

**MINNEAPOLIS FIREFIGHTERS'  
RELIEF ASSOCIATION**

**SPECIAL FUND**

*December 31, 2008  
Actuarial Valuation*

**Revised to Reflect  
November 20, 2009 Court Order**

November, 2009

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*Revised December 31, 2008 Actuarial Valuation of the Special Fund*

**Introduction**

**Purpose**

This report presents the results of the December 31, 2008 valuation for the Minneapolis Firefighters' Relief Association as originally finalized in April, 2009, preceded by the pages that were materially changed by District Court Judge Poston's Order dated November 20, 2009. Its primary purposes are:

- to present the original report in its entirety for reference,
- to revise the funded status as of December 31, 2008,
- to revise the normal cost for 2008, and the required amortization payment,
- to provide the basis for a revised levy payable in 2010 consistent with the Court Order, and
- to present information required to be disclosed under Governmental Accounting Standards Board Statement No. 25 (GASB 25) as of December 31, 2008.

**Sources of Data**

The Relief Association supplied December 31, 2008 data for all active and inactive members, and asset information, including the market and book value of investments as of December 31, 2008, and the amount of receivables and payables at year end. The Relief Association also provided historical salary increase rate and investment return values used in determining the actuarial value of assets. We have relied on this data in preparing this report.

Other than the November, 20, 2009, Court Order, no events subsequent to the issuance of the previously issued report are reflected.

**Changes from the Previous Valuation**

The original actuarial valuation of the plan was prepared as of December 31, 2008. The actuarial assumptions and methods used to prepare this report are the same as those used in the original 2008 report (see page 20).

For the 2007 report, liabilities were determined based on a unit value of 86.2658 effective October 15, 2007. The most recent union contract was through 2010. A unit value of 88.38 became effective October 26, 2008, and remained in effect until the November 20, 2009 court order which required that the unit value be decreased to 82.62 as of December 1, 2009.

For purposes of this restated valuation, we have used the 88.38 unit value through November 2009, the 82.62 unit value as of December 1, 2009 and an 85.13 unit value as of January 1, 2010 with projected annual increases of 4% per year.

Reflecting the unit values of the November 20, 2009 court order lowered the plan liabilities by \$17 million (see page 10, item A.3.e.).

Van Iwaarden Associates – November 30, 2009 – Revised pursuant to November 20, 2009 Court Order

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*Revised December 31, 2008 Actuarial Valuation of the Special Fund*

**Introduction (continued)**

As required by the November 20, 2009 order, this revised valuation reflects the City's payment in excess of revised prior minimum contributions. The market value of the accumulated excess contributions is included in the market value of assets and the book value of the excess contributions is included in the book value of assets. This results in the present value of future contributions being reduced by the accumulated value of the prior excess contributions. The fund still has an unfunded actuarial accrued liability, so the accumulated value of the excess contributions is effectively amortized over a rolling 15 year period, pursuant to Minn. Stat. 423C.15.

**Summary of Valuation Results**

As of December 31, 2008, the revised funded status of the plan (actuarial accrued liabilities divided by the actuarial value of assets) is 90.1%, down from 92.8% on December 31, 2007 but up 5.4% from the original 2008 report. The decrease in funded status from 2007 was primarily due to unfavorable investment results. Investment return for the year was -28.6%, much less than the 6% assumed return. This loss is partially offset by the reduced unit values.

**Actuarial Certification**

We certify that the actuarial valuation has been prepared in accordance with Minnesota Statutes §356.20-.23, §69.77 and §423C as they relate to fire department relief associations in cities of the first class in general and the Minneapolis Firefighters' Relief Association in particular. We also certify that we have made a good faith effort to comply with the November 20, 2009 District Court Order in all respects and in a manner intended to conform to Minnesota State law and generally accepted actuarial principles.

We believe the results are reasonable and fairly represent the actuarial status of this plan.

Respectfully submitted,



Mark D. Meyer, FSA, MAAA  
Consulting Actuary



Peter J. Cullen, EA  
Consulting Actuary

# MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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Revised December 31, 2008 Actuarial Valuation of the Special Fund

## Summary of Results

	Original December 31, 2008	Restated December 31, 2008	Change
<b><u>A. Plan participant data</u></b>			
1. Number of participants			
a. Active employees	27	27	0
b. Terminated vested employees	0	0	0
c. Retirees	348	348	0
d. Disability	49	49	0
e. Surviving spouses	166	166	0
f. Surviving children	0	0	0
g. Total	590	590	0
2. Liability duration			
a. Average life expectancy	13.6	13.6	(0.0)
b. Average annuity factor	12.5	11.7	(0.8)
c. Benefit life expectancy	26.0	24.4	(1.6)
<b><u>B. Normal costs</u></b>			
1. Total normal cost			
a. Amount	\$451,814	\$423,357	(\$28,457)
b. Percentage of active payroll	20.21%	18.93%	-1.28%
2. Employer normal cost			
a. Amount	272,939	244,482	(28,457)
b. Percentage of active payroll	12.21%	10.93%	-1.28%
<b><u>C. Amortization payments</u></b>			
1. Unfunded actuarial accrued liability	\$42,910,915	\$25,987,723	(\$16,923,192)
2. Amortization payment	5,083,702	3,439,873	(1,643,829)
<b><u>D. Value of plan assets</u></b>			
1. Market value	181,181,433	181,181,433	0
2. Actuarial value (for calculating contributions)	237,400,854	237,400,854	0
<b><u>E. Benefit liabilities</u></b>			
1. Present value of future benefits	281,254,209	264,271,659	(16,982,550)
2. Actuarial accrued liability	280,311,769	263,388,577	(16,923,192)
<b><u>F. Funded status</u></b>			
1. Actuarial value of assets as a percent of liabilities	84.7%	90.1%	5.4%
2. Market value of assets as a percent of liabilities	64.6%	68.8%	4.2%
3. Pension payment index (months)	102	102	0

Van Iwaarden Associates - November 30, 2009 - Revised pursuant to November 20, 2009 Court Order

VAN IWAARDEN

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*Revised December 31, 2008 Actuarial Valuation of the Special Fund*

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**Historical Unit Values**

	Effective Date	Contract Unit Values	Months Paid	Historical Salary Rates for PRB				
				Annualized Unit Values	Annualized Salary	Dollar Increase	Annualized Return	5-Year Average
1999	01/01/99	\$64.9037	9.5	\$65.5256	\$62,905			
	10/15/99	67.8887	2.5					
2000	01/01/2000	67.9408	9.5	68.3398	65,606	2,702	4.295%	
	10/15/2000	69.8559	2.5					
2001	01/01/2001	70.4249	9.5	70.8372	68,004	2,398	3.654%	
	10/15/2001	72.4039	2.5					
2002	01/01/2002	73.0107	9.5	73.3100	70,378	2,374	3.491%	
	10/15/2002	74.4474	2.5					
2003	01/01/2003	74.4474	9.5	74.6934	71,706	1,328	1.887%	
	10/15/2003	75.6284	2.5					
2004	01/01/2004	79.3547	9.5	79.3958	76,220	4,514	6.296%	3.925%
	10/15/2004	79.5518	2.5					
2005	01/01/2005	79.5518	6.0	80.6054	77,381	1,161	1.524%	3.370%
	07/01/2005	80.9824	3.5					
	10/15/2005	82.6062	2.5					
2006	01/01/2006	82.6062	9.5	82.7200	79,411	2,030	2.623%	3.164%
	10/15/2006	83.1522	2.5					
2007	01/01/2007	83.1522	8.1	83.9441	80,586	1,175	1.480%	2.762%
	09/09/2007	85.5889	3.9					
2008	01/01/2008	85.8168	9.9	86.2654	82,815	2,228	2.765%	2.938%
	10/26/2008	88.3800	2.1					
2009	01/01/2009	88.3800	11.0	87.9000	84,384	1,569	1.895%	2.057%
	12/01/2009	82.6200	1.0					
2010	01/01/2010	85.1300	12.0	85.1300	81,725	(2,659)	-3.151%	1.122%

The unit values as of September 9, 2007, January 1, 2008 and October 26, 2008 were determined by Rice, Michels and Walther based on the most recent union contract. Rice, Michels and Walther has determined that the unit values under the November 20, 2009 order are 82.62 as of December 1, 2009 and 85.13 as of January 1, 2010.

MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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Revised December 31, 2008 Actuarial Valuation of the Special Fund

*Funding Basis*

Actuarial Values Used to Determine Contribution

	December 31, 2007	December 31, 2008
<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	\$22,173,078	\$21,006,053
2. Vested terminated members	0	0
3. Retired members	204,883,603	182,582,139
4. Spouses and children receiving benefits	34,906,872	33,848,726
5. Disabled members receiving benefits	<u>30,251,236</u>	<u>26,834,741</u>
6. Total present value of projected benefits	292,214,789	264,271,659
<b><u>B. Actuarial accrued liability (the cost allocated to all prior years)</u></b>		
1. Active members	\$21,036,270	\$20,122,971
2. Vested terminated members	0	0
3. Retired members	204,883,603	182,582,139
4. Spouses and children receiving benefits	34,906,872	33,848,726
5. Disabled members receiving benefits	<u>30,251,236</u>	<u>26,834,741</u>
6. Total actuarial accrued liability	291,077,981	263,388,577
<b><u>C. Amortization of unfunded actuarial accrued liability</u></b>		
1. Total actuarial accrued liability (B.6.)	\$291,077,981	\$263,388,577
2. Actuarial value of assets	270,096,261	237,400,854
3. Unfunded actuarial accrued liability (1. - 2.)	20,981,720	25,987,723
4. Funded status (2. / 3.)	92.8%	90.1%
5. Amortization payment (see page 9)	2,788,761	3,439,873
<b><u>D. Normal cost (the cost allocated to the current year)</u></b>		
	December 31, 2007	December 31, 2008
1. Present value of future normal costs	\$1,136,808	\$883,082
2. Normal cost as a dollar amount		
a. Total normal cost	447,608	423,357
b. Statutory adjustment for member contributions	199,149	178,875
c. Employer normal cost (a. - b.)	248,458	244,482
3. Payroll for year ending on valuation date	2,489,368	2,235,940
4. Normal cost as a percent of active payroll		
a. Total normal cost	17.98%	18.93%
b. Statutory adjustment for member contributions	8.00%	8.00%
c. Employer normal cost (a. - b.)	9.98%	10.93%

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*Revised December 31, 2008 Actuarial Valuation of the Special Fund*

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***Funding Basis***

**Amortization Schedule for the Required Contribution**

<u>Date</u> <u>Established</u>	<u>Initial</u> <u>Balance</u>	<u>Outstanding</u> <u>Balance on</u> <u>12/31/2008</u>	<u>Remaining</u> <u>Years to</u> <u>Amortize</u>	<u>Amortization</u> <u>Payment</u>
12/31/2003	\$56,964,446	\$43,168,507	10	\$5,533,223
12/31/2004	(33,737,023)	(27,396,298)	11	(3,277,035)
12/31/2005	17,107,353	14,767,474	12	1,661,717
12/31/2006	2,855,699	2,602,961	13	277,387
12/31/2007	(14,480,218)	(13,858,108)	14	(1,406,531)
12/31/2008	6,703,187	<u>6,703,187</u>	15*	<u>651,112</u>
Total		25,987,723		3,439,873

\*The amortization period is the lesser of 15 years and the benefit life expectancy for the fund.

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*Revised December 31, 2008 Actuarial Valuation of the Special Fund*

**Actuarial Methods and Assumptions**

1. Mortality                      The 1983 GAM mortality table set forward 2 years for females. Before 2005, 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 57, or attained age if older.
  
5. Interest Rate                6% compounded annually.
  
6. Unit value/Salary Scale    The unit value is 88.38 as of January 1, 2009. The unit value under the November 20, 2009 order is 82.62 as of December 1, 2009 and 85.13 as of January 1, 2010. All future unit values 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 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 FIREFIGHTERS'  
RELIEF ASSOCIATION  
SPECIAL FUND**

*December 31, 2008  
Actuarial Valuation*

April, 2009

# MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

December 31, 2008 Actuarial Valuation of the Special Fund

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**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2008 Actuarial Valuation of the Special Fund*

**Introduction**

**Purpose**

This report presents the results of the December 31, 2008 valuation for the Minneapolis Firefighters' Relief Association. Its primary purposes are:

- to determine the funded status as of December 31, 2008,
- to determine the normal cost for 2008, and
- to present information required to be disclosed under Governmental Accounting Standards Board Statement No. 25 (GASB 25) as of December 31, 2008.

**Sources of Data**

The Relief Association supplied December 31, 2008 data for all active and inactive members, and asset information, including the market and book value of investments as of December 31, 2008, and the amount of receivables and payables at year end. The Relief Association also provided historical salary increase rate and investment return values used in determining the actuarial value of assets. 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, 2007. The actuarial assumptions and methods used to prepare this report are the same as those used in the 2007 report (see page 19). For the 2007 report, liabilities were determined based on a unit value of 86.2658 effective October 15, 2007. As of the date of this report, a union contract is in effect through 2010. The unit values determined based on the contract are shown on page 7 of this report. Unit values beyond the contract are projected at 4% annual increases. As of January 1, 2009, the annualized unit value for determining plan liabilities is 88.38.

**Summary of Valuation Results**

As of December 31, 2008, the funded status of the plan (actuarial accrued liabilities divided by the actuarial value of assets) is 84.7%, down from 92.8% on December 31, 2007. This was primarily due to unfavorable investment results. Investment return for the year was -28.6%, much less than the 6% assumed return.

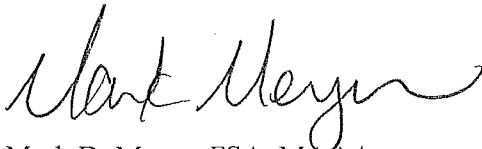
MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION  
*December 31, 2008 Actuarial Valuation of the Special Fund*

Introduction (continued)

Actuarial Certification

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

Respectfully submitted,



Mark D. Meyer, FSA, MAAA  
Consulting Actuary



Peter J. Cullen, EA  
Consulting Actuary

# MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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December 31, 2008 Actuarial Valuation of the Special Fund

## Summary of Results

<u>A. Plan participant data</u>	<u>December 31, 2007</u>	<u>December 31, 2008</u>	<u>Change</u>
1. Number of participants			
a. Active employees	27	27	0
b. Terminated vested employees	0	0	0
c. Retirees	366	348	(18)
d. Disability	51	49	(2)
e. Surviving spouses	164	166	2
f. Surviving children	0	0	0
g. Total	608	590	(18)
2. Liability duration			
a. Average life expectancy	13.9	13.6	(0.3)
b. Average annuity factor	12.9	12.5	(0.4)
c. Benefit life expectancy	27.3	26.0	(1.3)
<u>B. Normal costs</u>	<u>2007 Plan Year</u>	<u>2008 Plan Year</u>	
1. Total normal cost			
a. Amount	\$447,608	\$451,814	\$4,207
b. Percentage of active payroll	17.98%	20.21%	2.23%
2. Employer normal cost			
a. Amount	248,458	272,939	24,481
b. Percentage of active payroll	9.98%	12.21%	2.23%
<u>C. Amortization payments</u>			
1. Unfunded actuarial accrued liability	\$20,981,720	\$42,910,915	\$21,929,195
2. Amortization payment	2,788,761	5,083,702	2,294,941
<u>D. Value of plan assets</u>	<u>December 31, 2007</u>	<u>December 31, 2008</u>	
1. Market value	274,954,486	181,181,433	(93,773,053)
2. Actuarial value (for calculating contributions)	270,096,261	237,400,854	(32,695,407)
<u>E. Benefit liabilities</u>			
1. Present value of future benefits	292,214,789	281,254,209	(10,960,580)
2. Actuarial accrued liability	291,077,981	280,311,769	(10,766,212)
<u>F. Funded status</u>			
1. Actuarial value of assets as a percent of liabilities	92.8%	84.7%	-8.1%
2. Market value of assets as a percent of liabilities	94.5%	64.6%	-29.8%
3. Pension payment index (months)	153	102	(51)

# MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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December 31, 2008 Actuarial Valuation of the Special Fund

## Funding Basis

### Actuarial Value of Assets

#### A. Average unrealized gain

Year Ending December 31:	Market Value	Book Value	Unrealized Gain (Market - Book)
2005	\$253,180,944	\$228,019,216	\$25,161,728
2006	263,951,959	229,268,152	34,683,807
2007	274,954,486	239,806,540	35,147,946
2008	181,181,433	230,594,688	(49,413,255)

#### B. Preliminary actuarial value of assets

	December 31, 2007	December 31, 2008
1. Book value of assets	\$239,806,540	\$230,594,688
2. Average unrealized gain for previous three years	31,664,494	6,806,166
3. Preliminary actuarial value	271,471,034	237,400,854

#### C. Excess investment income

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

Fiscal Year	Salary Increase	Asset Return
2003	1.887%	20.000%
2004	6.296%	10.047%
2005	1.524%	5.890%
2006	2.623%	12.460%
2007	1.480%	11.500%
2008	2.765%	-28.600%

- Determination of excess investment income

a. Arithmetic average of previous 5 years salary increases	2.762%	2.938%
b. Arithmetic average of previous 5 years of asset returns	11.979%	2.259%
c. Excess of asset return over salary increase	9.217%	0.000%
d. Excess minus 2%	7.217%	0.000%
e. Excess investment income - min of 1.0% or 2.d., x market value	2,749,545	0
f. Post-retirement benefit - min of 1.0% or 2.d., x market value (0.5% as of December 31, 2007)	1,374,772	0

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

	\$270,096,261	\$237,400,854
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MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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December 31, 2008 Actuarial Valuation of the Special Fund

Summary of Member Data

	December 31, 2007	December 31, 2008
<u><b>A. Active members</b></u>		
1. Number		
a. Fully vested	27	27
b. Nonvested	0	0
c. Total	27	27
2. Average age	56.8	57.8
3. Average years of service	31.3	32.3
4. Total valuation payroll (for the year following the valuation date)	\$2,236,009	\$2,325,378
5. Average annual salary	\$82,815	\$86,125
6. Benefit life expectancy	52.5	50.7
<u><b>B. Vested terminated members</b></u>		
1. Number	0	0
2. Total annual deferred benefits	\$0	\$0
3. Average annual benefit	\$0	\$0
4. Average age	0.0	0.0
<u><b>C. Retirees</b></u>		
1. Number	366	348
2. Total annual benefits	\$15,524,573	\$15,156,494
3. Average annual benefit	\$42,417	\$43,553
4. Average age	70.6	71.1
5. Benefit life expectancy	27.6	26.3
<u><b>D. Disabilitants</b></u>		
1. Number	51	49
2. Total annual benefits	\$2,164,581	\$2,131,726
3. Average annual benefit	\$42,443	\$43,505
4. Average age	68.1	68.3
5. Benefit life expectancy	30.3	29.2
<u><b>D. Surviving spouses</b></u>		
1. Number	164	166
2. Total annual benefits	\$3,833,483	\$4,008,938
3. Average annual benefit	\$23,375	\$24,150
4. Average age	78.0	78.0
5. Benefit life expectancy	16.3	15.9
<u><b>E. Dependent children</b></u>		
1. Number	0	0
2. Total annual benefits	\$0	\$0
3. Average annual benefit	\$0	\$0
4. Average age	0.0	0.0
<u><b>F. Total number of members</b></u>	608	590

MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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December 31, 2008 Actuarial Valuation of the Special Fund

**Summary of Changes in Membership**

	Actives	Vested Terminees	Retirees	Disabled	Spouses	Children	Total
<b><u>A. Number of members on December 31, 2007</u></b>	27	0	366	51	164	0	608
<b><u>B. Changes in membership</u></b>							
1. Retirements							0
2. Vested terminations							0
3. Member deaths			(17)	(3)	13		(7)
4. Beneficiary deaths					(11)		(11)
5. Expiration of surviving child benefits							0
6. Separations due to disability							0
7. Change to disability payment status							
8. Corrections			(1)	1			0
9. Total changes	0	0	(18)	(2)	2	0	(18)
<b><u>C. Number of members on December 31, 2008</u></b>	27	0	348	49	166	0	590



# MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

December 31, 2008 Actuarial Valuation of the Special Fund

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## Historical Unit Values

	Effective Date	Contract Unit Values	Months Paid	Historical Salary Rates for PRB				
				Annualized Unit Values	Annualized Salary	Dollar Increase	Annualized Return	5-Year Average
1999	01/01/99	\$64.9037	\$9.5000	\$65.5256	\$62,905			
	10/15/99	67.8887	2.5					
2000	01/01/2000	67.9408	9.5	68.3398	65,606	2,702	4.295%	
	10/15/2000	69.8559	2.5					
2001	01/01/2001	70.4249	9.5	70.8372	68,004	2,398	3.654%	
	10/15/2001	72.4039	2.5					
2002	01/01/2002	73.0107	9.5	73.3100	70,378	2,374	3.491%	
	10/15/2002	74.4474	2.5					
2003	01/01/2003	74.4474	9.5	74.6934	71,706	1,328	1.887%	
	10/15/2003	75.6284	2.5					
2004	01/01/2004	79.3547	9.5	79.3958	76,220	4,514	6.296%	3.925%
	10/15/2004	79.5518	2.5					
2005	01/01/2005	79.5518	6.0	80.6054	77,381	1,161	1.524%	3.370%
	07/01/2005	80.9824	3.5					
	10/15/2005	82.6062	2.5					
2006	01/01/2006	82.6062	9.5	82.7200	79,411	2,030	2.623%	3.164%
	10/15/2006	83.1522	2.5					
2007	01/01/2007	83.1522	8.1	83.9441	80,586	1,175	1.480%	2.762%
	09/09/2007	85.5889	3.9					
2008	01/01/2008	85.8168	9.9	86.2654	82,815	2,228	2.765%	2.938%
	10/26/2008	88.3800	2.1					
2009	01/01/2009	88.3800	9.5	88.3800	84,845	2,030	2.451%	2.169%
	10/15/2009	88.3800	2.5					
2010	01/01/2010	91.0314	9.5	91.0314	87,390	2,545	3.000%	2.464%
	10/15/2010	91.0314	2.5					

The unit values as of September 9, 2007, January 1, 2008 and October 26, 2008 were determined by Rice, Michels and Walther based on the most recent union contract. The January 1, 2010 unit value is estimated based on the 3% increase effective in the final year of the contract.

# MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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December 31, 2008 Actuarial Valuation of the Special Fund

## Funding Basis

### Actuarial Values Used to Determine Contribution

	December 31, 2007	December 31, 2008
<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	\$22,173,078	\$22,418,004
2. Vested terminated members	0	0
3. Retired members	204,883,603	194,268,597
4. Spouses and children receiving benefits	34,906,872	36,015,267
5. Disabled members receiving benefits	<u>30,251,236</u>	<u>28,552,341</u>
6. Total present value of projected benefits	292,214,789	281,254,209
<b><u>B. Actuarial accrued liability (the cost allocated to all prior years)</u></b>		
1. Active members	\$21,036,270	\$21,475,564
2. Vested terminated members	0	0
3. Retired members	204,883,603	194,268,597
4. Spouses and children receiving benefits	34,906,872	36,015,267
5. Disabled members receiving benefits	<u>30,251,236</u>	<u>28,552,341</u>
6. Total actuarial accrued liability	291,077,981	280,311,769
<b><u>C. Amortization of unfunded actuarial accrued liability</u></b>		
1. Total actuarial accrued liability (B.6.)	\$291,077,981	\$280,311,769
2. Actuarial value of assets	270,096,261	237,400,854
3. Unfunded actuarial accrued liability (1. - 2.)	20,981,720	42,910,915
4. Funded status (2. / 3.)	92.8%	84.7%
5. Amortization payment (see page 9)	2,788,761	5,083,702
<b><u>D. Normal cost (the cost allocated to the current year)</u></b>		
	December 31, 2007	December 31, 2008
1. Present value of future normal costs	\$1,136,808	\$942,440
2. Normal cost as a dollar amount		
a. Total normal cost	447,608	451,814
b. Statutory adjustment for member contributions	199,149	178,875
c. Employer normal cost (a. - b.)	248,458	272,939
3. Payroll for year ending on valuation date	2,489,368	2,235,940
4. Normal cost as a percent of active payroll		
a. Total normal cost	17.98%	20.21%
b. Statutory adjustment for member contributions	8.00%	8.00%
c. Employer normal cost (a. - b.)	9.98%	12.21%

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**

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*December 31, 2008 Actuarial Valuation of the Retirement Plan****Funding Basis*****Amortization Schedule for the Required Contribution**

<u>Date</u> <u>Established</u>	<u>Initial</u> <u>Balance</u>	<u>Outstanding</u> <u>Balance on</u> <u>12/31/2008</u>	<u>Remaining</u> <u>Years to</u> <u>Amortize</u>	<u>Amortization</u> <u>Payment</u>
12/31/2003	\$56,964,446	\$43,168,507	10	\$5,533,223
12/31/2004	(33,737,023)	(27,396,298)	11	(3,277,035)
12/31/2005	17,107,353	14,767,474	12	1,661,717
12/31/2006	2,855,699	2,602,961	13	277,387
12/31/2007	(14,480,218)	(13,858,108)	14	(1,406,531)
12/31/2008	23,626,379	<u>23,626,379</u>	15*	<u>2,294,941</u>
Total		42,910,915		5,083,702

\*The amortization period is the lesser of 15 years and the benefit life expectancy for the fund.

# MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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December 31, 2008 Actuarial Valuation of the Special Fund

## Funding Basis

### Changes in the Unfunded Actuarial Accrued Liability

#### A. Liability gain or loss for the year ending on December 31, 2008

1. Expected actuarial accrued liability (AAL)	
a. AAL as of December 31, 2007	\$291,077,981
b. Normal cost as of December 31, 2007 (excluding expenses)	447,608
c. Interest to December 31, 2008 on the AAL and normal cost	17,491,535
d. Benefit payments for the year (excluding post-retirement benefits)	(21,256,303)
e. Interest on benefit payments (1/2 year)	(637,689)
f. Expected AAL on December 31, 2008 (sum of a. through e.)	287,123,132
2. Actual AAL on December 31, 2008	
a. Before any assumption or plan changes	280,319,698
b. After unit value changes	280,311,769
c. After assumption and unit value changes	280,311,769
d. After plan changes	280,311,769
3. Liability (gain) or loss	
a. Due to plan experience different from that expected (2a. - 1f.)	(2,721,373)
b. Due to change in unit value different from expected (2.b. - 2.a.)	(4,089,990)
c. Due to changes in actuarial assumptions (2c. - 2b.)	0
d. Due to plan changes (2d. - 2c.)	0
e. Total (a. + b. + c. + d.)	(6,811,363)

#### B. Asset gain or loss for the year ending on December 31, 2008

1. Expected actuarial value of assets	
a. Actuarial value of assets on December 31, 2007	270,096,261
b. Actual benefit payments and expenses for the year (including post-ret benefits)	(23,447,167)
c. Contributions for the year	4,677,208
d. Expected return on assets	15,642,677
e. Expected actuarial value of assets on December 31, 2008 (sum of a. through d.)	266,968,979
2. Actual actuarial value of assets on December 31, 2008	237,400,854
3. Asset (gain) or loss (1e. - 2.)	29,568,125

#### C. Changes in the unfunded AAL

1. Expected unfunded AAL on December 31, 2008	20,154,153
2. Changes	
a. Actuarial (gain) or loss other than change in unit value	26,846,752
b. Change in unit value different from expected	(4,089,990)
c. Changes in actuarial methods and assumptions	0
d. Total change	22,756,762
3. Unfunded AAL on December 31, 2008	42,910,915

## MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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December 31, 2008 Actuarial Valuation of the Special Fund

*Accounting Basis*Statement of Plan Net Assets as of December 31, 2008

	<u>Market Value</u>	<u>Book Value</u>
<b><u>A. Investment assets</u></b>		
1. Short term investments	8,827,485	8,827,485
2. U.S. government obligations	18,850,548	18,559,705
3. GNMA and mortgage-backed securities	10,106,030	9,995,005
4. Municipal obligations	10,935	19,998
5. Corporate bonds	7,603,258	8,189,756
6. Corporate bond funds	11,338,535	11,033,512
7. Foreign bonds, notes, debentures	266,776	295,021
8. Int'l fixed income funds	3,956,460	4,381,687
8. U.S. corporate stock	64,721,730	83,115,588
9. Equity mutual funds	8,728,224	11,047,707
10. Foreign stock	4,063,616	4,680,896
11. Int'l equity mutual funds	32,681,374	58,204,096
12. Limited partnerships	<u>8,782,230</u>	<u>11,000,000</u>
13. Total	179,937,199	229,350,454
<b><u>B. Checking account</u></b>	511,541	511,541
<b><u>C. Accrued/payable</u></b>		
1. Accrued contributions	309,349	309,349
2. Accounts receivable	0	0
3. Accrued income	607,068	607,068
4. Accounts payable	<u>(183,724)</u>	<u>(183,724)</u>
5. Total	732,693	732,693
<b><u>D. Net assets held in trust for pension benefits</u></b>	181,181,433	230,594,688

# MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION

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December 31, 2008 Actuarial Valuation of the Special Fund

## Accounting Basis

### Statement of Changes in Plan Net Assets

	December 31, 2007	December 31, 2008
<b><u>A. Additions</u></b>		
1. Contributions		
a. City	3,030,347	3,336,852
b. State	<u>1,259,931</u>	<u>1,413,297</u>
c. Total	4,290,278	4,750,149
2. Investment income (net of expense)	29,527,770	(75,114,543)
3. Other	<u>0</u>	<u>0</u>
4. Total additions	33,818,048	(70,364,394)
<b><u>B. Deductions</u></b>		
1. Benefits paid		
a. Regular benefit payments	\$20,955,795	\$21,256,303
b. Post-retirement payments	<u>1,319,834</u>	<u>1,604,231</u>
c. Total	22,275,629	22,860,534
2. Refund of contributions	0	0
3. Administrative expense and custodial trustee fees	<u>539,892</u>	<u>548,125</u>
4. Total deductions	22,815,521	23,408,659
<b><u>C. Net increase</u></b>	11,002,527	(93,773,053)
<b><u>D. Net assets held in trust for pension benefits</u></b>		
1. Beginning of year	\$263,951,959	274,954,486
2. End of year	274,954,486	181,181,433

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2008 Actuarial Valuation of the Special Fund*

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*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>Projected Payroll**</u>	<u>UAAL as a % of Covered Payroll*</u>
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%
2002	255,194	292,678	37,484	87.2%	5,540	676.6%
2003	236,991	293,955	56,964	80.6%	4,397	1295.5%
2004	248,546	275,513	26,967	90.2%	3,142	858.3%
2005	269,426	312,563	43,137	86.2%	2,933	1470.7%
2006	263,276	300,926	37,650	87.5%	2,489	1512.7%
2007	270,096	291,078	20,982	92.8%	2,236	938.4%
2008	237,401	280,312	42,911	84.7%	2,325	1845.6%

\* This measure of funded status is meaningless for a closed group but is presented in order to meet the requirement of GASB No. 25.

\*\*Projected payroll for the year following the valuation date (see page 5, line A.4. )

MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION  
December 31, 2008 Actuarial Valuation of the Special Fund

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*Accounting Basis*

**Schedule of Employer Contributions**

<u>Year Ended</u> <u>December 31:</u>	<u>City</u> <u>Contributions</u>	<u>State</u> <u>Contributions</u>	<u>Total</u> <u>Employer</u> <u>Contributions</u>
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	222,251	1,011,022	1,233,273
2002	3,920	1,024,112	1,028,032
2003	10,141	1,328,240	1,338,381
2004	859	2,146,934	2,147,792
2005	4,737,779	1,913,877	6,651,656
2006	1,348,855	1,221,161	2,570,016
2007	3,030,347	1,259,931	4,290,278
2008	3,336,852	1,413,297	4,750,149



**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2008 Actuarial Valuation of the Special Fund*  
**Historical Tables**

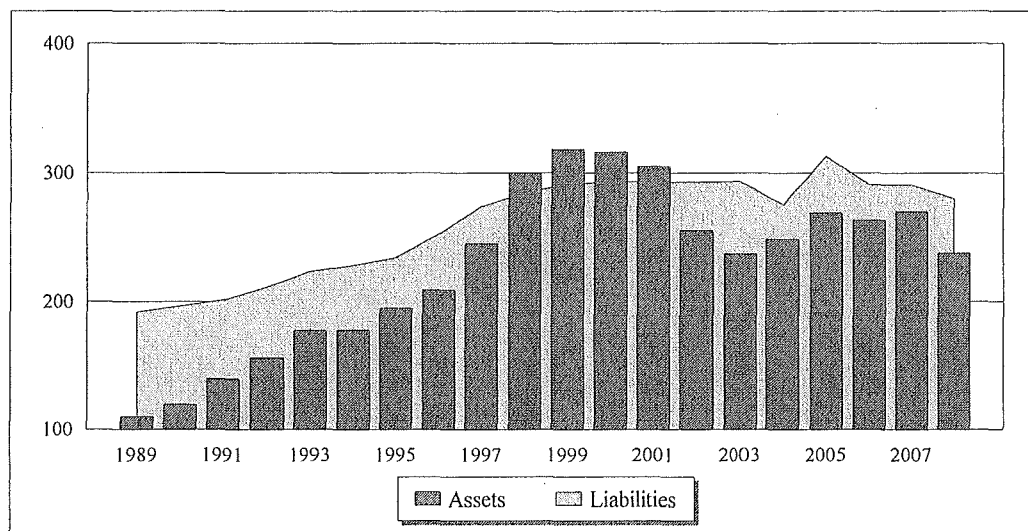
15

**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%
2002	292,678	255,194	87.2%
2003	293,955	236,991	80.6%
2004	275,513	248,546	90.2%
2005#	312,563	269,426	86.2%
2006	300,926	263,276	87.5%
2007	291,078	270,096	92.8%
2008	280,312	237,401	84.7%

#After change in actuarial assumptions

\*After change in benefit provisions



**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2008 Actuarial Valuation of the Special Fund*

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*Historical Tables*

**History of Actuarially Determined Employer Contributions**

<u>Valuation December 31:</u>	<u>Normal Cost as a Percent of Payroll</u>	<u>Amortization of Unfunded Actuarial Liability</u>
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
2002	21.74%	0*
2003	21.44%	5,533,223
2004	21.07%	2,256,188
2005	23.22%	3,917,905
2006	22.85%	4,195,292
2007	17.98%	2,788,761
2008	20.21%	5,083,702

\*Minn. Stat. §423C.06(6) provides that the City is not required to fund a deficit until the funded ratio has been under 100% for two successive years.

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2008 Actuarial Valuation of the Special Fund*

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*Historical Tables*

**Comparative Schedule of Active Members**

Valuation December 31:	Number of Active Members	Projected Payroll	Age	Averages Service	Pay
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
2002	76	5,326,859	53.2	27.1	72,894
2003	58	4,227,844	53.1	27.3	75,810
2004	42	3,020,755	53.7	28.1	74,800
2005	37	2,820,636	54.3	28.8	79,283
2006	31	2,393,623	54.8	29.2	80,302
2007	27	2,150,009	55.8	30.3	82,815
2008	27	2,235,940	57.8	32.3	86,125

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

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

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2008 Actuarial Valuation of the Special Fund*

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*Historical Tables*

**Comparative Schedule of Inactive Members**

As of December 31:	Number of Retirees and Beneficiaries			Annual Benefits	Present Value of Benefits
	Added to Rolls	Removed from Rolls	On Valuation Date		
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	38	46	645	19,919,708	247,423,056
2002	16	27	634	20,451,109	248,173,771
2003	25	29	630	21,248,675	257,735,265
2004	32	41	621	20,598,079	250,231,783
2005	14	34	601	21,397,735	285,341,651
2006	32	41	592	21,263,032	277,685,171
2007	4	15	581	21,522,637	270,041,711
2008	0	18	563	21,297,158	258,836,205

MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION  
*December 31, 2008 Actuarial Valuation of the Special Fund*

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*Historical Tables*

**Pension Payment Index (PPI)**

<u>As of December 31:</u>	<u>Monthly Benefit "Payroll"</u>	<u>Actuarial Accrued Liability</u>	<u>Target PPI</u>	<u>Market Value of Assets</u>	<u>PPI Ratio</u>
2006	\$1,771,919	\$300,925,513	169	\$263,951,959	148
2007	1,793,553	291,077,981	162	274,954,486	153
2008	1,774,763	280,311,769	157	181,181,433	102

**MINNEAPOLIS FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2008 Actuarial Valuation of the Special Fund*

**Actuarial Methods and Assumptions**

1. Mortality                      The 1983 GAM mortality table set forward 2 years for females. Before 2005, 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 57, or attained age if older.
  
5. Interest Rate                6% compounded annually.
  
6. Unit value/Salary Scale    The annualized value of \$88.38 as of January 1, 2009, with increases as shown on page 7, and 4% annual increases in subsequent years.
  
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 FIREFIGHTERS' RELIEF ASSOCIATION**  
*December 31, 2008 Actuarial Valuation of the Special Fund*

**Summary of Plan Provisions**

1. Normal Retirement Benefit      Annual benefit of  $1.6/80$  of base pay for each year of service up to 25 years. An additional 2 units are awarded for the 20th year of service, for a maximum of 42 units. 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. Retiring members who are unmarried may elect an actuarial increase.
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  $42/80$  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.