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**VIRGINIA FIRE DEPARTMENT RELIEF ASSOCIATION  
ANNUAL ACTUARIAL VALUATION  
December 31, 2005**

**GRS**

Gabriel Roeder Smith & Company

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April 6, 2006

Board of Trustees  
Virginia Fire Department Relief Association  
Virginia, Minnesota

Submitted in this report are the results of the December 31, 2005 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, 2007.

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 experience assumptions used is contained in Section C. The economic experience assumptions 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.

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

Respectfully submitted,  
Gabriel, Roeder, Smith & Company

Sincerely,



Michael R. Kivi, F.S.A.  
Senior Consultant

## **SECTION A**

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### **Valuation Results**

## SUMMARY OF ACTUARIAL VALUATION RESULTS

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	<u>December 31, 2005</u>	<u>December 31, 2004</u>
<b>Employee Data</b>		
Number of Age & Service Retirees	13	13
Number of Disabled Retirees	1	1
Number of Surviving Spouses	3	4
<b>TOTAL</b>	<b>17</b>	<b>18</b>
<b>Actuarial Accrued Liability</b>		
Age & Service Retirees	\$ 2,509,980	\$ 2,609,616
Disabled Retirees	239,760	247,044
Surviving Spouses	289,908	341,640
<b>TOTAL</b>	<b>\$ 3,039,648</b>	<b>\$ 3,198,300</b>
<b>Actuarial Value of Assets at Valuation Date</b>	<b>\$ 2,808,146</b>	<b>\$ 2,624,147</b>
<b>Unfunded (Overfunded) Actuarial Accrued Liability</b>	<b>\$ 231,502</b>	<b>\$ 574,153</b>
<b>Funded Position of Plan's Actuarial Accrued Liability*</b>	<b>92.4%</b>	<b>82.0%</b>

\* 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, 2007**

(1) Unfunded actuarial accrued liability	\$ 231,502
(2) Amortization payment on UAAL (4 year level dollar payment)	63,707
(3) Total normal cost	-
(4) 2005 administrative expenses paid from the fund × 1.035	_____
(5) Total financial requirements [(2)+(3)+(4)]	
(6) Employee contributions	-
(7) State amortization aid	14,842
(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]	_____

## **SECTION B**

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### **Benefit Provisions and Valuation Data**

## 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 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	1 \$2,053			1 \$2,053
65-69		1 \$1,595		1 1594.51
70-74	4 7,756		2 \$2,108	6 9,863
75-79	2 3,588			2 3,588
80-84	4 8,200			4 8,200
85 and Over	2 5,034		1 469	3 5,503
<b>Total</b>	13 \$26,631	1 \$1,595	3 \$2,576	17 \$30,802

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

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	<u>December 31, 2005</u>	<u>December 31, 2004</u>
Assets:		
Cash and short-term investments	\$ 400,071	\$ 494,311
Receivables:		
Accrued interest	(36)	(35)
Employer contribution	-	-
Accounts Payable:	-	-
Investments, at fair value:		
Common Stocks	1,101,340	1,099,283
Mutual Funds	-	-
Mortgages	-	-
Bonds	1,299,287	1,235,239
Real Estate	-	-
Total	\$ 2,400,627	\$ 2,334,522
Net assets held in trust for pension benefits	\$ 2,800,662	\$ 2,828,798

## STATEMENT OF CHANGES IN PLAN NET ASSETS

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	<u>December 31, 2005</u>	<u>December 31, 2004</u>
Additions:		
Contributions		
Employer	\$ 308,263	\$ 365,350
Plan members	-	-
Total	<u>308,263</u>	<u>365,350</u>
Investment Income	72,311	176,383
Total Additions	<u>\$ 380,574</u>	<u>\$ 541,733</u>
Deductions:		
Benefits Paid	\$ 373,487	\$ 377,373
Refund of Contributions	-	-
Expenses	35,223	34,703
Total Deductions	<u>\$ 408,711</u>	<u>\$ 412,076</u>
Net Increase	\$ (28,137)	\$ 129,657
Net assets held in Trust Fund:		
Beginning of year	\$ 2,828,798	\$ 2,699,141
End of year	<u>\$ 2,800,662</u>	<u>\$ 2,828,798</u>

## DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

<i>Expected</i>	1. Market value of assets at 12/31/2004	\$2,828,798																												
<i>Return on</i>																														
<i>Market Value</i>																														
<i>of Assets for</i>	2. Actual income and disbursements in prior year weighted for timing:																													
<i>Prior Year</i>																														
	<table style="width: 100%; border-collapse: collapse; margin-left: 40px;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Item</th> <th style="text-align: right; border-bottom: 1px solid black;">Amount</th> <th style="text-align: right; border-bottom: 1px solid black;">Weight for Timing</th> <th style="text-align: right; border-bottom: 1px solid black;">Weighted Amount</th> </tr> </thead> <tbody> <tr> <td>(a) Member Contributions</td> <td style="text-align: right;">\$ -</td> <td style="text-align: right;">50.00%</td> <td style="text-align: right;">\$ 0</td> </tr> <tr> <td>(b) Contributions</td> <td style="text-align: right;">308,263</td> <td style="text-align: right;">50.00%</td> <td style="text-align: right;">154,132</td> </tr> <tr> <td>(c) Miscellaneous Revenue</td> <td style="text-align: right;">-</td> <td style="text-align: right;">50.00%</td> <td style="text-align: right;">-</td> </tr> <tr> <td>(d) Benefit Payments</td> <td style="text-align: right;">(373,487)</td> <td style="text-align: right;">50.00%</td> <td style="text-align: right;">(186,744)</td> </tr> <tr> <td>(e) Administration</td> <td style="text-align: right;">(15,967)</td> <td style="text-align: right;">50.00%</td> <td style="text-align: right;">(7,983)</td> </tr> <tr> <td>(f) Total</td> <td></td> <td></td> <td style="text-align: right; border-top: 1px solid black;">\$ (40,595)</td> </tr> </tbody> </table>	Item	Amount	Weight for Timing	Weighted Amount	(a) Member Contributions	\$ -	50.00%	\$ 0	(b) Contributions	308,263	50.00%	154,132	(c) Miscellaneous Revenue	-	50.00%	-	(d) Benefit Payments	(373,487)	50.00%	(186,744)	(e) Administration	(15,967)	50.00%	(7,983)	(f) Total			\$ (40,595)	
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(e) Administration	(15,967)	50.00%	(7,983)																											
(f) Total			\$ (40,595)																											
	3. Market value of assets adjusted for actual income disbursements [(1) + (2)(f)]	\$2,788,203																												
	4. Assumed rate of return on plan assets for the year	5.00%																												
	5. Expected return [(3) * (4)]	\$ 139,410																												
<hr/>																														
<i>Actual Return</i>	6. Market value of assets at 12/31/2004	\$2,828,798																												
<i>on Market</i>	7. Income (less investment income) for prior plan year	308,263																												
<i>Value of</i>	8. Disbursements paid in prior year	389,454																												
<i>Assets for</i>	9. Market value of assets at 12/31/2005	2,800,662																												
<i>Prior Year</i>	10. Actual Return [(9) + (8) - (7) - (6)]	53,055																												
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<i>Gain/(Loss)</i>	11. Investment Gain/(Loss) for Prior Year [(10) - (5)]	\$ (86,355)																												

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
(CONTINUED)**

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<i>Actuarial Value of Assets as of 12/31/2005</i>	12. Market value of assets at 12/31/2005	2,800,662																														
	13. Deferred investment gains and (losses) for last 3 years:																															
	<table style="width: 100%; border-collapse: collapse; margin-left: 40px;"> <thead> <tr> <th style="width: 5%;"></th> <th style="width: 20%; border-bottom: 1px solid black;">Plan Year Beginning</th> <th style="width: 20%; border-bottom: 1px solid black;">Gain/(Loss)</th> <th style="width: 15%; border-bottom: 1px solid black;">Percent Deferred</th> <th style="width: 40%; border-bottom: 1px solid black;">Deferred Amount</th> </tr> </thead> <tbody> <tr> <td>a)</td> <td>2002</td> <td style="text-align: right;">(\$269,331)</td> <td style="text-align: center;">20.0%</td> <td style="text-align: right;">(53,866)</td> </tr> <tr> <td>b)</td> <td>2003</td> <td style="text-align: right;">\$256,530</td> <td style="text-align: center;">40.0%</td> <td style="text-align: right;">102,612</td> </tr> <tr> <td>c)</td> <td>2004</td> <td style="text-align: right;">\$21,423</td> <td style="text-align: center;">60.0%</td> <td style="text-align: right;">12,854</td> </tr> <tr> <td>d)</td> <td>2005</td> <td style="text-align: right;">(86,355)</td> <td style="text-align: center;">80.0%</td> <td style="text-align: right;">(69,084)</td> </tr> <tr> <td>e)</td> <td style="border-top: 1px solid black;">Total</td> <td style="text-align: right; border-top: 1px solid black;">(\$77,733)</td> <td></td> <td style="text-align: right; border-top: 1px solid black;">(7,484)</td> </tr> </tbody> </table>		Plan Year Beginning	Gain/(Loss)	Percent Deferred	Deferred Amount	a)	2002	(\$269,331)	20.0%	(53,866)	b)	2003	\$256,530	40.0%	102,612	c)	2004	\$21,423	60.0%	12,854	d)	2005	(86,355)	80.0%	(69,084)	e)	Total	(\$77,733)		(7,484)	
	Plan Year Beginning	Gain/(Loss)	Percent Deferred	Deferred Amount																												
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d)	2005	(86,355)	80.0%	(69,084)																												
e)	Total	(\$77,733)		(7,484)																												
	14. Actuarial Value of Plan Assets at 01/01/2005 [(12) + (13e)]	2,808,146																														

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.

## **SECTION C**

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### **Valuation Procedures**

## 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.** Unfunded actuarial accrued liabilities were amortized by level dollar contributions over four years.

**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 \$3,039,648, together with investment earnings, will be just sufficient to pay the 17 annuitants for their remaining lifetimes. This assumes the annuitants live and die according to the mortality, 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.

### Single Life Retirement Values

Sample Attained Ages	Level for Life		Increasing 3.5% Yearly		Future Life 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

**SECTION D**

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**GASB Statement No. 25**

## SCHEDULE OF FUNDING PROGRESS

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]
12/31/2000	\$2,733	\$3,621	\$888	75.5 %	\$0	N/A
12/31/2001	2,667	3,360	693	79.4	0	N/A
12/31/2002	2,483	3,305	822	75.1	0	N/A
12/31/2003	2,489	3,247	758	76.6	0	N/A
12/31/2004	2,624	3,198	574	82.0	0	N/A
12/31/2005	2,604	3,040	435	85.7	0	N/A

## SCHEDULE OF EMPLOYER CONTRIBUTIONS

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<b>Valuation Date</b>	<b>Fiscal Year</b>	<b>Annual Required Contribution (a)</b>	<b>Total Employer Contribution (b)</b>	<b>Percentage Contributed (b / a)</b>
12/31/2000	2002	\$ 121,903	227,624	186.7 %
12/31/2001	2003	104,671	203,773	194.7
12/31/2002	2004	138,655	365,350	263.5
12/31/2003	2005	145,782	308,263	211.5
12/31/2004	2006	129,406	TBD	TBD
12/31/2005	2007	63,707	TBD	TBD