# MINNEAPOLIS POLICE RELIEF ASSOCIATION SPECIAL FUND

December 31, 2007 Actuarial Valuation

April, 2008

December 31, 2007 Actuarial Valuation

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December 31, 2007 Actuarial Valuation

#### Introduction

#### Purpose

This report presents the results of the December 31, 2007 valuation for the Minneapolis Police Relief Association. Its primary purposes are:

- to determine the funded status as of December 31, 2007,
- to determine the normal cost 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, 2007.

## Sources of data

The Relief Association supplied December 31, 2007 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, 2006. The actuarial assumptions and methods used to prepare this report are the same as those used in the 2006 report. The current union contract was settled in 2007 and extends through October 14, 2008. A unit value of 91.74 became effective October 15, 2007, and remains in effect as of the valuation date for this report - December 31, 2007.

For purposes of this valuation, we have used the 91.74 unit value as of the valuation date, with projected annual increases of 4% per year - the statutory salary increase assumption. For the December 31, 2006 valuation, we used the established unit value of 89.27. We projected this rate at 4% per year as required by statute, so that the estimated unit value as of December 31, 2007 would have been 92.84 - compared to the actual rate of 91.74 that has now been established.

Since the actual rate is less than what was projected in the previous year, and therefore benefit costs are less than expected, the plan liabilities have experienced an actuarial "gain" of \$5.1 million (see page 8, item A.3.b.)

#### Summary of valuation results

As of December 31, 2007, the funded status of the plan (actuarial value of assets divided by actuarial accrued liabilities) is 87.9% (see page 7). This is an increase from last year's funded ratio of 85.7%. The improvement in funded status is due to the actuarial gain described above and to an increase in the actuarial value of assets (see pages 4 and 8). The effective investment return on the actuarial value of assets (about 7.2%) was greater than the statutory assumption of 6.0%. On a market value basis, the funded status has increased from 88.8% to 90.8%.

December 31, 2007 Actuarial Valuation

## **Introduction (continued)**

Because the five-year average rate of return on investments as of the valuation date exceeds the five-year average salary increase rate, a "13th Check" will be payable in 2008.

## Actuarial certification

We certify, with one qualification, 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.

Under Actuarial Standards of Practice (ASOP) No. 35, Paragraph 3.1,

A reasonable assumption is one that is expected to appropriately model the contingency being measured and is not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

We believe, based on the experience study we conducted in 2004, and have updated in 2008, and because of continuing actuarial experience losses (see page 8, item A.3.a.), that the mortality assumption used for this report is not reasonable. However, Paragraph 1.2 of ASOP 35, provides,

(w)hen applicable law, regulation, or other binding authority conflicts with this standard, complying with such law, regulation, or other binding authority shall not be deemed a deviation from this standard

and Paragraph 3.8 provides, "When an assumption is prescribed, the actuary is obligated to use it." Since the current mortality table cannot be changed without approval of the Legislative Commission on Pensions and Retirement (LCPR), we believe it is a "prescribed assumption" and that we are obligated to use it, even though it is our opinion that it is not reasonable. We note, however, that the Relief Association has sought and obtained the approval of the LCPR to use the recommended table beginning with the December 31, 2008 actuarial valuation.

If we had used the recommended mortality table (1983 GAM F+1 M-2) in this valuation, the funded ratio would have been 74.6% (instead of 87.9%) and the amortization payment would have been \$14 million (instead of about \$6 million) as of December 31, 2007.

In all other respects, we believe the results are reasonable and fairly represent the actuarial status of this plan.

Respectfully submitted,

Mark D. Meyer, FSA, MAAA

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**Consulting Actuary** 

Paul D. Krueger, JD, EA Consulting Actuary

Van Iwaarden

## **Summary of Results**

A. Plan participant data	December 31, 2006	December 31, 2007
1. Number of participants		
a. Active employees	. 15	14
b. Terminated vested employees	0	0
c. Retirees	647	627
d. Disability	. 0	0
e. Surviving spouses	234	233
f. Surviving children	<u>3</u>	<u>0</u>
g. Total	899	874
B. Normal costs	2006 Plan Year	2007 Plan Year
1. Total normal cost	•	٠.
a. Amount	\$208,556	\$187,403
b. Percentage of active payroll	16.87%	15.81%
2. Employer normal cost		
a. Amount	109,672	92,558
b. Percentage of active payroll	8.87%	7.81%
C. Amortization payments		
1. Unfunded actuarial accrued liability	\$62,978,850	\$51,814,909
2. Amortization payment	6,711,413	5,830,498
D. Value of plan assets	December 31, 2006	December 31, 2007
1. Market value	\$390,831,714	\$389,025,966
2. Actuarial value (for calculating contributions)	377,013,110	376,465,987
E. Benefit liabilities		
1. Present value of future benefits	\$440,215,227	\$428,468,299
2. Actuarial accrued liability	439,991,960	428,280,896
F. Funded status		
1. Market value of assets as a % of liabilities	88.8%	90.8%
2. Actuarial value of assets as a % of liabilities	85.7%	87.9%

#### Funding Basis

#### **Actuarial Value of Assets**

## A. Unrealized gain

Year Ending December 31:	Market <u>Value</u>	Book <u>Value</u>	Unrealized Gain (Market - Book)
2004	348,910,985	318,231,193	30,679,792
2005	366,406,914	331,038,035	35,368,879
2006	390,831,714	340,010,710	50,821,004
2007	389,025,966	330,008,751	59,017,215

#### B. Preliminary actuarial value of assets December 31, 2006 December 31, 2007 1. Book value of assets \$340,010,710

2. Average unrealized gain for previous three years 38,956,558 48,402,366

3. Preliminary actuarial value

378,967,268 378,411,117

\$330,008,751

#### C. Excess investment income

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

Year Ending		
December 31:	Salary Increase	Asset Return
2002	6.165%	-10.1%
2003	3.196%	22.7%
2004	3.525%	9.6%
2005	3.082%	5.9%
2006	1.932%	13.7%
2007	2 245%	7 20%

#### 2. Determination of excess investment income

a. Arithmetic average of previous 5 years salary increases	3.580%	2.796%
b. Arithmetic average of previous 5 years of asset returns	8.360%	11.820%
c. Excess of asset return over salary increase	4.780%	9.024%
d. Excess minus 2%	2.780%	7.024%
e. Lesser of 0.5% or 2.d., times market value (not < 0)	\$1,954,159	\$1,945,130
f. December 2007 monthly benefits paid	2,847,474	2,850,354
g. Adjustment to assets (lesser of e. or f.)	<u>1,954,159</u>	1,945,130

#### D. Actuarial value of assets (B.3. - C.2.g.)

\$377,013,110 \$376,465,987

## **Summary of Member Data**

	December 31, 2006	December 31, 2007
A. Active members		
1. Number		
a. Fully vested	15	14
b. Nonvested	. <u>0</u>	$\underline{0}$
c. Total	15	14
2. Average age	58.8	59.7
3. Average years of service	34.5	35.8
4. Total annual payroll for the year ending on valuation date	\$1,236,046	\$1,185,563
5. Average annual salary	\$82,403	\$84,683
B. Vested terminated members		
1. Number	0	0
2. Total annual deferred benefits	\$0	\$0
C. Retirees		
1. Age & service	647	627
2. Disability	0.7	0 .
3. Total	647	627
4. Total annual benefits	\$28,398,155	\$28,274,121
5. Average annual benefit	\$43,892	\$45,094
D. Beneficiaries		
1. Spouses	234	233
2. Children	3	. 0
3. Total	237	233
4. Total annual benefits	\$5,818,408	\$5,917,285
5. Average annual benefit	\$24,550	\$25,396
E. Total number of members (A.1. + B.1. + C.3. + D.3.)	899	874
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December 31, 2007 Actuarial Valuation

## **Summary of Changes in Membership**

	Actives	Vested <u>Terminees</u>	Retirees	Beneficiaries	Total
A. Number of members on December 31, 2006	15	0	647	237	899
	,				
B. Changes in membership					
1. Retirements	(1)		1	•	0
2. Vested terminations					0
3. Active deaths					0
4. Retiree deaths			(21)	12	(9)
5. Beneficiary deaths				(14)	(14)
6. Expiration of surviving child benefits				(3)	(3)
7. Corrections				1	1 .
8. Total changes	(1)	0	(20)	(4)	(25)
C. Number of members on December 31, 2007	14	0	627	233	874

December 31, 2007 Actuarial Valuation

## Funding Basis

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

December 31, 2006 December 31, 2007

A. Actuarial present value of projected benefits (the value of all futur	e benefits	
to be paid to the current group of members)	·	
1. Active members	\$12,109,576	\$11,361,941
2. Vested terminated members	0	0
3. Retired members	376,623,568	365,853,398
4. Spouses and children receiving benefits	51,482,083	51,252,960
5. Disabled members receiving benefits	· <u>0</u>	<u>0</u>
6. Total present value of projected benefits	440,215,227	428,468,299
B. Actuarial accrued liability (the cost allocated to all prior years)		
1. Active members	\$11,886,309	\$11,174,538
2. Vested terminated members	0	0
3. Retired members	376,623,568	365,853,398
4. Spouses and children receiving benefits	51,482,083	51,252,960
5. Disabled members receiving benefits	<u>0</u>	<u>0</u>
6. Total actuarial accrued liability	439,991,960	428,280,896
	•	
C. Amortization of unfunded actuarial accrued liability		
1. Total actuarial accrued liability (B.6.)	\$439,991,960	\$428,280,896
2. Actuarial value of assets	377,013,110	376,465,987
3. Unfunded actuarial accrued liability (1 2.)	62,978,850	51,814,909
4. Funded status $(2. \div 1.)$	85.7%	87.9%
5. Years left in amortization period	13	12
6. Amortization payment	6,711,413	5,830,498
D. Normal cost (the cost allocated to the current year)		
1. Present value of future normal costs (A.6 B.6.)	\$223,267	\$187,403
2. Normal cost as a dollar amount	\$223,207	\$107,405
a. Total normal cost	208,556	187,403
b. Statutory adjustment for member contributions	98,884	94,845
c. Employer normal cost (a b.)	109,672	92,558
<u> </u>	•	1,185,563
3. Payroll for year ending on valuation date	1,236,046	1,100,305
4. Normal cost as a percent of active payroll	16.87%	15.81%
<ul> <li>a. Total normal cost (2.a. ÷ 3.)</li> <li>b. Statutory adjustment for member contributions (2.b. ÷ 3.)</li> </ul>	8.00%	8.00%
· · · · · · · · · · · · · · · · · · ·	8.87%	7.81%
c. Employer normal cost (2.c. ÷ 3.)	0.0/70	7.0170

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## Funding Basis

## **Changes in the Unfunded Actuarial Accrued Liability**

A. Liability gain or loss for the year ending on December 31, 2007  1. Expected actuarial accrued liability (AAL)	
a. AAL as of December 31, 2006	\$439,991,960
b. Normal cost as of December 31, 2006 (excluding expenses)	208,556
c. Interest to December 31, 2007 on the AAL and normal cost	26,411,795
d. Benefit payments for the year (excluding post-retirement payments)	(34,081,838)
e. Interest on benefit payments (1/2 year)	(1,022,455)
	431,508,018
f. Expected AAL on December 31, 2007 (sum of a. through e.) 2. Actual AAL on December 31, 2007	431,300,010
,	433,416,158
a. Before any assumption or plan changes	• •
b. After unit value changes	428,280,896 428,280,896
c. After assumption and unit value changes	
d. After plan changes	428,280,896
3. Liability (gain) or loss	1 000 140
a. Due to plan experience different from that expected (2a 1f.)	1,908,140
b. Due to change in unit value different from expected (2.b 2.a.)	(5,135,262)
c. Due to changes in actuarial assumptions (2c 2b.)	0 ~
d. Due to plan changes (2d 2c.)	0
e. Total $(a. + b. + c. + d.)$	(3,227,122)
B. Asset gain or loss for the year ending on December 31, 2007	
1. Expected actuarial value of assets	
a. Actuarial value of assets on December 31, 2006	377,013,110
b. Benefit payments and expenses (including post-retirement payments)	(36,562,791)
c. Contributions for the year	6,814,443
d. Expected return on assets	21,728,336
e. Expected actuarial value of assets on December 31, 2007 (sum of a. through d.)	368,993,098
2. Actual actuarial value of assets on December 31, 2007	376,465,987
3. Asset (gain) or loss (1e 2.)	(7,472,889)
C. Changes in the unfunded AAL	
1. Expected unfunded AAL on December 31, 2007	62,514,920
2. Changes	02,511,920
a. Actuarial (gain) or loss other than change in unit value	(5,564,749)
b. Change in unit value different from expected	(5,135,262)
c. Changes in actuarial methods and assumptions	(3,133,202)
d. Plan change	0
e. Total change	(10,700,011)
3. Unfunded AAL on December 31, 2007	51,814,909
J. Offunded AAL on December 31, 2007	51,014,503

## Accounting Basis

## **Statement of Plan Net Assets**

A. Investment assets	Market	<u>Book</u>
Fixed income	27,284,926	27,204,043
State Board of Investment	217,542,522	170,171,614
Mutual funds	93,740,396	82,087,235
Cash equivalents and other investments	<u>51,457,074</u>	51,544,811
Total	390,024,918	331,007,703
B. Checking account	4,537	4,537
C. Accrued/payable		
Accrued investment income	268,616	268,616
Accrued contributions	75,147	75,147
Investment sales receivable	1,506,515	1,506,515
Investment purchase payable	0	0
Accounts payable	(2,853,767)	(2,853,767)
Total	(1,003,489)	(1,003,489)
D. Total pension assets $(A. + B. + C.)$	\$389,025,966	\$330,008,751

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## Accounting Basis

## **Statement of Changes in Plan Net Assets**

A. Additions         1. Contributions         a. State       \$5,200,521       \$3,167,214         b. City       5,366,224       3,647,229         c. Other       25,281       0         d. Total       10,592,026       6,814,443         2. Investment income       48,444,538       27,537,102         3. Unclaimed property       122,644       405,498         4. Proceeds from litigation       0       0         5. Total additions       59,159,208       34,757,043         B. Deductions         1. Benefits paid       34,121,401       \$34,081,838         b. Post-retirement payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791         C. Net increase (A.5 B.3.)       24,424,800       (1,805,748)		2006	2007
a. State       \$5,200,521       \$3,167,214         b. City       5,366,224       3,647,229         c. Other       25,281       0         d. Total       10,592,026       6,814,443         2. Investment income       48,444,538       27,537,102         3. Unclaimed property       122,644       405,498         4. Proceeds from litigation       0       0         5. Total additions       59,159,208       34,757,043         B. Deductions       1. Benefits paid       34,121,401       \$34,081,838         b. Post-retirement payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791			
b. City c. Other d. Total d. Total 25,281 0 d. Total 10,592,026 6,814,443 2. Investment income 348,444,538 27,537,102 3. Unclaimed property 4. Proceeds from litigation 5. Total additions  B. Deductions 1. Benefits paid a. Regular benefit payments b. Post-retirement payments b. Post-retirement payments c. Total 2. Administrative expense 3. Total deductions	1. Contributions		
c. Other       25,281       0         d. Total       10,592,026       6,814,443         2. Investment income       48,444,538       27,537,102         3. Unclaimed property       122,644       405,498         4. Proceeds from litigation       0       0         5. Total additions       59,159,208       34,757,043         B. Deductions       1. Benefits paid       34,121,401       \$34,081,838         b. Post-retirement payments       0       1,951,392       1,951,392         c. Total       34,121,401       36,033,230       2, Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791	a. State	\$5,200,521	\$3,167,214
d. Total       10,592,026       6,814,443         2. Investment income       48,444,538       27,537,102         3. Unclaimed property       122,644       405,498         4. Proceeds from litigation       0       0         5. Total additions       59,159,208       34,757,043         B. Deductions       1. Benefits paid       34,121,401       \$34,081,838         a. Regular benefit payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791	b. City	5,366,224	3,647,229
2. Investment income       48,444,538       27,537,102         3. Unclaimed property       122,644       405,498         4. Proceeds from litigation       0       0         5. Total additions       59,159,208       34,757,043         B. Deductions       1. Benefits paid       34,121,401       \$34,081,838         b. Post-retirement payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791	c. Other	25,281	0
3. Unclaimed property       122,644       405,498         4. Proceeds from litigation       0       0         5. Total additions       59,159,208       34,757,043         B. Deductions         1. Benefits paid       34,121,401       \$34,081,838         b. Post-retirement payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791	d. Total	10,592,026	6,814,443
4. Proceeds from litigation       0       0         5. Total additions       59,159,208       34,757,043         B. Deductions         1. Benefits paid       34,121,401       \$34,081,838         a. Regular benefit payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791	2. Investment income	48,444,538	27,537,102
5. Total additions       59,159,208       34,757,043         B. Deductions       1. Benefits paid		122,644	405,498
B. Deductions         1. Benefits paid       \$34,121,401       \$34,081,838         a. Regular benefit payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791	4. Proceeds from litigation	<u>O</u>	<u>0</u>
1. Benefits paid       \$34,121,401       \$34,081,838         a. Regular benefit payments       0       1,951,392         b. Post-retirement payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791	5. Total additions	59,159,208	34,757,043
1. Benefits paid       \$34,121,401       \$34,081,838         a. Regular benefit payments       0       1,951,392         b. Post-retirement payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791	B. Deductions		
a. Regular benefit payments       \$34,121,401       \$34,081,838         b. Post-retirement payments       0       1,951,392         c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791		•	i
b. Post-retirement payments c. Total 34,121,401 36,033,230 2. Administrative expense 3. Total deductions 34,734,408 36,562,791		\$34,121,401	\$34,081,838
c. Total       34,121,401       36,033,230         2. Administrative expense       613,007       529,561         3. Total deductions       34,734,408       36,562,791		<u>0</u>	1,951,392
3. Total deductions 34,734,408 36,562,791		34,121,401	36,033,230
	2. Administrative expense	<u>613,007</u>	529,561
<u>C. Net increase (A.5 B.3.)</u> 24,424,800 (1,805,748)	3. Total deductions	34,734,408	36,562,791
	C. Net increase (A.5 B.3.)	24,424,800	(1,805,748)
D. Net assets held in special fund	D. Net assets held in special fund		
1. Beginning of year \$366,406,914 \$390,831,714		\$366,406,914	\$390,831,714
2. Post closing audit adjustments 0 0		0	0
3. End of year \$390,831,714 \$389,025,966	3. End of year	\$390,831,714	\$389,025,966

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## Accounting Basis

## **Schedule of Funding Progress**

(Dollar amounts in thousands)

	Actuarial	Actuarial	Unfunded	
As of	Value of	Accrued	AAL	Funded
December 31:	<u>Assets</u>	Liability (AAL)	(UAAL)	Ratio
1992	\$265,307	\$325,891	\$60,584	81.4%
1992	288,942	347,879	58,937	83.1%
	,	•	,	
1994	280,772	344,087	63,315	81.6%
1995	294,692	358,657	63,965	82.2%
1996	320,686	382,957	62,271	83.7%
1997	362,683	398,728	36,045	91.0%
1998	387,530	414,694	27,164	93.4%
1999	427,122	447,596	20,474	95.4%
2000	391,083	447,086	56,003	87.5%
2001	349,170	464,649	115,479	. 75.1%
2002	309,667	463,487	153,820	66.8%
2003	300,154	465,276	165,122	64.5%
2004*	322,278	469,557	147,279	68.6%
2005	359,032	464,222	105,190	77.3%
2006	377,013	439,992	62,979	85.7%
2007	376,466	428,281	51,815	87.9%

<sup>\*</sup>After change in benefit and funding provisions, from restated report

## MINNEAPOLIS POLICE RELIEF ASSOCIATION December 31, 2007 Actuarial Valuation

## Accounting Basis

## **Schedule of Employer Contributions**

			Total
Year Ended	City	State	Employer
December 31:	<b>Contributions</b>	Contributions	<b>Contributions</b>
1992	\$5,926,443	\$2,975,695	\$8,902,138
1993	5,664,620	2,550,138	8,214,758
1994	4,437,124	2,354,380	6,791,504
1995	4,583,006	3,776,109	8,359,115
1996	4,144,998	4,317,908	8,462,906
1997	3,907,944	3,630,557	7,538,501
1998	2,698,561	3,431,684	6,130,245
1999	698,080	3,021,373	3,719,453
2000	1,295,071	3,268,063	4,563,134
2001	10,812	3,448,383	3,459,195
2002	2,912,060	5,413,835	8,325,895
2003	13,540,305	5,879,854	19,420,159
2004	20,800,530	7,089,022	27,889,552
2005	24,976,747	6,573,582	31,550,329
2006	5,366,224	5,200,521	10,566,745
2007	3,647,229	3,167,214	6,814,443

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## **Historical Unit Values**

				Historical Salary Rates for PRB		or PRB
	Effective	Contract	Months	Annualized	Annualized	5-Year
	<u>Date</u>	Unit Values	<u>Paid</u>	Unit Values	Return	<u>Average</u>
2000	01/01/2000	68.36	9.5	68.7350		
	10/15/2000	70.16	2.5			
2001	01/01/2001	73.16	9.5	73.6850	7.202%	
	10/15/2001	75.68	2.5			
2002	01/01/2002	77.74	9.5	78.2275	6.165%	
	10/15/2002	80.08	2.5			
2003	01/01/2003	80.08	9.5	80.7279	3.196%	
	10/15/2003	83.19	2.5		•	
2004	01/01/2004	83.19	9.5	83.5733	3.525%	
	10/15/2004	85.03	2.5			
2005	01/01/2005	85.03	2.0	86.1488	3.082%	4.634%
	03/01/2005	86.02	7.5			
	10/15/2005	87.43	2.5			
2006	01/01/2006	87.43	9.5	87.8133	1.932%	3.580%
•	10/15/2006	89.27	2.5			
2007	01/01/2007	89.27	9.5	89.7846	2.245%	2.796%
	10/15/2007	91.74	2.5		_	· •
2008	01/01/2008	91.74	9.5	91.7400	2.178%	2.592%
	10/15/2008	91.74	2.5			

Contract Unit Values: The most recent contract as of the date of this report expires October 14, 2008. The last unit value determined under that contract was 91.74 effective as of October 15, 2007.

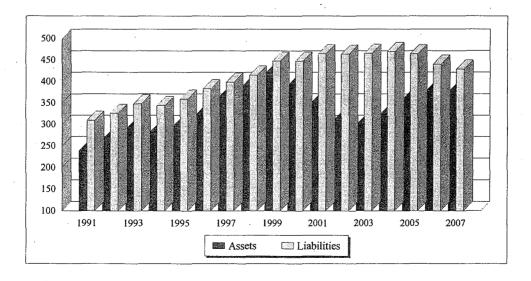
#### Historical Tables

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

(Dollar amounts in thousands)

As of December 31:	Actuarial Accrued <u>Liability</u>	Actuarial Value of <u>Assets</u>	Percent <u>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%
2002	463,487	309,667	66.8%
2003	465,276	300,154	64.5%
2004*	469,557	322,278	68.6%
2005	464,222	359,032	77.3%
2006	439,992	377,013	85.7%
2007	428,281	376,466	87.9%

<sup>\*</sup>After change in benefit and funding provisions, from restated report



## **Historical Tables**

## **History of Actuarially Determined Employer Contributions**

	Normal Cost	Amortization of Unfunded
Valuation	as a Percent	Actuarial
December 31:	of Payroll	Liability
	-	·
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
2002	21.56%	25,994,756
2003	19.78%	31,678,807
2004*	18.96%	14,305,932
2005	17.93%	10,676,247
2006	16.87%	6,711,413
2007	15.81%	5,830,498

The required municipal normal cost contribution is the total normal cost shown less an 8% adjustment for member payroll contributions.

<sup>\*</sup>After change in benefit and funding provisions, from restated report

December 31, 2007 Actuarial Valuation

## Historical Tables

## **Comparative Schedule of Active Members**

	Number of				
Valuation	Active	Projected	,	Averages	
December 31:	<u>Members</u>	Payroll	Age	Service	Pay
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
2002	53	3,955,411	53.7	29.4	74,630
2003	24	1,860,356	55.0	30.4	77,515
2004	· 18	1,429,255	55.2	31.1	79,403
2005	17	1,403,846	57.4	33.3	82,579
2006	15	1,236,046	58.8	34.5	82,403
2007	14	1,185,563	59.7	35.8	84,683

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

#### Historical Tables

## **Comparative Schedule of Inactive Members**

	. Number o	f Retirees and B	eneficiaries	Actual	Projected	
As of	Added	Removed	On Valuation	Annual	Annual	Present Value
December 31:	to Rolls	from Rolls	<u>Date</u>	<b>Benefits</b>	<b>Benefits</b>	of Benefits
1000	4.0					
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
2002	35	40	928	30,724,261	31,446,287	423,583,483
2003	40	31	935	31,855,476	33,194,254	447,163,590
2004*	. 40	31	921	32,797,952	34,479,242	455,208,169
2005	10	27	904	33,789,746	34,157,890	450,360,551
2006	19	39	884	34,121,401	34,216,563	428,105,651
2007	19	39	864	36,033,230	34,191,406	417,106,358

<sup>\*</sup>After change in benefit and funding provisions, from restated report

December 31, 2007 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 0% after age 50. The plan is frozen, and all remaining active members are over age 50.

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 54, or attained age if older.

5. Interest rate

6% compounded annually.

6. Unit value/Salary scale

The unit value as of December 31, 2007, based on the current union contract (which expires October 14, 2008) is 91.74. All future unit values for actives and inactives are assumed to increase 4% per year from the valuation date.

7. Actuarial cost method

The Entry Age Normal Cost Method. Under this method, the normal cost for an individual member is the level percentage of pay 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.

December 31, 2007 Actuarial Valuation

## **Summary of Plan Provisions**

1. Normal	retirement	benefit
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Annual benefit of 30.40/80 of base pay for first 19 years of service. An additional 4.60/80 units are 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 43/80 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

The plan is frozen. All remaining active members are eligible for an immediate benefit upon retirement.

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 23/80 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 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. In the event of death without survivorship, member contributions are refundable including 5% interest from the month the contribution is made.