GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

SOUTH CAROLINA NATIONAL GUARD RETIREMENT SYSTEM (NGRS)

ACTUARIAL VALUATION REPORT

AS OF JULY 1, 2011

GRS

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June 11, 2012

State Budget and Control Board
South Carolina Retirement System
P.O. Box 11960
Columbia, SC 29211-1960

Dear Members of the Board:

Subject: Actuarial Valuation as of July 1, 2011

This report describes the current actuarial condition of the South Carolina National Guard Retirement System (NGRS), determines the calculated employer contribution requirement, and analyzes changes in this amount. In addition, the report provides information required by the Retirement System in connection with Governmental Accounting Standards Board Statement No. 25 (GASB 25), and it provides various summaries of the data. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of July 1, the first day of the plan year for NGRS. This report was prepared at the request of the State Budget and Control Board (Board) and is intended for use by the South Carolina Retirement System (SCRS) staff and those designated or approved by the Board.

Under SCRS statutes, the Board must certify the employer contribution annually. This amount is determined actuarially, based on the Board's funding policy. The contribution is determined by a given actuarial valuation and becomes effective twelve months after the valuation date. In other words, the contribution amount determined by this July 1, 2011 actuarial valuation will be used by the Board when certifying the employer contribution amount for the year beginning July 1, 2012. If new legislation is enacted between the valuation date and the date the contribution becomes effective, the Board may adjust the calculated amount before certifying them, in order to reflect this new legislation. Such adjustments are based on information supplied by the actuary.

FINANCING OBJECTIVES AND FUNDING POLICY

The principle objectives in the funding policy that is maintained by the Board include:

- Establish a contribution amount that remains relatively level over time.
- To set an amount so that the measures of the System's funding progress which include the unfunded actuarial accrued liability, funded ratio, and funding period will be maintained or improved.

- To set a contribution amount that will result in the unfunded actuarial accrued liability (UAAL) to be amortized over a period from the current valuation date that does not exceed 30 years.

The contribution amounts are based on the Board's current funding policy, which is expected to completely amortize the unfunded actuarial accrued liability by June 30, 2036.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches at least 100%.

The funded ratio of the System decreased from 35.9% to 33.3%. This decrease was primarily due to the change in valuation interest rate and mortality assumptions used to perform the 2011 valuation. Absent favorable experience, we expect the funded ratio will continue to slightly decrease for the next several years as the 2008 investment loss is fully recognized in the development of the actuarial value of assets.

If market value of assets had been used in the calculation instead of actuarial (smoothed) value of assets, the funded ratio for the System would have been 28.9%, compared to 27.8% in the prior year.

ASSUMPTIONS AND METHODS

The valuation interest rate, inflation, and the mortality assumptions were updated for calculating the actuarial valuation as of July 1, 2011. Additionally, the asset valuation method was changed from one that recognized the difference between the expected and actual return on the market value of assets over a 10-year period, to a modified 5-year asset smoothing method.

It is our opinion that the recommended assumptions are internally consistent and reasonably reflect the anticipated future experience of the System. The actuarial assumptions and methods used in this report comply with the parameters for disclosure that appear in GASB 25.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can, and almost certainly will, differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rate, and funding periods. The actuarial calculations are intended to provide information for rational decision making.

BENEFIT PROVISIONS

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2011. There have been no changes in plan provisions since the preceding actuarial valuation.

DATA

Member data for retired, active and inactive members was supplied as of July 1, 2011, by the SCRS staff. The staff also supplied asset information as of July 1, 2011. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us by SCRS.

CERTIFICATION

We certify that the information presented herein is accurate and fairly portrays the actuarial position of NGRS as of July 1, 2011.

All of our work conforms with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

The undersigned are independent actuaries and consultants. Mr. Newton and Mr. White are Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Both are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Co.

Joseph P. Newton, FSA, MAAA, EA
Senior Consultant

Daniel J. White, FSA, MAAA, EA
Senior Consultant

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SECTION A

EXECUTIVE SUMMARY

Executive Summary

(Dollar amounts expressed in thousands)

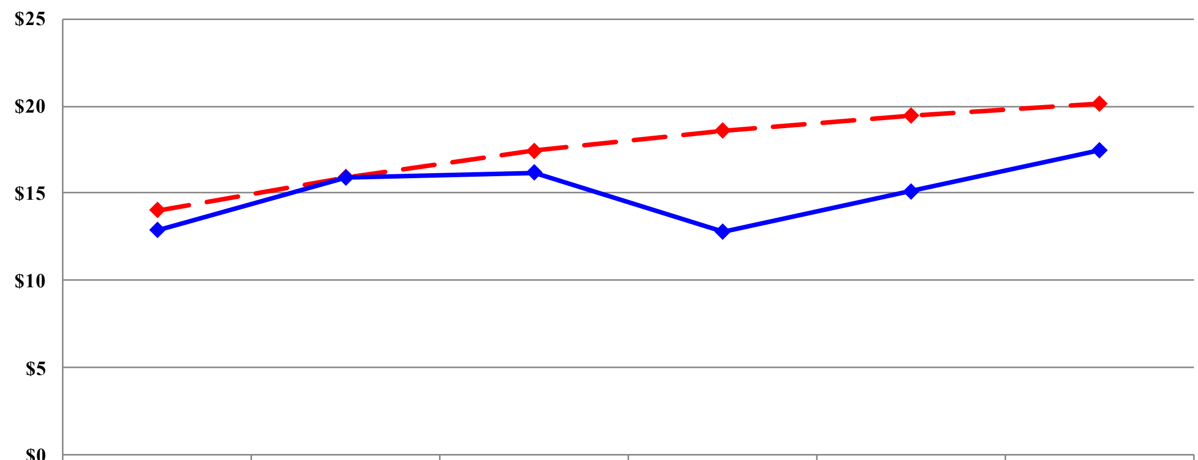
Valuation Date:	July 1, 2011	July 1, 2010
Membership		
• Number of		
- Active Members	12,271	12,445
- Retirees and Beneficiaries	4,252	3,951
- Inactive Members	2,458	2,683
- Total	18,981	19,079
GASB No. 25 Annual Required Contribution		
• Member	$0	$0
• Employer contribution[1]	$4,539	$3,937
Assets		
• Market value	$17,466	$15,053
• Actuarial value	20,138	19,458
• Return on market value	14.9%	14.4%
• Return on actuarial value	4.5%	2.4%
• Ratio - actuarial value to market value	115.3%	129.3%
• External cash flow %	-0.7%	3.1%
Actuarial Information		
• Normal cost	$703	$524
• Actuarial accrued liability (AAL)	60,388	54,153
• Unfunded actuarial accrued liability (UAAL)	40,250	34,695
• Funded ratio	33.3%	35.9%
• Amortization period (blended)	21	22
Reconciliation of UAAL		
• Beginning of Year UAAL	$34,695	$34,821
- Interest on UAAL	3,010	2,785
- Amortization payment with interest	(3,670)	(3,576)
- Assumption/method changes	5,441	0
- Asset experience	668	1,062
- Other liability experience	106	(397)
- Legislative changes	0	0
• End of Year UAAL	$40,250	$34,695

[1] The contribution amont determined by the actuarial valuation is effective for the following fiscal year.

EXECUTIVE SUMMARY (CONTINUED)

The unfunded actuarial accrued liability increased by $5.6 million since the prior year's valuation to $40.3 million. The single largest source of this increase is a result of updating the actuarial assumptions used in the 2011 valuation (an increase of $5.4 million). Below is a chart with the historical actuarial value of assets and actuarial accrued liability for NGRS.

Chart 1. History of Actuarial Value and Market Value of Assets
(Dollars in Millions)



	2006	2007	2008	2009	2010	2011
AVA	$14.0	$15.9	$17.4	$18.6	$19.5	$20.1
MVA	$12.9	$15.9	$16.2	$12.8	$15.1	$17.5

Assets as of July 1,

There is still $2.7 million in deferred investment losses as of the valuation date. Absent favorable investment experience, those deferred losses will be reflected in the actuarial value of assets over the next few years. Therefore, we expect the unfunded actuarial liability for the System to increase for several years and the funded ratio (on an actuarial value of asset basis) to decline before they improve.

The recommended employer contribution requirement increased from $3.9 million in FY 2013 to $4.5 million in FY 2014. The change in the actuarial assumptions and the asset experience (on a smoothed basis) were the two largest causes for the increase in the recommended contribution. Absent legislative changes or significantly favorable investment experience, we expect the contribution rate to gradually increase as deferred investment losses becomes recognized in the actuarial value of assets.

SECTION B

DISCUSSION

DISCUSSION

The results of the July 1, 2011 actuarial valuation of the South Carolina National Guard Retirement System are presented in this report. The purposes of the valuation report is to depict the current financial condition of the System, determine the annual required contribution, and analyze changes in the System's financial condition. In addition, the report provides information required by SCRS in connection with Governmental Accounting Standards Board Statement No. 25 (GASB 25), and various summaries of the members participating in the plan.

This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in financial condition of the retirement system.

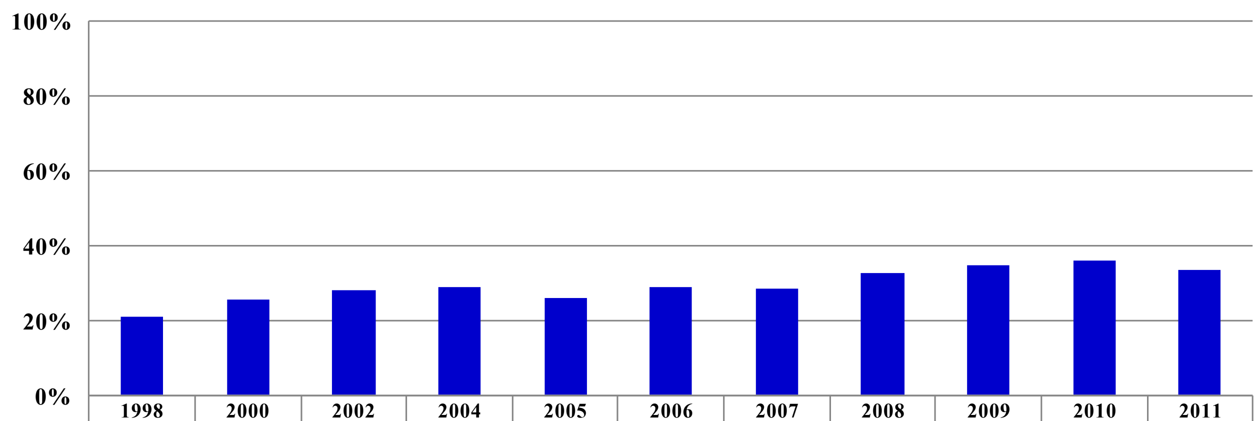
The valuation results for the prior year shown in this report are for comparison purposes. These were prepared by the Retirement System's prior actuary, Cavanaugh Macdonald Consulting LLC. As part of our transition work, we replicated the results and have previously communicated the results of our replication effort to the State Budget and Control Board.

All of the actuarial and financial tables referenced by the other sections of this report appear in Section C. Section D provides member data and statistical information. Appendices A and B provide summaries of the principle actuarial assumptions and methods and plan provisions. Finally, Appendix C provides a glossary of technical terms that are used throughout this report.

Funding Progress

The funded ratio decreased from 35.9% to 33.3% since the prior valuation and has generally trended upward since 2001 as shown in the graph below. Table 10, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the Retirement System.

Chart 2. Funded Ratio
Actuarial Assets as a percentage of Actuarial Accrued Liabilities



	1998	2000	2002	2004	2005	2006	2007	2008	2009	2010	2011
Funded Ratio	20.8%	25.5%	28.2%	28.7%	25.9%	28.8%	28.5%	32.6%	34.8%	35.9%	33.3%

The contribution policy established by the Board is to fully amortize the unfunded actuarial accrued liability (UAAL) over a 30 year period from July 1, 2006. Under this funding policy, there are 25 years remaining in the funding period from the valuation date.

The State appropriation (i.e. employer contribution) is the dollar amount necessary to fund the annual normal cost and systematically amortize the UAAL. There is an amortization cost of $600,534 to amortize the remaining balance of $4,029,636 that was established at July 1, 2006 due to a legislation change that allowed guardsmen who became members of the National Guard after June 30, 1993 to become eligible for membership in the System effective January 1, 2007. The remaining amortization period for this amount as of July 1, 2011 is 10 years. The UAAL from other sources of $36,220,064 is funded over a 30 year period beginning July 1, 2006. The remaining amortization period for this balance as of July 1, 2011 is 25 years. Therefore, the total State appropriation to be made for FY 2013 is $4,539,066.

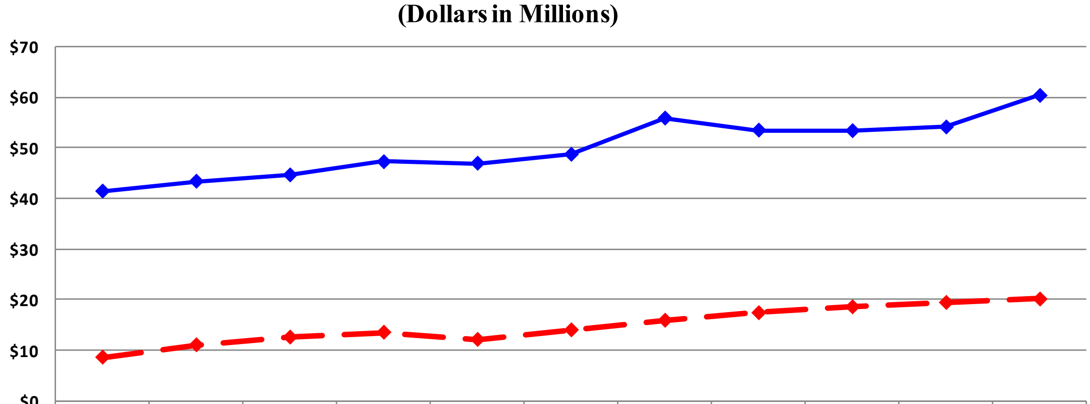
Asset Gains/ (Losses)

The actuarial value of assets ("AVA") is based on a smoothed market value of assets, using a systematic approach to phase-in actual investment return in excess of (or less than) the expected investment income. This is appropriate because it dampens the short-term volatility inherent in investment markets. The expected investment income is determined using the assumed annual investment return rate and the actuarial value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. The actuarial value of assets increased from $19.5 million to $20.1 million since the prior valuation. Table 8 in the following section of the report provides the development of the actuarial value of assets.

The rate of return on the mean market value of assets in 2011 was 14.9%, which is significantly above the expected annual return. However, because of the recognition of prior investment experience, the actuarial (smoothed) asset value returned only 4.5%. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.

The market value of assets is less than the actuarial value of assets, which signifies that the retirement system is in a position of deferred losses. Therefore, unless the System experiences investment returns in excess of the assumed rate of return, the future recognition of these deferred losses is expected to increase the unfunded actuarial accrued liability and decrease the System's funded ratio over the next few years.

Chart 3. History of Actuarial Assets vs. Actuarial Accrued Liability
(Dollars in Millions)



	1998	2000	2002	2004	2005	2006	2007	2008	2009	2010	2011
AVA	8.6	11.1	12.6	13.6	12.2	14.0	15.9	17.4	18.6	19.5	20.1
AAL	41.5	43.4	44.7	47.3	47.0	48.8	55.9	53.5	53.4	54.2	60.4

Tables 6 and 7 in the following section of this report provide asset information that was included in the annual financial statements of the System. Also, Table 9 shows the estimated yield on a market value basis and on the actuarial asset valuation method.

Actuarial Gains/ (Losses) and the Contribution Requirement

The annual actuarial valuation is a snapshot analysis of the benefit liabilities, assets and funded position of the System as of the first day of the plan year. In any one fiscal year, the experience can be better or worse from that which is assumed or expected. The actuarial assumptions do not necessarily attempt to model what the experience will be for any one given fiscal year, but instead try to model the overall experience on average over many years. The demographic experience for the last year is briefly summarized in the chart below.

The unfunded actuarial accrued liability (UAAL) has increased from $34.7 million in 2010 to $40.3 million in 2011. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

Reconciliation of UAAL
(Dollars in thousands)

•	Beginning of Year UAAL	$34,695
	- Interest on UAAL	3,010
	- Amortization payment with interest	(3,670)
	- Assumption change	5,441
	- Asset experience	668
	- Liability experience	106
	- Legislative changes	0
	- Total change	$5,555
•	End of Year UAAL	$40,250

The following table provides a reconciliation of the change in the recommended contribution from 2010 to 2011. The update to the actuarial assumptions used for the 2011 valuation had the largest single impact on the change in the recommended contribution.

Change in Recommended Contribution

•	Prior year valuation	$3,937
	- Expected change	0
	- Assumption change	544
	- Asset experience	68
	- Liability experience	(10)
	- Legislative changes	0
	- Total change	$602
•	Current year valuation	$4,539

This funding method and contribution policy is designed to result in relatively level contribution requirements from year to year. However, absent favorable investment experience, we expect that the contribution requirement will continue to increase over the next several years as existing deferred investment losses become fully recognized in the actuarial value of assets and calculation of the recommended contribution.

GASB No. 25 and No. 27 Disclosures

Accounting requirements for NGRS are provided by the Governmental Accounting Standards Board Statements No. 25 ("GASB 25") and No. 27 ("GASB 27"). Table 10 shows a historical summary of the funded ratios and other information for the System. Table 11 shows other information needed in connection with the required disclosures under GASB 25. GASB 27 governs reporting by the employers of government-sponsored retirement plans.

GASB 25 requires that plans calculate an Annual Required Contribution ("ARC"), and, if actual contributions received are less than the ARC, this must be disclosed. The ARC is calculated in accordance with certain parameters. In particular, it includes a payment to amortize the UAAL. This amortization payment must be computed using a funding period no greater than thirty (30) years. For this disclosure, NGRS treats the Board-established contribution requirement as the ARC.

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as probabilities of retirement, termination, death and disability, and an annual investment return assumption. The Board adopts the actual assumptions to be used in the actuarial valuation, taking into account the actuary's recommendations. The actuarial valuation as of July 1, 2011 reflects the assumptions and methods adopted by the Board in November 2011 for the South Carolina Retirement System.

The principle assumption changes were as follows:

- Decrease the investment return assumption from 8.00% to 7.50%.
- Decrease the inflation assumption from 3.00% to 2.75%.
- Update the mortality assumption and include an explicit assumption for future improvement in life expectancy in the post-retirement mortality assumption.
- The actuarial valuation of asset method was changed from one that recognized the difference between the expected and actual return on the market value of assets over a 10-year period, to a modified 5-year asset smoothing method.

It is our opinion that the recommended assumptions are internally consistent and are reasonable and reflect anticipated future experience of the System. The actuarial assumptions and methods used in this report comply with the parameters for disclosure that appear in GASB 25.

Benefit Provisions

Appendix B of this report includes a summary of the benefit provisions for NGRS. There have been no material changes in the benefit provisions since the prior valuation.

Summary of Retirement Provisions

- All members of the South Carolina National Guard are covered by the System.
- The retirement benefit amount is equal to $50 per month for 20 years' creditable service with an additional $5 per month for each additional year of service. The total pension is limited to $100 per month.
- Members with 20 years of military service are eligible for retirement after they have (i) attained age 60, or (ii) completed 30 years of creditable service. Eligible member may commence benefits at age 60.
- Member contributions are not required or permitted.

SECTION C

ACTUARIAL TABLES

ACTUARIAL TABLES

Summary of Cost Items

(Dollar amounts expressed in thousands)

		July 1, 2011 (1)	July 1, 2010 (2)
1.	Normal cost		
	a. Total normal cost	$ 703	$ 524
	b. Less: member contribution	0	0
	c. Employer normal cost	$ 703	$ 524
2.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 22,263	$ 18,016
	b. Less: present value of future normal costs	6,365	4,766
	c. Actuarial accrued liability	$ 15,898	$ 13,250
3.	Total actuarial accrued liability for:		
	a. Retirees and beneficiaries	$ 32,038	$ 28,492
	b. Inactive members	12,452	12,411
	c. Active members (Item 2.c.)	15,898	13,250
	d. Total	$ 60,388	$ 54,153
4.	Actuarial value of assets	$ 20,138	$ 19,458
5.	Unfunded actuarial accrued liability (UAAL) (Item 3.d. - Item 4.)	$ 40,250	$ 34,695
6.	GASB No. 25 Annual Required Contribution		
	a. Employer normal cost	$ 703	$ 524
	b. Employer contribution available to amortize the UAAL	3,836	3,413
	c. Total employer contribution	$ 4,539	$ 3,937

Actuarial Present Value of Future Benefits
(Dollar amounts expressed in thousands)

		July 1, 2011 (1)	July 1, 2010 (2)
1.	Active members		
	a. Service retirement	$ 2,830	$ 18,016
	b. Deferred termination benefits[1]	19,433	0
	c. Survivor benefits	0	0
	d. Disability benefits	0	0
	e. Total	$ 22,263	$ 18,016
2.	Retired and Inactive members		
	a. Members in payment status	$ 32,038	$ 28,492
	b. Inactive Vested members	12,452	12,411
	c. Total	$ 44,490	$ 40,903
3.	Total actuarial present value of future benefits	$ 66,753	$ 58,919

[1] Attributable to members who terminate after attaining 20 years of service and prior to age 60, the age when retirement benefits commence.

Analysis of Normal Cost
(Dollar amounts expressed in thousands)

	July 1, 2011 (1)	July 1, 2010 (2)
1. Total normal cost		
a. Retirement benefits	$ 91	$ 524
b. Deferred termination benefits	612	0
c. Survivor benefits	0	0
d. Disability benefits	0	0
e. Total	703	524
2. Less: member contributions	$ 0	$ 0
3. Net employer normal cost	$ 703	$ 524

Results of July 1, 2011 Valuation
(Dollar amounts expressed in thousands)

		July 1, 2011 (1)
1.	Actuarial Present Value of Future Benefits	
	a. Present Retired Members and Beneficiaries	$ 32,038
	b. Present Active and Inactive Members	34,715
	c. Total Actuarial Present Value	$ 66,753
2.	Present Value of Future Normal Contributions	
	a. Employee	$ 0
	b. Employer	6,365
	c. Total Future Normal Contributions	$ 6,365
3.	Actuarial Liability	$ 60,388
4.	Current Actuarial Value of Assets	$ 20,138
5.	Unfunded Actuarial Liability	$ 40,250
6.	Unfunded Actuarial Liability Liquidation Period (blended)	21 years

Actuarial Balance Sheet

(Dollar amounts expressed in thousands)

	July 1, 2011 (1)	July 1, 2010 (2)
1. Assets		
a. Current assets (actuarial value)	$ 20,138	$ 19,458
b. Present value of future member contributions	0	0
c. Present value of future employer contributions		
i. Normal contributions	$ 6,365	$ 4,766
ii. Accrued liability contributions	40,250	34,695
iii. Total future employer contributions	$ 46,615	$ 39,461
d. Total assets	$ 66,753	$ 58,919
2. Liabilities		
a. Benefits to be paid to retired members	$ 32,038	$ 28,492
b. Benefits to be paid to former members entitled to deferred pensions	12,452	12,411
c. Benefits to be paid to current active members	22,263	18,016
d. Total liabilities	$ 66,753	$ 58,919

System Net Assets
Assets at Market or Fair Value
(Dollar amounts expressed in thousands)

Item (1)	July 1, 2011 (2)	July 1, 2010 (3)
1. Cash and cash equivalents (operating cash)	$ 3,020	$ 3,695
2. Receivables	532	681
3. Investments		
a. Short-term securities	$ 7	$ 0
b. Domestic fixed income	2,380	2,343
c. Global fixed income	1,999	1,709
d. Domestic equities	1,301	975
e. Global equities	773	1
f. Alternative investments	8,422	6,302
g. Total investments	$ 14,882	$ 11,330
4. Securities lending cash collateral invested	$ 143	$ 195
5. Prepaid administrative expenses	1	1
6. Capital assets, net of accumulated depreciation	0	0
7. Total assets	$ 18,578	$ 15,902
8. Liabilities		
a. Due to other systems	$ 0	$ 1
b. Accounts payable	835	556
c. Investment fees payable	11	10
d. Obligations under securities lending	143	195
e. Deferred retirement benefits	0	0
f. Due to employee insurance program	0	0
g. Benefit payable	4	7
h. Other liabilities	119	80
i. Total liabilities	$ 1,112	$ 849
9. Total market value of assets available for benefits (Item 7. - Item 8.i.)	$ 17,466	$ 15,053
10. Asset allocation (investments)		
a. Net Invested cash	14.8%	24.7%
b. Domestic fixed income	13.6%	15.6%
c. Global fixed income	11.5%	11.4%
d. Domestic equities	7.5%	6.5%
e. Global equities	4.4%	0.0%
f. Alternative investments	48.2%	41.8%
g. Total investments	100.0%	100.0%

Reconciliation of System Net Assets
(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2011	July 1, 2010
	(1)	(2)
1. Value of assets at beginning of year	$ 15,053	$ 12,773
2. Revenue for the year		
a. Contributions		
i. Member contributions	$ 0	$ 0
ii. Employer contributions	3,904	4,052
iii. Total	$ 3,904	$ 4,052
b. Income		
i. Interest, dividends, and other income	$ 152	$ 168
ii. Investment expenses	(43)	(30)
iii. Net	$ 109	$ 138
c. Net realized and unrealized gains (losses)	2,424	1,727
d. Total revenue	$ 6,437	$ 5,917
3. Expenditures for the year		
a. Disbursements		
i. Refunds	$ 0	$ 0
ii. Regular annuity benefits	4,011	3,624
iii. Other benefit payments	0	0
iv. Transfers to other Systems	0	0
v. Total	$ 4,011	$ 3,624
b. Administrative expenses and depreciation	13	13
c. Total expenditures	$ 4,024	$ 3,637
4. Increase in net assets (Item 2.d.- Item 3.c.)	$ 2,413	$ 2,280
5. Value of assets at end of year (Item 1. + Item 4.)	$ 17,466	$ 15,053
6. Net external cash flow		
a. Dollar amount	$ (107)	$ 428
a. Percentage of market value	-0.7%	3.1%

Development of Actuarial Value of Assets
(Dollar amounts expressed in thousands)

			July 1, 2011
			(1)
1.	Actuarial value of assets at the prior valuation date	$	19,458
2.	Market value of assets at the prior valuation date	$	15,053
3.	Net external cash flow during the year		
	a. Contributions	$	3,904
	b. Disbursements		(4,011)
	c. Subtotal	$	(107)
4.	Expected net investment income at 7.50% earned on		
	a. Actuarial value of assets at the prior valuation date	$	1,459
	b. Contributions		146
	c. Disbursements		(150)
	d. Subtotal	$	1,455
5.	Expected actuarial value of assets, end of year (Item 1. + Item 3.c. + Item 4.d.)	$	20,806
6.	Market value of assets as of the current valuation date	$	17,466
7.	Difference between expected actuarial assets and market value of assets (Item 6. - Item 5.)	$	(3,340)
8.	Excess/(shortfall) recognized (20% of Item 7.)	$	(668)
9.	Actuarial value of plan assets, end of year (Item 5. + Item 8.)	$	20,138
10.	Asset gain (loss) for year (Item 9. - Item 5.)	$	(668)
11.	Asset gain (loss) as % of actual actuarial assets		-3.3%
12.	Ratio of AVA to MVA		115.3%

Estimation of Yields

(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2011	July 1, 2010
	(1)	(2)
1. Market value yield		
a. Beginning of year market assets	$ 15,053	$ 12,773
b. Contributions to fund during the year	3,904	4,052
c. Disbursements	(4,011)	(3,624)
d. Investment income (net of investment and administrative expenses)	2,520	1,852
e. End of year market assets	$ 17,466	$ 15,053
f. Estimated dollar weighted market value yield	14.9%	14.4%
2. Actuarial value yield		
a. Beginning of year actuarial assets	$ 19,458	$ 18,600
b. Contributions to fund during the year	3,904	4,052
c. Disbursements	(4,011)	(3,624)
d. Investment income (net of investment and administrative expenses)	787	430
e. End of year actuarial assets	$ 20,138	$ 19,458
f. Estimated actuarial value yield	4.5%	2.4%

Schedule of Funding Progress

(Dollar amounts expressed in thousands)

July 1,	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1998	$ 8,640	$ 41,478	$ 32,838	20.8%	N/A	N/A
2000*	11,089	43,427	32,338	25.5%	N/A	N/A
2002	12,608	44,678	32,069	28.2%	N/A	N/A
2004	13,567	47,281	33,714	28.7%	N/A	N/A
2005	12,151	46,985	34,835	25.9%	N/A	N/A
2006	14,046	48,755	34,709	28.8%	N/A	N/A
2007	15,937	55,917	39,980	28.5%	N/A	N/A
2008	17,426	53,534	36,108	32.6%	N/A	N/A
2009	18,600	53,421	34,821	34.8%	N/A	N/A
2010	19,458	54,153	34,695	35.9%	N/A	N/A
2011	20,138	60,388	40,250	33.3%	N/A	N/A

*As of April 30, 2000.

Notes to Required Supplementary Information
(as required by GASB #25)

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation date	July 1, 2011
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar
Amortization period for GASB 25 ARC	21-year closed period[1]
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return[2]	7.50%
Projected salary increases	None
Inflation	2.75%
Cost-of-living adjustments	0.00%

[1] The blended amortization period as of the valuation date.

[2] Includes inflation at 2.75%.

Solvency Test

(Dollar amounts expressed in thousands)

	Actuarial Accrued Liability				Portion of Aggregate Accrued Liabilities Covered by Assets		
July 1,	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)	Valuation Assets	Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1998	$ 0	$ 14,651	$ 26,827	$ 8,640	N/A	59.0%	0.0%
2000	0	16,186	27,241	11,089	N/A	68.5%	0.0%
2002	0	17,597	27,081	12,608	N/A	71.6%	0.0%
2004	0	19,704	27,577	13,567	N/A	68.9%	0.0%
2005	0	20,804	26,181	12,151	N/A	58.4%	0.0%
2006	0	22,366	26,389	14,046	N/A	62.8%	0.0%
2007	0	24,627	31,290	15,937	N/A	64.7%	0.0%
2008	0	25,554	27,980	17,426	N/A	68.2%	0.0%
2009	0	27,558	25,863	18,600	N/A	67.5%	0.0%
2010	0	28,492	25,661	19,458	N/A	68.3%	0.0%
2011	0	44,490	15,898	20,138	N/A	45.3%	0.0%

SECTION D

MEMBERSHIP DATA

MEMBERSHIP TABLES

Summary of Membership Data

		July 1, 2011	July 1, 2010
		(1)	(2)
1.	Active members		
	a. Males	10,356	10,516
	b. Females	1,915	1,929
	c. Total members	12,271	12,445
	d. Average age	32.0	31.9
	e. Average service	9.3	9.0
2.	Vested inactive members		
	a. Number	2,458	2,683
	b. Total annual deferred benefits	$ 1,910,760	$ 2,086,260
	c. Average annual deferred benefit	$ 777	$ 778
3.	Service retirees		
	a. Number	4,252	3,951
	b. Total annual benefits	$ 3,932,340	$ 3,674,040
	c. Average annual benefit	$ 925	$ 930
	d. Average age	68.7	68.6

Summary of Historical Active Membership

July 1,	Number of Employers	Number of Members	Annual Payroll	Average Pay	Percentage Increase in Average Pay
(1)	(2)	(3)	(4)	(5)	(6)
1998	1	9,604	N/A	N/A	N/A
2000	1	5,289	N/A	N/A	N/A
2002	1	4,010	N/A	N/A	N/A
2004	1	3,425	N/A	N/A	N/A
2005	1	2,864	N/A	N/A	N/A
2006	1	2,502	N/A	N/A	N/A
2007	1	11,076	N/A	N/A	N/A
2008	1	12,559	N/A	N/A	N/A
2009	1	12,599	N/A	N/A	N/A
2010	1	12,445	N/A	N/A	N/A
2011	1	12,271	N/A	N/A	N/A

Distribution of Active Members by Age and by Years of Service

Attained Age	Years of Credited Service 0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total
Under 20	449	141	16	0	0	0	0	0	0	0	0	0	606
20-24	643	711	817	562	334	334	0	0	0	0	0	0	3,401
25-29	177	163	228	191	214	1,089	168	0	0	0	0	0	2,230
30-34	50	58	86	51	58	481	663	81	0	0	0	0	1,528
35-39	47	18	29	22	32	202	349	454	67	0	0	0	1,220
40-44	16	9	29	16	13	159	217	322	577	57	0	0	1,415
45-49	6	6	4	9	6	68	130	131	273	361	53	0	1,047
50-54	0	0	0	2	0	12	36	77	86	156	167	5	541
55-59	1	1	1	0	0	4	7	24	36	55	60	57	246
60-64	0	0	0	0	0	0	0	2	4	4	8	19	37
65 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,389	1,107	1,210	853	657	2,349	1,570	1,091	1,043	633	288	81	12,271

Distribution of Annuitants by Age
as of July 1, 2011

Age	Number of Annuitants	Total Annual Benefits	Average Annual Benefits
(1)	(2)	(3)	(4)
Under 50	0	$ 0	N/A
50 - 54	0	0	N/A
55 - 59	0	0	N/A
60 - 64	1,712	1,533	$ 895
65 - 69	1,068	961	900
70 - 74	626	583	931
75 - 79	519	504	971
80 & Over	327	352	1,076
Total	4,252	$ 3,933	$ 925

Dollar amounts, except averages, are expressed in thousands.

Schedule of Retirants Added to And Removed from Rolls

(Dollar amounts except average allowance expressed in thousands)

	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase	Average
July 1,	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits	in Annual Benefit	Annual Benefit
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1998	N/A	N/A	N/A	N/A	1,801	$ 1,808	13.6%	$ 1,004
2000	N/A	N/A	N/A	N/A	1,962	1,947	7.7%	992
2002	N/A	N/A	N/A	N/A	2,213	2,160	10.9%	976
2004	N/A	N/A	N/A	N/A	2,535	2,439	12.9%	962
2005	244	$ 214	89	$ 81	2,690	2,572	5.5%	956
2006	303	276	90	91	2,903	2,757	7.2%	950
2007	362	329	61	58	3,204	3,028	9.8%	945
2008	364	331	76	75	3,492	3,284	8.5%	940
2009	378	335	85	83	3,785	3,536	7.7%	934
2010	267	237	101	99	3,951	3,674	3.9%	930
2011	399	351	98	93	4,252	3,932	7.0%	925

APPENDIX A

ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Methods and Assumptions

The following presents a summary of the actuarial assumptions and methods used in the valuation of the South Carolina National Guard Retirement System.

Investment Rate of Return

Assumed annual rate of 7.50% net of investment and administrative expenses composed of a 2.75% inflation component and a 4.75% real rate of return, net of investment and administration expenses.

Rates of Annual Salary Increase

No increases in salary are assumed. Benefit is not pay related.

Active Member Decrement Rates

a. Assumed rates of service retirement are shown in the following table. Members who retire prior to age 60 are assumed to defer retirement benefits until age 60.

Age Based Retirement Rates		
Age	**Rate with 20 or more years of service**	**Rate with 30 or more years of service**
39 & Under	10.00%	100.00%
40-49	10.00%	100.00%
50-59	10.00%	100.00%
60 & older	100.00%	100.00%

b. An abbreviated table with the assumed rates of disability and mortality while employed is shown below. There is no active employment withdrawal assumption.

	Disability Rates		Pre-Retirement Mortality	
Age	**Males**	**Females**	**Males**	**Females**
25	0.0854%	0.0854%	0.0338%	0.0186%
30	0.1100%	0.1100%	0.0653%	0.0264%
35	0.1474%	0.1474%	0.0978%	0.0467%
40	0.2201%	0.2201%	0.1234%	0.0790%
45	0.3595%	0.3595%	0.1614%	0.1248%
50	0.6059%	0.6059%	0.2171%	0.1767%
55	1.0089%	1.0089%	0.3776%	0.2516%
60	1.6269%	1.6269%	0.7443%	0.4454%
Multiplier			90.0%	90.0%

Note: The multiplier has been applied to the decrement in the illustrative table.

Post Retirement Mortality

Retirees and beneficiaries – The RP-2000 Mortality Table projected using the AA projection table with multipliers based on plan experience. The following are sample rates:

Annuitant Mortality Rates Before Projection		
Age	**Males**	**Females**
50	0.2774%	0.2257%
55	0.4825%	0.3214%
60	0.9511%	0.5691%
65	1.7870%	1.1958%
70	3.0772%	2.1429%
75	4.9601%	3.5521%
80	8.1129%	5.6296%
85	13.2339%	9.5565%
90	20.9021%	15.7189%
Multiplier	115%	115%

Note: The multiplier has been applied to the decrement in the illustrative table.

The following table provides the life expectancy for individuals retiring in future years based on the assumption with full generational projection:

Life Expectancy for an Age 65 Retiree in Years				
	Year of Retirement			
Gender	**2015**	**2020**	**2025**	**2030**
Male	17.8	18.2	18.6	19.0
Female	19.7	19.9	20.1	20.4

Asset Valuation Method

The actuarial value of assets is based on the market value of assets with five-year smoothing applied. This is accomplished by recognizing each year 20% of the difference between the market value of assets and the expected actuarial value of assets, based upon the assumed valuation rate of return.

Expected earnings are determined using the assumed investment rate of return and the beginning of year actuarial value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses.

Actuarial Cost Method

The Entry Age Normal actuarial cost method allocates the System's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level dollar amount necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

An unfunded accrued liability exists in the amount equal to the excess of accrued liability over valuation assets. The amortization period of the System is the number of years required to fully amortize the unfunded accrued liability with the expected amount of employer contributions in excess of the employers' portion of the normal cost.

Future Cost-of-Living Increases

No increases are assumed.

Payroll Growth Rate

None assumed.

Other Assumptions

1. There is not a marriage assumption.

2. Decrement timing: Decrements of all types are assumed to occur mid-year.

2. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

Participant Data

Participant data was supplied in electronic text files. There were separate files for (i) active, and (ii) members and beneficiaries receiving benefits.

The data for active members included birth date, gender, total military service and total South Carolina National Guard service. For retired members and beneficiaries, the data included date of birth, gender, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and form of payment code.

Assumptions were made to correct for missing, bad, or inconsistent data. These had no material impact on the results presented.

APPENDIX B

BENEFIT PROVISIONS

SUMMARY OF BENEFIT PROVISIONS FOR SOUTH CAROLINA NATIONAL GUARD RETIREMENT SYSTEM (NGRS)

Effective Date: July 1, 1975

Administration: The South Carolina Retirement System, organizationally aligned as a Division of the State Budget and Control Board, is responsible for the general administrative operations and day to day management of the Plan.

Eligibility: All members of the South Carolina National Guard who became members on or before June 30, 1993 are covered by the System. Effective January 1, 2007, eligibility for membership has been extended to those guardsmen who became members of the South Carolina National Guard after June 30, 1993.

Employee Contributions: Contributions from members are not permitted.

Service Retirement:

a. Eligibility: Members who are honorably discharged after attaining age 60 with at least 20 years of creditable military service, which include at least 15 years, 10 of which immediately preceding retirement, with the National Guard of South Carolina.

b. Monthly Benefit: $50 per month for 20 years of creditable service with an additional $5 per month for each additional year of service, subject to a maximum monthly benefit of $100 per month.

c. Payment Form: Life annuity.

Disability Retirement: None

Deferred Termination Benefit:

a. Eligibility: Members who are honorably discharged prior to attaining age 60 with at least 20 years of creditable military service, which include at least 15 years, 10 of which immediately preceding retirement, with the National Guard of South Carolina.

b. Monthly Benefit: Upon attaining age 60, the member will receive $50 per month for 20 years of creditable service with an additional $5 per month for each additional year of service, subject to a maximum monthly benefit of $100 per month.

c. Payment Form: Life annuity.

Active Member Death Benefit: None.

Postretirement Benefit Increases: None.

APPENDIX C

GLOSSARY

GLOSSARY

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or ***Funding Method:*** A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ARC.

Actuarial Gain or ***Actuarial Loss:*** A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)

b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and

c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would be provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB 25, such as the funded ratio and the ARC.

Actuarial Value of Assets or ***Valuation Assets:*** The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ARC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: That portion of the pension plan contribution or ARC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Annual Required Contribution (ARC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under GASB 25. The ARC consists of the Employer Normal Cost and the Amortization Payment.

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan that is not a Defined Contribution Plan. Typically a defined benefit plan is one in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA, although GASB 25 reporting requires the use of the AVA.

Funding Period or ***Amortization Period:*** The term "Funding Period" is used two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ARC. This funding period is chosen by the Board of Trustees. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 25 and ***GASB 27***: Governmental Accounting Standards Board Statements No. 25 and No. 27. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 27 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 25 sets the rules for the systems themselves.

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.