

**TEACHERS' PENSION AND ANNUITY FUND  
OF NEW JERSEY**

June 30, 2009 Actuarial Valuation Report

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February 4, 2010

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Board of Trustees  
Teachers' Pension and Annuity Fund of New Jersey  
State of New Jersey  
Department of the Treasury  
Division of Pensions and Benefits, CN 295  
Trenton, NJ 08625-0295

Ladies and Gentlemen:

This report presents the results of the actuarial valuation of Teachers' Pension and Annuity Fund of New Jersey as of June 30, 2009. Section I contains highlights of the valuation including a general discussion and comments on the various schedules included in the report. The subsequent Sections contain schedules summarizing the underlying calculations, asset information, participant data, plan benefits and actuarial assumptions.

### Purpose

The main purposes of this report are:

- to provide the annual state contribution in accordance with N.J. Statutes to be made in the Fiscal Year ending June 30, 2011 which represents the contribution for the valuation year beginning July 1, 2009;
- to determine the Annual Required Contribution in accordance with Governmental Accounting Standards Board Statements 25 and 27 for the Fiscal Year ending June 30, 2011 and,
- to review the experience under the plan for the valuation year ending June 30, 2009.

Actuarial computations presented in this report are for purposes of determining the statutory contribution amounts for TPAF. Actuarial computations under GASB Statements No. 25 and 27 are for purposes of fulfilling financial accounting requirements. The calculations in the enclosed report have been made on a basis consistent with our understanding of the N.J. statutes and GASB Statements No. 25 and 27. Determinations for purposes other than these requirements may be significantly

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different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the State of New Jersey Division of Pension and Benefits. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception:

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No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

#### Data Reliance

In performing this analysis, we relied, without audit, on census data, plan provisions, asset statements and other information (both written and oral) provided by the State of New Jersey Division of Pensions and Benefits. We have not audited or verified the census data, asset statements or other information. To the extent any of these are inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

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Future Measurements

Future actuarial measurements may differ significantly from the current measurements presented in this analysis due to actual plan experience deviating from the actuarial assumptions, and changes in plan provisions, actuarial assumptions, and applicable law. An assessment of the potential range and cost effect of such differences is beyond the scope of this analysis.

Certification

We hereby certify that, to the best of our knowledge, this report, including all costs and liabilities based on actuarial assumptions and methods adopted by the Board or mandated by statute, is complete and accurate and determined in conformance with generally recognized and accepted actuarial principles and practices, which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions and supporting Recommendations of the American Academy of Actuaries.

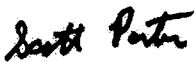
We are members of the American Academy of Actuaries and meet its Qualification Standard to render this actuarial opinion.

Respectfully submitted,

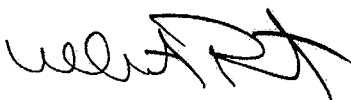
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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION I - SUMMARY**

**A. Summary of Principal Results**

		<b>PARTICIPANT DATA</b>			
		<u>June 30, 2009</u>	<u>June 30, 2008</u>	<u>June 30, 2007</u>	<u>Percentage</u>
		<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u>	<u>Change</u>
					<u>2008 to 2009</u>
					<u>2007 to 2008</u>
					<u>Percentage</u>
					<u>Change</u>
<b>Active Contributing Members</b>					
Number		144,579	142,887	141,943	1.2 %
Number of Veteran Members		922	1,019	1,171	(9.5)
Average Pay	\$	67,423	\$ 65,927	\$ 63,959	2.3
Total Payroll		9,747,926,624	9,420,070,731	9,078,568,687	3.5
Total Appropriation Payroll		9,747,020,060	9,419,083,203	9,077,628,813	3.5
Avg. Member Accumulated Contributions		56,172	53,174	50,707	5.6
Total Member Accumulated Contributions		8,121,238,550	7,597,916,467	7,197,468,540	6.9
<b>Active Non-Contributing Members</b>					
Number		12,530	13,200	13,153	(5.1) %
Number of Veteran Members		66	75	91	(12.0)
Average Pay	\$	48,311	\$ 47,016	\$ 45,441	2.8
Total Payroll		605,335,737	620,614,734	597,691,622	(2.5)
Avg. Member Accumulated Contributions		26,240	23,976	22,237	9.4
Total Member Accumulated Contributions		328,788,416	316,487,024	292,489,528	3.9
					8.2

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY

(continued)

A. Summary of Principal Results (continued)

	PARTICIPANT DATA			June 30, 2007 Valuation	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
	June 30, 2009 Valuation	June 30, 2008 Valuation	June 30, 2007 Valuation			
<b>Service Retirees, Including Domestic Relations Beneficiaries</b>						
Number	71,000	68,479	65,347		3.7 %	4.8 %
Average Annual Pension	\$ 37,613	\$ 36,056	\$ 34,904		4.3	3.3
Total Annual Pensions	\$ 2,670,513,732	\$ 2,469,099,049	\$ 2,280,902,612		8.2	8.3
Average Retirement Age of New Retirees	61.0	60.3	60.1		1.2	0.3
Average Annual Pension of New Retirees	\$ 46,486	\$ 45,786	\$ 44,698		1.5	2.4
<b>Disabled Retirees</b>						
Number	2,674	2,625	2,534		1.9 %	3.6 %
Average Annual Pension	\$ 25,846	\$ 24,916	\$ 24,239		3.7	2.8
Total Annual Pensions	\$ 69,112,238	\$ 65,403,886	\$ 61,422,715		5.7	6.5
<b>Beneficiaries and Dependents</b>						
Number	4,540	4,309	4,116		5.4 %	4.7 %
Average Annual Pension	\$ 22,696	\$ 21,577	\$ 20,726		5.2	4.1
Total Annual Pensions	\$ 103,041,702	\$ 92,975,389	\$ 85,307,467		10.8	9.0
<b>Terminated Vested Participants</b>						
Number	568	655	751		(13.3) %	(12.8) %
Average Annual Pension	\$ 12,568	\$ 12,270	\$ 11,761		2.4	4.3
Total Annual Pensions	\$ 7,138,800	\$ 8,036,844	\$ 8,832,492		(11.2)	(9.0)

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION I - SUMMARY**

(continued)

**A. Summary of Principal Results (continued)**

**STATUTORY PENSION CONTRIBUTIONS WITH BUDGET ADJUSTMENTS**

	June 30, 2009		June 30, 2008		June 30, 2007			
	Valuation (State's	Fiscal Year 2011	Valuation (State's	Fiscal Year 2010	Valuation (State's	Fiscal Year 2009	Percentage	
	<u>Contributions)</u>	<u>Contributions)</u>	<u>Contributions)</u>	<u>Contributions)</u>	<u>Contributions)</u>	<u>Contributions)</u>	Change	
							<u>2007 to 2008</u>	
							<u>2008 to 2009</u>	
							Change	
							<u>2007 to 2008</u>	
Normal Contribution (1/60th formula) **	\$ 582,957,683	\$	564,701,264	\$	546,875,239	\$	3.2 %	3.3 %
Additional Formula Normal Cost	106,610,084		103,469,076		100,313,396		3.0 %	3.1 %
Benefit Enhancement Fund (BEF) Balance	0		0		0		0.0	0.0
Additional Formula Contribution	106,610,084 *		103,469,076 *		100,313,396 *		3.0	3.1
Accrued Liability Contribution	<u>1,137,154,603</u> *		<u>857,998,490</u> *		<u>700,917,218</u> *		32.5 %	22.4 %
<b>Total Pension Contribution by Statute</b>	<b>\$ 1,826,722,370</b> *	<b>\$</b>	<b>1,526,168,830</b> *	<b>\$</b>	<b>1,348,105,853</b> *	<b>\$</b>	<b>19.7 %</b>	<b>13.2 %</b>
State Appropriation for Pension	(62,398,500)		(62,399,654)		(64,376,207)		0.0 %	(3.1) %
<b>Pension Contribution Not Appropriated</b>	<b>\$ 1,764,323,870</b> *	<b>\$</b>	<b>1,463,769,176</b> *	<b>\$</b>	<b>1,283,729,646</b> *	<b>\$</b>	<b>20.5 %</b>	<b>14.0 %</b>
<b>Percentage of Statutory Pension Contribution Appropriated</b>	<b>3.4%</b>		<b>4.1%</b>		<b>4.8%</b>		<b>(0.7) %</b>	<b>(0.7) %</b>

\* These amounts should be increased for assumed interest at the rate of 8.25% per annum if payment is delayed beyond June 30, 2010, June 30, 2009 and June 30, 2008, respectively.

\*\* Excludes the non-contributory group life insurance term cost.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY

(continued)

A. Summary of Principal Results (continued)

**ANNUAL REQUIRED CONTRIBUTION PER GASB 25 AND 27**

	June 30, 2009 Valuation (State's Fiscal Year 2011)	June 30, 2008 Valuation (State's Fiscal Year 2010)	June 30, 2007 Valuation (State's Fiscal Year 2009)	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
Normal Cost *	\$ 761,759,287	\$ 742,319,228	\$ 722,956,661	2.6 %	2.7 %
Amortization Payment **	<u>1,199,604,178</u>	<u>917,133,905</u>	<u>756,469,213</u>	30.8 %	21.2 %
Subtotal	1,961,363,465	1,659,453,133	1,479,425,874	18.2 %	12.2 %
Interest Adjustment ***	<u>161,812,485</u>	<u>136,904,883</u>	<u>122,052,634</u>	18.2 %	12.2 %
<b>Annual Required Contribution</b>	<b>\$ 2,123,175,950</b>	<b>\$ 1,796,358,016</b>	<b>\$ 1,601,478,508</b>	<b>18.2 %</b>	<b>12.2 %</b>

\* Reflects additional formula normal cost, full cost of pension adjustment benefits, and an actuarial determination of the cost of the non-contributory and contributory group life insurance benefits.

\*\* Benefit Enhancement Fund is excluded from the actuarial accrued liabilities.

\*\*\* Additional one year of interest is included to reflect payment of contributions at end of fiscal year.

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION I - SUMMARY**

(continued)

**A. Summary of Principal Results (continued)**

**TOTAL STATUTORY CONTRIBUTIONS (INCLUDING NCGI AND ERI)**

	June 30, 2009	June 30, 2008	June 30, 2007	
	Valuation (State's	Valuation (State's	Valuation (State's	
	Fiscal Year 2011	Fiscal Year 2010	Fiscal Year 2009	
	<u>Contributions)</u>	<u>Contributions)</u>	<u>Contributions)</u>	Percentage
				Change
				2007 to 2008
				2008 to 2009
				2009 to 2010
Total Pension Contribution by Statute	\$ 1,826,722,370 *	\$ 1,526,168,830 *	\$ 1,348,105,853 *	19.7 %
Est. Non-contributory Group Life Insurance (NCGI)	35,220,000	34,180,000 ***	31,487,765 **	3.0 %
Early Retirement Incentive (ERI-3 and ERI-5) ^	<u>1,624,780 *</u>	<u>1,329,187 *</u>	<u>1,231,186 *</u>	22.2 %
<b>Total State Contribution for Pension, NCGI and ERI</b>	<b>\$ 1,863,567,150</b>	<b>\$ 1,561,678,017</b>	<b>\$ 1,380,824,804</b>	<b>19.3 %</b>
<b>Total Certain State College Contribution (Included Above)</b>	<b>730,056</b>	<b>706,747</b>	<b>756,407 **</b>	<b>3.3 %</b>
				<b>(6.6) %</b>

\* These amounts should be increased for assumed interest at the rate of 8.25% per annum if payment is delayed beyond June 30, 2010, 2009 and 2008, respectively.

\*\* Actual NCGI claims paid and actual allocation of costs for certain State colleges for fiscal year 2009.

\*\*\* Amount shown reflects Milliman's estimate of NCGI claims. Actual claim amount will be appropriated.

^ Appropriation for ERI contributions is or is expected to be \$55,500, 54,346 and 58,793 for fiscal year ending June 30, 2011, 2010 and 2009, respectively.

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION I - SUMMARY**

(continued)

**A. Summary of Principal Results (continued)**

**LOCAL EMPLOYER CONTRIBUTIONS**

	<u>June 30, 2009</u>	<u>June 30, 2008</u>	<u>June 30, 2007</u>	<u>Percentage</u>	<u>Percentage</u>
	<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u>	<u>Change</u>	<u>Change</u>
				<u>2008 to 2009</u>	<u>2007 to 2008</u>
<b>Early Retirement Incentive Contributions payable April 1, 2011, April 1, 2010 and April 1, 2009, respectively</b>					
ERI 1 - Local Employers	\$ 1,212,778	\$ 1,212,778	\$ 1,228,070	0.0 %	(1.2) %
ERI 2 - Local Employers	1,565,030	1,564,018	1,568,124	0.1 %	(0.3) %
ERI 4 - Local Employers	2,874,148	2,874,148	3,822,965	0.0 %	(24.8) %
Total	\$ 5,651,956	\$ 5,650,944	\$ 6,619,159	0.0 %	(14.6) %

**Terminal Funding Contribution payable April 1, 2011, April 1, 2010 and April 1, 2009, respectively**

No Locations	\$ 0	\$ 0	\$ 0	N/A	N/A
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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION I - SUMMARY**

(continued)

**A. Summary of Principal Results (continued)**

	<b>ASSETS AND LIABILITIES</b>				
	<u>June 30, 2009</u>	<u>June 30, 2008</u>	<u>June 30, 2007</u>	<u>Percentage</u>	<u>Percentage</u>
	<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u>	<u>Change</u>	<u>Change</u>
				<u>2008 to 2009</u>	<u>2007 to 2008</u>
Market Value of Pension Assets	\$ 24,973,886,910	\$ 32,358,227,689	\$ 35,070,757,170	(22.8) %	(7.7) %
Actuarial Value of Pension Assets	\$ 34,708,001,341	\$ 36,541,083,946	\$ 36,594,817,062	(5.0) %	(0.1) %
Ratio of Actuarial Value to Market Value	139.0 %	112.9 %	104.3 %	26.1 %	8.6 %
Actuarial Accrued Pension Liability	\$ 53,418,328,576	\$ 50,658,278,274	\$ 48,127,453,410	5.4 %	5.3 %
Unfunded Pension Liability					
Based on Market Value	\$ 28,444,441,666	\$ 18,300,050,585	\$ 13,056,696,240	55.4 %	40.2 %
Based on Actuarial Value	\$ 18,710,327,235	\$ 14,117,194,328	\$ 11,532,636,348	32.5 %	22.4 %
Funded Ratio					
Based on Market Value	46.8 %	63.9 %	72.9 %	(17.1) %	(9.0) %
Based on Actuarial Value	65.0 %	72.1 %	76.0 %	(7.1) %	(3.9) %
Change in Funded Ratio since July 1, 2000, 1999 and 1998, respectively					
Based on Market Value	(81.9) %	(62.9) %	(47.0) %	(19.0) %	(15.9) %
Based on Actuarial Value	(45.1) %	(35.2) %	(28.2) %	(9.9) %	(7.0) %

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY

(continued)

A. Summary of Principal Results (continued)

**RISK MEASURES**

	June 30, 2009	June 30, 2008	June 30, 2007	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
	Valuation	Valuation	Valuation		
Market Value of Pension Assets	\$ 24,973,886,910	\$ 32,358,227,689	\$ 35,070,757,170	(22.8) %	(7.7) %
Annuity Savings Fund **	8,516,171,922	7,986,454,126	7,563,158,194	6.6 %	5.6 %
Net Market Value of Pension Assets	16,457,714,988	24,371,773,563	27,507,598,976	(32.5) %	(11.4) %
Actuarial Accrued Liability (AAL) for Retirees	30,209,589,102	27,997,635,266	25,901,044,198	7.9 %	8.1 %
% of AAL for Retirees Covered by Assets *	82.7%	100.0%	100.0%	(17.3) %	0.0 %
% of AAL for Retirees Covered by Net Assets *	54.5%	87.0%	100.0%	(32.5) %	(13.0) %
Prior Year's Benefit Payments for Retirees	2,805,740,059	2,607,233,754	2,395,332,364	7.6 %	8.8 %
Ratio of Assets to Benefit Payments for Retirees ^	8.9	12.4	14.6	(28.2) %	(15.1) %
Ratio of Net Assets to Benefit Payments for Retirees ^	5.9	9.3	11.5	(36.6) %	(19.1) %
Ratio of AAL to Benefit Payments for Retirees ^	10.8	10.7	10.8	0.9 %	(0.9) %

\* Percentage is limited to 100%.

\*\* Accumulated active and inactive member contributions.

^ Does not include impact of future investment income, member and State contributions, and increases in benefit payments.

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### **B. General Comments**

This report summarizes the results of the actuarial valuation of the Teacher's Pension and Annuity Fund (TPAF) as of June 30, 2009.

This actuarial valuation is the first valuation that reflects members hired after November 1, 2008 (Class E members) affected by Chapter 89, P.L. 2008. It is the second valuation that reflects members hired on or after July 1, 2007 and before November 2, 2008 (Class D members) affected by Chapter 103, P.L. 2007. Chapter 89, P.L. 2008 increased the age unreduced retirement benefits can commence from age 60 to age 62. Both chapters increased the early retirement reductions for members retiring prior to age 60 for Class D members and age 62 for Class E members, and also imposed a maximum salary equal to the Social Security Wage Base (\$106,800 for 2009) upon which contributions and benefits will be based. The reduction in the plan's total normal cost associated with both of these chapters for 15,045 affected members is approximately \$2.2 million, which is a 3% reduction.

This actuarial valuation also reflects Chapter 23, P.L. 2008, which offered ERI-5 to State employees. The retirement incentives included are similar to those included in previous ERIs. This ERI was only available to State employees and not local employees. As of June 30, 2009, 17 members retired under the program, which increased the actuarial accrued liability by \$2.9 million. A separate amortization schedule will be established for this ERI consistent with previous ERIs. The amortization period will be based on the same period used to amortize the unfunded liability of the System.

#### GASB Annual Required Contribution

Page 4 contains a Summary Exhibit on the Annual Required Contribution (ARC) per GASB 25 and 27. GASB 25 and 27 do not (1) exclude the Benefit Enhancement Fund from the Actuarial Value of Assets, (2) permit a portion of the normal cost to be paid by the BEF, (3) permit a phase-in of the pension adjustment normal cost or 4) allow the use of a term cost funding method for the non-contributory group life insurance (NCGI). Furthermore, since the contributory group life insurance is provided through TPAF, an actuarial cost for these benefits is included in the ARC. Expected employee contributions of 0.4% of pay offset the normal cost portion of the contributory group life insurance. For the 2007 and later fiscal years, the ARC includes an actuarial determination of the cost of the non-contributory and contributory group life insurance. The ARC in prior years included the term cost for

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### **B. General Comments (continued)**

the non-contributory group life insurance. The ARC for the 2011 fiscal year is \$2,123.2 million as compared to the sum of the required statutory pension contribution of \$1,826.7 million and the estimated non-contributory group life insurance term cost of \$35.2 million for a total of \$1,861.9 million.

#### Statutory Contributions

The statutory contribution requirements are highlighted on Summary Exhibits shown on pages 3 (pension only) and 5 (pension, NCGI and ERI). Included on these exhibits is our understanding of the effect of the fiscal year 2010 State budget resolution on contributions to the system for the 2010 and 2011 fiscal years. These exhibits are discussed in detail in the paragraphs below.

The required statutory pension contribution has increased from \$1,526.2 million for the State's 2010 fiscal year to \$1,826.7 million for the State's 2011 fiscal year. This contribution consists of the Normal Contribution (\$583.0 million), the Additional Formula Contribution (\$106.6 million) and the Accrued Liability Contribution (\$1,137.1 million). Chapter 92 P.L. 2007 eliminated the use of any Excess Assets to offset the pension normal cost in determining the Normal Contribution. Chapter 133 P.L. 2001 established the Benefit Enhancement Fund (BEF) to reduce the State's Additional Formula Normal Contribution. As of June 30, 2009, there are no assets in the BEF so no offset occurred and there are no Excess Assets as of July 1, 2009, so no assets will be transferred to the BEF as of that date.

In addition to the pension contribution, the estimated non-contributory group life insurance contribution is expected to increase from \$34.2 million to \$35.2 million and the ERI-3 contribution has increased from \$1.33 million to \$1.62 million from the State's 2010 fiscal year to the State's 2011 fiscal year.

Chapter 92, P.L. 2007 states that the System shall use consistent and generally accepted actuarial standards as established by GASB for the purpose of determining asset values, obligations and employer contributions. However, the System's contribution requirements, which are defined in NJ State statute, differ from the GASB compliant figures that are shown in this report. Also, current budgetary practices do not assess interest on contributions to reflect payment after the start of the fiscal year to the date paid. As a result, the System's statutory contribution is not the same as the annual required contribution (ARC) determined under GASB. As

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### B. General Comments (continued)

stated above, the GASB ARC is \$261.3 million or 14.0% higher than the statutory pension and estimated NCGI contributions.

The summary exhibit on Page 3 reflects our understanding of the effect of the fiscal year 2010, as well as any change to fiscal year 2009, State budget resolution on these contributions to the system for the 2010 and 2011 fiscal years as outlined below:

- For the 2009 fiscal year, the State actually contributed \$64.4 million versus the expected appropriation of \$166.2 million included in the June 30, 2008 actuarial valuation report. This reduction in the State appropriation is reflected throughout this report. The actual contribution of \$64.4 million covered approximately 4.8% of the pension and ERI contributions.
- For the 2010 fiscal year, the State has appropriated \$62.5 million, which covers approximately 4.1% of the pension contribution (\$62.4 million out of \$1,526.2 million) and the ERI-3 contribution (\$0.1 out of \$1.3 million). This appropriation is 3% lower than the prior year's. In addition, it is our understanding that the actual amount of the non-contributory group life insurance claims will be appropriated. We have estimated the amount of those claims to be \$34.2 million during the 2010 fiscal year based on the actuarial mortality assumption.
- An appropriation to cover the remaining portion of the 2010 fiscal year pension contribution (\$1,463.8 million) was not made. This increases the Unfunded Actuarial Accrued Liability as of July 1, 2009 by \$1,463.8 million resulting in an increase in the 2011 fiscal year Accrued Liability Contribution of \$89.0 million. The accumulated value of statutory pension contributions, excluding ERI-3 contributions, not appropriated by the State in fiscal years 2004 through 2010 equals \$5,528.6 million. The Unfunded Actuarial Accrued Liability as of July 1, 2009 is \$18,710.3 million.
- For the 2011 fiscal year, it is anticipated that approximately 3.4% of the statutory pension contribution of \$1,826.7 million and the combined ERI-3 and ERI-5 contributions of \$1.6 million will be appropriated. In addition, it is anticipated that the State will appropriate an amount to cover the non-

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### B. General Comments (continued)

contributory group life insurance claims (NCGI est. \$35.2 million). In displaying the results of this actuarial valuation, we have not reduced the contribution otherwise due under statute to reflect the expectation that funds will not be appropriated.

#### Actuarial Value of Assets

As mandated by statute, only 20% of the difference between the expected actuarial value of assets and the market value is recognized in calculating the actuarial value of assets each year. Due to the significant drop in the financial markets since 2007, the actuarial value of assets as of June 30, 2009 is 139% of market value, which is an increase from the prior year's ratio of 113%. Section III(G) shows the impact of using the market value of assets to determine the statutory pension contribution instead of the actuarial value.

#### Actuarial Accrued Liability

The actuarial accrued liability figures reflect the full additional actuarial liability due to pension adjustment benefits for actives, retirees, terminated vested members and beneficiaries. It excludes the actuarial liability associated with the group life insurance benefits and post retirement medical benefits. The State will appropriate funds to cover the actual amount of the non-contributory group life insurance claims. The post retirement medical benefits are no longer financed through TPAF. The liabilities are based on the assumptions adopted in the 2006 Experience Study.

#### Normal Cost

For purposes of calculating employer contributions, the portion of the normal cost attributable to the pension adjustment benefits for active members is reflected separately and its cost is being phased-in over a period beginning with the March 31, 1987 valuation. The current valuation reflects a 60.61% phase-in of the pension adjustment normal cost for active members.

The net pension normal cost, based on the 1/60 formula and reflecting the phase-in of the pension adjustment benefits, payable as of July 1, 2009 is \$538.5 million. This is \$16.8 million more than the comparable normal cost of \$521.7 million

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### B. General Comments (continued)

payable on July 1, 2008. This increase is due to the continued phase-in of the pension adjustments (\$3.8 million) and increases in payroll and the number of active participants (\$13.0 million).

The additional formula normal cost payable as of July 1, 2009 is \$98.5 million. This is \$2.9 million more than the additional formula normal cost of \$95.6 million payable on July 1, 2008. This increase is due to increases in payroll and the number of active participants.

#### Unfunded Actuarial Accrued Liability

The unfunded Actuarial Accrued Liability increased by \$4,593.1 million from \$14,117.2 million as of July 1, 2008 to \$18,710.3 million as of July 1, 2009. This increase in the unfunded liability resulted in an increase in the Accrued Liability Contribution of \$279.1 million from \$858.0 million payable June 30, 2009 to \$1,137.1 million payable June 30, 2010. The following table summarizes the reasons for the increase in the unfunded liability.

Unfunded Liability as of June 30, 2008	\$14,117.2
Pension Contribution Less than State Appropriation for Prior Year	110.3
State Appropriation Less than Statutorily Required	1,463.8
Phase-in of Pension Adjustment Benefits	71.0
Amortization Payment Less/(More) than Interest Accrual	306.6
Actuarial Loss/(Gain)	2,703.3
Member Contributions Less/(More) than anticipated	(61.9)
Total Change in Unfunded Liability	\$4,593.1
Unfunded Liability as of June 30, 2009	\$18,710.3

#### Funded Ratio

As a result of the increase in the unfunded liability, the funded ratio based on the actuarial value of assets decreased by 7.1% from 72.1% as of June 30, 2008 to 65.0% as of June 30, 2009. On a market value basis, the funded ratio decreased by 17.1% from 63.9% to 46.8%. The decrease is greater on a market value basis since

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### **B. General Comments (continued)**

the actuarial value smoothes the investment losses over time. Since July 1, 2000, the funded ratio on a market value basis has decreased 81.9%. This decrease is primarily due to investment losses experienced over the period, State contributions less than the GASB Annual Required Contribution, the increase in benefits due to Chapter 133, P.L. 2001 and Chapter 353, P.L. 2001, and the strengthening of actuarial assumptions.

As of June 30, 2009, the market value of assets has fallen below the actuarial liability attributable to retirees due to significant investment losses during the prior year and State contributions significantly less than the statutorily required contribution. Furthermore, if the assets contained in the Annuity Savings Fund (ASF) are excluded, the funded ratio of the remaining market value of assets to the actuarial accrued liability for retirees is 54.5%.

As of June 30, 2009, the ratio of market value of assets to the prior year's benefit payments is 8.9. This is a simplistic measure of the number of years that the assets can cover benefit payments, excluding: investment income, State and member contributions, and future increases in those payments. This ratio has decreased 39% over the past two years. If ASF assets are excluded, since they represent accumulated contributions from active and inactive members, the ratio is 5.9.

#### Actuarial Gain/(Loss) Analysis

TPAF experienced an actuarial loss of \$2,703.3 million during the period July 1, 2008 to June 30, 2009 based on the actuarial assumptions adopted in the 2006 Experience Study. This loss is approximately 5.1% of the Actuarial Accrued Liability as of June 30, 2009. The major factors contributing to this loss are summarized below and are compared to the experience for the prior two plan years.

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### B. General Comments (continued)

	<u>June 30, 2009</u>	<u>Gain/(Loss)</u> <i>(Amounts in Millions)</i>	
		<u>June 30, 2008</u>	<u>June 30, 2007 *</u>
Economic Factors:			
Investment Return	\$(2,433.5)	\$(1,045.7)	\$(381.0)
Salary Increases	230.0	20.1	112.1
Pension Adjustments (COLA)	(286.0)	125.2	(151.4)
Expenses	(13.2)	(14.3)	(12.8)
Demographic Factors:			
Active Members	(34.5)	(82.8)	(123.3)
New Entrants	(61.7)	(58.0)	(55.0)
Non-Contributing Members	(29.4)	(28.4)	(29.5)
Retirees and Beneficiaries	<u>(75.0)</u>	<u>(47.3)</u>	<u>(67.7)</u>
Total	(2,703.3)	(1,131.2)	\$(708.6)

\* Based on 2003 Experience Study

Total pension assets earned investment returns of approximately -16.29% on a market value basis and 1.36% on an actuarial value basis for the period ending June 30, 2009. The determination of the approximate rate of return on the market value of assets is based on all assets of the fund including receivables and payables in addition to the investment holdings. This will result in a different rate of return reported by the Division of Investments. The resulting loss to the plan of \$(2,433.5) million represents the shortfall in the actuarial value of assets relative to the 8.25% assumed investment return.

Salary increases for contributory members who were active on both July 1, 2008 and July 1, 2009 averaged 4.61% versus expected salary increases of 5.95% resulting in an actuarial gain of \$230.0 million. Salaries for new entrants averaged \$47,975, which is significantly below the average salary of all contributory members of \$67,423. This resulted in the average salary of all contributory members increasing by only 2.3% over last year, with total contributory payroll growing by 3.5%.

For annuitants receiving benefits since 2006, the pension adjustments were based on a CPI increase of 4.60%, which is higher than the 3.0% actuarial assumption for CPI increases. This resulted in an actuarial loss of \$286.0 million.

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### C. Discussion of Supporting Exhibits

#### Assets

Section II summarizes the System assets taken into account in the preparation of the actuarial valuation. Subsection A summarizes the market value of System assets as of June 30, 2009 and includes the present value of expected contributions from State and local employers for ERI and Terminal Funding retirements as of June 30, 2009.

Subsection B reconciles the development of the market value of pension assets starting from the market values as of June 30, 2008, which reflects a reduction in the State contribution for fiscal year 2009 from the prior valuation report. Subsection C summarizes the development of the actuarial value of pension assets as of July 1, 2009. The exhibit reflects the growth in the pension assets based on the expected investment income at an assumed rate of 8.25% adjusted to reflect 20% of the difference between the market value of pension assets as of the valuation date and the expected actuarial value.

Subsection D estimates the annual rate of return for the year ending June 30, 2009 on the actuarial value and the market value of pension assets. Subsection E summarizes the estimated annual rates of return for the five previous plan years. The 5-year compounded annual return on the actuarial value of assets and the market value of assets are 4.72% and 2.63%, respectively.

#### Actuarial Liabilities and Contributions

Section III summarizes the actuarial liabilities and the development of the required State contribution for the plan year beginning July 1, 2009. The State is statutorily required to make three contributions, a Normal Cost Contribution, an Accrued Liability Contribution and an Additional Formula Normal Cost Contribution, which in general are determined under the Projected Unit Credit funding method. The Normal Cost and Additional Formula Normal Cost under the Projected Unit Credit funding method is defined as the present value of the benefits attributed to the current year. The Normal Cost reflects the phase-in of the cost of pension adjustment benefits. The Unfunded Accrued Liability (Surplus) is determined as the difference between the Actuarial Accrued Liability used to develop contributions and

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### **C. Discussion of Supporting Exhibits (continued)**

the Adjusted Actuarial Value of Assets (excludes the BEF). The actuarial liabilities used to develop contributions reflect the assumptions developed in the 2006 Experience Study and the economic assumptions prescribed by the Treasurer.

Subsection A summarizes the development of the Actuarial Accrued Liability as of July 1, 2009 for all current members and indicates the portion of those present values attributable to active participants, retirees and beneficiaries, and terminated vested participants. These liabilities include the full liability for pension adjustment benefits for all members. The non-contributory lump sum death benefits payable from active service, terminated vested status and retiree status have been excluded from the Actuarial Accrued Liability since those benefits are funded on a term cost basis. Projected benefits based on compensation in excess of the 401(a)(17) compensation cap for a group of grandfathered employees for certain School Districts under Chapter 113, P.L. 1997 have been included in the determination of the Accrued Liability.

Subsection B summarizes the development of the pension Normal Cost under the 1/60 and 1/55 formulas payable July 1, 2009. The schedule shows the portion of the Normal Cost attributable to: (1) the basic allowances and (2) pension adjustment benefits for active members and (3) expected member contributions. The Normal Cost due to pension adjustments reflects the 60.61% phase-in of the pension adjustment benefits. The Normal Cost as of July 1, 2009 was developed based on the Projected Unit Credit Method. Projected benefits based on compensation in excess of the 401(a)(17) compensation cap for a group of grandfathered employees for certain School Districts under Chapter 113, P.L. 1997 have been included in the determination of the Normal Cost.

Subsection C summarizes the Actuarial Accrued Liability and Gross Pension Normal Cost (1/55 formula) for active contributory members by employee type as of July 1, 2009.

Subsection D summarizes the development of the Excess Valuation Assets which are \$0 as of July 1, 2009. The Excess Valuation Assets are determined by subtracting the Actuarial Accrued Liability for basic allowances and pension adjustment benefits, the Post Retirement Medical Premium Fund, the present value of the total projected normal cost in excess of the projected phased-in normal cost

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### C. Discussion of Supporting Exhibits (continued)

for pension adjustment benefits of active members and the BEF (prior to reduction for the additional formula normal contribution for fiscal year 2011) from the Valuation Assets.

Subsection E summarizes the development of the BEF as of July 1, 2009 and the Additional Formula Normal Contribution. Chapter 133, P.L. 2001 established the BEF as of June 30, 1999. The BEF is \$0 as of June 30, 2009. The BEF is credited with excess assets not to exceed actual member contributions made to the system nor the present value of expected additional normal costs due to the formula change. Since there are no excess assets, there is no contribution to the BEF. Since the BEF is \$0, there is no offset to the additional formula normal cost.

Subsection F summarizes the development of the State's estimated fiscal year 2011 Statutory Required Contributions to TPAF comprising three components: pension, non-contributory group life insurance, and ERI. The total pension contribution of \$1,826,722,370 equals the Normal Contribution of \$582,957,683 based on the 1/60 formula plus the Additional Formula Normal Contribution of \$106,610,084 plus the Accrued Liability Contribution of \$1,137,154,603. The non-contributory group life insurance contribution represents a one year term cost of lump sum death benefits payable during active service, terminated vested status and retiree status and is estimated to be \$35,220,000. The State's combined ERI-3 and ERI-5 contributions are \$1,624,780. The Statutory Required Contribution for the State's fiscal year 2011 is estimated to be \$1,863,567,150. This is an estimate because the State will contribute the actual 2011 fiscal year non-contributory group life insurance benefits, not the estimated amount shown above.

Subsection G shows the Statutory Required Contribution as a percentage of appropriation payroll on two bases: (1) after reflecting the actual phase-in of the pension adjustment benefits and any BEF reductions – 19.10% and (2) as if the pension adjustment liabilities were fully phased-in, BEF reductions did not exist and the Market Value of Assets were used to determine the Accrued Liability Contribution – 25.88%. The latter figure is an estimate of the percentage of payroll that would need to be contributed each year for the next 30 years in order to fully amortize the unfunded actuarial pension liability assuming no gains or losses and a closed (amortization period is reduced by one year each year) amortization method.

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### C. Discussion of Supporting Exhibits (continued)

Subsection H summarizes these contributions as a percentage of appropriation payroll for the five previous fiscal years.

Subsection I shows the fiscal year 2011 Statutory Required Contribution based on the 1/60 formula, the Additional Formula Contribution after application of the BEF, the Accrued Liability Contribution and the estimated non-contributory group life insurance contribution payable by the State and certain State Colleges. The State's contribution is allocated between the Department of Higher Education, Department of Education, County Colleges, Charter Schools and other.

Subsection J shows the calculation of the total actuarial gain (loss). The general comments section outlines the areas where experience differed from that expected.

#### Actuarial Balance Sheet

Section IV provides the actuarial balance sheet summarizing the assets and liabilities by Fund as of June 30, 2009. The assets credited to the various funds include the portion of the investment income allocated to each fund for the year and ending June 30, 2009. The actuarial value of assets are used as the basis for the balance sheet. Note that the actuarial of assets are 39% higher than market value. The liabilities presented are based on the actuarial accrued liabilities summarized in Section III without any phase-in adjustments.

The actuarial balance sheet indicates the following transfers should be made:

#### (1) Retirement Reserve Fund

When a member retires, or when he dies and an allowance is payable to his beneficiary, the allowance including cost-of-living adjustments is paid from the Retirement Reserve Fund. The member's own contributions with interest are transferred from the Annuity Savings Fund, and the balance of the reserve on the total allowance is transferred from the Contingent Reserve Fund. As of June 30, 2009, the Retirement Reserve Fund has present assets of \$29,264,750,657 including accrued interest. The liabilities of the fund amount to \$30,209,460,137 so that there is a deficit of \$944,709,480 in the fund as of the valuation date. New Jersey statute states that the fund be put in balance as

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### C. Discussion of Supporting Exhibits (continued)

of June 30, 2009 by a transfer of assets from the Contingent Reserve Fund, and this transfer is shown in the balance sheet. Note that the balance in the Contingent Reserve Fund is negative so that this fund remains in balance.

#### (2) Pension Fund

The reserves held in the Pension Fund represent the reserves on retirement allowances payable to non-veteran members who retired prior to 1956. As of June 30, 2009, the Pension Fund has assets credited to it amounting to \$136,392 including accrued interest. The liabilities of the fund amount to \$128,965 so that there is a surplus of \$7,427 in the fund as of the valuation date. It is recommended that the fund be put in balance as of June 30, 2009 by a transfer of assets to the Contingent Reserve Fund, and this transfer is shown in the balance sheet.

#### (3) Annuity Savings Fund and Contingent Reserve Fund

The Annuity Savings Fund, which is the fund to which members' contributions with interest are credited, has assets amounting to \$8,516,171,922 as of June 30, 2009 after accrued interest has been added. The Contingent Reserve Fund is the fund to which contributions made by the State and local employers to provide the benefits paid from retirement fund monies are credited. The assets creditable on an actuarial value basis to the Contingent Reserve Fund amount to \$(4,017,759,683) as of June 30, 2009 after adjustment is made on account of accrued interest and the amounts transferable to the Retirement Reserve Fund and from the Pension Fund. If a market value basis was used, assets creditable to the Contingent Reserve Fund after transfers would amount to \$(13,751,874,114).

If a member withdraws from active service before qualifying for retirement, the amount of his accumulated deductions is paid to him from the Annuity Savings Fund. If he dies before retirement and no survivorship benefit is payable, his accumulated deductions are paid to his beneficiary from the Annuity Savings Fund. If he retires, or if he dies leaving a beneficiary eligible for a survivorship benefit, his accumulated deductions are transferred from the Annuity Savings Fund to the Retirement Reserve Fund, and the reserve on the allowance which

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### C. Discussion of Supporting Exhibits (continued)

is not provided by his own deductions is transferred from the Contingent Reserve Fund to the Retirement Reserve Fund. Any lump sum benefit payable upon the death of a member before or after retirement is paid by The Prudential Insurance Company of America.

#### (4) Benefit Enhancement Fund

The reserves held in the BEF are used to fund the additional formula normal contributions. The BEF is credited with excess assets not to exceed actual member contributions made to the system nor the present value of the expected additional formula normal contributions. No additional excess assets will be credited to the BEF after the maximum amount is attained. If excess assets permit, monies are transferred from the Contingent Reserve Fund. As of June 30, 2009, the BEF has no assets.

#### (5) Special Reserve Fund

The Special Reserve Fund is the fund to which any excess interest earnings are transferred and against which any losses from the sale of securities are charged. The maximum limit on the accumulations in this fund is set at one percent of the market value of the investments of the retirement fund; any amounts in excess of this limit are creditable to the Contingent Reserve Fund. The Special Reserve Fund is considered as an asset of the retirement fund. This fund has assets amounting to \$0 as of June 30, 2009.

### Accounting Information

Section V presents the accounting information required under Governmental Accounting Standards Statement No. 25 (GASB 25). Schedule A outlines the development of the Annual Required Contribution (ARC). The ARC comprises the employer's normal cost plus a specified amortization of the unfunded actuarial accrued liability (UAAL). The amortization method selected for this system is an open level percentage of projected payroll based on an assumed payroll growth rate of 4.0% for 30 years. For 2007 and later fiscal years (the 2005 and subsequent valuations), an actuarial determination of the cost for non-contributory and contributory group life insurance benefits is included in the calculation since these

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### **C. Discussion of Supporting Exhibits (continued)**

benefits are paid from TPAF. Prior years included a term cost for the non-contributory group life insurance and excluded the contributory group life insurance. The portion of the ARC for the 2011 fiscal year attributable to group life insurance benefits is \$70.8 million. The total ARC for the 2011 fiscal year is \$2,123.2 million.

Schedule B shows the projection of the Estimated Net Pension Obligation (NPO) as of June 30, 2010 and June 30, 2011. The NPO represents the cumulative difference between the Annual Pension Costs for the system and the contributions made. After the expected contributions of \$96.6 million for fiscal year 2010 and \$97.6 million for fiscal year 2011, the NPO as of June 30, 2011 is expected to be \$9,972.4 million.

Schedule C is the Schedule of Funding Progress. This schedule presents the Actuarial Accrued Liability, the Actuarial Value of Assets, the Unfunded Accrued Liability, the funded ratio (assets as a percentage of Actuarial Accrued Liability), and the Unfunded Accrued Liability as a percentage of covered payroll. Six years of historical information are shown in compliance with GASB 25.

Schedule D is the Schedule of Employer Contributions. This schedule presents the ARC for the fiscal year, the employer contributions made for that fiscal year and the percentage of the ARC those contributions represent. For the fiscal year ending June 30, 2010 the employer contributions are 5.4% of the ARC and for the fiscal year ending June 30, 2011, the expected employer contributions are 4.6% of the ARC. Six years of historical information are shown in compliance with GASB 25. Schedule E presents the funding policy for the fiscal year. This disclosure includes the valuation date, the Actuarial Cost Method, the amortization period and method, the Asset Valuation Method, and certain key actuarial assumptions.

### Census Data

Section VI summarizes the census data provided by the Division of Pensions and Benefits and utilized in the preparation of the actuarial valuation. Subsection A provides a reconciliation of the current year participant counts from the prior valuation. Subsection B shows the appropriation count and salary information by group. Subsection C shows the number and annual retirement allowances with pension adjustments by beneficiary type. Subsection D shows information on members who retired since the last valuation split between those who retired with

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### C. Discussion of Supporting Exhibits (continued)

less than and more than 25 years of service. Subsections E and F present a profile of Contributory and Non-contributory members split by gender, summarized by 5-year age and service groupings. Subsection G provides a profile of terminated vested members, retired members, disabled members, and beneficiaries broken down into 5-year age categories. The census data represents the status of plan participants as of June 30, 2009.

In performing this analysis, we relied, without audit, on census data, plan provisions, asset statements and other information (both written and oral) provided by the State of New Jersey Division of Pensions and Benefits. We have not audited or verified the census data, asset statements or other information. To the extent any of these are inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

#### Actuarial Assumptions and Methods

Section VII summarizes the actuarial assumptions and methods utilized in the preparation of this actuarial valuation. Subsection A identifies the various assumptions. These assumptions are based on the assumptions developed in the Experience Study from July 1, 2003 to June 30, 2006 and the economic assumptions prescribed by the Treasurer. Subsection B summarizes the actuarial valuation methodology set forth in Chapter 62, P.L. 1994 as modified by Chapters 115, P.L. 1997, 133, P.L. 2001 and 92 P.L. 2007.

Future actuarial measurements may differ significantly from the current measurements presented in this analysis due to actual plan experience deviating from the actuarial assumptions, and changes in plan provisions, actuarial assumptions, and applicable law. An assessment of the potential range and cost effect of such differences is beyond the scope of this analysis.

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### C. Discussion of Supporting Exhibits (continued)

#### Summary of Principal Plan Provisions

Section VIII summarizes the principal plan provisions as of the valuation date and denotes any changes from the previous valuation.

#### Early Retirement Incentive Contribution Schedule

Appendix I presents the contribution schedule for the early retirement incentive programs (ERI-1, ERI-2, ERI-3, ERI-4 and ERI-5) by location for the 2011 fiscal year. It also provides the present value of the future contributions as of June 30, 2009. This list reflects locations who paid off their ERI liabilities through June 2009 as a result of Chapter 42, P.L. 2002.

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION II - ASSETS

### A. Market Value of Assets as of June 30, 2009

#### 1. Assets

Cash	\$	2,936,186
Investment Holdings		24,496,191,883
Employers' Contributions Receivable - NCGI		3,203,635
Employers' Contributions Receivable - State		86,304,976
Employers' Contributions Receivable - Local		43,068,612
Employers' Contributions Receivable - Delayed Enrollments		244,341
Employers' Contributions Receivable - Delayed Appropriations		4,778,875
Members' Contributions Receivable		83,068,268
Accrued Interest on Investments		256,997,854
Accounts Receivable		6,689,888
Loans Receivable		168,157,524
Dividends Receivable		<u>46,906,378</u>
Total	\$	<u>25,198,548,420</u>

#### 2. Liabilities

Pension Payroll Payable	\$	183,274,138
Pension Adjustment Payroll Payable		33,039,820
Withholdings Payable		29,976,150
Death Benefits Payable		3,203,635
Net Securities Lending Collateral		9,096,148
Accounts Payable - Other		<u>31,347,619</u>
Total	\$	<u>289,937,510</u>

3. Market Value of Assets as of June 30, 2009: (1) - (2)	\$	24,908,610,910
4. State's FY 2010 and 2011 Receivable Contributions due to ERI-5		2,876,346
5. State's FY 2010 Receivable Contributions from State		<u>62,399,654</u>
6. Adjusted Market Value of Assets as of June 30, 2009: (3) + (4) + (5)	\$	<u>24,973,886,910</u>

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION II - ASSETS**

(continued)

**B. Reconciliation of Market Value of Assets from June 30, 2008 to June 30, 2009**

	<u>Pension</u>
1. Market Value of Assets as of June 30, 2008	\$ 32,358,227,689
2. Increases	
Member Contributions excluding transfers from Other Systems	\$ 568,469,178
Member Transfer Contributions	7,147,019
Other Employer Contributions including Transfers From Other Systems, Delayed Appropriations, And Delayed Enrollments	6,912,898
State and Local Appropriations *	(70,423,324)
Investment Income	<u>(5,070,623,384)</u>
Total	\$ <u>(4,558,517,613)</u>
* Includes reduction in State Contribution for fiscal year 2009	
3. Decreases	
Withdrawal of Member Contributions and Transfer Contributions	\$ 41,197,343
Retirement Allowances	2,453,071,751
Pension Adjustment Benefits	352,668,308
Death Benefit Claims	31,487,765
Administrative Expense	12,673,999
Medical Benefits and Expenses	<u>0</u>
Total	\$ <u>2,891,099,166</u>
4. Market Value of Assets as of June 30, 2009: (1) + (2) - (3)	\$ 24,908,610,910
5. FY 2010 and 2011 Receivable Contributions due to ERI-5	2,876,346
6. FY 2010 Receivable Contributions from State	<u>62,399,654</u>
7. Adjusted Market Value of Assets as of June 30, 2009: (4) + (5) + (6)	\$ <u>24,973,886,910</u>

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION II - ASSETS

(continued)

### C. Development of Actuarial Value of Assets as of July 1, 2009

1. Actuarial Value of Pension Assets as of July 1, 2008	\$ 36,541,083,946
2. Net Cash Flow without Investment Income	(2,378,993,395)
3. Investment Income at Actuarially Assumed Rate @ 8.25%	2,914,163,398
4. Receivable Contributions from State and Local Employers	<u>65,276,000</u>
5. Expected Actuarial Value of Pension Assets: (1) + (2) + (3) + (4)	37,141,529,949
6. Adjusted Market Value of Pension Assets as of June 30, 2009	24,973,886,910
7. Excess Market Value over Expected Actuarial Value Assets: (6) - (5)	(12,167,643,039)
8. 20% mark-up to reflect growth in Market Value: 20% x (7)	<u>(2,433,528,608)</u>
9. Actuarial Value of Pension Assets as of July 1, 2009: (5) + (8)	\$ <u>34,708,001,341</u>
10. Pension Actuarial/Market Value Ratio: (9) / (6)	139.0%

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION II - ASSETS**

(continued)

**D. Estimated Annual Rate of Return for year ending June 30, 2009**

	<u>Pension</u> <u>Actuarial Value</u>	<u>Pension</u> <u>Market Value</u>
1. Value of Assets as of July 1, 2008	\$ 36,541,083,946	\$ 32,358,227,689
2. Employee Contributions	582,529,095	582,529,095
3. State and Local Appropriations	(70,423,324)	(70,423,324)
4. Receivable Contributions - State and Local Employers	65,276,000	65,276,000
5. Benefit Payments and Expenses	2,891,099,166	2,891,099,166
6. Value of Assets as of June 30, 2009	34,708,001,341	24,973,886,910
7. Non-Investment Increment: (2) + (3) - (5)	(2,378,993,395)	(2,378,993,395)
8. Investment Increment: (6) - (1) - (4) - (7)	480,634,790	(5,070,623,384)
9. Time Weighted Value: (1) +.5 x (7) *	35,300,631,704	31,117,775,447
10. Estimated Annual Rate of Return: (8) / (9)	1.36%	-16.29%

\* Reflects timing adjustment on State contribution reduction for fiscal year 2009

**E. Estimated Historical Rates of Return**

<u>Plan Year Ending</u>	<u>Actuarial Value</u>	<u>Market Value</u>
June 30, 2009	1.36%	-16.29%
June 30, 2008	5.31%	-2.27%
June 30, 2007	7.15%	15.95%
June 30, 2006	5.35%	10.30%
June 30, 2005	4.50%	8.84%
 5-Year Compounded Annual Rate of Return	 4.72%	 2.63%

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION III - LIABILITIES AND CONTRIBUTIONS

### A. Actuarial Accrued Liability as of July 1, 2009 - 1/55th Formula

1. Projected Benefits Payable to Beneficiaries and Retirees	
Service Retirees (Including ERI Benefits)	\$ 28,664,147,943
Disability Retirees	645,185,536
Beneficiaries	<u>900,255,623</u>
Total	\$ 30,209,589,102
2. Projected Benefits for Vested Terminated Members	67,025,573
3. Projected Benefits for Non-Contributory Members	\$ 511,054,102
4. Projected Benefits for Active Members	
Service Retirement	\$ 18,363,985,010
Ordinary Disability Retirement	364,925,903
Accidental Disability Retirement	24,647,299
Return of Members' Contributions - Death	80,501,610
Return of Members' Contributions - Withdrawal	124,747,410
Deferred Retirement	362,043,630
Pension Adjustment Benefits	<u>3,309,808,937</u>
Total	\$ 22,630,659,799
5. Total Pension Accrued Liability: (1) + (2) + (3) + (4)	\$ 53,418,328,576

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION III - LIABILITIES AND CONTRIBUTIONS**

(continued)

**B. Development of Normal Cost payable July 1, 2009**

	<u>1/60th Formula</u>	<u>1/55th Formula</u>
1. Basic Allowances	\$ 959,987,152	\$ 1,044,179,201
2. Pension Adjustment Benefits for active members		
a. Full Amount of Pension Adjustment Benefits	162,315,240	176,608,257
b. Phase-in Percentage	60.61%	N/A
c. Phased-in Amount of Pension Adjustment Benefits	98,379,267	N/A
3. Gross Pension Normal Cost		
a. Full Amount of Pension Normal Cost: (1) + (2a)	\$ 1,122,302,392	\$ 1,220,787,458
b. Phased-in Amount of Pension Normal Cost for Contribution Purposes: (1) + (2c)	1,058,366,419	N/A
4. Expected Member Contributions	<u>519,837,382</u>	<u>519,837,382</u>
5. Net Pension Normal Cost		
a. Full Amount of Net Pension Normal Cost: (3a) - (4)	602,465,010	700,950,076
b. Net Phased-in Amount of Pension Normal Cost for Contribution Purposes: (3b) - (4)	538,529,037	N/A

**C. Summary of Active Member Actuarial Accrued Liability & Normal Cost payable July 1, 2009**

<u>Employee Type</u>	<u>Number of Members</u>	<u>Total Salary</u>	<u>Actuarial Accrued Liability</u>	<u>Gross Pension Normal Cost (1/55th Formula)</u>
Class A & B	129,534	9,019,053,619	22,518,268,912	1,157,357,130
Class D	14,063	682,097,075	110,312,741	59,409,985
Class E	982	46,775,930	2,078,146	4,020,343
Total	144,579	9,747,926,624	22,630,659,799	1,220,787,458

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION III - LIABILITIES AND CONTRIBUTIONS**

(continued)

**D. Development of Excess Valuation Assets as of July 1, 2009**

1. Valuation Assets	\$ 34,708,001,341
2. Actuarial Accrued Liability for Basic Allowances & Pension Adjustment Benefits	53,418,328,576
3. Post Retirement Medical Premium Fund	0
4. Present Value of Total Projected Normal Cost in Excess of the Projected Phased-in Normal Cost for Pension Adjustment Benefits	469,017,673
5. Benefit Enhancement Fund (prior to reduction for additional formula normal cost)	<u>0</u>
6. Excess Valuation Assets as of July 1, 2009: (1)-(2)-(3)-(4)-(5), not less than \$0	\$ 0

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION III - LIABILITIES AND CONTRIBUTIONS

(continued)

**E. Development of Benefit Enhancement Fund and Additional Formula Contribution  
As of July 1, 2009**

1. Benefit Enhancement Fund as of July 1, 2008	\$	0
2. Accrued Interest		<u>0</u>
3. Benefit Enhancement Fund as of July 1, 2009		0
4. Additional Formula Normal Cost to be paid by Benefit Enhancement Fund		
a. Gross Normal Cost payable July 1, 2009 - 1/55th Formula (B)(3)(a)		1,220,787,458
b. Gross Normal Cost payable July 1, 2009 - 1/60th Formula (B)(3)(a)		<u>1,122,302,392</u>
c. Additional Formula Normal Cost: (a) - (b)		98,485,066
5. Net Benefit Enhancement Fund Balance as of July 1, 2009 before Fiscal Year 2011 Contribution: (3) - (4c), not less than \$0		0
6. State Additional Formula Contribution as of July 1, 2009: (4c) - (3), not less than \$0		98,485,066
7. Estimated Fiscal Year 2011 Employee Contributions as of July 1, 2009		499,428,062
8. Limit on Fiscal Year 2011 Contribution to Benefit Enhancement Fund		
a. Present Value of Future Normal Costs as of June 30, 2009 - 1/55th Formula		12,673,064,716
b. Present Value of Future Normal Costs as of June 30, 2009 - 1/60th Formula		<u>11,630,124,486</u>
c. Limit: (a) - (b) - (5)		1,042,940,230
9. Excess Assets Available (D6)		0
10. Fiscal Year 2011 Allowable Contribution to Benefit Enhancement Fund: Lesser of (7), (8c), (9)	\$	0

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION III - LIABILITIES AND CONTRIBUTIONS

(continued)

**F. Development of State's Fiscal Year 2011 Statutory Required Contributions**

1. Net Pension Normal Contribution as of July 1, 2009: B(5)(b)	\$ 538,529,037
2. Net Pension Normal Contribution as of June 30, 2010	582,957,683
3. Additional Formula Contribution as of July 1, 2009: E(6)	98,485,066
4. Additional Formula Contribution as of June 30, 2010	106,610,084
5. Accrued Liability Contribution	
a. Actuarial Accrued Liability for Basic Allowances & Pension	
Adjustment Benefits	\$ 53,418,328,576
b. Adjusted Actuarial Value of Assets	
(excluding BEF)	34,708,001,341
c. Reserve for previously earned reductions	
in Member Contributions	<u>0</u>
d. Unfunded Pension Accrued Liability: (a) - (b) + (c)	\$ 18,710,327,235
e. 30 - Year Amortization with 4% increasing payments of	
Unfunded Pension Accrued Liability payable June 30, 2010	1,137,154,603
6. Total Pension Contribution for State's Fiscal Year 2011: (2) + (4) + (5e)	\$ 1,826,722,370
7. State's FY 2011 Est. Non-contributory Group Life Insurance	
Contribution (NCGI)	35,220,000
8. State's Fiscal Year 2011 ERI-3 and ERI-5 Contributions	<u>1,624,780</u>
9. Total State's Fiscal Year 2011 Contribution for Pension, NCGI and ERI:	
(6) + (7) + (8)	\$ <u>1,863,567,150</u>

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION III - LIABILITIES AND CONTRIBUTIONS**

(continued)

**G. Statutory Required Contribution as a Percentage of Appropriation Payroll**

	<u>Percent of Payroll</u>
Basic Allowances Net of Member Contributions - 1/60th Formula	4.89%
Active COLA (Phase-in percentage of 60.61%)-1/60th Formula	1.09%
Additional Formula Normal Cost (after any BEF reductions)	1.09%
Accrued Liability Contribution	<u>11.67%</u>
<b>Total Pension Contribution for State's Fiscal Year 2011</b>	<b>18.74%</b>
Estimated Non-contributory Group Life Insurance Benefits (NCGI)	0.36%
<b>Total State's Fiscal Year 2011 Contribution for Pension and NCGI</b>	<b>19.10%</b>
Increases in contribution if:	
COLA fully phased-in	0.71%
No BEF reductions existed	0.00%
Market Value of Assets used to determine the Accrued Liability Contribution	<u>6.07%</u>
Total Increases as a percent of payroll	6.78%
<b>Total Contribution with these increases as a percent of payroll</b>	<b>25.88%</b>

**H. Historical Statutory Required Contributions as a Percentage of Appropriation Payroll**

Fiscal Year <u>Ending</u>	Statutory Pension and <u>NCGI</u>	With Increases Above <u>Included</u>
June 30, 2011	19.10%	25.88%
June 30, 2010	16.56%	20.02%
June 30, 2009	15.21%	17.03%
June 30, 2008	15.13%	18.70%
June 30, 2007	14.08%	18.62%

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION III - LIABILITIES AND CONTRIBUTIONS

(continued)

I. Fiscal Year 2011 Statutory Required Contributions Payable by the State and Certain State Colleges

<u>Group</u>	Normal Contribution (1/60 Formula)	Additional Formula Contribution (After BEF reductions)	Accrued Liability Contribution	Non-Contributory Group Life Insurance	Estimated	<u>Total</u>
<u>Certain State Colleges</u>						
NJ Institute of Technology	\$7,611	\$1,392	\$14,846	\$460		\$24,309
Rowan University	15,274	2,793	29,794	923		\$48,784
New Jersey University	53,330	9,753	104,029	3,222		\$170,334
Kean University	37,989	6,947	74,103	2,295		\$121,334
William Paterson University	41,253	7,544	80,471	2,492		\$131,760
Montclair State U. (Group 4)	26,123	4,777	50,956	1,578		\$83,434
The College of NJ	25,372	4,640	49,493	1,533		\$81,038
Stockton State College	<u>21,623</u>	<u>3,954</u>	<u>42,180</u>	<u>1,306</u>		<u>\$69,063</u>
<b>Total for Certain State Colleges</b>	<b>\$228,575</b>	<b>\$41,800</b>	<b>\$445,872</b>	<b>\$13,809</b>		<b>\$730,056</b>
<u>State</u>						
Dept of Higher Education	0	0	0	0		\$0
Dept of Education	1,123,749	205,509	2,192,058	67,893		\$3,589,209
County Colleges	150,642	27,549	293,852	9,101		\$481,144
Charter Schools	5,631,775	1,029,927	10,985,701	340,250		\$17,987,653
Other	<u>575,822,942</u>	<u>105,305,299</u>	<u>1,123,237,120</u>	<u>34,788,947</u>		<u>\$1,839,154,308</u>
<b>Total for State</b>	<b>\$582,729,108</b>	<b>\$106,568,284</b>	<b>\$1,136,708,731</b>	<b>\$35,206,191</b>		<b>\$1,861,212,314</b>
<b>Total for System</b>	<b>\$582,957,683</b>	<b>\$106,610,084</b>	<b>\$1,137,154,603</b>	<b>\$35,220,000</b>		<b>\$1,861,942,370</b>

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## TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

### SECTION III - LIABILITIES AND CONTRIBUTION

(continued)

#### J. Analysis of Actual Experience for the Year Ended June 30, 2009

1. Unfunded Accrued Liability as of June 30, 2008	\$	14,117,194,328
2. Gross Normal Cost as of June 30, 2008		1,185,506,343
3. Interest: ((1) + (2)) * 8.25%		1,262,472,805
4. Employee and Employer Contributions Made with Interest *		<u>561,039,508</u>
5. Expected Unfunded Accrued Liability as of June 30, 2009: (1) + (2) + (3) - (4)	\$	16,004,133,968
6. Increase/(Decrease) in liability due to assumption changes		0
7. Increase/(Decrease) in liability due to statutory changes		2,876,346
8. Expected Unfunded Accrued Liability after changes as of June 30, 2009: (5) + (6) + (7)	\$	16,007,010,314
9. Actual Unfunded Accrued Liability as of June 30, 2009		<u>18,710,327,235</u>
10. Gain/(Loss): (8) - (9)	\$	<u>(2,703,316,921)</u>

\* Reflects ERI-5 and includes reduction in State Contribution for fiscal year 2009

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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**

**SECTION IV - ACTUARIAL BALANCE SHEET AS OF JUNE 30, 2009**

<u>Assets</u>			<u>Liabilities</u>
<u>Retirement Reserve Fund (RRF)</u>			<u>Payable from Retirement Reserve Fund</u>
Credited to Fund w/ Distribution of Income	\$29,264,750,657		Retirees, Disableds and Beneficiaries
Add/(deduct) reserve transferable from/(to) CRF	944,709,480		currently receiving benefits
Adjusted Total	<u>30,209,460,137</u>		
<u>Pension Fund (PF)</u>			<u>Payable from Pension Fund</u>
Credited to Fund w/ Distribution of Income	136,392		Retirees, Disableds and Beneficiaries
Add/(deduct) reserve transferable from/(to) CRF	<u>(7,427)</u>		currently receiving benefits
Adjusted Total	128,965		
Annuity Savings Fund (ASF) w/ Distribution of Income	8,516,171,922		<u>Payable from Annuity Savings Fund</u>
			and <u>Contingent Reserve Fund</u>
<u>Contingent Reserve Fund (CRF)</u>			Active Members
Credited to Fund w/ Distribution of Income	(3,073,057,630)		Term Vested Members
Add/(Deduct) from/(to) RRF, PF & SRF	<u>(944,702,053)</u>		Total
Adjusted Total	(4,017,759,683)		
<u>Benefit Enhancement Fund (BEE)</u>	0		
<u>Special Reserve Fund (SRF)</u>	0		
Add/(deduct) reserve transferable from/(to) CRF	<u>0</u>		
Adjusted Total	0		
Total Actuarial Value of Assets as of June 30, 2009	\$34,708,001,341		
Present Value of Prospective Contributions to the CRF and BEF for service accrued as of July 1, 2009	<u>18,710,327,235</u>		
Total Assets	\$53,418,328,576		<u>Total Liabilities</u>
			\$53,418,328,576

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