

*Report
of the
Actuary*

Valuation and Review
of the
MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM
OF THE STATE OF RHODE ISLAND
as of June 30, 1984

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April 23, 1985

Retirement Board of the Municipal
Employees' Retirement System
State of Rhode Island
198 Dyer Street
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, 1984.

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, 1986.

We received a great deal of help from State employees in obtaining the information which forms the basis of this report. Most important, Mr. Joseph G. Iannelli, Executive Director; Mr. John F. Sullivan, Assistant Director; and Mr. Carlo Mencucci, 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:


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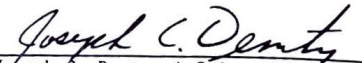
Following the report, we have attached our actuarial certificate detailing the cost factors, assumptions, and plan of benefits used for the valuation.

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

Sincerely yours,

MARTIN E. SEGAL COMPANY, INCORPORATED

By 
Sherman C. Sass
Senior Vice President

By 
Joseph C. Demty, A.S.A., M.A.A.A.
Vice President and Actuary

/tlj

I. SUMMARY

Benefit Provisions

The Municipal Employees' Retirement System of Rhode Island covers employees of the many municipalities, housing authorities, water and sewer districts which have elected to participate. There is one plan for general employees and a second optional plan for police and firemen.* General employees contribute 6 per cent of their annual earnings; those police and firemen under the optional program contribute 7 per cent. For groups that elect an optional cost-of-living provision, the employee contribution rate is increased by 1 per cent.

The System generally provides unreduced benefits of 2 per cent of earnings. Such benefits are available to members at least age 58 with 10 years of service or after 30 years at any age. Police and firemen may retire at age 55 if they have 10 years of service or after 25 years at any age. Benefits are based on the average of the highest three consecutive years' earnings.

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

More detail can be found in the actuarial certificate following this report.

Employee Data

We received data on 4,029 active general employees and 283 police and firemen as of June 30, 1984, who were participating in the System. The average salary was \$13,700 for general employees and \$19,800 for police and firemen. On average, the general employees were age 47 and had 9 1/2 years of service; police and firemen were age 37 1/2 with 11 years of service.

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

Retiree Data

We received data on 1,530 pensioners and 51 beneficiaries as of June 30, 1984. The pensioners' average monthly benefit was \$283. Of all the pensioners on the rolls, 8 per cent had retired in the year ended June 30, 1984.

Retirement Fund

As of June 30, 1984, the Fund had assets of approximately \$113.7 million available as an offset to the actuarial liabilities for future benefits.

Actuarial Valuation

Our valuation was prepared as of June 30, 1984. Our calculations were based on what we believe are reasonable assumptions as to expected future experience. The assumptions are the same as those used in our previous actuarial valuation. We used the "entry age normal cost" method of funding, which spreads the cost of each employee's pension as a level percentage of his earnings from the date of hire to assumed retirement age.

The employer normal cost* for general employees is \$2.4 million. This is 4.4 per cent of the payroll of participating general employees. The employer normal cost for police and firemen is \$0.4 million or 7.8 per cent of payroll.

For general employees, the actuarial liability* (the accumulated cost of the benefits assigned to the period before July 1, 1984) is \$122.8 million of which \$47.0 million represents the liability to those already receiving pensions. The unfunded actuarial liability at the end of the year is \$22.1 million after accounting for assets of \$100.7 million. For police and firemen, the actuarial liability is \$15.3 million of which \$5.0 million is for those receiving pensions. The unfunded actuarial liability stands at \$2.3 million after accounting for police and fire assets of \$12.9 million.

*Please refer to the "Actuarial Assumptions and Methods" section of the report for definitions of these terms.

The value of the System's vested benefits is \$137 million. Thus the assets are short of this amount by \$24.5 million.

Based on the normal cost plus an amortization payment of each municipality's unfunded actuarial liability, the total annual employer cost as of June 30, 1984 adjusted for monthly payment is \$5.7 million (10.3 per cent of covered payroll) for general employees and \$0.7 million (13.1 per cent of 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. In some instances, these remaining periods have been lengthened in order to spread the effects of actuarial losses over a longer period.

II. EMPLOYEE DATA

We received data on 4,029 general employees and 283 police and firemen participating in the System on June 30, 1984. The data included age, service, sex, and salary for each of them. The average salary of the participants was \$13,700 for general employees and \$19,800 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, 1984 and 1983 on active general employees and police and firemen. 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, 1984. Table 2D which shows the same information as of June 30, 1983 is included for comparison purposes.

The data we received for this valuation in respect of some of the municipalities seemed inconsistent, and in some cases, more incomplete, when compared to that of the prior year. Anomalous results are obtained when the data is inconsistent. However, for the majority of the municipalities, the data was usable. The Retirement Board has made much 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, 1984 by Age and by Years of Service

GENERAL EMPLOYEES

Age	Total	Years of service								Unknown
		0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30- 34	35 and over	
Total	4,029 \$13,700	1,334 \$12,500	960 \$14,100	865 \$13,900	469 \$14,700	157 \$16,600	58 \$15,500	25 \$18,500	14 \$16,300	147 \$12,700
Under 20	8 \$12,200	6 \$12,000	--	--	--	--	--	--	--	2 \$12,800
20 - 24	122 12,800	112 12,700	4 \$14,200	--	--	--	--	--	--	6 13,400
25 - 29	278 13,800	195 13,500	77 14,400	3 \$13,500	--	--	--	--	--	3 21,300
30 - 34	430 14,600	185 13,300	129 15,800	82 14,900	10 \$18,200	--	--	--	--	24 14,600
35 - 39	388 14,900	173 12,900	91 16,300	69 17,100	27 18,700	5 \$13,300	--	--	--	23 13,200
40 - 44	439 13,300	163 10,800	129 13,800	74 15,800	39 16,500	11 19,800	1 \$14,200	--	--	22 10,800
45 - 49	493 13,700	146 11,600	126 12,900	113 15,000	56 16,600	25 17,900	7 17,300	2 \$17,600	--	18 12,800
50 - 54	561 13,400	129 12,000	136 13,500	148 12,500	96 14,700	23 16,200	9 17,800	5 18,700	3 \$12,400	12 15,700
55 - 59	682 13,900	112 12,300	148 13,900	211 13,400	110 14,100	52 17,600	22 14,700	5 29,200	7 16,800	15 11,200
60 - 64	452 13,500	60 13,300	99 13,400	132 13,000	104 13,600	33 14,400	12 15,800	6 18,600	3 19,800	3 5,000
65 and over	106 11,600	7 13,200	17 13,000	32 11,200	27 10,100	8 13,600	7 12,800	7 10,900	1 13,500	--
Unknown	70 11,600	46 11,900	4 11,100	1 13,600	--	--	--	--	--	19 10,800

Table 1B

Number and Average Salaries of Employees in Active Service
as of June 30, 1984 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	Unknown
Total	283 \$19,800	81 \$18,000	45 \$19,200	76 \$20,100	41 \$21,100	21 \$22,800	7 \$26,700	1 \$25,500	11 \$18,300
20 - 24	15 \$17,500	15 \$17,500	--	--	--	--	--	--	--
25 - 29	59 18,100	39 18,000	12 \$18,400	--	--	--	--	--	8 \$17,600
30 - 34	53 19,200	18 18,200	18 19,600	15 \$20,000	--	--	--	--	2 20,000
35 - 39	47 19,800	4 17,900	9 19,700	26 20,000	7 \$20,600	--	--	--	1 19,800
40 - 44	48 20,500	--	4 19,800	21 19,900	16 20,500	7 \$23,100	--	--	--
45 - 49	18 21,600	2 25,300	--	6 18,900	5 21,100	3 24,200	2 \$23,600	--	--
50 - 54	24 22,800	--	1 12,400	5 22,500	6 21,500	6 21,200	5 27,900	1 \$25,500	--
55 - 59	14 22,500	--	--	2 20,100	7 22,500	5 23,400	--	--	--
60 - 64	1 25,600	--	--	1 25,600	--	--	--	--	--
Unknown	4 15,700	3 14,100	1 20,500	--	--	--	--	--	--

RHODE ISLAND MUNICIPAL ERS

Table 2A
Statistical Data on Active Employees
on June 30, 1984 and 1983

GENERAL EMPLOYEES

	June 30, 1984	June 30, 1983
Number of covered employees	4,029	3,891
Total annual salary	\$55,234,600	\$50,443,600
Average annual salary	\$13,700	\$13,000
Average age	47	47
Average years of service	9 1/2	9 1/2
Number eligible for service retirement	552	503
Number vested but not eligible to retire	1,036	959

RHODE ISLAND MUNICIPAL ERS

Table 2B
Statistical Data on Active Employees
on June 30, 1984 and 1983

POLICE AND FIREMEN

	June 30, 1984	June 30, 1983
Number of covered employees	283	284
Total annual salary	\$5,603,200	\$5,375,500
Average annual salary	\$19,800	\$18,900
Average age	37 1/2	38
Average years of service	11	11
Number eligible for service retirement	29	33
Number vested but not eligible to retire	117	108

RHODE ISLAND MUNICIPAL ERS

Table 2C
Statistical Data on Active Employees on June 30, 1984
by Municipality

Municipality	Number	Average age	Average service	Average salary
<u>General Employees</u>				
01 Barrington	141	46 1/2	9	\$13,400
02 Bristol	111	45 1/2	9 1/2	13,500
03 Burrillville	106	48	7	11,800
07 Cranston	603	47 1/2	9 1/2	13,300
09 E. Greenwich	121	46	8 1/2	13,400
10 E. Providence	334	46 1/2	11	16,500
11 Exeter-W. Greenwich School District	30	46	8	8,200
12 Foster	27	48	5	11,600
14 Hopkinton	28	43 1/2	6 1/2	11,700
15 Jamestown	29	43 1/2	9 1/2	14,300
16 Johnston	170	50 1/2	11 1/2	13,300
21 Newport	268	43	10 1/2	16,100
22 New Shoreham	21	41	5 1/2	11,900
23 N. Kingstown	165	45	8 1/2	14,200
24 N. Providence	201	45 1/2	8 1/2	11,100
25 N. Smithfield	77	48 1/2	9	11,800
26 Pawtucket	614	47	10 1/2	14,100
29 Richmond	15	40 1/2	3 1/2	9,100
30 Scituate	56	51	10 1/2	11,000
31 Smithfield	106	49 1/2	8	13,300
32 S. Kingstown	184	43	6 1/2	12,400
33 Tiverton	70	50	8 1/2	13,100
34 Warren	62	51 1/2	11 1/2	13,500
36 Westerly	8	52	12	22,100
39 Woonsocket	344	49 1/2	11	13,400
40 Charho Regional School District	24	45 1/2	5	11,100
51 Cranston Housing	13	42 1/2	7 1/2	16,600
52 E. Providence Housing	11	47	5 1/2	16,300
53 Pawtucket Housing	26	50 1/2	12 1/2	19,000
56 Cumberland Housing	9	45	7	16,400
57 Lincoln Housing	7	44 1/2	7 1/2	17,500
59 Bristol Housing	5	49	8 1/2	15,500
65 Burrillville Housing	2	41	6	15,800
66 N. Providence Housing	6	42	4	15,700
67 E. Smithfield Water	3	46	3 1/2	14,500
68 Greenville Water	4	48 1/2	7 1/2	19,500
71 Warren Housing	6	44	4 1/2	14,500
72 Johnston Housing	6	47 1/2	3 1/2	13,400
79 Coventry Housing	7	49 1/2	7 1/2	13,400
80 S. Kingstown Housing	1	63 1/2	10 1/2	16,300
83 W. Warwick Housing	6	43	7	15,000
84 Smithfield Housing	2	47 1/2	8	14,300
<u>Police and Fire</u>				
50 E. Greenwich Fire	10	50	13	25,800
54 E. Greenwich Police	22	40	11 1/2	21,800
55 N. Kingstown Fire	58	37 1/2	10 1/2	20,000
58 N. Providence Fire	26	38 1/2	11	16,900
60 Barrington P & F	52	39 1/2	15 1/2	20,400
62 Warren Police	16	38	10 1/2	19,900
63 S. Kingstown P & F	39	35 1/2	10	19,300
64 Primrose Volunteer Fire	7	31	3	16,800
76 N. Smithfield Police	13	36 1/2	12	18,700
77 Tiverton Fire	17	40 1/2	10 1/2	19,100
82 Foster Police	6	33 1/2	5	18,200
85 Woonsocket Police	17	27 1/2	1 1/2	20,200

RHODE ISLAND MUNICIPAL ERS

Table 2D
 Statistical Data on Active Employees on June 30, 1983
 by Municipality

Municipality	Number	Average age	Average service	Average salary
General Employees	133	46	9	\$13,000
01 Barrington	111	46½	10	13,100
02 Bristol	99	48	7	11,700
03 Burrillville	594	47½	10	11,700
07 Cranston	114	46½	8½	12,000
09 E. Greenwich	286	46½	11½	16,200
10 E. Providence	23	46½	10½	8,700
11 Exeter-W. Greenwich Sch. Dist.	18	47	6½	13,100
12 Foster	25	45	5	10,100
14 Hopkinton	32	43	8½	14,400
15 Jamestown	162	50	11	11,800
16 Johnston	261	42½	10½	15,000
21 Newport	12	38	8½	11,300
22 New Shoreham	165	45½	9	13,700
23 N. Kingstown	193	45½	8½	11,100
24 N. Providence	71	48	8	11,600
25 N. Smithfield	629	47	10½	13,600
26 Pawtucket	12	42½	3½	7,800
29 Richmond	55	51	10½	10,200
30 Scituate	106	49	8	11,900
31 Smithfield	174	42½	6	11,800
32 S. Kingstown	67	50	8	12,800
33 Tiverton	63	50½	9½	12,800
34 Warren	8	51	11	21,000
36 Westerly	341	48½	11	12,900
39 Woonsocket	21	48	6	10,400
40 Charho Reg. Sch. Dist.	12	43	7½	15,700
51 Cranston Housing	9	52½	9	14,200
52 E. Providence Housing	31	49	12	18,800
53 Pawtucket Housing	8	43½	7	14,900
56 Cumberland Housing	7	43½	6½	16,000
57 Lincoln Housing	6	46	7	14,800
59 Bristol Housing	1	38½	8½	12,500
65 Burrillville Housing	4	40	4½	14,800
66 N. Providence Housing	3	45	2½	13,500
67 E. Smithfield Water	3	47½	8½	19,100
68 Greenville Water	4	51½	6	14,300
71 Warren Housing	5	43½	3½	12,000
72 Johnston Housing	5	56	9½	14,300
79 Coventry Housing	1	62½	9½	15,300
80 S. Kingstown Housing	10	40	3½	13,900
81 Smithfield Sewer	6	42	6	14,000
83 West Warwick Housing	1	56½	14½	14,000
84 Smithfield Housing				
Police and Fire				
50 E. Greenwich Fire	12	53½	14	25,200
54 E. Greenwich Police	23	40	11½	20,400
55 N. Kingstown Fire	61	36½	9½	19,700
58 N. Providence Fire	25	40	11½	14,400
60 Barrington P & F	57	39½	15	19,900
62 Warren Police	16	37	10½	18,900
63 S. Kingstown P & F	33	36	11½	18,400
64 Primrose Volunteer Fire	6	28½	2	14,300
76 N. Smithfield Police	14	35½	11	17,200
77 Tiverton Fire	17	41½	11	18,000
82 Foster Police	6	32½	4	17,400
85 Woonsocket Police	14	27	0½	18,800

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, 1984 and 1983:

	June 30, 1984	June 30, 1983
Pensioners:		
Number	1,530	1,459
Average age	69 1/2	69 1/2
Average monthly benefit	\$283	\$265
Beneficiaries:		
Number	51	43
Average age	64	65 1/2
Average monthly benefit	\$275	\$263

Table 3 gives distributions of the 125 pensions awarded in the current year by type of pension and amount. Table 4 does the same for age at retirement.

Table 5 gives distributions for all pensions in force at the end of the fiscal year by type and amount. Table 6 does the same by age.

Table 7 has statistical data on pensioners and beneficiaries by municipality.

The data we received for those currently on the pension rolls was generally good. One question, which we have raised in the past has to do with whether some of those designated as pensioners are in fact really beneficiaries.

The data on terminated employees with vested rights to a deferred benefit did not include enough information to allow a calculation of the total cost for them. We did, however, again this year, include a cost equal to their accumulated employee contributions. We continue to recommend that information regarding terminated vested employees be maintained by the System so that it can be incorporated in future valuations.

Table 3
Pensions Awarded in the Year Ended June 30, 1984
by Type and by Monthly Amount

Monthly amount	Total	Type of pension			
		Service	Ordinary disability	Accidental disability	Beneficiary
Total	125	109	5	6	5
\$50 - 99	4	4	--	--	--
100 - 149	3	3	--	--	--
150 - 199	9	7	1	--	1
200 - 249	18	16	1	1	--
250 - 299	17	14	1	--	2
300 - 349	15	15	--	--	--
350 - 399	12	10	1	--	1
400 - 449	8	8	--	--	--
450 - 499	4	3	--	--	1
500 - 599	4	4	--	--	--
600 - 699	5	5	--	--	--
700 - 799	7	7	--	--	--
800 - 899	3	3	--	--	--
900 - 999	2	1	--	1	--
1,000 - 1,099	11	6	1	4	--
1,400 - 1,499	1	1	--	--	--
1,500 - 1,999	2	2	--	--	--

RHODE ISLAND MUNICIPAL ERS

Table 4
Pensions Awarded in the Year Ended June 30, 1984
by Type and by Age on Effective Date

Age on effective date	Total	Type of Pension			
		Service	Ordinary disability	Accidental disability	Beneficiary
Total	125	109	5	6	5
Under 25	1	--	--	--	1
25 - 29	1	--	--	1	--
30 - 34	1	--	--	1	--
40 - 44	2	--	1	1	--
45 - 49	2	--	1	1	--
50	1	--	1	--	--
51	1	--	--	--	1
52	4	--	--	--	1
53	1	1	--	--	--
55	1	--	1	--	--
57	2	2	--	--	--
58	21	12	--	2	--
59	4	4	--	--	--
60	10	10	--	--	--
61	7	7	--	--	--
62	63	29	--	--	1
63	8	8	--	--	--
64	8	8	--	--	--
65	14	13	1	--	--
66	9	8	--	--	1
67	26	2	--	--	--
69	1	1	--	--	--
70	4	4	--	--	--

RHODE ISLAND MUNICIPAL ERS

Table 5
Pensions in Payment Status on June 30, 1984
by Type and by Monthly Amount

Monthly amount	Total	Type of pension			
		Service	Ordinary disability	Accidental disability	Beneficiary
Total	1,581	1,386	100	44	51
Under \$50	55	49	4	1	1
\$50 - 99	169	157	9	1	2
100 - 149	222	199	17	1	5
150 - 199	283	239	35	1	8
200 - 249	200	172	15	2	11
250 - 299	119	104	6	--	9
300 - 349	118	104	5	6	3
350 - 399	82	72	2	4	4
400 - 449	74	67	2	3	2
450 - 499	58	47	3	5	3
500 - 599	65	58	--	7	--
600 - 699	40	34	1	3	2
700 - 799	38	38	--	--	--
800 - 899	17	13	--	3	1
900 - 999	16	13	--	3	--
1,000 - 1,999	16	11	1	4	--
1,100 - 1,199	2	2	--	--	--
1,200 - 1,299	3	3	--	--	--
1,300 - 1,399	1	1	--	--	--
1,400 - 1,499	1	1	--	--	--
1,500 - 1,999	2	2	--	--	--

RHODE ISLAND MUNICIPAL ERS

Table 6

Pensions in Payment Status on June 30, 1984
by Type and by Age

Age on June 30, 1984	Total	Type of Pension			
		Service	Ordinary disability	Accidental disability	Beneficiary
Total	1,581	1,386	100	44	51
Under 25	1	--	--	1	1
25 - 29	2	--	1	2	1
30 - 34	4	--	--	3	--
35 - 39	3	--	3	3	1
40 - 44	7	--	--	--	--
45 - 49	19	2	8	7	2
50 - 54	31	6	16	4	5
55 - 59	65	39	14	8	4
60 - 64	309	270	25	5	9
65 - 69	437	403	20	6	8
70 - 74	355	339	7	1	8
75 - 79	191	180	3	2	6
80 - 84	117	110	2	2	3
85 - 89	32	29	1	--	2
90 - 94	8	8	--	--	--

RHODE ISLAND MUNICIPAL ERS

Table 7

Pensioner and Beneficiary Statistical Data
as of June 30, 1984 by Municipality

Municipality	Number	Average age	Average monthly benefit
General Employees			
01 Barrington	76	68	\$291
02 Bristol	43	68	270
03 Burrillville	17	64 1/2	382
07 Cranston	247	71	235
09 E. Greenwich	25	67 1/2	298
10 E. Providence	143	70	282
11 Exeter-W. Greenwich School District	1	46 1/2	287
12 Foster	--	--	--
14 Hopkinton	6	77 1/2	152
15 Jamestown	10	68 1/2	350
16 Johnston	41	68	220
21 Newport	126	69	348
22 New Shoreham	3	65 1/2	129
23 N. Kingstown	55	70	259
24 N. Providence	53	69 1/2	232
25 N. Smithfield	30	67 1/2	212
26 Pawtucket	287	71	280
29 Richmond	2	64	311
30 Scituate*	28	69 1/2	230
31 Smithfield**	31	69 1/2	237
32 S. Kingstown	42	70	249
33 Tiverton	24	70	219
34 Warren	27	67 1/2	206
36 Westerly	7	68 1/2	628
39 Woonsocket	144	70	251
40 Charho Regional School District	3	64	378
51 Cranston Housing	4	70	207
52 E. Providence Housing	4	70	289
53 Pawtucket Housing	14	70 1/2	340
56 Cumberland Housing	--	--	--
57 Lincoln Housing	2	63	199
59 Bristol Housing	--	--	--
65 Burrillville Housing	1	64 1/2	333
66 N. Providence Housing	1	66 1/2	239
67 E. Smithfield Water	2	68 1/2	364
68 Greenville Water	1	65 1/2	261
71 Warren Housing	--	--	--
72 Johnston Housing	1	64 1/2	241
79 Coventry Housing	--	--	--
80 S. Kingstown Housing	--	--	--
83 W. Warwick Housing	1	66 1/2	375
84 Smithfield Housing	--	--	--
Police and Fire			
50 E. Greenwich Fire	--	--	--
54 E. Greenwich Police	8	61 1/2	379
55 N. Kingstown Fire	19	64	582
58 N. Providence Fire	5	63 1/2	336
60 Barrington P & F	21	57 1/2	624
62 Warren Police	10	58	585
63 S. Kingstown P & F	8	61	521
64 Primrose Volunteer Fire	1	70 1/2	303
76 N. Smithfield Police	2	42	458
77 Tiverton Fire	5	61	495
82 Foster Police	--	--	--
85 Woonsocket Police	--	--	--

*Includes 1 pensioner formerly covered by the Scituate Police Plan.
 **Includes 2 pensioners formerly covered by the Smithfield Police and Fire Plan.
 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, 1984.

The Fund receives all member and employer contributions. The assets are invested by the State Investment Commission, with the income being added to the Fund and available for reinvestment.

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 gives a summary of income and expenditures for the year ended June 30, 1984.

At June 30, 1984 assets totalled approximately \$113.7 million. Table 9 gives a breakdown of the assets. About 62 per cent of the Fund was invested in fixed income securities such as bonds and notes.

The financial statements indicate that 89 per cent of the assets relate to general employees and 11 per cent 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, 1984

Employer contributions	\$6,273,431	
Member contributions	<u>3,741,855</u>	
Total contributions		\$10,015,286
Net miscellaneous items		23,846
Investment income:		
Dividends	\$2,216,208	
Interest	6,933,923	
Capital gains	<u>1,793,399</u>	
Net investment income		<u>10,943,530</u>
Total income available for benefit payments		\$20,982,662
Benefit payments:		
Pension benefits		\$ 5,352,354
Death benefits		84,000
Contribution refunds		<u>488,994</u>
Total benefit payments		<u>5,925,348</u>
Excess of income over expenses		<u><u>\$15,057,314</u></u>

RHODE ISLAND MUNICIPAL ERS

Table 9
Assets as of June 30, 1984

		\$ (402,091)
Cash (overdraft)		1,754,592
Accrued interest receivable		
Investment	\$45,504,094	
Government bonds	17,495,200	
Corporate bonds	43,228,487	
Common and preferred stocks	6,050,000	
Certificates of deposit	1,000,000	
Commercial paper		
(Less) Unamortized premiums and discounts	<u>(888,242)</u>	<u>112,389,539</u>
Total assets		<u>\$113,742,040</u>

RHODE ISLAND MUNICIPAL ERS

Table 10
Allocation of Assets by Plan
as of June 30, 1984

General Employees:		
Retirement reserves	\$79,349,879	
Employer reserves	1,344,403	
Member reserves	<u>19,999,107</u>	
Total General Employees Reserves		\$100,693,389
Police and Fire:		
Retirement reserves	\$ 9,962,655	
Employer reserves	501,967	
Member reserves	<u>2,553,821</u>	
Total Police and Fire Reserves		13,018,443
Unallocated:		
Unclaimed benefit reserve		<u>30,208</u>
Total Assets		<u>\$113,742,040</u>

RHODE ISLAND MUNICIPAL ERS

V. ACTUARIAL ASSUMPTIONS AND COST METHOD

The actual cost of a pension plan consists of the benefit payments and administrative 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. The result is an employer contribution which anticipates future costs. 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. These assumptions are the same as those used in the previous actuarial valuation.

Mortality Rates

We assumed that mortality rates would conform with the 1971 Group Annuity Mortality Table. This is a table of pension plan mortality, and we believe it is a reasonable basis for estimating experience under the System. It is one of the tables in general use in valuing pension plans in the United States. 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 might be a high per cent of his pay when he is young and a lower per cent of his higher salary at a later age. By the use of a salary projection, the contribution for an individual, all other things remaining the same, tends to stay at the same percentage over the years.

How to project future salaries is a major policy question. To what extent should one seek to anticipate, through present contributions, the full impact on pension costs of future salary changes?

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

<u>Age</u>	<u>Present Salary as a % of Age 65 Salary</u>	<u>Annual Increases (Rate %)</u>
20	17.45	4.84
25	22.07	4.75
30	27.76	4.59
35	34.62	4.39
40	42.68	4.08
45	51.76	3.72
50	61.77	3.45
55	72.98	3.33
60	86.08	3.16

As will appear, the problem of salary projection has a parallel in the question of choosing an assumption as to future investment yield and the two are somewhat interrelated.

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 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:

General Employees (Rate %)

<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 service-connected.

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 service-connected.

*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 may get unreduced or reduced benefits at even 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 any case where the employee already meets these assumed conditions of age and service, it is projected that he or she will retire immediately.

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 6 per cent - in contrast to a 5 per cent yield - will reduce annual costs by 16-20 per cent.

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 10 and 20 years from now.

We select an investment return assumption of 6 1/2 per cent per year for our calculation. This assumption takes account of probable moderate long-term inflation but is not tied directly to the higher rates currently available.

Cost Method

We have 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. The normal cost for the entire system is equal to the sum of the normal costs for all participants. In a rough sense, it can be visualized as the cost of benefits earned during the current year.

The actuarial liability 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.

Overall Actuarial Basis

We believe that our 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 appropriate 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, 1984 developed as follows:

	<u>Amount</u>	<u>% of Payroll</u>
	\$55,234,600	--
(1) Participating payroll	2,408,800	4.4%
(2) Employer normal cost	22,076,700	--
(3) Unfunded actuarial liability		
(4) Amortization of unfunded actuarial liability	3,091,400	5.6
(5) Total annual cost if paid July 1, 1984 = (2) + (4)	5,500,200	10.0
(6) Total annual cost if paid monthly = (5) plus 1/2 year interest	5,678,900	10.3

Police and Firemen

The costs for police and firemen as of June 30, 1984, developed as follows:

	<u>Amount</u>	<u>% of Payroll</u>
	\$5,603,200	--
(1) Participating payroll	437,300	7.8%
(2) Employer normal cost	2,326,800	--
(3) Unfunded actuarial liability		
(4) Amortization of unfunded actuarial liability	271,200	4.8
(5) Total annual cost if paid July 1, 1984 = (2) + (4)	708,500	12.6
(6) Total annual cost if paid monthly = (5) plus 1/2 year interest	731,300	13.1

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 above groups.

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 over a period of 25 years from the date the municipality joined the System. The earliest membership date is 1957; those original groups have completed their amortization schedules. Other groups have more years left. As mentioned earlier, some of the amortization periods were lengthened three years ago to spread the effects of actuarial losses over a longer period. On a dollar-weighted basis, the remaining amortization period is about 9 years for general employees and 12 years for police and firemen. That is, the total amortization payment reported above would pay off the total unfunded actuarial liability over that period of time.

Looking at the total cost figures compared to the previous year, it can be seen that for general employees, costs increased by 0.6 per cent of payroll (from 9.4 per cent to 10.0 per cent). The normal cost percentage increased from 4.3 per cent to 4.4 per cent and there was also an increase in the amortization payment when expressed as a per cent of payroll (from 5.1 per cent to 5.6 per cent). The dollar-weighted aggregate amortization period remained at 9 years for the general employee group. It should be noted that this year's valuation includes the cost of COLA Plan B for the City of Cranston which became effective as of January 1, 1985.

For police and firemen, costs decreased by 0.8 per cent of payroll (from 13.4 per cent to 12.6 per cent). The normal cost percentage decreased slightly from 7.9 per cent to 7.8 per cent and the amortization payment as a per cent of payroll decreased by 0.7 per cent (from 5.5 per cent to 4.8 per cent). The dollar-weighted aggregate amortization period decreased by three years for this group from 15 years to 12 years.

Table 13 shows the recommended rates for each participating municipality. These rates are to be effective for the year beginning July 1, 1986. The total rates are separated into normal cost and unfunded liability amortization components. For comparison, the 1985 and 1984 recommended total rates are also shown. In addition, the remaining amortization periods for each municipality are presented. There are no new entering groups as of June 30, 1984. Smithfield Sewer Authority withdrew from the System this year. The City of Cranston elected the optional COLA Plan B effective January 1, 1985.

Value of Vested Benefits

In private pension plans, it is customary for the actuary to provide the "value of vested benefits". This figure is used by accountants in preparing financial statements, both as a disclosure item and as a factor in determining the pension expense charge, in accordance with Opinion No. 8 of the Accounting Principles Board of the American Institute of Certified Public Accountants, "Accounting for the Cost of Pension Plans". While we recognize that the System may not be covered by this Opinion, a brief discussion of this subject may be helpful.

The "value of vested benefits" represents the single sum value under the plan's investment income and mortality assumptions of all benefits to present and former employees. In this calculation, future employment by the employee is not a condition for the receipt of benefits. Thus, it includes the present value of an immediate or deferred pension for all pensioners, beneficiaries, vested former employees, and active participants with at least 10 years of service. For active employees with less than 10

years of service, only the accumulated employee contributions are included, since that is all such employees would receive if they had no further employment. This year we again included the accumulated employee contributions for inactive former employees.

For the Municipal Employees' Retirement System, the value of vested benefits is as follows:

	<u>General Employees</u>	<u>Police and Firemen</u>
Active members	\$ 77,604,500	\$ 6,825,200
Inactive members	592,100	11,000
Retired members	<u>47,004,200</u>	<u>4,982,700</u>
Total value of vested benefits	\$125,200,800	\$11,818,900
Assets	<u>100,691,200</u>	<u>12,948,600</u>
Unfunded value of vested benefits	<u>\$ 24,509,600</u>	<u>\$ --</u>

Table 12 includes the unfunded vested benefits for each municipality.

Overall Status of System

As Table 13 shows, the costs for some municipalities differ somewhat from those reported last year. The major reason this occurs is the effect of actuarial gains on losses, an example of which will explain the situation. In a large system, if some participants retire earlier than assumed due to disability, for example, the impact on the total system is generally not significant. However, the impact on the costs of a small system (such as a municipality) can be quite dramatic if the retiree is one of its members. As a whole, the assumptions we employ are reasonable for the whole system, but for any one system at any one time, the assumptions and the actual experience may differ significantly. When this happens, the individual system's liabilities will be substantially affected resulting in yearly fluctuations. We recommend the continuation of the practice of annual valuations and look forward to working with the Retirement Board in this effort.

Table 12
Actuarial Cost Factors as of June 30, 1984
by Municipality

Municipality	Year joined	Employer normal cost	Unfunded actuarial liability	Unfunded value of vested benefits
General Employees				
01 Barrington	1957	\$ 79,700	\$ 761,900	\$ 722,400
02 Bristol	1957	57,700	--	--
03 Burrillville	1968	66,800	376,300	576,900
07 Cranston*	1963	409,400	6,417,500	6,594,100
09 E. Greenwich	1957	67,500	146,700	130,900
10 E. Providence	1961	194,900	1,074,700	1,602,100
11 Exeter-W. Greenwich School District	1982	12,100	281,100	232,200
12 Foster	1981	15,600	141,200	99,600
14 Hopkinton	1969	14,700	14,600	1,400
15 Jamestown	1964	14,100	106,400	151,400
16 Johnston	1968	116,800	497,000	930,100
21 Newport	1966	134,300	3,177,700	3,295,800
22 New Shoreham	1980	8,400	147,100	133,700
23 N. Kingstown	1957	95,100	--	13,400
24 N. Providence	1961	96,300	766,000	900,100
25 N. Smithfield	1964	48,300	194,000	221,000
26 Pawtucket	1962	356,000	5,484,200	6,016,700
29 Richmond	1979	7,000	73,300	59,100
30 Scituate	1967	28,600	355,800	343,700
31 Smithfield	1959	75,700	161,000	161,700
32 S. Kingstown	1957	98,400	--	--
33 Tiverton	1964	50,900	369,700	270,800
34 Warren	1957	44,200	151,600	262,000
36 Westerly	1976	8,400	640,300	667,000
39 Woonsocket	1962	206,200	1,043,000	1,691,000
40 Charho Regional School District	1981	15,000	235,600	220,500
51 Cranston Housing	1968	7,700	--	--
52 E. Providence Housing	1968	8,600	--	--
53 Pawtucket Housing	1968	21,700	--	4,200
56 Cumberland Housing	1969	6,500	9,000	34,300
57 Lincoln Housing	1969	5,400	38,300	56,600
59 Bristol Housing	1970	3,900	--	--
65 Burrillville Housing	1972	1,200	14,000	4,600
66 N. Providence Housing	1973	3,900	--	--
67 E. Smithfield Water	1973	2,500	41,900	32,500
68 Greenville Water	1973	3,600	36,200	1,500
71 Warren Housing	1975	4,100	14,400	--
72 Johnston Housing	1976	5,400	--	--
79 Coventry Housing	1977	5,300	48,200	28,900
80 S. Kingstown Housing	1977	1,300	9,600	32,000
83 W. Warwick Housing	1981	3,900	87,500	104,600
84 Smithfield Housing	1981	1,700	33,400	50,200
Police and Fire				
50 E. Greenwich Fire	1967	28,900	--	--
54 E. Greenwich Police	1968	39,200	--	--
55 N. Kingstown Fire	1968	87,600	294,400	34,900
58 N. Providence Fire	1968	36,000	602,400	--
60 Barrington P & F	1970	75,500	180,200	--
62 Warren Police	1970	24,900	748,200	--
63 S. Kingstown P & F	1971	55,900	481,400	273,100
64 Primrose Volunteer Fire	1972	9,700	138,300	--
76 N. Smithfield Police	1977	17,100	--	--
77 Tiverton Fire	1977	28,000	62,000	--
82 Foster Police	1981	9,200	129,800	--
85 Woonsocket Police	1982	25,300	31,000	--

*Based on COLA Plan B effective January 1, 1985
RHODE ISLAND MUNICIPAL ERS

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

Municipality	Year beginning July 1, 1986				Total rate year beginning July 1,	
	Amortization period	Normal cost	Past service	Total rate	1985	1984
General Employees						
01 Barrington	6	4.37%	8.09%	12.46%	11.82%	13.34%
02 Bristol	--	3.97	--	3.97	4.20	10.96
03 Burrillville	9	5.50	4.38	9.88	10.25	11.58
07 Cranston*	19	5.27	7.21	12.48	13.79	11.10
09 E. Greenwich	7	4.28	1.60	5.88	4.83	5.89
10 E. Providence	2	3.66	10.38	14.04	13.42	13.92
11 Exeter-W. Greenwich School District	23	5.10	9.44	14.54	15.83	--
12 Foster	22	5.15	3.80	8.95	10.19	10.88
14 Hopkinton	10	4.63	0.59	5.22	5.44	7.53
15 Jamestown	5	3.52	5.99	9.51	7.83	5.80
16 Johnston	9	5.33	3.19	8.52	8.46	8.87
21 Newport	18	3.22	6.86	10.08	10.24	11.54
22 New Shoreham	21	3.47	5.06	8.53	11.46	12.23
23 N. Kingstown	3	4.20	--	4.20	6.04	6.99
24 N. Providence	18	4.45	3.18	7.63	8.20	9.45
25 N. Smithfield	5	5.48	4.98	10.46	8.08	10.79
26 Pawtucket	18	4.23	5.88	10.11	10.40	10.27
29 Richmond	20	5.31	4.67	9.98	11.70	6.36
30 Scituate	9	4.80	8.44	13.24	13.83	13.74
31 Smithfield	3	5.55	4.19	9.74	11.75	15.38
32 S. Kingstown	--	4.44	--	4.44	4.46	4.34
33 Tiverton	5	5.73	9.39	15.12	15.93	17.10
34 Warren	4	5.45	5.12	10.57	8.06	11.86
36 Westerly	18	4.90	33.64	38.54	39.28	45.04
39 Woonsocket	3	4.60	8.27	12.87	12.75	14.06
40 Charho Regional School District	22	5.80	7.43	13.23	14.33	13.90
51 Cranston Housing	9	3.70	--	3.70	3.77	4.71
52 E. Providence Housing	9	4.97	--	4.97	6.27	9.96
53 Pawtucket Housing	9	4.52	--	4.52	4.53	4.86
56 Cumberland Housing	17	4.54	0.54	5.08	5.11	6.41
57 Lincoln Housing	10	4.55	4.18	8.73	6.53	6.67
59 Bristol Housing	11	5.15	--	5.15	4.73	5.12
65 Burrillville Housing	18	3.93	4.32	8.25	13.60	3.20
66 N. Providence Housing	18	4.25	--	4.25	3.70	4.75
67 E. Smithfield Water	22	5.92	8.07	13.99	15.27	30.47
68 Greenville Water	18	4.77	4.34	9.11	10.49	10.98
71 Warren Housing	16	4.87	1.69	6.56	8.23	7.71
72 Johnston Housing	18	6.95	--	6.95	7.00	8.11
79 Coventry Housing	18	5.85	4.74	10.59	13.11	12.91
80 S. Kingstown Housing	18	8.24	5.87	14.11	13.73	13.48
83 W. Warwick Housing	22	4.47	8.20	12.67	13.33	16.32
84 Smithfield Housing	22	6.13	9.60	15.73	23.57	23.14
Police and Fire						
50 E. Greenwich Fire	18	11.53	--	11.53	13.67	17.24
54 E. Greenwich Police	18	8.43	5.69	14.12	13.81	14.28
55 N. Kingstown Fire	14	7.81	5.60	13.41	13.94	15.34
58 N. Providence Fire	10	8.48	5.52	14.00	16.55	17.10
60 Barrington P & F	18	7.35	6.56	13.91	13.99	15.13
62 Warren Police	21	8.06	12.97	21.03	22.79	16.19
63 S. Kingstown P & F	5	7.68	4.29	11.97	13.51	13.62
64 Primrose Volunteer Fire	13	8.50	--	8.50	7.93	8.40
76 N. Smithfield Police	18	7.27	2.36	9.63	9.53	8.65
77 Tiverton Fire	18	8.92	3.73	12.65	13.19	13.88
82 Foster Police	22	8.68	2.38	11.06	11.42	11.93
85 Woonsocket Police	23	7.60	--	7.60	7.72	--

*Based on COLA Plan B effective 1/1/85
RHODE ISLAND MUNICIPAL ERS

April 23, 1985

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, 1984.

This certificate contains the following attached exhibits:

EXHIBIT I - Actuarial Cost for Year Beginning July 1, 1984

A. General employees

B. Police and firemen

EXHIBIT II - Actuarial Assumptions and Cost Method

EXHIBIT III - 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: Joseph C. Demy
 Joseph C. Demy, A.S.A., M.A.A.A.
 Vice President and Actuary

EXHIBIT I

ACTUARIAL COST FOR YEAR BEGINNING JULY 1, 1984

A. GENERAL EMPLOYEES

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

- a. 4,029 active participants (including 1,588 fully vested) with total annual salaries of \$55,234,600
- b. 288 inactive participants
- c. 1,502 pensioners (including 34 beneficiaries of deceased pensioners and active employees)

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

1. Total normal cost	\$ 5,799,600
2. Projected employee contributions	3,390,800
3. Employer normal cost	2,408,800
4. Actuarial liability - total	122,767,900
Active employees	\$75,171,600
Inactive employees	592,100
Pensioners (including beneficiaries of deceased pensioners and active employees)	47,004,200
5. Assets	100,691,200
6. Unfunded actuarial liability	22,076,700

Liability for accrued vested benefits: \$125,200,800

Note: Included are 198 active employees unknown as to age, service, or both. Status of beneficiaries was unclear. The liability included for inactive employees is the sum of their accumulated contributions.

EXHIBIT I

ACTUARIAL COST FOR YEAR BEGINNING JULY 1, 1984

B. POLICE AND FIREMEN

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

- a. 283 active participants (including 147 fully vested) with total annual salaries of \$5,603,200
- b. 5 inactive participants
- c. 79 pensioners (including 17 beneficiaries of deceased pensioners and active employees)

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

1. Total normal cost		\$ 829,600
2. Projected employee contributions		392,300
3. Employer normal cost		437,300
4. Actuarial liability - total		15,275,400
Active employees	\$10,281,700	
Inactive employees	11,000	
Pensioners (including beneficiaries of deceased pensioners and active employees)	4,982,700	
5. Assets		12,948,600
6. Unfunded actuarial liability		2,326,800
Liability for accrued vested benefits:	\$11,818,900	

Note Included are 15 active employees unknown as to age, service, or both. Status of beneficiaries was unclear. The liability included for inactive employees is the sum of their accumulated contributions.

EXHIBIT II

ACTUARIAL ASSUMPTIONS AND COST METHOD

Mortality rates -- 1971 Group Annuity Mortality Table

Disability mortality before age 65 -- Age 65 mortality under stipulated table

Termination rates before retirement:

General Employees (Rate %)

<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 service-connected.

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 service-connected.

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

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

Salary scale:

<u>Age</u>	<u>Present salary as a percent of salary at 65</u>	<u>Annual increase (Rate %)</u>
	17.45	4.84
20	22.07	4.75
25	27.76	4.59
30	34.62	4.39
35	42.68	4.08
40	51.76	3.72
45	61.77	3.45
50	72.98	3.33
55	86.08	3.16
60		

Includes allowance for inflation of 3% 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.

Percent married -- Social Security awards during 1972

Net investment return -- 6 1/2%

Valuation of assets -- At amortized book value for bonds and at cost for stocks

Actuarial cost method -- Entry age normal cost

EXHIBIT III

SUMMARY OF PLAN PROVISIONS

Service pension

	<u>General Employees</u>	<u>Police and Firemen</u>
Age requirement:	58 None	55 None
	or	or
Service requirement:	10 yrs. 30 yrs.	10 yrs. 25 yrs.

Amount: 2% of final average salary per year of service to a maximum of 75%. Final average salary is defined as the average of compensation earned during the highest 3 consecutive years prior to termination. Retirement is mandatory at age 70. 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: 2% final average salary at disability per year of service (but not less than 20%), 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.

Pre-retirement death benefits

Ordinary death benefits:

Lump sum benefit:

Age requirement: None

Service requirement: None

Amount: (a) \$400 per year of service to a maximum of \$8,000
and with a minimum of \$2,000.

(b) Refund of employee contributions

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 \$2,000.

Police and firemen's survivor's benefit:

Same as pre-retirement

Employee contribution rate:

6% for general employees, 7% for police and firemen, until 75%
benefit is accrued.

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.