,558</b> |

Reserve Accounts - Allocation of Fund Balances  
June 30, 1975

|                                | Code | Members Reserves      | Employees Reserves   | Retirement Reserves    |
|--------------------------------|------|-----------------------|----------------------|------------------------|
| <u>General Employees</u>       | 01   | \$ 348,288.28         | \$ - 26,171.57       | \$1,234,567.38         |
|                                | 02   | 233,327.78            | 313,801.92           | 453,726.76             |
|                                | 03   | 127,252.82            | 115,917.79           | 52,836.38              |
|                                | 07   | 1,199,745.30          | -105,358.77          | 3,157,798.27           |
| Barrington                     | 09   | 172,808.77            | 253,289.35           | 301,589.89             |
| Bristol                        | 10   | 834,013.97            | 97,785.92            | 2,573,687.10           |
| Burrillville                   | 14   | 13,941.81             | - 31,367.34          | 68,150.74              |
| Cranston                       | 15   | 76,715.87             | 123,260.62           | 92,351.89              |
| East Greenwich                 | 16   | 237,893.31            | 330,485.58           | 211,778.19             |
| East Providence                | 21   | 669,044.86            | -432,820.24          | 2,059,923.59           |
| Hopkinton                      | 23   | 358,581.60            | 324,314.44           | 736,532.46             |
| Jamestown                      | 24   | 196,685.70            | - 38,219.66          | 548,319.84             |
| Johnston                       | 25   | 141,190.53            | 187,300.62           | 206,245.99             |
| Newport                        | 26   | 1,397,226.51          | -1,400,520.24        | 3,912,833.36           |
| North Kingstown                | 30   | 107,151.00            | 31,655.89            | 256,921.22             |
| North Providence               | 31   | 166,758.20            | 174,565.18           | 409,616.52             |
| North Smithfield               | 32   | 218,626.47            | 333,249.76           | 514,953.11             |
| Pawtucket                      | 33   | 188,774.46            | 151,391.82           | 230,053.42             |
| Scituate                       | 34   | 132,806.72            | 57,186.34            | 399,656.56             |
| Smithfield                     | 39   | 738,922.85            | 24,995.53            | 1,877,089.60           |
| South Kingstown                | 51   | 22,298.48             | 46,967.90            | 12,778.85              |
| Tiverton                       | 52   | 21,908.29             | 38,318.89            | 11,860.40              |
| Warren                         | 53   | 81,114.16             | 119,895.99           | 146,161.78             |
| Woonsocket                     | 55   | 8,140.54              | 7,306.06             | 2,606.75               |
| Cranston Housing Authority     | 56   | 13,325.70             | 8,963.07             | 3,825.59               |
| East Prov. Housing Authority   | 57   | 10,594.91             | 15,574.05            | 3,698.33               |
| Pawtucket Housing Authority    | 59   | 2,455.16              | 3,124.78             | 518.63                 |
| Cumberland Housing Authority   | 65   | 3,126.93              | 2,021.64             | 442.53                 |
| Lincoln Housing Auth.          | 66   | 1,869.35              | 552.05               | 3,765.25               |
| Bristol Housing Auth.          | 67   | 3,025.90              | 5,336.05             | 456.68                 |
| Burrillville Housing Auth.     | 68   |                       |                      |                        |
| No. Providence Housing Auth.   |      |                       |                      |                        |
| East Smithfield Water Dist.    |      |                       |                      |                        |
| Greenville Water District      |      |                       |                      |                        |
| <b>Totals</b>                  |      | <b>\$7,727,616.23</b> | <b>\$ 732,803.42</b> | <b>\$19,484,747.06</b> |
| <u>Police &amp; Fire</u>       |      |                       |                      |                        |
| East Greenwich Fire District   | 50   | \$ 40,267.11          | \$ 72,022.94         | \$ 21,400.38           |
| East Greenwich Police Dept.    | 54   | 81,971.42             | - 54,665.83          | 189,257.73             |
| North Kingstown Police & Fire  | 55   | 318,472.41            | 117,275.21           | 479,901.63             |
| North Providence Police & Fire | 58   | 167,173.36            | - 32,536.26          | 327,032.67             |
| Barrington Police & Fire       | 60   | 297,302.98            | 73,496.02            | 393,925.00             |
| Smithfield Police & Fire       | 61   | 139,877.92            | 47,099.36            | 128,546.55             |
| Warren Police Dept.            | 62   | 75,910.65             | - 28,982.69          | 146,427.51             |
| South Kingstown Police & Fire  | 63   | 117,292.99            | 118,251.82           | 61,715.33              |
| North Smithfield Fire Dept.    | 64   | 8,247.53              | 13,618.22            | 2,141.91               |
| <b>Totals</b>                  |      | <b>\$1,246,516.37</b> | <b>\$ 325,578.79</b> | <b>\$1,750,348.71</b>  |

|                                | Code | Total Reserves         | Average                | %              | Dist. of Earnings     |
|--------------------------------|------|------------------------|------------------------|----------------|-----------------------|
| <u>General Employees</u>       | 01   | \$ 2,876,799.82        | \$ 1,438,399.91        | 05.16          | \$ 88,624.07          |
| Barrington                     | 02   | 1,777,651.47           | 888,825.74             | 03.19          | 54,788.91             |
| Bristol                        | 03   | 489,680.92             | 244,840.46             | 00.88          | 15,114.18             |
| Burrillville                   | 07   | 7,647,104.44           | 3,823,552.22           | 13.72          | 235,643.85            |
| Cranston                       | 09   | 1,275,433.46           | 637,716.73             | 02.29          | 39,331.23             |
| East Greenwich                 | 10   | 6,325,037.00           | 3,162,518.50           | 11.35          | 194,938.61            |
| East Providence                | 14   | 87,395.84              | 43,697.92              | 00.16          | 2,748.03              |
| Hopkinton                      | 15   | 515,966.07             | 257,983.04             | 00.93          | 15,972.94             |
| Jamestown                      | 16   | 1,311,539.69           | 655,769.85             | 02.35          | 40,361.74             |
| Johnston                       | 21   | 4,150,993.38           | 2,075,496.69           | 07.45          | 127,955.30            |
| Newport                        | 23   | 2,552,105.15           | 1,276,052.58           | 04.58          | 78,662.45             |
| North Kingstown                | 24   | 1,248,280.00           | 624,140.00             | 02.24          | 38,472.47             |
| North Providence               | 25   | 940,283.45             | 470,141.73             | 01.69          | 29,026.10             |
| North Smithfield               | 26   | 7,009,691.37           | 3,504,845.69           | 12.58          | 216,064.11            |
| Pawtucket                      | 30   | 694,860.99             | 347,430.50             | 01.25          | 21,469.01             |
| Scituate                       | 31   | 1,349,089.45           | 674,544.73             | 02.42          | 41,564.00             |
| Smithfield                     | 32   | 1,909,002.60           | 954,501.30             | 03.43          | 58,910.96             |
| South Kingstown                | 33   | 981,019.54             | 490,509.77             | 01.76          | 30,228.37             |
| Tiverton                       | 34   | 1,064,335.50           | 532,167.75             | 01.91          | 32,804.65             |
| Warren                         | 39   | 4,715,330.72           | 2,357,665.36           | 08.46          | 145,302.26            |
| Woonsocket                     | 51   | 141,451.77             | 70,725.89              | 00.25          | 4,293.80              |
| Cranston Housing Authority     | 52   | 126,425.68             | 63,212.84              | 00.23          | 3,950.30              |
| East Prov. Housing Auth.       | 53   | 608,945.48             | 304,472.74             | 01.09          | 18,720.98             |
| Pawtucket Housing Authority    | 56   | 30,932.55              | 15,466.28              | 00.06          | 1,030.51              |
| Cumberland Housing Auth.       | 57   | 44,202.53              | 22,101.27              | 00.08          | 1,374.02              |
| Lincoln Housing Auth.          | 59   | 51,310.58              | 25,655.29              | 00.09          | 1,545.77              |
| Bristol Housing Auth.          | 65   | 9,351.42               | 4,675.71               | 00.02          | 343.50                |
| Burrillville Housing Auth.     | 66   | 8,946.89               | 4,473.45               | 00.02          | 343.50                |
| No. Providence Housing Auth.   | 67   | 8,409.29               | 4,204.65               | 00.02          | 343.50                |
| East Smithfield Water Dist.    | 68   | 12,380.78              | 6,190.39               | 00.02          | 343.50                |
| Greenville Water Dist.         |      |                        |                        |                |                       |
| <b>Total</b>                   |      | <b>\$49,963,957.83</b> | <b>\$24,981,978.98</b> | <b>89.68%</b>  | <b>\$1,540,272.62</b> |
| <u>Police &amp; Fire</u>       |      |                        |                        |                |                       |
| East Greenwich Fire Dist.      | 50   | \$ 228,821.85          | \$ 114,410.93          | 00.41%         | \$ 7,041.84           |
| East Greenwich Police Dept.    | 54   | 378,378.43             | 189,189.22             | 00.68          | 11,679.14             |
| No. Kingstown Police & Fire    | 55   | 1,611,702.97           | 805,851.49             | 02.89          | 49,636.35             |
| North Providence Police & Fire | 58   | 796,323.14             | 398,161.57             | 01.43          | 24,560.55             |
| No. Providence Police & Fire   | 60   | 1,331,429.23           | 665,714.62             | 02.39          | 41,048.75             |
| Barrington Police & Fire       | 61   | 519,453.50             | 259,726.75             | 00.93          | 15,972.94             |
| Smithfield Police & Fire       | 62   | 349,807.20             | 174,903.60             | 00.63          | 10,820.38             |
| Warren Police Dept.            | 63   | 495,169.41             | 247,584.71             | 00.89          | 15,285.94             |
| So. Kingstown Police & Fire    | 64   | 36,369.91              | 18,184.96              | 00.07          | 1,202.27              |
| No. Smithfield Fire Dept.      |      |                        |                        |                |                       |
| <b>Police &amp; Fire Total</b> |      | <b>\$ 5,747,455.64</b> | <b>\$ 2,873,727.85</b> | <b>10.32%</b>  | <b>\$ 177,248.16</b>  |
| <b>Grand Total</b>             |      | <b>\$55,711,413.47</b> | <b>\$27,855,706.77</b> | <b>100.00%</b> | <b>\$1,717,520.78</b> |