

**MINNEAPOLIS FIREFIGHTERS'  
RELIEF ASSOCIATION**

**SPECIAL FUND**

*December 31, 2000  
Actuarial Valuation*

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MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

December 31, 2000 Actuarial Valuation of the Special Fund

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**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2000 Actuarial Valuation of the Special Fund*

**Introduction**

**Purpose**

This report presents the results of the December 31, 2000 valuation for the Minneapolis Firefighters' Relief Association. Its primary purposes are:

- to determine the funded status as of December 31, 2000,
- to determine the normal cost for 2000, and
- to present information required to be disclosed under Governmental Accounting Standards Board Statement No. 25 (GASB 25) as of December 31, 2000.

**Sources of Data**

The Relief Association supplied December 31, 2000 data for all active and inactive members, and asset information regarding the special fund. We have relied on this data in preparing this report.

**Changes from the Previous Valuation**

The prior actuarial valuation of the plan was prepared as of December 31, 1999. The actuarial assumptions and methods used to prepare this report are identical to those used in the 1999 report, with the exception of the salary scale which has been adjusted to reflect the collective bargaining agreement settled between the firefighters and the City of Minneapolis. since the last valuation date (see page 17).

**Summary of Valuation Results**

As of December 31, 2000, the funded status of the plan (actuarial accrued liabilities divided by the actuarial value of assets) is 107.5%, down from 109.2% on December 31, 1999. The decrease is due to a decline in the value of assets in the Special Fund. The overall rate of return on the market value of assets for the year was about -2.7% (see page 4).

The total normal cost for 2000 is \$1,540,141 (see page 7). After adjustment for member contributions, the employer normal cost is reduced to \$997,517. During 2000, the Minnesota legislature changed the adjustment for member contributions. The offset is now the full 8% of pay that members contribute, even though some of the contribution does not go to the Special Fund. The change is shown in both the 1999 and 2000 results (see page 7).

MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION  
*December 31, 2000 Actuarial Valuation of the Special Fund*

Introduction (continued)

Actuarial Certification

We certify that the actuarial valuation has been prepared in accordance with Minnesota Statutes §§356.20-.23 and §69.77 as they relate to fire department relief associations in cities of the first class in general and the Minneapolis Firefighters' Relief Association in particular.

Respectfully submitted,



Mark D. Meyer, FSA, MAAA  
Consulting Actuary



Paul D. Krueger, JD, EA  
Consulting Actuary

*December 31, 2000 Actuarial Valuation of the Special Fund***Summary of Results**

<b><u>A. Plan participant data</u></b>	<b><u>December 31, 1999</u></b>	<b><u>December 31, 2000</u></b>
1. Number of participants		
a. Active employees	153	104
b. Terminated vested employees	1	1
c. Retirees	411	445
d. Disability	9	8
e. Surviving spouses	198	197
f. Surviving children	4	3
g. Total	776	758
<b><u>B. Normal costs</u></b>	<b><u>1999 Plan Year</u></b>	<b><u>2000 Plan Year</u></b>
1. Total normal cost		
a. Amount	\$2,323,102	\$1,540,141
b. Percentage of active payroll	24.07%	22.71%
2. Employer normal cost		
a. Amount	1,550,864	997,517
b. Percentage of active payroll	16.07%	14.71%
<b><u>C. Amortization payments</u></b>		
1. Unfunded actuarial accrued liability	(\$26,874,947)	(\$22,098,554)
2. Amortization payment	0	0
<b><u>D. Value of plan assets</u></b>	<b><u>December 31, 1999</u></b>	<b><u>December 31, 2000</u></b>
1. Market value	342,204,913	310,820,185
2. Actuarial value (for calculating contributions)	318,042,643	315,900,478
<b><u>E. Benefit liabilities</u></b>		
1. Present value of future benefits	300,811,418	299,849,657
2. Actuarial accrued liability	291,167,696	293,801,923
<b><u>F. Funded status</u></b>		
1. Actuarial value of assets as a % of liabilities	109.2%	107.5%
2. Market value of assets as a % of liabilities	117.5%	105.8%

MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

December 31, 2000 Actuarial Valuation of the Special Fund

*Funding Basis*

Actuarial Value of Assets

A. Average unrealized gain

<u>Year Ending December 31:</u>	<u>Market Value</u>	<u>Book Value</u>	<u>Unrealized Gain (Market - Book)</u>
1998	\$310,029,845	\$231,421,505	\$78,608,340
1999	342,204,913	232,882,437	109,322,476
2000	310,820,185	231,468,670	79,351,515
		Average:	89,094,110

B. Book value of assets December 31, 2000

231,468,670

C. Excess investment income

1. Salary increases and time-weighted rate of return on assets

<u>Fiscal Year</u>	<u>Salary Increase</u>	<u>Asset Return</u>
1996	0.000%	14.031%
1997	6.390%	23.842%
1998	7.420%	20.735%
1999	6.833%	18.278%
2000	3.037%	-2.698%
Average	4.698%	14.433%

2. Determination of excess investment income

a. Excess of asset return over salary increase	9.73%
b. Excess minus 2%	7.73%
c. Lesser of 1.5% or 2.c. times market value of assets	4,662,303

D. Actuarial value of assets as of December 31, 2000

\$315,900,478

(A. + B. - C.2.c.)

December 31, 2000 Actuarial Valuation of the Special Fund

Summary of Member Data

	<u>December 31, 1999</u>	<u>December 31, 2000</u>
<b><u>A. Active members</u></b>		
1. Number		
a. Fully vested	153	104
b. Nonvested	<u>0</u>	<u>0</u>
c. Total	153	104
2. Average age	51.5	52.0
3. Average years of service	25.2	25.8
4. Total annual payroll for the year beginning on valuation date	\$10,039,101	\$7,054,115
5. Average annual salary	\$65,615	\$67,828
<b><u>B. Vested terminated members</u></b>		
1. Number	1	1
2. Total annual deferred benefits	\$22,724	\$23,288
3. Average annual benefit	\$22,724	\$23,288
4. Average age	45.0	46.0
<b><u>C. Retirees</u></b>		
1. Number	411	445
2. Total annual benefits	\$14,010,961	\$15,512,767
3. Average annual benefit	\$34,090	\$34,860
4. Average age	69.3	68.3
<b><u>D. Disabilitants</u></b>		
1. Number	9	8
2. Total annual benefits	\$307,448	\$283,272
3. Average annual benefit	\$34,161	\$35,409
4. Average age	50.9	51.0
<b><u>D. Surviving spouses</u></b>		
1. Number	198	197
2. Total annual benefits	\$3,656,357	\$3,794,610
3. Average annual benefit	\$18,466	\$19,262
4. Average age	77.0	77.9
<b><u>E. Dependent children</u></b>		
1. Number	4	3
2. Total annual benefits	\$26,246	\$20,348
3. Average annual benefit	\$6,562	\$6,783
4. Average age	18.7	18.8
<b><u>F. Total number of members</u></b>	<b>776</b>	<b>758</b>

*December 31, 2000 Actuarial Valuation of the Special Fund***Summary of Changes in Membership**

	<u>Actives</u>	<u>Vested Terminees</u>	<u>Retirees</u>	<u>Disabled</u>	<u>Spouses</u>	<u>Children</u>	<u>Total</u>
<b><u>A. Number of members on December 31, 1999</u></b>	153	1	411	9	198	4	776
<b><u>B. Changes in membership</u></b>							
1. Retirements	(45)		50	(5)			0
2. Vested terminations							0
3. Member deaths			(16)		7		(9)
4. Beneficiary deaths					(9)		(9)
5. Expiration of surviving child benefits						(1)	0
6. Separations due to disability	(4)			4			
7. Corrections					1		1
8. Total changes	(49)	0	34	(1)	(1)	(1)	(18)
<b><u>C. Number of members on December 31, 2000</u></b>	104	1	445	8	197	3	758

December 31, 2000 Actuarial Valuation of the Special Fund

*Funding Basis***Actuarial Values Used to Determine Contribution**

	<u>December 31, 1999</u>	<u>December 31, 2000</u>
<b><u>A. Actuarial present value of projected benefits (the value of all future benefits to be paid to the current group of members)</u></b>		
1. Active members	\$87,621,002	\$59,017,045
2. Vested terminated members	446,621	468,549
3. Retired members	174,568,735	202,586,587
4. Spouses and children receiving benefits	32,302,333	32,659,412
5. Disabled members receiving benefits	<u>5,872,727</u>	<u>5,118,064</u>
6. Total present value of projected benefits	300,811,418	299,849,657
<b><u>B. Actuarial accrued liability (the cost allocated to all prior years)</u></b>		
1. Active members	\$77,977,280	\$52,969,312
2. Vested terminated members	446,621	468,549
3. Retired members	174,568,735	202,586,587
4. Spouses and children receiving benefits	32,302,333	32,659,412
5. Disabled members receiving benefits	<u>5,872,727</u>	<u>5,118,064</u>
6. Total actuarial accrued liability	291,167,696	293,801,923
<b><u>C. Amortization of unfunded actuarial accrued liability</u></b>		
1. Total actuarial accrued liability (A.7.)	\$291,167,696	\$293,801,923
2. Actuarial value of assets	318,042,643	315,900,478
3. Unfunded actuarial accrued liability (1. - 2.)	(26,874,947)	(22,098,554)
4. Funded status (2. / 3.)	109.2%	107.5%
5. Years left in amortization period	10	9
6. Amortization payment	0	0
<b><u>D. Normal cost (the cost allocated to the current year)</u></b>		
		<u>December 31, 2000</u>
1. Present value of future normal costs	\$9,643,722	\$6,047,734
2. Normal cost as a dollar amount		
a. Total normal cost	2,323,102	1,540,141
b. Expected member contributions	772,239	542,624
c. Employer normal cost (a. - b.)	1,550,864	997,517
3. Payroll for year ending on valuation date	9,652,982	6,782,803
4. Normal cost as a percent of active payroll		
a. Total normal cost	24.07%	22.71%
b. Expected member contributions	8.00%	8.00%
c. Employer normal cost (a. - b.)	16.07%	14.71%

December 31, 2000 Actuarial Valuation of the Special Fund

*Accounting Basis***Statement of Plan Net Assets as of December 31, 2000**

	<u>Market Value</u>	<u>Book Value</u>
<b><u>A. Investment assets</u></b>		
1. Alliance Capital	164,678,364	99,423,098
2. State Board of Investment	102,402,672	94,112,670
3. Alliance Capital Group Trust	40,793,685	34,941,918
4. JMB	180,839	226,359
5. Cash equivalents	118	118
6. Health benefits account	<u>0</u>	<u>0</u>
7. Total	308,055,678	228,704,163
<b><u>B. Checking account</u></b>	1,506,119	1,506,119
<b><u>C. Accrued/payable</u></b>		
1. Accrued contributions	529,073	529,073
1. Accounts receivable	212,000	212,000
2. Accrued income	696,612	696,612
	0	0
2. Accounts payable	(179,297)	(179,297)
4. Total	1,258,388	1,258,388
<b><u>E. Net assets held in trust for pension benefits</u></b>	310,820,185	231,468,670

December 31, 2000 Actuarial Valuation of the Special Fund

*Accounting Basis***Statement of Changes in Plan Net Assets**

	<u>December 31, 1999</u>	<u>December 31, 2000</u>
<b><u>A. Additions</u></b>		
1. Contributions		
a. Employer	\$1,177,332	1,938,365
b. Plan members	319,004	295,016
c. Total	1,496,336	2,233,381
2. Investment income	53,115,673	(8,458,601)
3. Other	0	212,000
3. Total additions	54,612,009	(6,013,220)
<b><u>B. Deductions</u></b>		
1. Benefits paid	21,229,325	24,366,214
2. Refund of contributions	0	0
3. Expenses	1,097,438	1,005,294
4. Total deductions	22,326,763	25,371,508
<b><u>C. Net increase</u></b>	<b>32,285,246</b>	<b>(31,384,728)</b>
<b><u>D. Net assets held in trust for pension benefits</u></b>		
1. Beginning of year	\$309,919,667	342,204,913
2. End of year	342,204,913	310,820,185

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2000 Actuarial Valuation of the Special Fund*

*Accounting Basis*

**Schedule of Funding Progress**  
*(Dollar amounts in thousands)*

<u>As of December 31:</u>	<u>Actuarial Value of Assets</u>	<u>Actuarial Accrued Liability (AAL)</u>	<u>Unfunded AAL (UAAL)</u>	<u>Funded Ratio</u>	<u>Covered Payroll</u>	<u>UAAL as a % of Covered Payroll</u>
1992	\$156,279	\$211,558	\$55,279	73.9%	\$13,614	406.0%
1993	177,529	223,357	45,828	79.5%	13,395	342.1%
1994	178,003	228,567	50,564	77.9%	13,073	386.8%
1995	194,611	234,386	39,775	83.0%	11,839	336.0%
1996	208,969	252,540	43,571	82.7%	12,298	354.3%
1997	245,306	274,030	28,724	89.5%	12,079	237.8%
1998	300,150	284,874	(15,276)	105.4%	11,357	-134.5%
1999	318,043	291,168	(26,875)	109.2%	10,039	-267.7%
2000	315,900	293,802	(22,098)	107.5%	7,054	-313.3%

*Accounting Basis*

**Schedule of Employer Contributions**

<u>Year Ended December 31:</u>	<u>Annual Employer Contributions</u>
1992	\$7,667,121
1993	6,871,984
1994	6,878,398
1995	7,405,980
1996	6,328,580
1997	4,844,823
1998	3,541,518
1999	1,177,332
2000	1,938,365

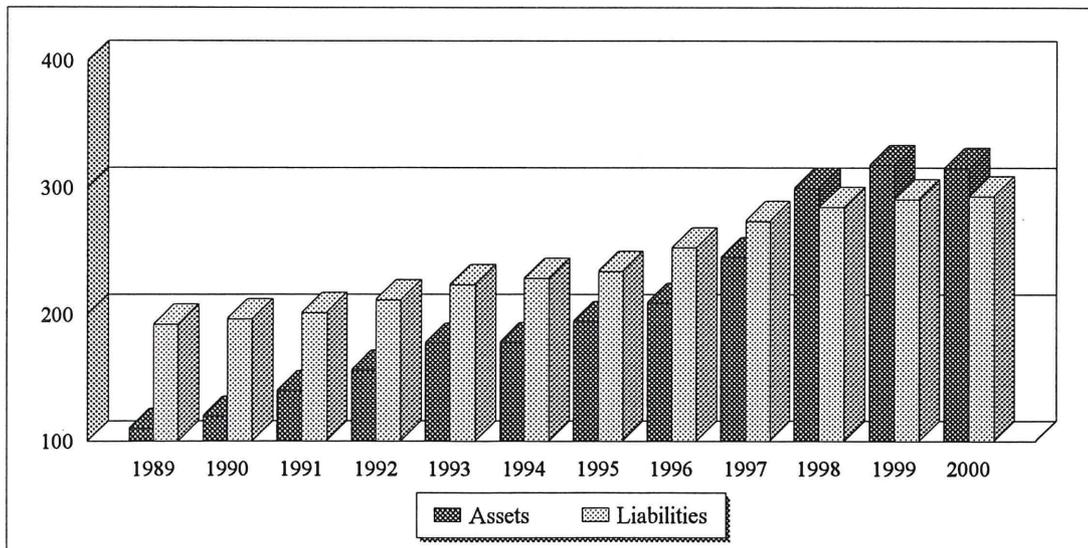
*Historical Tables*

**Historical Funding Ratio Schedule**  
 (Dollar amounts in thousands)

<u>As of December 31:</u>	<u>Actuarial Accrued Liability</u>	<u>Actuarial Value of Assets</u>	<u>Percent Funded</u>
1988*#	\$188,014	\$93,601	49.8%
1989	192,264	110,092	57.3%
1990#	196,491	119,652	60.9%
1991	201,461	139,891	69.4%
1992#	211,558	156,279	73.9%
1993#	223,357	177,529	79.5%
1994	228,567	178,003	77.9%
1995	234,386	194,611	83.0%
1996	252,540	208,969	82.7%
1997	274,030	245,306	89.5%
1998	284,874	300,150	105.4%
1999	291,168	318,043	109.2%
2000	293,802	315,900	107.5%

#After change in actuarial assumptions

\*After change in benefit provisions



*Historical Tables*

History of Employer Contributions

<u>Valuation December 31:</u>	<u>Normal Cost as a Percent of Payroll</u>	<u>Amortization of Unfunded Actuarial Liability</u>
1988	23.37%	\$7,793,970
1989	23.33%	6,957,374
1990	23.95%	6,687,685
1991	23.85%	5,538,556
1992	23.90%	5,123,898
1993	23.98%	4,403,949
1994	23.99%	5,056,000
1995	23.94%	4,155,683
1996	23.91%	4,779,811
1997	23.88%	3,327,287
1998	23.66%	0
1999	24.07%	0
2000	22.71%	0

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2000 Actuarial Valuation of the Special Fund*

*Historical Tables*

**Comparative Schedule of Active Members**

<u>Valuation</u> <u>December 31:</u>	<u>Number of</u> <u>Active</u> <u>Members</u>	<u>Projected</u> <u>Payroll</u>	<u>Averages</u>		
			<u>Age</u>	<u>Service</u>	<u>Pay</u>
1988	364	\$14,045,668	46.7	19.4	\$38,587
1989	351	14,067,027	47.4	20.0	40,077
1990	337	13,854,744	48.0	20.8	41,112
1991	321	13,664,649	48.6	21.5	42,569
1992	309	13,614,231	49.2	22.2	44,059
1993	285	13,395,285	49.5	22.6	47,001
1994	267	13,073,121	50.2	23.2	48,963
1995	236	11,838,704	50.3	23.5	50,164*
1996	220	12,297,560	50.8	24.1	55,898
1997	198	12,078,990	51.4	24.7	61,005
1998	179	11,356,611	51.2	24.5	63,445
1999**	153	10,039,101	51.5	25.2	65,615
2000	104	6,782,803	52.0	25.8	67,828

\* Labor agreement settled in late 1996 with the 1996 single salary of \$53,175

\*\*Payroll used to calculate normal cost for calendar year 1999 is \$9,652,982.

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2000 Actuarial Valuation of the Special Fund*

*Historical Tables*

**Comparative Schedule of Inactive Members**

As of <u>December 31:</u>	Number of Retirees and Beneficiaries			Annual <u>Benefits</u>	Present Value <u>of Benefits</u>
	<u>Added to Rolls</u>	<u>Removed from Rolls</u>	<u>On Valuation Date</u>		
1987	25	29	555	\$8,337,959	\$110,331,396
1988	32	25	562	8,894,721	111,904,800
1989	18	25	555	9,118,089	113,227,692
1990	24	22	557	9,364,461	115,174,188
1991	19	22	554	9,717,991	117,998,856
1992	34	24	564	10,418,854	125,708,460
1993	32	22	574	11,350,689	135,712,458
1994	32	31	575	12,845,678	143,862,253
1995	39	18	596	13,417,874	153,032,140
1996	27	27	596	14,091,016	166,750,488
1997	41	34	603	15,441,956	184,855,572
1998	20	12	611	16,759,837	200,745,351
1999	38	27	622	18,001,012	212,743,795
2000	62	34	653	19,610,997	240,364,062



**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2000 Actuarial Valuation of the Special Fund*

**Actuarial Methods and Assumptions (continued)**

8. Contract salary scale - resulting unit values

<u>Effective Date</u>	<u>Units</u>	<u>Annualized Units</u>	<u>Corresponding Pay*</u>	<u>Increase Rate**</u>
01/01/2001	70.4249	70.6542	\$67,828.03	
10/15/2001	72.4039			
01/01/2002	73.0107	73.0107	70,090.27	<b>3.3353%</b>
01/01/2003	75.9311	75.9311	72,893.86	<b>4.0000%</b>

\* pay is units times 80 times 12.

\*\* the salary scale used in the valuation is the statutory rate of 4% after the terms of the current collective bargaining agreement expire in 2002.

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2000 Actuarial Valuation of the Special Fund*

**Summary of Plan Provisions**

1. Normal Retirement Benefit      Annual benefit of  $1.6/80$  of base pay for each year of service up to 25 years. An additional 2 units are awarded for the 20th year of service, for a maximum of 42 units. "Base pay" for this purpose means the maximum monthly salary of a first grade firefighter. Members must be at least age 50 with 5 years of service to receive this benefit.
2. Deferred Vested Benefit      Annual benefit equal to the accrued normal retirement benefit, deferred to age 50 for members with at least 5 years of service.
3. Disability Benefit      Annual benefit of  $41/80$  of base pay for members no longer able to perform the duties of a firefighter due to disability.
4. Surviving Spouse's Benefit      Annual benefit of  $22/80$  of base pay for the surviving spouse of an active or retired member. Members on retirement may choose an alternate form of payment that provides 50%, 75% or 100% of their benefit to their spouse after their death.
5. Surviving Children's Benefit      Annual benefit of  $8/80$  of base pay for each surviving child of an active or retired member. Benefits continue to age 18 or if the child is a full-time student, to age 22. The total benefit for surviving children and spouse combined is limited to  $41/80$  of base pay.
6. Member Contributions      Members are required to contribute 8% of base pay. After 25 years of service, member contributions are paid to a separate health insurance account. Member contributions are non-refundable.