December 31, 2002 Actuarial Valuation

June, 2003



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December 31, 2002 Actuarial Valuation

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December 31, 2002 Actuarial Valuation

#### Introduction

#### **Purpose**

This report presents the results of the December 31, 2002 valuation and benefit study for the Fairmont Policemen's Relief Association. Its primary purposes are:

- to determine the funded status as of December 31, 2002,
- to determine the amortization payment for 2002, and
- to present information required to be disclosed under General Accounting Standards Board Statement No. 25 (GASB 25) as of December 31, 2002.

#### Sources of Data

The Relief Association supplied December 31, 2002 data for all active and retired members. Roessler, Nuss & Co., P.A. provided audited asset data for 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, 2001. The actuarial assumptions and methods used to prepare this report are the same as those used in the 2001 report. The annual benefit value per unit increased from \$643.65 on December 31, 2001 to \$687.56 on December 31, 2002, a 6.82% increase, 3.32% more than the assumed increase of 3.5%.

#### Summary of Valuation Results

The funded status of the plan decreased from 91.9% on December 31, 2001 to 82.1% on December 31, 2002. The decrease in funded status was caused by actuarial losses both in assets and liabilities over the past year: the investment return was less than assumed (-2.70% versus 5%), and the benefit increase was greater than assumed (6.82% versus 3.5%). These results have caused the amount of the amortization payment to increase from \$90,321 last year, to \$230,291 this year. Because of the fixed amortization date of December 31, 2010, the unfunded actuarial accrued liability of \$1.4 million is amortized over only 7 years. This shortening of the amortization period magnifies the increase in the amortization payment. Unless the investment return over 2003 is at least 5%, the payment will increase again next year.

December 31, 2002 Actuarial Valuation

# **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 local police department relief associations in general and the Fairmont Policemen's Relief Association in particular.

Respectfully submitted,

Mark D. Meyer, FSA, MAAA

Consulting Actuary

Paul D. Krueger, JD, EA Consulting Actuary

# **Summary of Results**

A. Membership data*  1. Liability Duration	December 31, 2001	December 31, 2002
a. Average annuity factor	16.4	15.8
b. Average life expectancy	15.7	15.1
2. Number of members	10.7	13.1
a. Retirees	11	11
b. Surviving spouses	<u>3</u>	<u>3</u>
c. Total	14	14
B. Amortization payments		
1. Unfunded actuarial accrued liability	612,953	1,399,178
2. Amortization payment	90,321	230,291
C. Value of plan assets	December 31, 2001	December 31, 2002
1. Market value	6,757,468	December 31, 2002 6,178,561
<ol> <li>Market value</li> <li>Actuarial value (for calculating contributions)</li> </ol>	6,757,468 6,960,424	6,178,561 6,431,374
1. Market value	6,757,468	6,178,561
<ol> <li>Market value</li> <li>Actuarial value (for calculating contributions)</li> </ol>	6,757,468 6,960,424	6,178,561 6,431,374
<ol> <li>Market value</li> <li>Actuarial value (for calculating contributions)</li> <li>Investment return on actuarial value of assets</li> </ol>	6,757,468 6,960,424	6,178,561 6,431,374
<ol> <li>Market value</li> <li>Actuarial value (for calculating contributions)</li> <li>Investment return on actuarial value of assets</li> </ol> D. Benefit liabilities	6,757,468 6,960,424 1.54%	6,178,561 6,431,374 -2.69%
<ol> <li>Market value</li> <li>Actuarial value (for calculating contributions)</li> <li>Investment return on actuarial value of assets</li> </ol> D. Benefit liabilities <ol> <li>Present value of future benefits</li> </ol>	6,757,468 6,960,424 1.54% 7,573,377	6,178,561 6,431,374 -2.69% 7,830,552
<ol> <li>Market value</li> <li>Actuarial value (for calculating contributions)</li> <li>Investment return on actuarial value of assets</li> </ol> D. Benefit liabilities <ol> <li>Present value of future benefits</li> <li>Actuarial accrued liability</li> </ol>	6,757,468 6,960,424 1.54% 7,573,377	6,178,561 6,431,374 -2.69% 7,830,552

<sup>\*</sup>This is a closed group, all membesr have retired, so there are only retirees and beneficiaries.

# Funding Basis

#### Actuarial Value of Assets

# A. Unrealized gain

Year Ending December 31:	Market Value	Book Value	Unrealized Gain (Market - Book)
1999	7,081,591	7,128,750	(47,159)
2000	7,106,264	7,201,645	(95,381)
2001	6,757,468	7,061,902	(304,434)
2002	6,178,561	6,557,781	(379,220)

December 31, 2001 December 31, 2002

# B. Actuarial value of assets

1. Book value	7,061,902	6,557,781
2. One-third of unrealized gain	(101,478)	(126,407)
3. Actuarial value (1. + 2.)	\$6,960,424	\$6,431,374

# **Summary of Member Data**

	December 31, 2001	December 31, 2002
A. Retirees  1. Age & service 2. Total annual benefits 3. Average annual benefit 4. Average age	11 \$395,201 \$35,927 62.6	\$422,162 \$38,378 63.6
B. Beneficiaries	2	2
1. Surviving spouses	3 \$67,583	3 \$72,194
2. Total annual benefits	\$22,528	\$72,194 \$24,065
<ul><li>3. Average annual benefit</li><li>4. Average age</li></ul>	72.3	73.3
C. Total number of members (A.1. + B.1.)	14	14

This is a closed group, all membesr have retired, so there are only retirees and beneficiaries.

# **Summary of Changes in Membership**

	Retirees	Beneficiaries	<u>Total</u>
A. Number of members on December 31, 2001	11	3	14
B. Changes in membership			
1. Deaths			0
2. Corrections			0
3. Total changes	0	0	0
C. Number of members on December 31, 2002	11	3	14

#### Funding Basis

#### **Actuarial Values Used to Determine Contribution**

December 31, 2001 December 31, 2002

A. Actuarial present value of projected benefits (the value of all future benefits are point to the current group of members)	efits .	
to be paid to the current group of members)  1. Active members	\$0	<b>C</b> O
2. Vested terminated members	20	\$0
3. Retired members	9	7.05(.077
4. Spouses and children receiving benefits	6,817,754	7,056,977
5. Disabled members receiving benefits	755,623	773,575
9	7.572.277	7.020.652
6. Total present value of projected benefits	7,573,377	7,830,552
B. Actuarial accrued liability (the cost allocated to all prior years)		
1. Active members	\$0	\$0
2. Vested terminated members	0	0
3. Retired members	6,817,754	7,056,977
4. Spouses and children receiving benefits	755,623	773,575
5. Disabled members receiving benefits	0	0
6. Total actuarial accrued liability	7,573,377	7,830,552
C. Amortization of unfunded actuarial accrued liability		
1. Total actuarial accrued liability (A.7.)	\$7,573,377	\$7,830,552
2. Actuarial value of assets	6,960,424	6,431,374
3. Unfunded actuarial accrued liability (1 2.)	612,953	1,399,178
4. Funded status (2. / 3.)	91.9%	82.1%
5. Years left in amortization period	8	7
6. Amortization payment	90,321	230,291
E. Key economic assumptions		
1. Funding interest rate	5.00%	5.00%
2. Annual benefit increase rate	3.50%	3.50%

This is a closed group, all membesr have retired, so thereis no normal cost.

# Changes in the Unfunded Actuarial Accrued Liability

A. Liability gain or loss for the year ending on December 31, 2002	
1. Expected actuarial accrued liability (AAL)	
a. AAL as of December 31, 2001	\$7,573,377
b. Normal cost as of December 31, 2001	0
c. Interest to December 31, 2002 on the AAL and normal cost	378,669
d. Expected benefit payments for the year (excluding post-retirement benefits)	(459,539)
e. Interest on benefit payments (1/2 year)	(11,488)
f. Expected AAL on December 31, 2002 (sum of a. through e.)	7,481,019
2. Actual AAL on December 31, 2002	
a. Before any assumption or plan changes	7,587,032
b. After assumption changes, but before any unit value changes	7,587,032
c. After assumption and unit value changes	7,830,552
3. Liability (gain) or loss	
a. Due to plan experience different from that expected (2a 1f.)	106,013
b. Due to changes in actuarial assumptions (2b 2a.)	0
c. Due to changes in unit value (2c 2b.)	243,520
d. Total $(a. + b. + c.)$	106,013
B. Asset gain or loss for the year ending on December 31, 2002	
1. Expected actuarial value of assets	
a. Actuarial value of assets on December 31, 2001	6,960,424
b. Actual benefit payments and expenses for the year	(486,226)
c. Contributions for the year	90,321
d. Expected return on assets	338,124
e. Expected actuarial value of assets on December 31, 2002 (sum of a. through d.)	6,902,643
2. Actual actuarial value of assets on December 31, 2002	6,431,374
3. Asset (gain) or loss (1e 2.)	471,268
C. Changes in the unfunded AAL	
1. Expected unfunded AAL on December 31, 2002	578,376
2. Changes	
a. Actuarial (gain) or loss other than change in unit value	577,281
b. Change in unit value different from expected	243,520
c. Changes in actuarial methods and assumptions	0
d. Total change	
3. Unfunded AAL on December 31, 2002	1,399,178
HIT.	* * *

# Accounting Basis

# Statement of Plan Net Assets - Market Value

	December 31, 2001	December 31, 2002
A. Assets		
1. Cash	\$24,085	\$0
2. Short-term investments	0	0
3. Total	24,085	0
B. Receivables		
1. Accrued interest	7,566	7,554
2. Distributions	989	4,906
3. Accrued contributions	0	0
4. Total	8,555	12,460
C. Accounts payable	0	0
D. Investments, at fair value		
1. Daily passport trust	81,306	88,072
2. Mutual funds	2,943,993	2,499,830
3. Asset and mortgage backed securities	2,575,737	2,357,640
4. Unit trusts	536,839	573,258
5. Corporate bonds	154,939	58,211
6. Government securities	372,051	509,596
7. GNMA mortgage certificate	10,530	40,866
8. Limited partnerships	49,433	38,628
9. Total	6,724,828	6,166,101
E. Net assets held in trust for pension benefits	6,757,468	6,178,561

# Accounting Basis

# Statement of Changes in Plan Net Assets

	December 31, 2001	December 31, 2002
A. Additions		
1. Contributions		
a. Employer	\$10,095	\$90,321
b. Plan members	0	0
c. Total	10,095	90,321
2. Investment income		
a. Interest and dividends	371,230	286,339
b. Partnership income	4,525	3,804
c. Realized gain (loss)	(60,522)	(397,070)
d. Change in unrealized appreciation (depreciation)	(207,900)	(75,939)
e. Total	107,333	(182,866)
3. Total additions	117,428	(92,545)
B. Deductions		
1. Service pensions	371,077	386,727
2. Survivors pensions	63,632	68,131
3. Distributions to members	11,918	11,918
4. Professional services	9,875	9,365
5. Salaries	1,841	1,724
6. Other expenses	7,881	8,497
7. Total deductions	466,224	486,362
C. Net increase	(348,796)	(578,907)
D. Adjustments	0	0
E. Net assets held in special fund		
1. Beginning of year	\$7,106,264	\$6,757,468
2. End of year	\$6,757,468	\$6,178,561
F. Investment return		
1. Market value of assets	1.56%	-2.79%
2. Actuarial value of assets	1.54%	-2.69%

# Accounting Basis

# **Schedule of Funding Progress**

(Dollar amounts in thousands)

	Actuarial	Actuarial	Unfunded			UAAL as a %
As of	Value of	Accrued	AAL	Funded	Covered	of Covered
December 31:	Assets	Liability (AAL)	(UAAL)	Ratio	<u>Payroll</u>	<u>Payroll</u>
1000	04.170	Φ5.052	¢1.772	70.00/	<b>#210</b>	012.20/
1992	\$4,179	\$5,952	\$1,773	70.2%	\$218	813.3%
1993	4,570	5,781	1,211	79.1%	223	543.0%
1994	4,828	5,987	1,159	80.6%	243	477.0%
1995	5,274	6,066	792	86.9%	200	396.0%
1996	5,808	6,179	371	94.0%	210	176.7%
1997	6,516	6,164	(352)	105.7%	163	-216.0%
1998	6,355	6,835	480	93.0%	118	407.0%
1999	7,113	7,174	61	99.1%	=	N <del></del>
2000	7,170	7,245	75	99.0%	-	1-
2001	6,960	7,573	613	91.9%	-	-
2002	6,431	7,831	1,399	82.1%	=	1000

# Accounting Basis

# **Schedule of Employer Contributions**

Year Ended	Annual Employer
December 31:	<b>Contributions</b>
1992	\$286,563
1993	243,556
1994	243,726
1995	208,626
1996	163,177
1997	257,828
1998	5,829
1999	0
2000	7,529
2001	10,095
2002	90,321

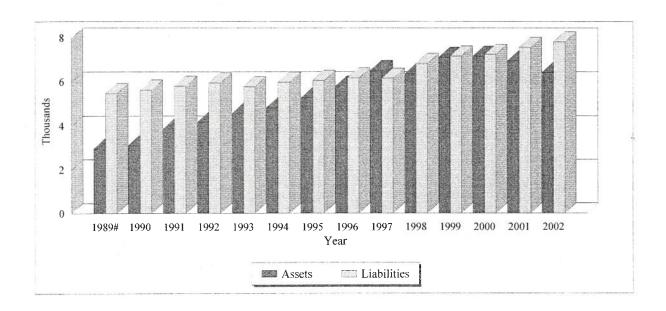
#### Historical Tables

#### **Historical Funding Ratio Schedule**

(Dollar amounts in thousands)

	Actuarial	Actuarial	
As of	Accrued	Value of	Percent
December 31:	<u>Liability</u>	Assets	Funded
1989#	\$5,474	\$2,981	54.5%
1990	5,627	3,137	55.7%
1991	5,803	3,874	66.8%
1992	5,952	4,179	70.2%
1993	5,781	4,570	79.1%
1994	5,987	4,828	80.6%
1995	6,066	5,274	86.9%
1996	6,179	5,808	94.0%
1997	6,164	6,516	105.7%
1998	6,835	6,355	93.0%
1999	7,174	7,113	99.1%
2000	7,245	7,170	99.0%
2001	7,573	6,960	91.9%
2002	7,831	6,431	82.1%

#After court ruling on definition of prevailing pay.



#### Historical Tables

# **History of Employer Contributions**

	Amortization
Normal Cost	of Unfunded
as a Percent	Actuarial
of Payroll	Liability
36.55%	\$195,178
36.40%	201,066
36.26%	161,011
35.13%	153,456
35.13%	109,085
35.24%	108,913
35.51%	78,140
35.54%	38,541
36.49%	0
37.21%	56,447
-	7,529
=	10,095
=	90,321
-	230,291
	as a Percent of Payroll 36.55% 36.40% 36.26% 35.13% 35.13% 35.24% 35.51% 35.54% 36.49%

December 31, 2002 Actuarial Valuation

# Historical Tables

# **Comparative Schedule of Active Members**

	Number of					
Valuation	Active	Valuation		Averages		
December 31:	Members	<u>Payroll</u>	<u>Age</u>	Service	Pay	% Increase
1989	6	\$238,546	44.5	18.8	\$39,758	36.6%
1990	6	246,839	45.5	19.8	41,140	3.5%
1991	6	254,243	46.5	20.8	42,374	3.0%
1992	5	217,830	46.8	21.9	43,566	2.8%
1993	5	223,316	47.8	22.9	44,663	2.5%
1994	5	243,049	48.8	23.9	48,610	8.8%
1995	4	199,651	49.5	24.5	49,913	2.7%
1996	4	209,607	50.5	25.5	52,402	5.0%
1997	3	163,423	51.0	25.5	54,474	4.0%
1998	2	117,841	52.5	27.4	58,921	8.2%
1999	0	•	n=1	-	-	-
2000	0	-	-	-	-	-
2001	0		-	-	-	-
2002	0		-	-	-	-

December 31, 2002 Actuarial Valuation

#### Historical Tables

# **Comparative Schedule of Inactive Members**

	Number				
As of	Added	Removed	On Valuation	Annual	Present Value
December 31:	to Rolls	from Rolls	Date	Benefits	of Benefits
1989	0	0	14	\$245,520	\$3,553,860
1990	0	0	14	252,417	3,526,812
1991	0	0	14	261,491	3,521,472
1992	1	0	15	287,546	3,944,772
1993	0	2	13	250,879	3,611,904
1994	0	1	12	242,682	3,504,876
1995	2	1	13	264,009	3,954,504
1996	0	1	12	262,615	3,848,304
1997	2	1	13	286,633	4,302,888
1998	1	0	14	342,613	5,418,324
1999	2	0	16	444,729	7,174,075
2000	0	1	15	452,326	7,245,193
2001	0	1	14	463,261	7,573,377
2002	0	0	14	494,356	7,830,552

December 31, 2001 Actuarial Valuation

#### **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, disability, retirement age

As of December 31, 1999, there are no active members, and the plan is closed to new members.

3. Interest rate

5% compounded annually.

4. Cost-of-living adjustment

3.5% annually. Benefits for members retiring as lieutenants remain level until they equal the benefits of a first class patrolman.

5. 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. There is no normal cost for a member or beneficiary in pay status. The actuarial accrued liability is the accumulated value of these annual normal costs on a given date. For members or beneficiaries receiving monthly benefits, the accrued liability is the present value of future benefit payments. The normal cost and accrued liability for the plan is the total of these values for all members.

December 31, 2001 Actuarial Valuation

#### **Summary of Plan Provisions**

1. Normal Retirement Benefit

50% of "base pay" with 20 years of service, increased 2% per year up to a maximum of 60%. "Base pay" is the prevailing pay of a first class patrolman for the City of Fairmont. All members are now retired. Their benefit is the benefit they are currently receiving, adjusted by increases in base pay.

2. Deferred Vested Benefit

None. All members are retired.

3. Surviving Spouse's Benefit

Annual benefit equal to 35% of base pay. If surviving spouse married member after retirement, marriage must have occurred at least five years before member's death.

4. Surviving Children's Benefit

Annual benefit equal to 6.25% of base pay per child, up to a maximum benefit of 25% of base pay if spouse is receiving benefits, or 50% if no spouse. Children are eligible until attainment of age 18.

5. Member Contributions

None. There are no active members.

# Van Iwaarden

Retirement planning for corporations

November 6, 2003

Office of the State Auditor 525 Park Street, Suite 400 St. Paul, MN 55103

Larry Martin
Director, LCPR
Room 55, State Office Building
St. Paul, MN 55155

Commissioner Dan McElroy Minnesota Department of Finance 638 Cedar Street St. Paul, MN 55155

Legislative Reference Library ATTN: Acquisitions Department 645 State Office Building St. Paul, MN 55155-1050

Re: 12/31/2002 Actuarial Valuation Report - Fairmont Policemen's Relief Association

We have enclosed for filing one copy of the December 31, 2002 actuarial valuation report for the Fairmont Policemen's Relief Association. Please inform us if you have any questions regarding the report or need additional copies.

Sincerely,

Paul D. Krueger, JD, EA Consulting Actuary

Paul D. Krueger (Cah)

c: Harley Rosenberg - Fairmont Policemen's Relief Association