

1978 ACTUARIAL REPORT

for

BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION

*Rec'd
9/19/78*

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Section 1. A Brief Summary of the Census Data

The data on which this actuarial valuation is based is summarized below. Information on each member and beneficiary included in the valuation is presented in Appendix D.

Active Members

Number	124
Average Age	36.0
Average Service	8.0
Aggregate Salary (on Which Retirement Benefits are Based)	\$2,267,712
Employee Contributions for Past Plan Year	\$ 17,892
Prospective Annual Retirement Annuities	\$1,363,736

Other Members

	<u>Number</u>	<u>Annual Annuity Payments</u>
Retired Members	18	\$102,816
Disabled Members	3	17,136
Widows of Deceased Members	4	17,136
Children of Deceased Members	-	0
Deferred Annuitant Members*	1	5,712*

*Prospective Retirement Annuities

Section 2. The Actuarial Valuation

The results of the valuation on December 31, 1977 are shown below.

1.	Accrued Liability	\$7,211,501
2.	Assets	<u>3,759,724</u>
3.	Unfunded Accrued Liability (Prior Service Deficit)	\$3,451,777
4.	Normal Cost for Current Year	\$ 525,520
5.	Normal Cost as a Level Percentage of Current and Projected Future Participating Payroll	23.174%
6.	Current Participating Payroll Used for Valuation	\$2,267,712

The actuarial assumptions will be found in Appendix A.

Section 3. Contributions

The contributions outlined below are the support rates required on an annual basis to meet the level of funding indicated. The amounts shown are based on the payroll used in the current valuation. The Normal Cost portion has been determined as a level per cent of the payroll used in determining benefits and will fluctuate in dollar amounts in future years as the participating payroll fluctuates. The support rates shown assume payment as of the valuation date. The total contribution is that which would be required under the Guidelines Bill if there were no transition rules.

Contribution to Pay Normal Cost and Interest on Unfunded Accrued Liability

1. Normal Cost for Current Year	\$525,520
2. Interest Payment on Unfunded Accrued Liability (Prior Service Deficit)	<u>164,370</u>
3. Total Contribution if made, 1/1/78	\$689,890
4. Interest at 5% to 12/31/78	\$ 34,495
5. Total Contribution if made, 12/31/78	\$724,385

Section 4. The Preparation of the Report

This report has been prepared in accordance with generally accepted actuarial principles and practices. This actuarial survey was made in accordance with the requirements of Chapter 729 of Minnesota Laws 1967, as amended. The usual care has been exercised in making the calculations and presenting the results. The contents of this report are, therefore, believed to be a correct appraisal of the state of affairs of the Plan.

Respectfully submitted,

HEWITT ASSOCIATES

Rodger Patrick

Rodger Patrick, ASA

APPENDIX A

ACTUARIAL ASSUMPTIONS

Mortality Rates

The mortality rates used are based on the United States Life Table, 1959-61, White Males and White Females. These tables were used for both active and retired members and for survivors.

Withdrawal Rates

The rate of withdrawal of .030 at age 20 decreasing uniformly to zero at age 50 with no withdrawal after that age.

Disability Rates

These rates are based on "Intermediate Rates of Disablement" that were used by the Social Security Administration in their 1962 cost estimating procedures.

Retirement Age

The assumed average retirement age for this fund is age 53.

Salary Scale

A 3 1/2% annual increase in the salary on which retirement benefits are based has been assumed.

Interest Rate

Five per cent compounded annually.

Actuarial Method

The Entry Age Normal Cost Method has been used to determine the Unfunded Prior Service Cost. The Normal Cost has been determined as a level percentage of current and future participating payroll on which the retirement benefits are based.

APPENDIX B

SUMMARY OF PLAN PROVISIONS

Requirements for Benefits

Retirement

Twenty years of service and 50 years of age.

Disability

In Line of Duty: None

Not In Line of Duty: None.

Vesting

Twenty years of service. Benefit is deferred to the attainment of age 50.

Amount of Benefit

Retirement

Benefit When Minimum Requirements Are Met: 33-1/3% of the last three years' average pay of a Patrolman (escalator).

Disability

In Line of Duty: 33-1/3% of last three years' average salary of a Patrolman.

Not In Line of Duty: Same as for In Line of Duty.

Vesting

Same as for Retirement benefit.

Widow's Benefit

Twenty-five percent of last three years' average salary of a Patrolman. Maximum family benefit is 33-1/3% of the last three years' average salary of a Patrolman.

Children of Deceased Members

Four percent of the last three years' average salary of a Patrolman.

Other Death Benefits

\$500 funeral benefit.

Salary Basis for Benefits

Salary of a First Grade Patrolman - \$18,288.

Unit Value

Not applicable.

Member Contribution

\$144 per year payable semi-annually.

APPENDIX C

INCOME OF FUND DURING 1977

Members' Contributions	\$ 17,892
City or Village Contributions	\$644,774
State Aid	\$108,865
Total Contributions	\$771,531
Investment Income	\$101,306

APPENDIX D

CENSUS DATA

BLOOMINGTON FIRE DEPARTMENT RELIEF ASSOCIATION

ACTIVE MEMBERS CURRENT SALARY IS THE SALARY ON WHICH
RETIREMENT BENEFITS ARE BASED

CODE NUMBER	AGE NEAREST BIRTHDAY	COMPLETED YEARS OF SERVICE	CURRENT SALARY	PROJECTED ANNUAL ANNUITY
-----	-----	-----	-----	-----
2	53	19	\$ 18,288	\$ 6,098
14	52	18	\$ 18,288	\$ 6,312
8	51	17	\$ 18,288	\$ 6,532
3	50	18	\$ 18,288	\$ 6,533
22	50	17	\$ 18,288	\$ 6,533
4	49	19	\$ 18,288	\$ 6,762
21	48	17	\$ 18,288	\$ 6,999
9	47	18	\$ 18,288	\$ 7,243
15	47	15	\$ 18,288	\$ 7,243
10	46	18	\$ 18,288	\$ 7,496
11	46	18	\$ 18,288	\$ 7,496
17	46	18	\$ 18,288	\$ 7,496
18	46	18	\$ 18,288	\$ 7,496
12	46	17	\$ 18,288	\$ 7,496
33	46	11	\$ 18,288	\$ 8,030
28	45	14	\$ 18,288	\$ 7,759
36	45	11	\$ 18,288	\$ 8,030
19	45	9	\$ 18,288	\$ 8,602
26	44	14	\$ 18,288	\$ 8,030
6	44	9	\$ 18,288	\$ 8,602
54	43	9	\$ 18,288	\$ 8,601
40	42	11	\$ 18,288	\$ 8,603
50	42	10	\$ 18,288	\$ 8,603
55	42	9	\$ 18,288	\$ 8,603
64	42	7	\$ 18,288	\$ 9,215

BLOOMINGTON FIRE DEPARTMENT RELIEF ASSOCIATION

ACTIVE MEMBERS CURRENT SALARY IS THE SALARY ON WHICH
RETIREMENT BENEFITS ARE BASED

CODE NUMBER	AGE NEAREST BIRTHDAY	COMPLETED YEARS OF SERVICE	CURRENT SALARY	PROJECTED ANNUAL ANNUITY
74	42	7	\$ 18,288	\$ 9,215
73	42	7	\$ 18,288	\$ 9,215
75	42	7	\$ 18,288	\$ 9,215
42	41	18	\$ 18,288	\$ 8,903
23	41	16	\$ 18,288	\$ 8,903
41	41	10	\$ 18,288	\$ 8,903
44	41	10	\$ 18,288	\$ 8,903
81	41	6	\$ 18,288	\$ 9,537
20	40	18	\$ 18,288	\$ 9,217
1	40	11	\$ 18,288	\$ 9,217
47	40	10	\$ 18,288	\$ 9,217
49	40	9	\$ 18,288	\$ 9,217
65	40	7	\$ 18,288	\$ 9,217
25	39	14	\$ 18,288	\$ 9,539
29	39	13	\$ 18,288	\$ 9,539
32	39	11	\$ 18,288	\$ 9,539
38	39	11	\$ 18,288	\$ 9,539
37	39	11	\$ 18,288	\$ 9,539
16	39	10	\$ 18,288	\$ 9,539
43	39	10	\$ 18,288	\$ 9,539
5	38	13	\$ 18,288	\$ 9,872
31	38	12	\$ 18,288	\$ 9,872
45	38	9	\$ 18,288	\$ 9,872
57	38	9	\$ 18,288	\$ 9,872
24	38	8	\$ 18,288	\$ 9,872

BLOOMINGTON FIRE DEPARTMENT RELIEF ASSOCIATION

ACTIVE MEMBERS

CURRENT SALARY IS THE SALARY ON WHICH
RETIREMENT BENEFITS ARE BASED

CODE NUMBER	AGE NEAREST BIRTHDAY	COMPLETED YEARS OF SERVICE	CURRENT SALARY	PROJECTED ANNUAL ANNUITY
-----	-----	-----	-----	-----
13	37	13	\$ 18,288	\$ 10,216
52	37	9	\$ 18,288	\$ 10,216
61	37	8	\$ 18,288	\$ 10,216
60	37	8	\$ 18,288	\$ 10,216
62	37	8	\$ 18,288	\$ 10,216
70	37	7	\$ 18,288	\$ 10,216
82	37	6	\$ 18,288	\$ 10,216
27	36	11	\$ 18,288	\$ 10,574
39	36	11	\$ 18,288	\$ 10,574
46	36	10	\$ 18,288	\$ 10,574
56	36	9	\$ 18,288	\$ 10,574
58	36	9	\$ 18,288	\$ 10,574
59	36	8	\$ 18,288	\$ 10,574
83	36	6	\$ 18,288	\$ 10,574
88	36	5	\$ 18,288	\$ 10,574
85	36	5	\$ 18,288	\$ 10,574
7	36	4	\$ 18,288	\$ 10,574
111	36	2	\$ 18,288	\$ 10,943
35	35	11	\$ 18,288	\$ 10,945
51	35	8	\$ 18,288	\$ 10,945
66	35	7	\$ 18,288	\$ 10,945
67	35	7	\$ 18,288	\$ 10,945
76	35	5	\$ 18,288	\$ 10,945
94	35	3	\$ 18,288	\$ 10,945
99	35	3	\$ 18,288	\$ 10,945

BLOOMINGTON FIRE DEPARTMENT RELIEF ASSOCIATION

ACTIVE MEMBERS CURRENT SALARY IS THE SALARY ON WHICH
RETIREMENT BENEFITS ARE BASED

CODE NUMBER	AGE NEAREST BIRTHDAY	COMPLETED YEARS OF SERVICE	CURRENT SALARY	PROJECTED ANNUAL ANNUITY
103	35	2	\$ 18,288	\$ 10,945
121	35	0	\$ 18,288	\$ 11,724
123	35	0	\$ 18,288	\$ 11,724
30	34	8	\$ 18,288	\$ 11,329
71	34	7	\$ 18,288	\$ 11,329
77	34	7	\$ 18,288	\$ 11,329
80	34	6	\$ 18,288	\$ 11,329
89	34	4	\$ 18,288	\$ 11,329
114	34	1	\$ 18,288	\$ 11,329
69	33	6	\$ 18,288	\$ 11,725
86	33	5	\$ 18,288	\$ 11,725
98	33	3	\$ 18,288	\$ 11,725
34	32	11	\$ 18,288	\$ 12,137
119	32	0	\$ 18,288	\$ 12,137
68	31	7	\$ 18,288	\$ 12,559
72	31	7	\$ 18,288	\$ 12,559
79	31	6	\$ 18,288	\$ 12,559
84	31	5	\$ 18,288	\$ 12,559
90	31	4	\$ 18,288	\$ 12,559
97	31	3	\$ 18,288	\$ 12,559
48	30	9	\$ 18,288	\$ 12,999
53	30	9	\$ 18,288	\$ 12,999
87	30	4	\$ 18,288	\$ 12,999
105	30	2	\$ 18,288	\$ 12,999
124	30	0	\$ 18,288	\$ 12,999

BLOOMINGTON FIRE DEPARTMENT RELIEF ASSOCIATION

ACTIVE MEMBERS CURRENT SALARY IS THE SALARY ON WHICH
RETIREMENT BENEFITS ARE BASED

CODE NUMBER	AGE NEAREST BIRTHDAY	COMPLETED YEARS OF SERVICE	CURRENT SALARY	PROJECTED ANNUAL ANNUITY
-----	-----	-----	-----	-----
63	29	6	\$ 18,288	\$ 13,456
78	29	6	\$ 18,288	\$ 13,456
96	29	3	\$ 18,288	\$ 13,456
108	29	2	\$ 18,288	\$ 13,456
113	29	2	\$ 18,288	\$ 13,456
95	28	3	\$ 18,288	\$ 13,927
102	28	2	\$ 18,288	\$ 13,927
92	27	4	\$ 18,288	\$ 14,411
91	26	4	\$ 18,288	\$ 14,918
93	26	3	\$ 18,288	\$ 14,918
109	26	2	\$ 18,288	\$ 14,918
122	26	0	\$ 18,288	\$ 14,918
120	25	0	\$ 18,288	\$ 15,438
100	24	3	\$ 18,288	\$ 15,982
110	24	2	\$ 18,288	\$ 15,982
101	23	3	\$ 18,288	\$ 16,538
106	23	2	\$ 18,288	\$ 16,538
104	22	2	\$ 18,288	\$ 17,118
107	22	2	\$ 18,288	\$ 17,118
112	22	2	\$ 18,288	\$ 17,118
118	22	2	\$ 18,288	\$ 17,118
115	22	1	\$ 18,288	\$ 17,118
116	21	1	\$ 18,288	\$ 17,717
117	20	1	\$ 18,288	\$ 18,334

BLOOMINGTON FIRE DEPARTMENT RELIEF ASSOCIATION

TERMINATED MEMBERS
WITH DEFERRED VESTED BENEFITS

<u>CODE NUMBER</u>	<u>AGE NEAREST BIRTHDAY</u>	<u>TYPE OF ANNUITY</u>	<u>ANNUAL ANNUITY</u>
1	49	ESCALATOR	\$ 5,712

DISABLED MEMBERS

1	50	ESCALATOR	\$ 5,712
2	42	ESCALATOR	5,712
3	41	ESCALATOR	5,712

WIDOWS OF DECEASED MEMBERS

1	68	ESCALATOR	\$ 4,284
2	67	ESCALATOR	4,284
3	67	ESCALATOR	4,284
4	58	ESCALATOR	4,284

BLOOMINGTON FIRE DEPARTMENT RELIEF ASSOCIATION
RETIRED MEMBERS

<u>CODE NUMBER</u>	<u>AGE NEAREST BIRTHDAY</u>	<u>TYPE OF ANNUITY</u>	<u>ANNUAL ANNUITY</u>
1	69	ESCALATOR	5712
2	67	ESCALATOR	5712
3	66	ESCALATOR	5712
4	65	ESCALATOR	5712
5	65	ESCALATOR	5712
6	63	ESCALATOR	5712
7	62	ESCALATOR	5712
8	60	ESCALATOR	5712
9	60	ESCALATOR	5712
10	60	ESCALATOR	5712
11	59	ESCALATOR	5712
12	58	ESCALATOR	5712
13	58	ESCALATOR	5712
14	57	ESCALATOR	5712
15	57	ESCALATOR	5712
16	55	ESCALATOR	5712
17	54	ESCALATOR	5712
18	54	ESCALATOR	5712