

RECEIVED

MAY 09 2002

LEGISLATIVE REFERENCE LIBRARY  
STATE OFFICE BUILDING  
ST. PAUL, MN 55155

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**

**SPECIAL FUND**

*December 31, 2001*

*Actuarial Valuation*

April, 2002

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

**Table of Contents**

	<u>Page</u>
 <b><u>Introduction</u></b>	
Introduction and actuarial certification.....	1
Summary of results.....	3
 <b><u>Valuation data - plan assets and members</u></b>	
Actuarial value of assets.....	4
Summary of member data.....	5
Summary of changes in membership.....	6
 <b><u>Valuation results - actuarial values</u></b>	
Actuarial values used to determine contribution.....	7
Changes in the unfunded actuarial accrued liability.....	8
 <b><u>Accounting basis results - GASB disclosure information</u></b>	
Statement of plan net assets - market value.....	9
Statement of changes in plan net assets.....	10
Schedule of funding progress.....	11
Schedule of employer contributions.....	12
 <b><u>Historical tables</u></b>	
Historical funding ratio schedule.....	13
History of employer contributions.....	14
Comparative schedule of active members.....	15
Comparative schedule of inactive members.....	16
 <b><u>Supplementary information</u></b>	
Actuarial assumptions and methods.....	17
Summary of plan provisions.....	18

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

**Introduction**

**Purpose**

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

- to determine the funded status as of December 31, 2001,
- to determine the normal cost for 2001 and the required amortization payment, 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, including unit values and historical salary increase rates. The Relief Association has also provided asset information regarding the special fund including historical rates of return. 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 the same as those used in the 2000 report, except that the unit value effective January 1, 2002 is 77.74 instead of 75.13. All future unit values are projected at 4%.

**Summary of valuation results**

As of December 31, 2001, the funded status of the plan (actuarial value of assets divided by actuarial accrued liabilities), after adjustment for the benefit increase, is 75.1% (see page 7). This is a significant decrease from last year's funded ratio of 87.5%. In fact, the current funded ratio is the lowest since December 31, 1990. This decrease is due to three main factors:

Investment return less than expected	7.9%
Unit value increase greater than expected	3.5%
Other actuarial experience different from expected	<u>1.0%</u>
Total	12.4%

The Unfunded Actuarial Accrued Liability (UAAL) more than doubled from \$56,256,615 last year to \$115,555,147 as of December 31, 2001. This significant increase in the UAAL, coupled with a decrease in the amortization period to 8 years, produced an increase in the amortization payment from \$7,767,618 to \$17,555,219, or about a \$10 million increase. The amortization payment for 2001 is about the same as the prior four years combined.

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

**Introduction (continued)**

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. Nonetheless, it is crucial to the actuarial soundness of the fund that the City and the State fully contribute the required contribution outlined in this actuarial report.

In addition to the increase in contributions, there is a decrease in benefits. There will be no “13th Check” this year because the five-year average rate of return on investments did not exceed the five-year average salary increase rate.

**Actuarial certification**

We certify that the actuarial valuation has been prepared in accordance with Minnesota Statutes §§356.20-.23, §423B, and §69.77 as they relate to police department relief associations in cities of the first class in general and the Minneapolis Police Relief Association in particular.

Respectfully submitted,



Mark D. Meyer, FSA, MAAA  
Consulting Actuary



Paul D. Krueger, JD, EA  
Consulting Actuary

MINNEAPOLIS POLICE RELIEF ASSOCIATION

3

December 31, 2001 Actuarial Valuation

**Summary of Results**

<u>A. Plan participant data</u>	<u>December 31, 2000</u>	<u>December 31, 2001</u>
1. Number of participants		
a. Active employees	97	73
b. Terminated vested employees	3	2
c. Retirees	677	680
d. Disability	0	0
e. Surviving spouses	246	251
f. Surviving children	1	2
g. Total	1,024	1,008
<u>B. Normal costs</u>	<u>2000 Plan Year</u>	<u>2001 Plan Year</u>
1. Total normal cost		
a. Amount	\$1,581,906	\$1,210,336
b. Percentage of active payroll	24.03%	23.10%
2. Employer normal cost		
a. Amount	1,055,239	791,257
b. Percentage of active payroll	16.03%	15.10%
<u>C. Amortization payments</u>		
1. Unfunded actuarial accrued liability	\$56,002,927	\$115,478,223
2. Amortization payment	7,767,618	17,543,533
<u>D. Value of plan assets</u>	<u>December 31, 2000</u>	<u>December 31, 2001</u>
1. Market value	\$376,849,745	\$332,365,731
2. Actuarial value (for calculating contributions)	391,083,455	349,170,447
<u>E. Benefit liabilities</u>		
1. Present value of future benefits	\$450,417,283	\$466,775,149
2. Actuarial accrued liability	447,086,382	464,648,670
<u>F. Funded status</u>		
1. Market value of assets as a % of liabilities	84.3%	71.5%
2. Actuarial value of assets as a % of liabilities	87.5%	75.1%

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

***Funding Basis***

**Actuarial Value of Assets**

**A. Average unrealized gain**

<u>Year Ending</u> <u>December 31:</u>	<u>Market</u> <u>Value</u>	<u>Book</u> <u>Value</u>	<u>Unrealized Gain</u> <u>(Market - Book)</u>
1999	413,332,414	380,356,320	32,976,094
2000	376,849,745	354,618,330	22,231,415
2001	332,365,731	329,969,050	2,396,681
		Average:	\$19,201,397

**B. Book value of assets December 31, 2001** \$329,969,050

**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>
1997	6.097%	12.660%
1998	3.656%	11.030%
1999	12.459%	11.600%
2000	1.418%	-1.641%
2001	7.026%	-3.900%
Arithmetic average:	6.131%	5.950%

2. Determination of excess investment income

a. Excess of asset return over salary increase	-0.181%
b. Excess minus 2%	-2.181%
c. Lesser of 0.5% or 2.b., times market value (not < 0)	0
d. December 2000 monthly benefits paid	2,466,745
e. Adjustment to assets (lesser of c. or d.)	<u>0</u>

**D. Actuarial value of assets December 31, 2001** \$349,170,447  
 (A. + B. - C.2.e.)

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

5

**Summary of Member Data**

December 31, 2000    December 31, 2001

**A. Active members**

1. Number		
a. Fully vested	97	73
b. Nonvested	<u>0</u>	<u>0</u>
c. Total	97	73
2. Average age	51.7	52.6
3. Average years of service	27.2	28.4
4. Total annual payroll for the year ending on valuation date	\$6,583,342	\$5,238,480
5. Average annual salary	\$67,870	\$71,760

**B. Vested terminated members**

1. Number	3	2
2. Total annual deferred benefits	\$64,496	\$69,406

**C. Retirees**

1. Age & service	677	680
2. Disability	0	0
3. Total	677	680
4. Total annual benefits	\$23,300,668	\$25,217,864
5. Average annual benefit	\$34,418	\$37,085

**D. Beneficiaries**

1. Spouses	246	251
2. Children	1	2
3. Total	247	253
4. Total annual benefits	\$4,742,992	\$5,180,460
5. Average annual benefit	\$19,202	\$20,476

**E. Total number of members (A.1. + B.1. + C.3. + D.3.)**

	1,024	1,008
--	-------	-------

MINNEAPOLIS POLICE RELIEF ASSOCIATION

*December 31, 2001 Actuarial Valuation*

**Summary of Changes in Membership**

	<u>Actives</u>	<u>Vested Terminees</u>	<u>Retirees</u>	<u>Beneficiaries</u>	<u>Total</u>
<b><u>A. Number of members on December 31, 2000</u></b>	97	3	677	247	1,024
<b><u>B. Changes in membership</u></b>					
1. Retirements	(24)	(1)	25		0
2. Vested terminations					0
3. Retiree deaths			(22)	16	(6)
4. Beneficiary deaths				(12)	(12)
5. Expiration of surviving child benefits					0
6. Corrections				2	2
7. Total changes	(24)	(1)	3	6	(16)
<b><u>C. Number of members on December 31, 2001</u></b>	73	2	680	253	1,008



**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

7

*Funding Basis*

**Actuarial Values Used to Determine Contribution**

	<u>December 31, 2000</u>	<u>December 31, 2001</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	\$63,694,272	\$51,168,175
2. Vested terminated members	1,660,256	1,275,786
3. Retired members	340,595,777	365,368,326
4. Spouses and children receiving benefits	44,466,978	47,666,645
5. Disabled members receiving benefits	0	1,296,217
6. Total present value of projected benefits	450,417,283	466,775,149
<b><u>B. Actuarial accrued liability (the cost allocated to all prior years)</u></b>		
1. Active members	\$60,363,371	\$49,041,696
2. Vested terminated members	1,660,256	1,275,786
3. Retired members	340,595,777	365,368,326
4. Spouses and children receiving benefits	44,466,978	47,666,645
5. Disabled members receiving benefits	0	1,296,217
6. Total actuarial accrued liability	447,086,382	464,648,670
<b><u>C. Amortization of unfunded actuarial accrued liability</u></b>		
1. Total actuarial accrued liability (B.6.)	\$447,086,382	\$464,648,670
2. Actuarial value of assets	391,083,455	349,170,447
3. Unfunded actuarial accrued liability (1. - 2.)	56,002,927	115,478,223
4. Funded status (2. ÷ 1.)	87.5%	75.1%
5. Years left in amortization period	9	8
6. Amortization payment	7,767,618	17,543,533
<b><u>D. Normal cost (the cost allocated to the current year)</u></b>		
1. Present value of future normal costs (A.6. - B.6.)	\$3,330,901	\$2,126,479
2. Normal cost as a dollar amount		
a. Total normal cost	1,581,906	1,210,336
b. Statutory adjustment for member contributions	526,667	419,078
c. Employer normal cost (a. - b.)	1,055,239	791,257
3. Payroll for year ending on valuation date	6,583,342	5,238,480
4. Normal cost as a percent of active payroll		
a. Total normal cost (2.a. ÷ 3.)	24.03%	23.10%
b. Statutory adjustment for member contributions (2.b. ÷ 3.)	8.00%	8.00%
c. Employer normal cost (2.c. ÷ 3.)	16.03%	15.10%

*Funding Basis*

**Changes in the Unfunded Actuarial Accrued Liability**

**A. Liability gain or loss for the year ending on December 31, 2001**

1. Expected actuarial accrued liability (AAL)	
a. AAL as of December 31, 2000	\$447,086,382
b. Normal cost as of December 31, 2000 (excluding expenses)	1,210,336
c. Interest to December 31, 2001 on the AAL and normal cost	26,897,803
d. Benefit payments for the year	(30,503,691)
e. Interest on benefit payments (1/2 year)	(915,111)
f. Expected AAL on December 31, 2001 (sum of a. through e.)	443,775,719
2. Actual AAL on December 31, 2001	
a. Before any assumption or plan changes	464,648,670
b. After assumption changes, but before any plan changes	464,648,670
3. Liability (gain) or loss	
a. Due to plan experience different from that expected (2a. - 1f.)	20,872,952
b. Due to changes in actuarial assumptions (2b. - 2a.)	0
c. Total (a. + b.)	20,872,952

**B. Asset gain or loss for the year ending on December 31, 2001**

1. Expected actuarial value of assets	
a. Actuarial value of assets on December 31, 2000	391,083,455
b. Benefit payments and expenses for the year	(31,599,005)
c. Contributions for the year	4,033,308
d. Expected return on assets	22,638,036
e. Expected actuarial value of assets on December 31, 2001 (sum of a. through d.)	386,155,794
2. Actual actuarial value of assets on December 31, 2001	349,170,447
3. Asset (gain) or loss (1e. - 2.)	36,985,348

**C. Changes in the unfunded AAL**

1. Expected unfunded AAL on December 31, 2001	57,619,924
2. Changes	
a. Actuarial (gain) or loss other than change in unit value	41,716,505
b. Change in unit value different from expected	16,141,795
c. Changes in actuarial methods and assumptions	0
d. Total change	57,858,299
3. Unfunded AAL on December 31, 2001	115,478,223

MINNEAPOLIS POLICE RELIEF ASSOCIATION  
December 31, 2001 Actuarial Valuation

9

*Accounting Basis*

**Statement of Plan Net Assets**

<b><u>A. Investment assets</u></b>	<b><u>Market</u></b>	<b><u>Book</u></b>
Government obligations	\$39,861,038	\$39,079,387
Corporate obligations	38,442,917	34,909,450
Corporate stock	98,729,146	90,534,702
Limited partnerships	1,945,224	1,945,224
Equity Collective Fund	49,706,221	51,028,286
Common Stock Index Account	54,982,633	62,807,353
Bond Market Account	20,271,057	16,203,361
International Share Account	11,522,663	16,556,455
Short-term cash equivalents	<u>18,742,812</u>	<u>18,742,812</u>
Total	334,203,711	331,807,030
<b><u>B. Checking account</u></b>	17,527	17,527
<b><u>C. Accrued/payable</u></b>		
Accrued investment income	930,172	930,172
Accrued contributions	521,408	521,408
Accounts payable	<u>(3,307,087)</u>	<u>(3,307,087)</u>
Total	(1,855,507)	(1,855,507)
<b><u>D. Total pension assets (A. + B. + C.)</u></b>	\$332,365,731	\$329,969,050

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

10

*Accounting Basis*

**Statement of Changes in Plan Net Assets**

	<u>December 31, 2000</u>	<u>December 31, 2001</u>
<b><u>A. Additions</u></b>		
1. Contributions		
a. Employer	\$4,563,133	\$3,459,195
b. Plan members	166,325	56,995
c. Total	4,729,458	3,516,190
2. Investment income	(9,772,799)	(16,918,317)
3. Unclaimed property	<u>500,000</u>	<u>517,118</u>
4. Total additions	(4,543,341)	(12,885,009)
<b><u>B. Deductions</u></b>		
1. Benefits paid	\$30,697,541	\$30,503,691
2. Refund of contributions	0	0
3. Expenses	<u>1,241,787</u>	<u>1,095,314</u>
4. Total deductions	31,939,328	31,599,005
<b><u>C. Net increase (A.4. - B.4.)</u></b>	(36,482,669)	(44,484,014)
<b><u>D. Net assets held in special fund</u></b>		
1. Beginning of year	\$413,332,414*	\$376,849,745
2. End of year	\$376,849,745	\$332,365,731

\* Differs from 12/31/1999 value because of adjustments by State Auditor

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

*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	\$265,307	\$325,891	\$60,584	81.4%	\$16,913	358.2%
1993	288,942	347,879	58,937	83.1%	16,577	355.5%
1994	280,772	344,087	63,315	81.6%	14,799	427.8%
1995	294,692	358,657	63,965	82.2%	13,938	458.9%
1996	320,686	382,957	62,271	83.7%	13,003	478.9%
1997	362,683	398,728	36,045	91.0%	10,818	333.2%
1998	387,530	414,694	27,164	93.4%	8,857	306.7%
1999	427,122	447,596	20,474	95.4%	7,504	272.8%
2000	391,083	447,086	56,003	87.5%	6,583	850.7%
2001	349,170	464,649	115,479	75.1%	5,238	2204.6%

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

*Accounting Basis*

**Schedule of Employer Contributions**

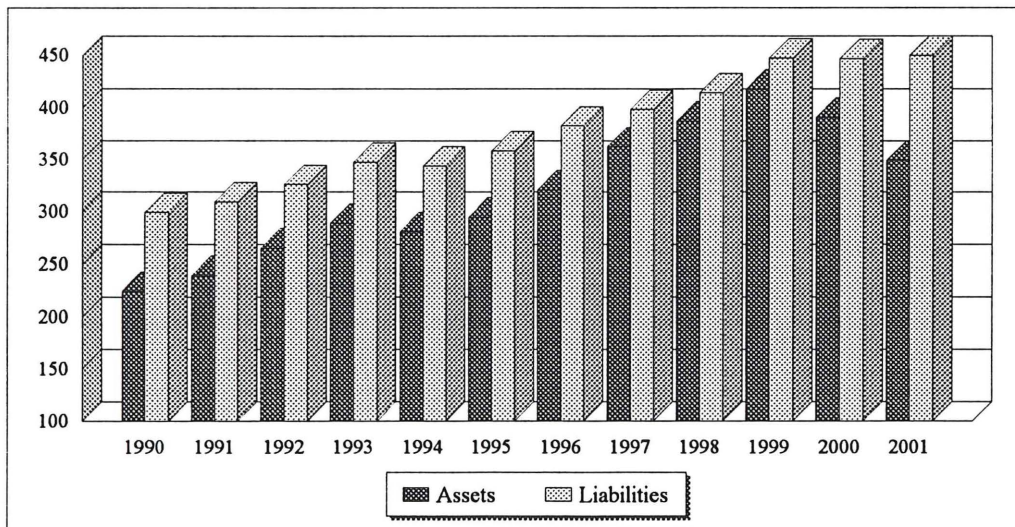
<u>Year Ended</u> <u>December 31:</u>	<u>Annual Employer</u> <u>Contributions</u>
1992	\$8,281,262
1993	8,859,961
1994	6,239,591
1995	8,359,115
1996	5,544,721
1997	7,298,118
1998	6,207,956
1999	3,719,453
2000	4,563,133
2001	3,459,195

*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>
1989	\$290,537	\$211,081	72.7%
1990#	299,151	223,919	74.9%
1991	309,429	238,975	77.2%
1992#	325,891	265,307	81.4%
1993#	347,879	288,942	83.1%
1994#	344,087	280,772	81.6%
1995	358,657	294,692	82.2%
1996	382,957	320,686	83.7%
1997	398,728	362,683	91.0%
1998#	414,694	387,531	93.4%
1999	447,596	418,122	95.4%
2000	447,086	391,083	87.5%
2001	464,649	349,170	75.1%

#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>
1989	24.53%	\$6,727,495
1990	25.61%	6,547,850
1991	25.58%	6,319,193
1992	25.62%	5,615,587
1993	25.57%	5,663,676
1994	25.43%	6,331,000
1995	24.91%	6,683,106
1996	24.83%	6,831,165
1997	24.66%	4,175,261
1998	26.53%	3,344,809
1999	26.50%	2,624,238
2000	24.03%	7,767,618
2001	23.10%	17,543,533



**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

*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>Age</u>	<u>Averages</u> <u>Service</u>	<u>Pay</u>
1989	460	\$18,421,160	46.6	21.0	\$40,046
1990	433	17,859,951	47.3	21.8	41,247
1991	410	17,658,290	48.0	22.5	43,069
1992	381	16,913,352	48.5	23.2	44,392
1993	349	16,576,802	49.2	24.0	47,498
1994	307	14,799,242	49.8	24.6	48,206
1995	278	13,937,530	50.3	25.3	50,135
1996	239	13,002,556	50.9	25.9	54,404
1997	188	10,817,520	51.1	26.3	57,540
1998	148	8,856,616	51.5	26.8	59,842
1999*	123	7,804,036	51.3	26.6	63,447
2000	97	6,583,342	51.7	27.2	67,870
2001	73	5,238,480	52.6	28.4	71,760

\*Payroll used to calculate normal cost for calendar year 1999 is \$7,503,881.

**MINNEAPOLIS POLICE RELIEF ASSOCIATION**  
*December 31, 2001 Actuarial Valuation*

*Historical Tables*

**Comparative Schedule of Inactive Members**

As of December 31:	Number of Retirees and Beneficiaries			Actual Annual Benefits	Projected Annual Benefits	Present Value of Benefits
	Added to Rolls	Removed from Rolls	On Valuation Date			
1989	40	31	752	\$12,988,156	\$12,007,149	\$163,236,324
1990	33	33	752	13,179,656	12,579,039	169,649,676
1991	30	25	757	12,726,042	13,152,752	175,237,680
1992	55	28	784	14,764,375	14,352,332	192,504,840
1993	45	33	796	15,646,456	15,690,269	212,051,856
1994	56	40	812	18,040,942	17,238,698	226,104,506
1995	35	39	808	17,597,704	17,375,347	235,698,327
1996	51	28	831	20,240,597	19,435,342	263,685,600
1997	82	35	878	25,513,260	21,662,581	298,497,984
1998	65	23	920	24,511,366	24,020,183	330,745,536
1999	34	37	917	26,213,944	26,701,339	368,568,524
2000	34	37	924	30,697,541	28,043,660	385,062,755
2001	41	34	933	30,503,691	30,398,324	413,026,264

**MINNEAPOLIS POLICE RELIEF ASSOCIATION***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                                    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:
- | <u>Age</u> | <u>Rate</u> |
|------------|-------------|
| 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 54, or attained age if older.
5. Interest rate                                    6% compounded annually.
6. Unit value/Salary scale                    The unit value of \$77.74 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.

**MINNEAPOLIS POLICE RELIEF ASSOCIATION***December 31, 2001 Actuarial Valuation***Summary of Plan Provisions**

1. Normal retirement benefit  
Annual benefit of 30.40/80 of base pay for first 19 years of service. An additional 3.60/80 unit is awarded for the 20th year of service. For service years in excess of 20, an additional 1.60/80 is granted; to a maximum of 25 years of service and 42/80 of base pay. "Base pay" for this purpose means the maximum monthly salary of a first class patrolman. 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 34/80 of base pay for members no longer able to perform the duties of a policeman 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.
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 to age 22 if the child is a full-time student. The total benefit for surviving children and spouse combined is limited to 40/80 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. In the event of death without survivorship, member contributions are refundable including 5% interest from the month the contribution is made. Termination after 5 years of service but before benefit eligibility results in a \$500 refund, plus an additional \$100 for each full year of service over 5 years.