

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Actuarial Valuation as of January 1, 1991

May 22, 1991

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**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Actuarial Valuation as of January 1, 1991

PURPOSE AND SUMMARY

The purpose of this report is to present the results of our January 1, 1991 actuarial valuation of the Bloomington Fire Department Relief Association performed in accordance with the provisions of Chapter 356 of the Minnesota State Statutes. In summary, our valuation indicates a required contribution of \$1,670,900 as of January 1, 1991. The contribution must be increased with interest, at the rate of 5% per annum until the date of payment. If payment is made as late as December 31, 1991, a contribution of \$1,754,400 is required. This contribution is in addition to estimated member contributions of \$20,100 for 1991. The results of the valuation are discussed in detail in later sections of the report.

We certify that this actuarial valuation has been prepared in accordance with Chapter 356 of the Minnesota State Statutes as it applies to the Bloomington Fire Department Relief Association.

EMPLOYEE DATA

The data provided by the Association is summarized in Table 2(a). The table sets forth a reconciliation from January 1, 1990 to January 1, 1991. There are 141 active members in the Association as of the valuation date. They have an average attained age of 35.7 and an average entry age of 27.3. Table 2(b) sets forth the prospective benefit each member may expect to receive if he remains in the Association to the normal retirement date assumed in the valuation, age 50 and completion of 20 years of service. These benefits assume 3-1/2% future pay increases per year.

The reported data includes 63 retired members, 3 disabled members, 10 surviving spouses and 2 surviving children receiving monthly benefits as of January 1, 1991. There are 14 terminated members entitled to receive benefits at age 50.

Table 2(c) sets forth a listing showing the benefit each inactive member is currently receiving or is entitled to receive upon attainment of age 50. No increase is assumed in benefits of terminated vested members for this listing.

Monthly benefits payable from the plan are based on the most recent three year average salary rates of the highest paid non-officer policeman in the City of Bloomington. Consequently, benefits to all inactive members are increased each year. January 1, 1991 benefit levels are determined as follows:

1.	Average Monthly Salary	
	(a) January 1, 1989	3,140
	(b) January 1, 1990	3,250
	(c) January 1, 1991	3,380
	(d) Average	3,257
2.	Monthly Benefits	
	(a) Retirees	
	(1(d) x 1/3)	1,085
	(b) Surviving Spouses	
	(2(a) x 75%)	814

For cost determinations, future benefits are assumed to increase in accordance with the assumed rate of salary increase, 3-1/2% per year.

ASSETS OF THE SPECIAL FUND

A statement of the assets of the Special Fund as of December 31, 1990 prepared by George Hayden was made available to us by the Association. Our valuation reflects the reported market value of the Special Fund as of December 31, 1990 of \$39,217,393 less salaries and pensions of \$79,839 which were payable as of December 31, 1990 for a total of \$39,137,554 used as valuation assets.

PLAN PROVISIONS

Table 3 is a summary of the principal provisions of the plan. The benefits to retired members have increased 3.83% from \$1,045 to \$1,085 per month as a result of increases in the pay rate of the highest paid non-officer Bloomington policeman.

The plan's disability and pre-retirement death benefit provisions have been amended. Previously, all disabled members received a prorated benefit and full survivor benefits were payable. Both benefits were changed so that full benefits payable on account of a duty related event and prorated benefits are payable on account of non-duty related events.

ACTUARIAL ASSUMPTIONS

Chapter 356 of the Minnesota Statutes requires that actuarial valuations of public plans be based on an assumed interest rate of 5% per annum and an assumed rate of annual salary increase of 3-1/2% per annum. Other assumptions pertaining to the rates of mortality, turnover, retirement, etc. are left to the discretion of the actuary. All of the valuation assumptions are the same as those used in the January 1, 1990 valuation of the plan. Table 4 is a summary of all of the actuarial assumptions.

ACTUARIAL METHOD

As required by law, the funding method used for the valuation is the entry age normal cost method. Under this method, the normal cost is computed as that percentage of pay which would fund all benefits if that percentage of pay was contributed every year from each fireman's entry into the plan until his retirement. The total normal cost for the plan is the sum of the normal costs for all active members. The normal cost is reduced by the members' contribution for the current year.

The present value of all future benefits payable from the plan for all active and inactive members less the present value of all future normal costs is defined as the accrued liability. The accrued liability is the amount that would have accumulated in the Special Fund if all the actuarial assumptions had been exactly realized in all prior years and if funding for all members, based on current plan benefits, had commenced immediately upon their date of joining the Association.

The total accrued liability is compared to the market value of the Special Fund to determine the status of the plan. Any difference, known as the unfunded accrued liability is to be funded with a payment over a number of years specified by law,

known as the amortization payment. The unfunded accrued liability of the current plan must be paid over the 29 year period beginning on January 1, 1983 and ending on December 31, 2011. There are 21 years left in the amortization period. Any changes in the unfunded accrued liability due to changes in benefits or actuarial assumptions must be paid over a new 30 year period.

The total annual contribution due as of the valuation date is the sum of the normal cost, the amortization payment and a \$45,300 provision for administrative expenses. The provision for expected expenses is necessary because all expenses are paid from the Special Fund. The \$45,300 amount is estimated from actual expenses paid from the Special Fund during 1990. Interest must be added to the contribution at the rate of 5% from the valuation date to the date of payment. Thus, if payment were made as of December 31, 1991, the January 1 contribution amount must be multiplied by 1.05.

VALUATION RESULTS

A contribution of \$1,526,300 was reported in the January 1, 1990 valuation. This contribution was expected to increase to \$1,578,300 as of January 1, 1991 because the normal cost is expected to increase 3-1/2% each year in accordance with our valuation method.

Table 1 sets forth the principal results of this year's valuation. A contribution of \$1,754,400 is required.

The annual contribution is the sum of the normal cost, the amortization payment, and administrative expenses. The normal cost is computed to be a level percentage of pay assuming each fireman earns the same as a Bloomington policeman, \$40,560 per year. Under this assumption, there is a total covered payroll of \$5,719,000 (141 x \$40,560) and the net normal cost of \$1,562,700 is 27.3% of payroll. The total contribution of \$1,754,400 is 30.7% of payroll.

CHANGE IN THE UNFUNDED ACCRUED LIABILITY

Chapter 356 requires a reconciliation of the unfunded accrued liability from one valuation to the next valuation. As of January 1, 1990 there was an unfunded accrued liability of \$307,200. As of January 1, 1991 there is an unfunded accrued liability of \$829,800. This increase of \$522,600 is accountable as follows:

1.	Unfunded accrued liability as of January 1, 1990	307,200
2.	Decrease due to:	
	(a) Contributions	310,400
	(b) Benefit change	102,400
	(c) Total decrease	412,800
3.	Increase due to:	
	(a) Salary increases in excess of those assumed	151,800
	(b) Investment earnings lower than expected	113,500
	(c) Miscellaneous actuarial losses	670,100
	(d) Total increase	935,400
4.	Unfunded accrued liability as of January 1, 1991 (1 - 2.c + 3.d)	829,800

Investment earnings were 4.7% for 1990 versus our assumption of 5%. Salary increases were 4.0% for 1990 versus our assumption of 3.5%.

FINANCIAL DISCLOSURE

Government Accounting Standards Board Statement No. 5 now requires governmental plans to disclose certain information in their financial statement. Table 1(b) presents this information. The pension benefit obligation represents the value of benefits earned to date. Future benefit increases are assumed. The vested obligation includes a liability only for members with 20 or more years of service. The total obligation includes a liability for all members.

* * * * *

If you have any questions, please let us know. We would be happy to meet with you to discuss further the results of our valuation.

Respectfully submitted,

THE WYATT COMPANY



Victoria A. Stomiany
Fellow, Society of Actuaries

Minneapolis/St. Paul
May 22, 1991

Table 1(a)

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Results of Actuarial Valuation as of January 1, 1991

	<u>Before Plan Changes</u>	<u>With Plan Changes</u>
A. <u>BASIC VALUATION RESULTS</u>		
1. Accrued liability		
a. Active members	15,357,400	15,255,000
b. Inactive members		
i. Retired members	17,350,700	17,350,700
ii. Disabled members	1,200,700	1,200,700
iii. Surviving spouses	1,385,300	1,385,300
iv. Surviving children	26,100	26,100
v. Terminated members entitled to deferred benefits	4,749,500	4,749,500
vi. Total	24,712,300	24,712,300
c. Total accrued liability	40,069,700	39,967,300
2. Market value of special fund as of January 1, 1991	39,137,500	39,137,500
3. Unfunded accrued liability (1 - 2)	932,200	829,800
4. Annual normal cost		
a. Total	1,489,500	1,582,800
b. Estimated member contributions	20,100	20,100
c. Net normal cost (a-b)	1,469,400	1,562,700
B. <u>ANNUAL CONTRIBUTION</u>		
1. Payable as of January 1, 1991		
a. Normal cost	1,469,400	1,562,700
b. Amortization payment for unfunded accrued liability	69,200	62,900
c. Administrative expenses	45,300	45,300
d. Total	1,583,900	1,670,900
2. Payable as of December 31, 1991 (1.d x 1.05)	1,663,100	1,754,400

Table 1(b)

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

**Financial Disclosure Information
as of January 1, 1991**¹

Pension Benefit Obligation:

Retirees and beneficiaries currently receiving benefits and terminated members not yet receiving benefits	\$ 24,712,300
Current members -	
Accumulated member contributions including allocated investment earnings ²	0
Vested benefits	828,900
Non-vested benefits	13,875,600
Total Pension Benefit Obligation	\$ 39,416,800

¹ Assumes future rate of return on plan assets of 5% and 3-1/2% future benefit increases.

² Member contributions are not separately accounted since there are no refund of contribution provisions under the plan.

Table 2(a)

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Summary of Membership as of January 1, 1990

A.	<u>ACTIVE MEMBERS</u>	
1.	January 1, 1990	134
2.	New Entrants	24
3.	Transfers from Disabled Status	0
4.	Separations	
	(a) Vested terminations	4
	(b) Non-vested terminations	6
	(c) Disabilities	1
	(d) Deaths	0
	(e) Retirements	6
	(f) Total separations	17
4.	January 1, 1991	141
B.	<u>RETIRED MEMBERS</u>	
1.	January 1, 1990	54
2.	New Retirees	6
3.	Transfers from Deferred Vested Status	2
4.	Transfers from Disabled Status	1
5.	Deaths	0
6.	January 1, 1991	63
C.	<u>SURVIVING SPOUSES</u>	
1.	January 1, 1990	10
2.	New Beneficiaries	0
3.	Deaths	0
4.	Remarriage	0
5.	January 1, 1991	10

Table 2(a) cont.

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Summary of Membership as of January 1, 1991

D. DISABLED MEMBERS

1.	January 1, 1990	3
2.	New Disabilities	1
3.	Deaths	0
4.	Recoveries to Active Status	0
5.	Transferred to Retired Status	1
6.	January 1, 1991	3

E. SURVIVING CHILDREN

1.	January 1, 1990	2
2.	New Recipients	0
3.	Benefits Expired	0
4.	January 1, 1991	2

F. DEFERRED VESTED MEMBERS

1.	January 1, 1990	12
2.	New Vested Terminations	4
3.	Transferred to Retiree Status	2
4.	Transfer from Disabled Status	0
5.	January 1, 1991	14

Table 2(b)

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Projected Benefits for Active Members as of January 1, 1991

<u>Name</u>	<u>Birth Date</u>	<u>Entry Date</u>	<u>Annual Projected Benefit</u>
W AHMAN	09/53	05/78	20,438
B ANDERSON	06/43	04/70	13,999
L ANDERSON	02/48	11/77	16,626
S ANDERSON	08/66	01/86	31,964
T ARBUCKLE	02/60	01/84	25,123
B ASKE	12/56	10/83	22,660
M AUNE	12/71	10/90	37,963
J BACH	08/68	12/86	34,240
J BARNES	01/53	09/79	19,747
J BELL	08/57	05/89	25,123
L BERGQUIST	11/42	11/77	16,626
S BLODGETTS	10/43	07/78	17,208
R BORST	06/42	04/73	14,489
S BROWN	07/62	07/90	27,854
D BUJOLD	08/57	04/90	26,002
B CARLSON	06/70	08/88	35,439
D CARNEY	09/53	07/88	24,274
P COLLINS	04/54	12/84	21,153
D CONGDON	05/38	01/88	20,438
D CRUIKSHANK	03/44	11/72	14,489
L DALY	10/52	01/88	24,274
D DELONG	07/54	03/85	21,893
B DONNELLY	08/64	05/85	29,838
M DOYLE	03/49	06/82	19,747
J DUERKOP	01/53	04/83	20,438
G DUGAL	01/48	08/79	17,810
B DUNHAM	03/55	07/80	21,153
D DVORAK	10/46	11/73	16,064
D ELLINGS	08/59	03/82	25,123
T ERICKSON	10/58	11/88	24,274
R FALK	09/46	02/71	16,064

Table 2(b) cont.

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Projected Benefits for Active Members as of January 1, 1991

<u>Name</u>	<u>Birth Date</u>	<u>Entry Date</u>	<u>Annual Projected Benefit</u>
P FERRY	05/48	02/83	20,438
J FINNEGAN	10/45	05/79	17,810
S FRITCHMAN	06/59	01/88	24,274
F FUECKER	10/41	08/68	13,504
J GALE	09/53	11/75	20,438
C GERDES	12/48	06/74	17,208
D GILLUM	08/54	10/88	24,274
W GUENTHER	07/53	06/88	24,274
T GUSTAFSON	10/48	12/75	17,208
C GUTH	09/55	11/80	21,893
R HAEG	06/53	01/88	24,274
L HAUGAN	08/52	03/77	19,747
K HECHT	10/42	10/74	14,996
W HECHT	12/52	10/71	19,747
D HEDIN	10/54	12/74	21,153
P HEGER	10/53	12/74	20,438
B HENRY	05/63	11/89	27,954
J HOGAN	07/66	03/90	31,964
M HOY	07/68	07/89	34,240
R HUFFMAN	05/56	01/88	24,274
A HUNDT	06/57	05/81	22,660
M HURLEY	03/52	02/80	19,079
J HUTTER	02/64	11/90	28,829
W JEFFERS	11/47	04/81	19,079
G JESSEN	05/48	03/75	16,626
B JOHNSON	11/59	06/81	25,123
J JUDY	10/46	04/81	19,079
J KABEITZ	03/55	01/88	24,274
K KAISER	06/54	08/80	20,438
B KALINA	10/49	01/75	17,810
W KALINA	02/43	01/75	15,521

Table 2(b) cont.

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Projected Benefits for Active Members as of January 1, 1991

<u>Name</u>	<u>Birth Date</u>	<u>Entry Date</u>	<u>Annual Projected Benefit</u>
T KEELER	10/68	09/87	34,240
P KELLER	05/44	02/76	16,064
J LANNENBERG	04/66	07/84	30,883
R LARKIN	09/64	02/88	29,838
B LARSON	09/52	08/84	21,153
D LARSON	02/71	11/90	36,679
L LARSON	08/51	01/88	24,274
S LEEDER	10/51	10/80	19,079
G LEMBECK	12/64	01/88	29,838
W LEMBECK	10/41	04/71	13,504
M LESSARD	09/66	06/89	31,964
M LOISELLE	08/48	10/71	17,208
K MAHONEY	10/62	10/90	27,854
A MAJERUS	03/61	05/84	26,002
S MALONEY	01/60	10/81	25,123
D MANSKE	10/48	01/78	17,208
D MATLON	11/61	08/88	26,913
S MCCARTHY	07/61	04/88	26,913
K MCDEVITT	04/53	12/84	21,153
G MELONY	06/45	11/72	14,996
J MEUWISSEN	12/53	01/88	24,274
C MEYER	07/64	06/89	29,838
G MOORE	07/69	03/90	35,439
J NANOFF	10/53	12/87	23,453
K NELSON	10/60	07/88	26,002
R NELSON	02/57	04/89	25,123
D NOEL	02/57	04/89	25,123
B OCONNOR	07/64	03/85	29,838
C ODASH	05/61	05/89	26,002
B OLSON	05/57	11/84	22,660
R OLSON	07/54	01/79	21,153

Table 2(b) cont.

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Projected Benefits for Active Members as of January 1, 1991

<u>Name</u>	<u>Birth Date</u>	<u>Entry Date</u>	<u>Annual Projected Benefit</u>
W PAGET	06/39	07/83	20,438
K PAHL	06/48	08/68	16,626
E PALMSTEN	07/48	02/83	20,438
R PETERSON	03/43	08/75	15,521
S PETERSON	10/70	06/89	36,679
J POWERS	11/67	10/90	33,082
J REILY	08/50	07/85	21,893
C REYNOLDS	08/63	11/83	28,829
J REZAC	11/61	12/82	26,913
T RILEA	09/65	06/88	30,883
R ROASE	09/57	02/85	23,453
W ROASE	12/58	12/83	24,274
K ROBERTS	03/47	01/72	16,064
R ROEHL	04/52	09/78	19,079
M ROUEN	12/41	09/72	13,999
M SCHERER	07/67	07/88	33,082
J SCHOENBORN	02/67	11/90	31,964
R SCHOENBORN	07/40	02/71	13,504
T SCHWARTZ	06/54	01/88	24,274
U SEAL	10/57	06/76	23,453
G SELINSKY	09/41	06/72	13,999
R SHAW	04/54	02/84	21,153
T SHEFLET	09/66	01/89	31,964
G SHIELDS	01/47	10/81	19,079
D SMITH	04/47	02/81	19,079
R SMITH	05/52	06/78	19,079
D SORENSEN	07/66	11/87	31,964
M STERN	01/43	05/72	13,999
W SUTCLIFFE	02/59	02/82	24,274
B SVEUM	01/52	06/73	19,079
A SVOBODNY	07/55	04/83	21,893

Table 2(b) cont.

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Projected Benefits for Active Members as of January 1, 1991

<u>Name</u>	<u>Birth Date</u>	<u>Entry Date</u>	<u>Annual Projected Benefit</u>
B TANNER	04/69	02/88	34,240
S THIELE	11/66	02/89	31,964
V TRAETOW	04/52	01/88	24,274
L TRISCO	11/66	11/89	31,964
D TRITSCHLER	04/65	10/90	29,838
R TROUSDALE	08/52	05/83	20,438
D TSCHIMPERLE	01/65	04/85	29,838
K TSCHIMPERLE	12/65	06/84	30,883
J TUMBERG	03/64	11/84	28,829
M VOBER	01/44	02/71	14,489
T VOLK	01/54	10/87	23,453
B VOLKMEIER	01/54	10/87	23,453
D WALKER	12/46	06/74	16,064
B WARD	09/62	06/83	27,854
E WENSHAU	08/37	09/71	13,504
C WILLIAMS	03/43	04/74	14,996
M YOUNGGREN	12/53	01/88	24,274

Table 2(c)

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Monthly Benefits for Inactive Members as of January 1, 1991

<u>Name</u>	<u>Type</u>	<u>Monthly Benefits</u>
B ANDERSON	RETIRED	1,085
L ANDERSON	DEFERRED	1,085
R ANDERSON	RETIRED	1,085
R BOESER	RETIRED	1,085
J BRENING	RETIRED	1,085
D CARLSON	DEFERRED	1,085
L CHADWICK	WIDOW	814
G CHAPLIN	DEFERRED	1,085
C CHRISTENSEN	WIDOW	814
E CHRISTIAN	RETIRED	1,085
D CIARDELLI	RETIRED	1,085
R CLEMENSEN	RETIRED	1,085
J COLEHOUR	DISABLED	1,085
D DODDS	RETIRED	1,085
G DOUSETTE	RETIRED	1,085
R EGLAND	RETIRED	1,085
D ELFTMANN	RETIRED	1,085
J ELLRICH	WIDOW	814
R ELM	RETIRED	1,085
D ENGBERG	RETIRED	1,085
J ENGBERG	RETIRED	1,085
W FABER	RETIRED	1,085
I FINN	RETIRED	1,085
N FISCHER	DEFERRED	1,085
M FREEMARK	RETIRED	1,085
A FRIENDSHUH	RETIRED	1,085
A FURULI	RETIRED	1,085
N GABRIEL	RETIRED	1,085
R GABRIEL	DEFERRED	1,085
J GASTERLAND	DEFERRED	1,085
G GERHARDT	DISABLED	1,085
J GJEVRE	RETIRED	1,085

Table 2(c) cont.

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Monthly Benefits for Inactive Members as of January 1, 1991

<u>Name</u>	<u>Type</u>	<u>Monthly Benefits</u>
P GOETTSCH	CHILD	327
G HAEG	DISABLED	1,085
J HAEG	RETIRED	1,085
P HALL	RETIRED	1,085
J HARRINGER	DEFERRED	1,085
G HAYDEN	DEFERRED	1,085
C HECHT	RETIRED	1,085
C HEDIN	RETIRED	1,085
R HEDIN	RETIRED	1,085
K HEGER	RETIRED	1,085
B HOAGLUND	WIDOW	814
P HUBER	DEFERRED	1,085
B JUSTEN	WIDOW	814
M KAISER	RETIRED	1,085
E KEITH	RETIRED	1,045
C KELLEY	RETIRED	1,085
W KETTLEKAMP	RETIRED	1,085
R KIMBLER	RETIRED	1,085
G KRISTJANSON	DEFERRED	1,085
H LANENBERG	RETIRED	1,085
O LUND	WIDOW	814
R MACALLISTER	DISABLED	1,085
T MANSKE	DEFERRED	1,085
D MARTENSON	RETIRED	1,085
D MATTSON	RETIRED	1,085
R MCDONALD	RETIRED	1,085
R MCKENZIE	RETIRED	1,085
J MCWILLIAMS	RETIRED	1,085
G MILLER	RETIRED	1,085
S MINION	RETIRED	1,085
D NAPIER	DEFERRED	1,085
D NICHOLS	RETIRED	1,085

Table 2(c) cont.

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Monthly Benefits for Inactive Members as of January 1, 1991

<u>Name</u>	<u>Type</u>	<u>Monthly Benefits</u>
W NOLEEN	RETIRED	1,085
D OLSON	RETIRED	1,085
M PAHL	RETIRED	1,085
E PETERSEN	RETIRED	1,085
D PETERSON	DEFERRED	1,085
D PETERSON	RETIRED	1,085
S PETERSON	RETIRED	1,085
T PRESSLER	RETIRED	1,085
M RUEGER	WIDOW	814
J SAVAGE	WIDOW	814
R SAVAGE	WIDOW	814
V SEGERSTROM	RETIRED	1,085
D SHEFLET	DEFERRED	1,085
B SMITH	RETIRED	1,085
W SNYDER	RETIRED	1,085
R SWANSON	RETIRED	1,085
E SWIVEN	RETIRED	1,085
J THOMA	DEFERRED	1,085
R THOMA	RETIRED	1,085
D TRAVERS	RETIRED	1,085
L TSCHIMPERL	RETIRED	1,085
A WELTER	RETIRED	1,085
C WILSON	RETIRED	1,085
G WILSON	DEFERRED	1,085
L WISE	RETIRED	1,085
M ZOCHERT	WIDOW	814

Table 3

**BLOOMINGTON FIRE DEPARTMENT
RELIEF ASSOCIATION**

Summary of Current Plan Provisions

1. **Basic Benefit:** One-third of the final average salary of a policeman of the highest grade, not including officers of the City of Bloomington. Final average earnings is the average of the monthly pay for such a policeman over the past three years. All benefits under the plan increase each time a pay increase is granted to the Bloomington Police Department.
2. **Normal Retirement Benefit:** Basic benefit is payable at retirement after attainment of age 50 and completion of 20 years of service.
3. **Deferred Vested Benefits:** On termination after completion of 20 years of service, the basic benefit is payable after attainment of age 50.
4. **Disability Benefits:**
 - Duty Related -** Basic benefit is payable at time of disability. This benefit is payable while the member remains disabled. After attainment of age 50, a normal retirement benefit is payable. Disability is defined as inability to perform the duties of a fireman.
 - Non-Duty Related -** The basic benefit is multiplied by 5% for every year of service earned up to the time of disability; maximum 20 years. This benefit is payable while the member remains disabled. After attainment of age 50, a normal retirement benefit is payable. Disability is defined as inability to perform the duties of a fireman.

5. **Spouse's Benefit:**
- Duty Related -** 75% of the basic benefit is payable to the surviving spouse for her remaining lifetime. Benefits cease on remarriage of the surviving spouse.
- Non-Duty Related -** 75% of the accrued benefit at time of death is payable to the surviving spouse for her remaining lifetime. The accrued benefit is 5% of the basic benefit multiplied by the number of years of service at time of death; maximum 20 years.
- Inactive Member -** On the death of any inactive member, 75% of the basic benefit is payable to the surviving spouse for her remaining lifetime.
6. **Children's Benefit:** On the death of an active member, a children's benefit is payable to each surviving child until attainment of age 18. The children's benefit is defined the same as the duty or non-duty related spouse's benefit with 12% instead of 75%. Maximum family benefit is 100% of the basic benefit. On the remarriage or death of a widow, surviving children may receive benefits which in total equal no more than the basic benefit.
7. **Lump Sum Death Benefit:** On the death of any active or inactive member \$500 is payable.
8. **Membership Dues:** Each member contributes \$144.00 per year payable semi-annually on January 1 and July 1.

Table 4

BLOOMINGTON FIRE DEPARTMENT RELIEF ASSOCIATION

Actuarial Method and Assumptions

1. Interest Rate: 5% per annum.
2. Mortality: The mortality rates used are based on the 1971 Group Annuity Mortality Table, without margins, projected to 1976 by Scale E. The table is used for all rates of mortality.
3. Withdrawal: The rate of withdrawal is .030 at age 20 decreasing uniformly to zero at age 50 with no withdrawal after that age.
4. Disability: The Railroad Retirement Board 12th Valuation rates of disablement loaded for the nature of the group.
5. Duty/Non-Duty: 75% of all disabilities and deaths are assumed to be duty-related and 25% non-duty-related.
6. Retirement Age: Members are assumed to retire after attaining age 50 and completing 20 years of service.
7. Salary Scale: 3-1/2% per annum.
8. Valuation Assets: Market value.
9. Funding Method: The entry age normal cost method has been used with the normal cost determined as a level of percentage of pay each year from the date of joining the Association to the assumed retirement age. Each fireman is assumed to earn the same as a Bloomington policeman.