Minneapolis Firefighters' Relief Association

SPECIAL FUND

December 31, 2001
Actuarial Valuation

May, 2002

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Retirement planning for corporations

May 31, 2002

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Mr. Brian Rice
Rice, Michels & Johnson, LLP
206 East Bridge-Riverplace
10 Second Street NE
Minneapolis, MN 55413

Re: **Revised December 31, 2001 Actuarial Valuation Report**

Dear Sir or Madam:

Enclosed for your files please find a revised copy of the December 31, 2001 Actuarial Valuation Report for the Minneapolis Firefighter's Relief Association. Please discard any copies you received previously. The book value of assets was changed slightly, which in turn increased the actuarial value of assets and raised the funded ratio from 103.7% to 103.9%. The City contribution and the post-retirement benefit were unaffected by the change.

Sincerely,

Paul D. Krueger, JD, EA
Consulting Actuary

cc: Mark Meyer (with enclosure)

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MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

December 31, 2001 Actuarial Valuation of the Special Fund

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MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

December 31, 2001 Actuarial Valuation of the Special Fund

Introduction

Purpose

This report presents the results of the December 31, 2001 valuation for the Minneapolis Firefighters' Relief Association. Its primary purposes are:

- to determine the funded status as of December 31, 2001,
- to determine the normal cost for 2001, and
- to present information required to be disclosed under Governmental Accounting Standards Board Statement No. 25 (GASB 25) as of December 31, 2001.

Sources of Data

The Relief Association supplied December 31, 2001 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, 2000. The actuarial assumptions and methods used to prepare this report are identical to those used in the 2000 report (see page 17). New legislation was adopted since the last valuation report which offers single members retiring with 25 years of service the option to receive 42.3 units. If this option is selected, the survivor benefit payable to a future spouse would be reduced. Current retired members who meet certain restrictions may choose to change their benefit retroactively. This change has no material impact on the results of this valuation.

Summary of Valuation Results

As of December 31, 2001, the funded status of the plan (actuarial accrued liabilities divided by the actuarial value of assets) is 103.9%, down from 107.5% on December 31, 2000. The same ratio computed on the basis of *market* value declined from 105.8% to 94.3%. The method for computing the actuarial value of assets helps to smooth out some of the fluctuations in the value of assets. During 2001, the market value of assets experienced a loss of 3.3% but the actuarial value of assets experienced a positive return of 4.4%. Nonetheless, since the assumed rate of return on assets is 6%, there was an actuarial loss on assets of 1.6% or about $4.9 million (see page 8).

The current year results are a "snapshot" of the current actuarial status of the plan and are not necessarily indicative of long-term expectations. The United States stock market declined for two consecutive years in 2000 and 2001 for the first time since 1973 and 1974. This market condition is affecting every pension plan in this country to one degree or another.

Introduction (continued)

In addition to the actuarial loss on assets there was also an actuarial loss on liabilities of about $5.7 million (see page 8). In other words, the actual liabilities on December 31, 2001, were $5.7 million more than expected. However, even with this loss, the actuarial accrued liabilities *declined* slightly from $293.8 million to $293.4. This decline is significant because it is the first decline in actuarial accrued liability in the history of the fund and because it verifies earlier projections that the liabilities for this fund are at or near the peak.

The method for computing the actuarial value of assets was criticized last year for producing an actuarial value of assets that was higher than the market value had ever been. That is not the case this year, but next year another shortcoming will become evident. Since the method uses a three-year average of the unrealized gain, and since 1999 (which had an unrealized gain of almost $110 million) will drop from the calculation, the actuarial value of assets will decline by over $20 million next year, even if the market value of assets earn the assume 6% rate of return.

Based on the current valuation, it is expected that the funded ratio next year will be less than 102%. This means the post-retirement benefit will be cut by 2/3rds, unless there is significant gain on investments. The fund must earn a positive rate of return in excess of 16% during 2002 in order to preserve the post-retirement benefit at the current level. Even this rate of return on assets will not be sufficient if the fund experiences an actuarial loss on liabilities during 2002.

We recommend that the funded status be closely monitored starting with the September 30, 2002, quarterly results so that appropriate communications can be initiated with members and the Board.

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	Paul D. Krueger, JD, EA
Consulting Actuary	Consulting Actuary

Summary of Results

A. Plan participant data	December 31, 2000	December 31, 2001
1. Number of participants		
a. Active employees	104	84
b. Terminated vested employees	1	2
c. Retirees	445	441
d. Disability	8	6
e. Survivng spouses	197	196
f. Surviving children	3	2
g. Total	758	731

B. Normal costs	2000 Plan Year	2001 Plan Year
1. Total normal cost		
a. Amount	$1,540,141	$1,251,925
b. Percentage of active payroll	22.71%	22.11%
2. Employer normal cost		
a. Amount	997,517	799,034
b. Percentage of active payroll	14.71%	14.11%

C. Amortization payments		
1. Unfunded actuarial accrued liability	($22,098,555)	($11,490,571)
2. Amortization payment	0	0

D. Value of plan assets	December 31, 2000	December 31, 2001
1. Market value	310,820,185	276,816,114
2. Actuarial value (for calculating contributions)	315,900,478	304,886,680

E. Benefit liabilities		
1. Present value of future benefits	299,849,657	298,194,767
2. Actuarial accrued liability	293,801,923	293,396,109

F. Funded status		
1. Actuarial value of assets as a % of liabilities	107.5%	103.9%
2. Market value of assets as a % of liabilities	105.8%	94.3%

Funding Basis

Actuarial Value of Assets

A. Average unrealized gain

Year Ending December 31:	Market Value	Book Value	Unrealized Gain (Market - Book)
1999	$342,204,913	$232,882,437	$109,322,476
2000	310,820,185	231,468,670	79,351,515
2001	276,816,114	230,813,330	46,002,784
		Average:	78,225,592

B. Book value of assets December 31, 2001	230,813,330

C. Excess investment income

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

Fiscal Year	Salary Increase	Asset Return
1997	6.390%	23.842%
1998	7.420%	20.735%
1999	6.833%	18.278%
2000	3.037%	-2.698%
2001	3.335%	-3.302%
Arithmetic average:	5.403%	11.371%

2. Determination of excess investment income

a. Excess of asset return over salary increase	5.97%
b. Excess minus 2%	3.97%
c. Lesser of 1.5% or 2.b. times market value of assets	4,152,242

D. Actuarial value of assets as of December 31, 2001 (A. + B. - C.2.c.)	$304,886,680

Summary of Member Data

	December 31, 2000	December 31, 2001
A. Active members		
1. Number		
a. Fully vested	104	84
b. Nonvested	0	0
c. Total	104	84
2. Average age	52.0	52.3
3. Average years of service	25.8	26.3
4. Total annual payroll for the year ending on valuation date	$7,054,115	$5,887,582
5. Average annual salary	$67,828	$70,090
B. Vested terminated members		
1. Number	1	2
2. Total annual deferred benefits	$23,288	$56,587
3. Average annual benefit	$23,288	$28,294
4. Average age	46.0	47.0
C. Retirees		
1. Number	445	441
2. Total annual benefits	$15,512,767	$15,813,925
3. Average annual benefit	$34,860	$35,859
4. Average age	68.3	68.1
D. Disabilitants		
1. Number	8	6
2. Total annual benefits	$283,272	$220,022
3. Average annual benefit	$35,409	$36,670
4. Average age	51.0	51.0
D. Surviving spouses		
1. Number	197	196
2. Total annual benefits	$3,794,610	$3,871,743
3. Average annual benefit	$19,262	$19,754
4. Average age	77.9	77.5
E. Dependent children		
1. Number	3	2
2. Total annual benefits	$20,348	$14,018
3. Average annual benefit	$6,783	$7,009
4. Average age	18.8	18.6
F. Total number of members	758	731

Summary of Changes in Membership

	Actives	Vested Terminees	Retirees	Disabled	Spouses	Children	Total
A. Number of members on December 31, 2000	104	1	445	8	197	3	758
B. Changes in membership							
1. Retirements	(18)		21	(3)			0
2. Vested terminations	(1)	1					0
3. Member deaths			(25)		16		(9)
4. Beneficiary deaths					(17)		(17)
5. Expiration of surviving child benefits						(1)	(1)
6. Separations due to disability	(1)			1			0
7. Corrections							0
8. Total changes	(20)	1	(4)	(2)	(1)	(1)	(27)
C. Number of members on December 31, 2001	84	2	441	6	196	2	731

Funding Basis

Actuarial Values Used to Determine Contribution

	December 31, 2000	December 31, 2001
A. Actuarial present value of projected benefits (the value of all future benefits to be paid to the current group of members)		
1. Active members	$59,017,045	$49,593,917
2. Vested terminated members	468,549	1,177,794
3. Retired members	202,586,587	209,547,782
4. Spouses and children receiving benefits	32,659,412	33,876,096
5. Disabled members receiving benefits	5,118,064	3,999,178
6. Total present value of projected benefits	299,849,657	298,194,767
B. Actuarial accrued liability (the cost allocated to all prior years)		
1. Active members	$52,969,312	$44,795,259
2. Vested terminated members	468,549	1,177,794
3. Retired members	202,586,587	209,547,782
4. Spouses and children receiving benefits	32,659,412	33,876,096
5. Disabled members receiving benefits	5,118,064	3,999,178
6. Total actuarial accrued liability	293,801,923	293,396,109
C. Amortization of unfunded actuarial accrued liability		
1. Total actuarial accrued liability (A.7.)	$293,801,923	$293,396,109
2. Actuarial value of assets	315,900,478	304,886,680
3. Unfunded actuarial accrued liability (1. - 2.)	(22,098,555)	(11,490,571)
4. Funded status (2. / 3.)	107.5%	103.9%
5. Years left in amortization period	9	8
6. Amortization payment	0	0

D. Normal cost (the cost allocated to the current year)	December 31, 2000	December 31, 2001
1. Present value of future normal costs	$6,047,734	$4,798,658
2. Normal cost as a dollar amount		
a. Total normal cost	1,540,141	1,251,925
b. Expected member contributions	542,624	452,891
c. Employer normal cost (a. - b.)	997,517	799,034
3. Payroll for year ending on valuation date	6,782,803	5,661,137
4. Normal cost as a percent of active payroll		
a. Total normal cost	22.71%	22.11%
b. Expected member contributions	8.00%	8.00%
c. Employer normal cost (a. - b.)	14.71%	14.11%

Funding Basis

Changes in the Unfunded Actuarial Accrued Liability

A. Liability gain or loss for the year ending on December 30, 2001	
1. Expected actuarial accrued liability (AAL)	
a. AAL as of December 31, 2000	$293,801,923
b. Normal cost as of December 31, 2000 (excluding expenses)	1,251,925
c. Interest to December 30, 2001 on the AAL and normal cost	17,703,231
d. Benefit payments for the year	(24,318,080)
e. Interest on benefit payments (1/2 year)	(729,542)
f. Expected AAL on December 30, 2001 (sum of a. through e.)	287,709,457
2. Actual AAL on December 31, 2001	
a. Before any assumption or plan changes	293,396,109
b. After assumption changes, but before any plan changes	293,396,109
3. Liability (gain) or loss	
a. Due to plan experience different from that expected (2a. - 1f.)	5,686,652
b. Due to changes in actuarial assumptions (2b. - 2a.)	0
c. Total (a. + b.)	5,686,652
B. Asset gain or loss for the year ending on December 30, 2001	
1. Expected actuarial value of assets	
a. Actuarial value of assets on December 31, 2000	315,900,478
b. Benefit payments and expenses for the year	(25,746,061)
c. Contributions for the year	1,365,283
d. Expected return on assets	18,222,605
e. Expected actuarial value of assets on December 30, 2001 (sum of a. through d.)	309,742,305
2. Actual actuarial value of assets on December 31, 2001	304,886,680
3. Asset (gain) or loss (1e. - 2.)	4,855,625
C. Changes in the unfunded AAL	
1. Expected unfunded AAL on December 31, 2001	(22,032,848)
2. Changes	
a. Actuarial (gain) or loss other than change in unit value	10,542,277
b. Change in unit value different from expected	0
c. Changes in actuarial methods and assumptions	0
d. Total change	10,542,277
3. Unfunded AAL on December 31, 2001	(11,490,571)

Accounting Basis

Statement of Plan Net Assets as of December 31, 2001

	Market Value	Book Value
A. Investment assets		
1. Alliance Capital	112,042,272	73,074,801
2. American Express Asset MG	7,717,328	7,778,602
3. Cash equivalents	6	6
4. JMB	162,783	162,783
5. Kayne Anderson Rudnick	18,947,301	19,061,774
6. Marque Millennium Capital	15,773,193	16,382,596
7. Regent Inv. Service	10,059,516	10,000,000
8. State Board of Investment	53,171,625	46,682,564
9. US Bancorp Piper Jaffray	24,847,744	25,083,405
10. Voyageur asset Management	10,054,664	9,970,187
11. White Pine Capital	21,201,986	19,778,916
12. Total	273,978,418	227,975,634
B. Checking account	1,744,668	1,744,668
C. Accrued/payable		
1. Accrued contributions	466,890	466,890
2. Accounts receivable	0	0
3. Accrued income	751,227	751,227
4. Accounts payable	(125,089)	(125,089)
5. Total	1,093,028	1,093,028
D. Net assets held in trust for pension benefits	276,816,114	230,813,330

Accounting Basis

Statement of Changes in Plan Net Assets

	December 31, 2000	December 31, 2001
A. Additions		
1. Contributions		
a. Employer	$1,938,365	1,232,252
b. Plan members	295,016	133,031
c. Total	2,233,381	1,365,283
2. Investment income	(8,458,601)	(9,623,293)
3. Other	212,000	0
3. Total additions	(6,013,220)	(8,258,010)
B. Deductions		
1. Benefits paid	24,366,214	24,318,080
2. Refund of contributions	0	0
3. Expenses	1,005,294	1,427,981
4. Total deductions	25,371,508	25,746,061
C. Net increase	(31,384,728)	(34,004,071)
D. Net assets held in trust for pension benefits		
1. Beginning of year	$342,204,913	310,820,185
2. End of year	310,820,185	276,816,114

Accounting Basis

Schedule of Funding Progress
(Dollar amounts in thousands)

As of December 31:	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
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%
2001	304,887	293,396	(11,491)	103.9%	5,888	-195.2%

Accounting Basis

Schedule of Employer Contributions

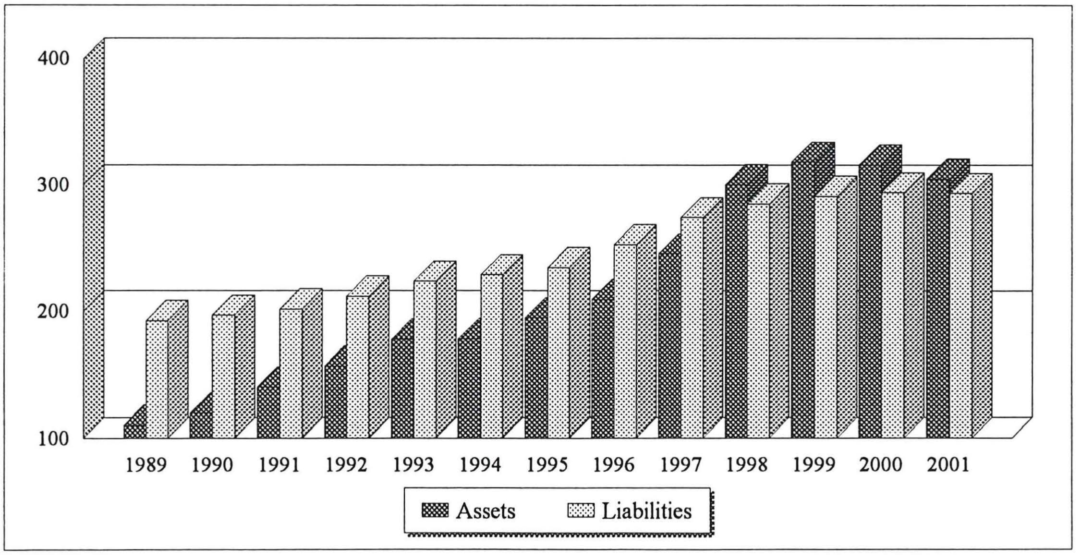
Year Ended December 31:	Annual Employer Contributions
1992	$7,667,121
1993	6,871,984
1994	6,878,398
1995	7,405,980
1996	6,328,580
1997	4,844,823
1998	3,541,518
1999	1,177,332
2000	1,938,365
2001	1,232,252

Historical Tables

Historical Funding Ratio Schedule
(Dollar amounts in thousands)

As of December 31:	Actuarial Accrued Liability	Actuarial Value of Assets	Percent Funded
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%
2001	293,396	304,887	103.9%

#After change in actuarial assumptions
**After change in benefit provisions*



Historical Tables

History of Employer Contributions

Valuation December 31:	Normal Cost as a Percent of Payroll	Amortization of Unfunded Actuarial Liability
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
2001	22.11%	0

Historical Tables

Comparative Schedule of Active Members

Valuation December 31:	Number of Active Members	Projected Payroll	Averages Age	Service	Pay
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
2001	84	5,661,137	52.3	26.3	70,090

* 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.

Historical Tables

Comparative Schedule of Inactive Members

As of December 31:	Number of Retirees and Beneficiaries: Added to Rolls	Removed from Rolls	On Valuation Date	Annual Benefits	Present Value of Benefits
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
2001	62	34	645	19,919,708	247,423,056

Actuarial Methods and Assumptions

1. Mortality — The UP-1984 Mortality Table set forward 2 years for males and set back 3 years for females.

2. Withdrawal — The rate of withdrawal is 6% at age 20 decreasing uniformly to zero at age 50 with no withdrawal after that age.

3. Disability — Rates varying by age. Sample disability rates are as follows:

Age	Rate
25	0.08%
30	0.08
35	0.08
40	0.20
45	0.26
50	0.49
55	0.89

4. Retirement Age — Members are assumed to retire at age 57, or attained age if older.

5. Interest Rate — 6% compounded annually.

6. Unit value/Salary Scale — The unit value of $73.0107 as of January 1, 2002 was used in measuring active and inactive liabilities. The unit value is assumed to increase 4% annually. Inactive benefits are assumed to increase at the same rate.

7. Actuarial Cost Method — The Entry Age Normal Cost Method. Under this method, the normal cost for an individual member is the level annual dollar amount required, beginning on the date of joining the association, to accumulate the funds needed to pay the member's accrued benefits by their assumed retirement age. The actuarial accrued liability is the accumulated value of these annual normal costs on a given date. The normal cost and accrued liability for the plan is the total of these values for all members.

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. Members may choose among alternative survivor payment forms (see 4. below) which modify the number of units payable to the member and their spouse. A member who is single at the time of retirement and who has at least 25 years of service may choose to receive 42.3 units on the condition of a reduced survivor payment to any future spouse. "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. Upon retirement, members may choose an alternate form of payment that provides 50%, 75% or 100% of their benefit to their spouse after their death. The 22 units are adjusted if one of these alternate forms is selected.
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.