

**VIRGINIA FIRE DEPARTMENT RELIEF ASSOCIATION  
ANNUAL ACTUARIAL VALUATION  
AS OF DECEMBER 31, 2010**

# CONTENTS

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<u>Section</u>	<u>Page</u>	
		<b><i>Introduction</i></b>
A		<b><i>Valuation Results</i></b>
	1-2	Summary of Actuarial Valuation Results
B		<b><i>Benefit Provisions and Valuation Data</i></b>
	1-2	Brief Summary of Plan Provisions
	3	Schedule of Benefit Payments
	4	Statement of Plan Net Assets (Market Value)
	5	Statement of Changes in Plan Net Assets
	6	Development of Actuarial Value of Assets
C		<b><i>Valuation Procedures</i></b>
	1-2	Actuarial Methods and Valuation Assumptions
D		<b><i>GASB Statement No. 25</i></b>
	1	Required Supplementary Information Schedule of Funding Progress
	2	Schedule of Employer Contributions



March 30, 2011

Board of Trustees  
Virginia Fire Department Relief Association  
Virginia, Minnesota

Submitted in this report are the results of the December 31, 2010, actuarial valuation of the assets, actuarial values and contribution requirements associated with the benefits provided by the Virginia Fire Department Relief Association.

The valuation results contained in Section A provide the actuarial information needed to determine the employer's "minimum obligation" effective January 1, 2012.

The valuation was based upon information furnished by the Association concerning benefits, financial transactions, retirees and beneficiaries. Data was checked for year to year consistency but was not otherwise audited by us. This information is summarized in Section B.

A description of the actuarial funding method and the demographic assumptions used (1984 Uninsured Pensioner Mortality Table set forward two years for males and set back three years for females) is contained in Section C. The Plan Sponsor may want to consider adopting a newer mortality table for use in the valuation.

The economic assumptions, including the 5.0% discount rate, and actuarial funding method are established by state law.

Information needed to comply with Statement No. 25 of the Governmental Accounting Standards Board is contained in Section D.

To the best of our knowledge, this actuarial statement is complete and accurate, and has been prepared in accordance with generally accepted actuarial principles and practice. Furthermore, the undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinion herein.

We will be pleased to review this report with you at your convenience.

Respectfully submitted,  
Gabriel, Roeder, Smith & Company

Sincerely,

Alex Rivera, F.S.A., M.A.A.A.  
Senior Consultant

Lance Weiss, F.A., M.A.A.A.  
Senior Consultant

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**SECTION A**  
**VALUATION RESULTS**

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## SUMMARY OF ACTUARIAL VALUATION RESULTS

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	<u>December 31, 2010</u>	<u>December 31, 2009</u>
<b>Employee Data</b>		
Number of Age & Service Retirees	8	9
Number of Disabled Retirees	1	1
Number of Surviving Spouses	5	5
<b>TOTAL</b>	<b>14</b>	<b>15</b>
 <b>Actuarial Accrued Liability</b>		
Age & Service Retirees	\$ 1,479,708	\$ 1,687,536
Disabled Retirees	224,088	227,592
Surviving Spouses	468,564	478,836
<b>TOTAL</b>	<b>\$ 2,172,360</b>	<b>\$ 2,393,964</b>
 <b>Actuarial Value of Assets at Valuation Date</b>	 \$ 2,045,028	 \$ 2,299,267
 <b>Unfunded (Overfunded) Actuarial Accrued Liability</b>	 \$ 127,332	 \$ 94,697
 <b>Funded Position of Plan's Actuarial Accrued Liability*</b>	 94.1%	 96.0%

\* Equals the ratio of the actuarial value of assets to the total gross actuarial accrued liability

**SUMMARY OF ACTUARIAL VALUATION RESULTS  
(CONTINUED)**

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**Calculation of Contribution for Calendar Year Effective January 1, 2012**

(1) Unfunded actuarial accrued liability	\$ 127,332
(2) Amortization payment on UAAL*	15,705
(3) Total normal cost	-
(4) 2010 administrative expenses paid from the fund × 1.035	17,238
(5) Total financial requirements [(2)+(3)+(4)]	\$ 32,943
(6) Employee contributions	\$ -
(7) State amortization aid	\$ -
(8) Estimated State Fire Aid	-
(9) Estimated total contributions from other sources [(6)+(7)+(8)]	-
(10) Employer's minimum obligation if payment is made in equal installments throughout the year [(5)-(9)]	-
(11) Employer's minimum obligation if payment is made at year end [(10)*1.0247]	-

\* In accordance with Minnesota State Statutes, the unfunded liability was amortized using a 10-year level-dollar amortization.

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**SECTION B**

**BENEFIT PROVISIONS AND VALUATION DATA**

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## BRIEF SUMMARY OF PLAN PROVISIONS

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### AGE & SERVICE RETIREMENT

*Eligibility.* 20 years of service and 50 years of age.

*Amount.* For the first 20 years of service, 45% of final year's salary. For each year in excess of 20, an additional 1% is added to a maximum of 50% of final year's salary for 25 or more years of service. For each year over 25, an additional 1/2% of base pay is added to the benefit. (The latter additional benefit is not subject to the post-retirement adjustments provisions).

### DISABILITY RETIREMENT

*Eligibility.* Totally or partially disabled to the extent that no longer able to perform duties of a fireman before being eligible for age & service retirement.

*Amount.*

Total Disability. 50% of final year's salary.

Partial Disability. 35% of final year's salary.

### MEMBER'S DEATH WHILE ACTIVE, OR IN DEFERRED STATUS, OR RETIRED

*Eligibility.*

*Spouse.* Legally married to member before separation from service and residing with member at time of death. Benefits are payable for life.

*Child.* Younger than age 18.

*Amount.*

*Spouse.* 50% of benefit deceased was receiving or would have been eligible to receive. Based on minimum of 20 years of service.

*Child.* \$300 per child per year.

*Maximum Family Benefit.* Amount deceased was receiving or would have been eligible to receive.

**VESTED DEFERRED.** 20 years of service and separated before age 50. Payment beginning is deferred to attainment of age 50.



**BRIEF SUMMARY OF PLAN PROVISIONS  
(CONTINUED)**

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**POST-RETIREMENT ADJUSTMENTS ("ESCALATOR").** Benefit payments to retired members at age 55 and eligible surviving spouses are increased each January by the lesser of the following percentages: (1) 3-1/2% or (2) the preceding year's percentage increase in the salary of a first grade firefighter.

**MEMBER CONTRIBUTIONS.** 8% of salary. Total contributions are refundable, without interest, if no monthly benefit is payable upon separation from service. Upon the death of an active or retired member with no surviving spouse or dependent children, any unused remaining member contributions shall be paid to a surviving designated beneficiary or estate in monthly amounts equal to the surviving spouse's benefit.

## SCHEDULE OF MONTHLY BENEFIT PAYMENTS

Attained Ages	Age & Service Retirees	Disability Retirees	Beneficiaries	Total
60-64				0 \$0
65-69	1 2,379			1 2,379
70-74		1 1,848		1 1,848
75-79	3 6,583		3 3,646	6 10,229
80-84	2 4,159			2 4,159
85 and Over	2 5,112		2 1,924	4 7,036
<b>Total</b>	8 \$18,233	1 \$1,848	5 \$5,570	14 \$25,651

**STATEMENT OF PLAN NET ASSETS**  
**MARKET VALUE**

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	<u>December 31, 2010</u>	<u>December 31, 2009</u>
Assets:		
Cash and short-term investments	\$ 219,566	\$ 333,482
Receivables:		
Accrued interest	-	-
Employer contribution	-	14,824
Accounts Payable:		
	-	-
Investments, at fair value:		
Common Stocks	855,579	761,598
Mutual Funds	-	-
Mortgages	143,182	229,595
Bonds	794,789	833,561
Real Estate	-	-
Total	\$ 1,793,550	\$ 1,824,754
Net assets held in trust for pension benefits	\$ 2,013,116	\$ 2,173,060

## STATEMENT OF CHANGES IN PLAN NET ASSETS

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	<u>December 31, 2010</u>	<u>December 31, 2009</u>
Additions:		
Contributions		
Employer	\$ 14,761	\$ 48,343
Plan members	-	-
Total	<u>14,761</u>	<u>48,343</u>
Investment Income	165,248	209,383
Total Additions	<u>\$ 180,009</u>	<u>\$ 257,726</u>
Deductions:		
Benefits Paid	\$ 323,298	\$ 320,910
Refund of Contributions	-	-
Administrative Expenses	16,655	15,992
Total Deductions	<u>\$ 339,953</u>	<u>\$ 336,902</u>
Net Increase	\$ (159,944)	\$ (79,176)
Net assets held in Trust Fund:		
Beginning of year	\$ 2,173,060	\$ 2,252,236
End of year	<u>\$ 2,013,116</u>	<u>\$ 2,173,060</u>

## DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

<i>Expected Return on Market Value of Assets for Prior Year</i>	1. Market value of assets at 12/31/2009	\$ 2,173,060
	2. Actual income and disbursements in prior year weighted for timing:	

Item	Amount	Weight for Timing	Weighted Amount
(a) Member Contributions	\$ -	50.00%	\$ -
(b) Contributions	14,761	50.00%	7,381
(c) Miscellaneous Revenue	-	50.00%	-
(d) Benefit Payments	(323,298)	50.00%	(161,649)
(e) Administration	(16,655)	50.00%	(8,328)
(f) Total			\$ (162,596)

3. Market value of assets adjusted for actual income disbursements [(1) + (2)(f)]	\$2,010,464
4. Assumed rate of return on plan assets for the year	5.00%
5. Expected return [(3) * (4)]	\$ 100,523

<i>Actual Return on Market Value of Assets for Prior Year</i>	6. Market value of assets at 12/31/2009	\$2,173,060
	7. Income (less investment income) for prior plan year	14,761
	8. Disbursements paid in prior year	339,953
	9. Market value of assets at 12/31/2010	2,013,116
	10. Actual Return [(9) + (8) - (7) - (6)]	165,248

<i>Gain/(Loss)</i>	11. Investment Gain/(Loss) for Prior Year [(10) - (5)]	\$ 64,725
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<i>Actuarial Value of Assets as of 12/31/2010</i>	12. Market value of assets at 12/31/2010	2,013,116
	13. Deferred investment gains and (losses) for last four years:	

Plan Year Beginning	Gain/(Loss)	Percent Deferred	Deferred Amount
a) 2007	\$ (29,173)	20.0%	\$ (5,835)
b) 2008	(350,619)	40.0%	(140,248)
c) 2009	103,985	60.0%	62,391
d) 2010	64,725	80.0%	51,780
e) Total	\$ (211,082)		\$ (31,912)

14. Actuarial Value of Plan Assets at 12/31/2010 [(12) - (13e)]	2,045,028
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Note: The calculated value is determined by adjusting the market value of assets to reflect the investment gains and losses (the difference between the actual investment return and the expected investment return) during each of the last five years at the rate of 20% per year.

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**SECTION C**  
VALUATION PROCEDURES

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## ACTUARIAL METHODS AND VALUATION ASSUMPTIONS

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**Actuarial Cost Method.** Minnesota statutes require that the Entry Age Normal actuarial cost method be used to determine the liabilities and normal cost. However, because the relief association retirement plan no longer includes active members, and all benefits are already accrued, the liabilities would be the same under any actuarial cost method.

**Financing of Unfunded Actuarial Accrued Liabilities.** In accordance with Minnesota State Statutes, the unfunded liability was amortized using a 10-year level-dollar amortization.

**Actuarial Value of Pension Plan Assets.** The current market value of assets is reduced (increased) for the current year and each of three succeeding years, by a portion of the gain/(loss) in market value during the prior year. Such gain/(loss) is determined as the excess/(deficit) of the current market value of assets over the market value of assets as of the prior year, increased to reflect interest at the actuarial rate and adjusted to reflect contributions and benefit payments during the prior year. The portion of such gain/(loss) by which the current market value of assets is reduced (increased) shall be 80% in the current year; 60% in the first succeeding year, 40% in the second succeeding year and 20% in the third succeeding year.

**Discussion of Valuation Assumptions.** The actuarial accrued liability reported in section A indicates that \$2,172,360, together with investment earnings, will be just sufficient to pay the 14 annuitants for their remaining lifetimes. This assumes the annuitants live and die according to the mortality table, and the amount invested earns an average annual return of five percent over the remaining lifetimes of the annuitants. Actual experience of the Relief Association will not coincide exactly with assumed experience. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experience. The result is a continual series of adjustments (usually small) to the computed contribution rate.

## ACTUARIAL METHODS AND VALUATION ASSUMPTIONS

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The assumed rate of investment return used, as required by state law, was 5.0 percent per annum compounded annually.

The mortality table used to measure retirement mortality was based on the 1984 Uninsured Pensioner Mortality Table set forward two years for males and set back three years for females.

Sample Attained Ages	Single Life Retirement Values (\$1 monthly)				Future Life	
	Level for Life		Increasing 3.5% Yearly		Expectancy (years)	
	Men	Women	Men	Women	Men	Women
45	177.21	189.58	276.55	309.95	29.54	34.05
50	163.12	177.21	242.82	276.55	25.24	29.54
55	147.50	163.12	209.39	242.82	21.20	25.24
60	130.52	147.50	176.80	209.39	17.46	21.20
65	112.87	130.52	146.07	176.80	14.09	17.46
70	95.20	112.87	117.93	146.07	11.13	14.09
75	77.77	95.20	92.46	117.93	8.56	11.13
80	61.71	77.77	70.67	92.46	6.43	8.56



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**SECTION D**  
**GASB STATEMENT NO. 25**

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**This information is presented in draft form for review by the City's auditor.  
Please let us know if there are any changes so that we may maintain consistency  
with the City's financial statements.**

**SCHEDULE OF FUNDING PROGRESS  
(THOUSANDS OF DOLLARS)**

Actuarial Valuation Date	GASB Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Payroll [(b - a)/c]
12/31/2005	\$2,808	\$3,040	\$232	92.4 %	\$0	N/A
12/31/2006	2,828	2,952	124	95.8	0	N/A
12/31/2007	2,768	2,826	58	97.9	0	N/A
12/31/2008	2,542	2,513	(30)	101.2	0	N/A
12/31/2009	2,299	2,394	95	96.0	0	N/A
12/31/2010	2,045	2,172	127	94.1	0	N/A

## SCHEDULE OF EMPLOYER CONTRIBUTIONS

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<b>Valuation Date</b>	<b>Applicable to Fiscal Year</b>	<b>Annual Required Contribution (a)</b>	<b>Total Employer Contribution for Applicable Fiscal Year (b)</b>	<b>Percentage Contributed (b / a)</b>
12/31/2005	2007	\$ 80,232	\$ 150,367	187.4 %
12/31/2006	2008	62,027	82,755	133.4
12/31/2007	2009	48,343	48,343	100.0
12/31/2008	2010	14,761	14,761	100.0
12/31/2009	2011	28,232	TBD	TBD
12/31/2010	2012	32,943	TBD	TBD