

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

June 30, 2013 Actuarial Valuation Report
Prepared as of July 1, 2013



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February 27, 2014

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, 2013. 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, 2015 which represents the contribution for the valuation year beginning July 1, 2013;
- to determine the Target Funded Ratio as of July 1, 2013 in accordance with N.J. Statutes to potentially provide for the formation of a special pension committee;
- to determine the Annual Required Contribution in accordance with Governmental Accounting Standards Board Statement No. 27 for the Fiscal Year ending June 30, 2015 (information regarding new GASB standard No. 68 effective June 30, 2015 is not reflected in this report) and,
- to review the experience under the plan for the valuation year ending June 30, 2013.

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Actuarial computations presented in this report are for purposes of determining the statutory contribution amounts and Target Funded Ratio for TPAF. Actuarial computations under GASB Statement No. 27 are for purposes of assisting TPAF and participating employers in fulfilling their financial accounting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the N.J. statutes and GASB Statement No. 27. Determinations for purposes other than these requirements may be significantly 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 use and benefit of the Teachers' Pension and Annuity Fund ("System") for 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:

- The System may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.

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.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

Data Reliance

In preparing this report, we relied, without audit, on statutory provisions, member 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

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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.

Future Measurements

This valuation report is only an estimate of TPAF's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of TPAF benefits, only the timing of TPAF contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial methods; and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board and State Treasurer have the final decision regarding the appropriateness of the assumptions and actuarial cost methods.

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.


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In compliance with New Jersey statute, this actuarial valuation is based on an investment return assumption of 7.90%. The investment return assumption is specified by the State Treasurer. Based on Milliman's capital market outlook model, this assumption is above the 75th percentile of projected annualized 30-year returns. We believe consideration should be given to reducing the investment return assumption. If the investment return was lowered, the actuarial accrued liability and statutory contributions would increase and the funded ratio would decrease. Determining results at an alternative investment return assumption is outside the scope of our assignment.

This actuarial valuation is based on the asset valuation method in compliance with New Jersey Statute. This method recognizes 20% of the difference between the market value of assets and the actuarial value of assets. Per Actuarial Standards of Practice (ASOP) No. 44, a reasonable asset valuation method produces values within a sufficiently narrow range around market value or recognizes differences from market value in a sufficiently short period. As of June 30, 2013, the Actuarial Value of Assets is 113.4% of market value. Investment losses have occurred each year since the July 1, 2000 actuarial valuation on an actuarial value of asset basis. Combining an optimistic investment return assumption with a current actuarial value of assets that exceeds the market value of assets, along with an asset smoothing method which recognizes investment losses very slowly over time, will result in upward pressure on actuarially determined contribution requirements in future years.

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

Respectfully submitted,

By: 
Richard L. Gordon, F.S.A.
Member American Academy of Actuaries


Scott F. Porter, F.S.A.
Member American Academy of Actuaries

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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

PARTICIPANT DATA

	<u>June 30, 2013</u>		<u>June 30, 2012</u>		<u>June 30, 2011</u>	Percentage	Percentage
	<u>Valuation</u>		<u>Valuation</u>		<u>Valuation</u>	<u>Change</u>	<u>Change</u>
						<u>2012 to 2013</u>	<u>2011 to 2012</u>
Active Contributing Members							
Number	138,921		136,797		136,899	1.6 %	(0.1) %
Number of Veteran Members	506		564		664	(10.3)	(15.1)
Average Pay	\$ 72,292	\$	71,510	\$	70,746	1.1	1.1
Total Payroll	10,042,860,779		9,782,353,518		9,685,002,389	2.7	1.0
Total Appropriation Payroll *	10,038,792,896		9,779,212,916		9,682,318,739	2.7	1.0
Avg. Member Accumulated Contributions	69,239		65,707		62,623	5.4	4.9
Total Member Accumulated Contributions	9,618,768,093		8,988,504,623		8,573,010,328	7.0	4.8
Active Non-Contributing Members							
Number	12,397		13,403		14,216	(7.5) %	(5.7) %
Number of Veteran Members	63		60		69	5.0	(13.0)
Average Pay	\$ 53,849	\$	52,715	\$	51,453	2.2	2.5
Total Payroll	667,563,967		706,537,322		731,452,411	(5.5)	(3.4)
Avg. Member Accumulated Contributions	37,200		33,095		29,143	12.4	13.6
Total Member Accumulated Contributions	461,170,035		443,569,158		414,290,577	4.0	7.1

* Excludes salary in excess of the Taxable Wage Base for employees hired after June 30, 2007

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY

(continued)

A. Summary of Principal Results (continued)

PARTICIPANT DATA

	<u>June 30, 2013</u>		<u>June 30, 2012</u>		<u>June 30, 2011</u>	Percentage	Percentage
	Valuation		Valuation		Valuation	Change	Change
						<u>2012 to 2013</u>	<u>2011 to 2012</u>
Service Retirees, Including Domestic Relations Beneficiaries							
Number	83,265		81,209		78,140	2.5 %	3.9 %
Average Annual Pension	\$ 40,493	\$	40,104	\$	39,551	1.0	1.4
Total Annual Pensions	\$ 3,371,687,147	\$	3,256,792,847	\$	3,090,549,345	3.5	5.4
Average Retirement Age of New Retirees	61.9		61.6		61.4	0.5	0.3
Average Annual Pension of New Retirees	\$ 47,827	\$	48,904	\$	50,555	(2.2)	(3.3)
Disabled Retirees							
Number	3,085		2,946		2,855	4.7 %	3.2 %
Average Annual Pension	\$ 27,646	\$	27,267	\$	26,848	1.4	1.6
Total Annual Pensions	\$ 85,286,951	\$	80,328,020	\$	76,650,196	6.2	4.8
Beneficiaries and Dependents							
Number	5,379		5,153		4,917	4.4 %	4.8 %
Average Annual Pension	\$ 24,918	\$	24,424	\$	24,043	2.0	1.6
Total Annual Pensions	\$ 134,033,364	\$	125,854,873	\$	118,220,158	6.5	6.5
Terminated Vested Participants							
Number	351		392		420	(10.5) %	(6.7) %
Average Annual Pension	\$ 14,454	\$	14,224	\$	13,816	1.6	3.0
Total Annual Pensions	\$ 5,073,360	\$	5,575,788	\$	5,802,852	(9.0)	(3.9)

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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, 2013 Valuation (State's Fiscal Year 2015 <u>Contributions</u>)	Modified ¹ June 30, 2012 Valuation (State's Fiscal Year 2014 <u>Contributions</u>)	Revised June 30, 2011 Valuation (State's Fiscal Year 2013 <u>Contributions</u>)	Percentage Change <u>2012 to 2013</u>	Percentage Change <u>2011 to 2012</u>
Normal Contribution (1/60th formula) **	\$ 308,712,803	\$ 315,770,296	\$ 469,288,099	(2.2) %	(32.7) %
Additional Formula Normal Cost	71,184,388	72,593,176	81,664,185	(1.9) %	(11.1) %
Benefit Enhancement Fund (BEF) Balance	<u>0</u>	<u>0</u>	<u>0</u>	0.0 %	0.0 %
Additional Formula Contribution	71,184,388 *	72,593,176 *	81,664,185 *	(1.9) %	(11.1) %
Accrued Liability Contribution	<u>1,926,714,524</u> *	<u>1,769,923,886</u> *	<u>1,597,232,717</u> *	8.9 %	10.8 %
Total Pension Contribution by Statute	\$ 2,306,611,715 *	\$ 2,158,287,358 *	\$ 2,148,185,001 *	6.9 %	0.5 %
State Appropriation for Pension ***	(1,318,063,837)	(924,980,296)	(613,766,799)	42.5 %	50.7 %
Pension Contribution Not Appropriated	\$ 988,547,878 *	\$ 1,233,307,062 *	\$ 1,534,418,202 *	(19.8) %	(19.6) %
Percentage of Statutory Pension Contribution Appropriated	57.1%	42.9%	28.6%	14.2 %	14.3 %

* These amounts should be increased for assumed interest at the rate of 7.90%, 7.90% or 7.95% per annum if payment is delayed beyond June 30, 2014, June 30, 2013 and June 30, 2012, respectively.

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

*** Chapter 1, P.L. 2010 requires payment of the statutory pension contribution to be phased-in over a 7-year period from the fiscal year ending June 30, 2012 to the fiscal year ending June 30, 2018.

¹ **Modified 2012 valuation results reflecting change in salary scale assumption and treatment of member contributions in excess of 5.5%. All member contributions are used as direct offset to the Normal Contribution.**

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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

		Modified ¹	Revised		
	June 30, 2013	June 30, 2012	June 30, 2011	Percentage	Percentage
	Valuation (State's	Valuation (State's	Valuation (State's	Change	Change
	<u>Fiscal Year 2015)</u>	<u>Fiscal Year 2014)</u>	<u>Fiscal Year 2013)</u>	<u>2012 to 2013</u>	<u>2011 to 2012</u>
Normal Cost *	\$ 371,553,683	\$ 380,613,778	\$ 470,005,769	(2.4) %	(19.0) %
Amortization Payment **	<u>2,027,262,124</u>	<u>1,865,716,585</u>	<u>1,690,078,894</u>	8.7 %	10.4 %
Subtotal	2,398,815,807	2,246,330,363	2,160,084,663	6.8 %	4.0 %
Interest Adjustment ***	<u>189,506,450</u>	<u>177,460,098</u>	<u>171,726,732</u>	6.8 %	3.3 %
Annual Required Contribution	\$ 2,588,322,257	\$ 2,423,790,461	\$ 2,331,811,395	6.8 %	3.9 %

This information does not reflect the new GASB Standards: No. 67 Financial Reporting for Pension Plans effective fiscal year 2014 and No. 68 Accounting and Financial Reporting for Pensions effective fiscal year 2015.

* Reflects all expected member contributions, 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.

¹ **Modified 2012 valuation results reflecting change in salary scale assumption.**

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, 2013 Valuation (State's Fiscal Year 2015 <u>Contributions</u>)	Modified ¹ June 30, 2012 Valuation (State's Fiscal Year 2014 <u>Contributions</u>)	Revised June 30, 2011 Valuation (State's Fiscal Year 2013 <u>Contributions</u>)	Percentage Change <u>2012 to 2013</u>	Percentage Change <u>2011 to 2012</u>
Total Pension Contribution by Statute	\$ 2,306,611,715 *	\$ 2,158,287,358 *	\$ 2,148,185,001 *	6.9 %	0.5 %
Est. Non-contributory Group Life Insurance (NCGI)	34,400,000	33,164,920 ***	33,292,536 **	3.7 %	(0.4) %
Early Retirement Incentive (ERI-3 and ERI-5) ^	<u>3,115,873</u> *	<u>2,992,322</u> *	<u>2,853,205</u> *	4.1 %	4.9 %
Total State Contribution for Pension, NCGI and ERI	\$ 2,344,127,588	\$ 2,194,444,600	\$ 2,184,330,742	6.8 %	0.5 %
Total Certain State College Contribution (Included Above)	\$ 388,224	\$ 435,391	\$ 550,298 **	(10.8) %	(20.9) %

* These amounts should be increased for assumed interest at the rate of 7.90%, 7.90% or 7.95% per annum if payment is delayed beyond June 30, 2014, 2013 and 2012, respectively.

** Actual NCGI claims paid and actual allocation of costs for certain State colleges for fiscal year 2013.

*** Amount shown reflects estimate of NCGI claims. Actual claim amount will be appropriated.

^ Appropriation for ERI contributions is or is expected to be \$1,780,499, \$1,282,424, and \$815,201 for fiscal year ending June 30, 2014, 2013 and 2012, respectively.

¹ **Modified 2012 valuation results reflecting change in salary scale assumption and treatment of member contributions in excess of 5.5%. All member contributions are used as direct offset to the Normal Contribution.**

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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

	June 30, 2013		June 30, 2012		Revised June 30, 2011	Percentage Change	Percentage Change
	<u>Valuation</u>		<u>Valuation</u>		<u>Valuation</u>	<u>2012 to 2013</u>	<u>2011 to 2012</u>
Early Retirement Incentive Contributions payable April 1, 2015 April 1, 2014 and April 1, 2013, respectively							
ERI 1 - Local Employers	\$ 901,208	\$	909,373	\$	911,475	(0.9) %	(0.2) %
ERI 2 - Local Employers	974,314		973,334		974,708	0.1 %	(0.1) %
ERI 4 - Local Employers	2,812,523		2,812,522		2,831,739	0.0 %	(0.7) %
Unauthorized ERIs - Local Employers *	<u>11,375,100</u>		<u>14,352,700</u>		<u>14,352,700</u>	<u>(20.7) %</u>	<u>0.0 %</u>
Total	\$ 16,063,145	\$	19,047,929	\$	19,070,622	(15.7) %	(0.1) %

* One Local Employer has settled their unauthorized ERI. A receivable has been included for remaining Local Employers first established in the 2011 valuation.

Terminal Funding Contributions payable April 1, 2015, April 1, 2014 and April 1, 2013, 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)

	ASSETS AND LIABILITIES				
	June 30, 2013	Modified ¹	Revised	Percentage	Percentage
	<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u>	<u>Change</u>	<u>Change</u>
				<u>2012 to 2013</u>	<u>2011 to 2012</u>
Market Value of Pension Assets	\$ 26,859,612,370	\$ 26,037,983,392	\$ 27,654,006,602	3.2 %	(5.8) %
Actuarial Value of Pension Assets	\$ 30,469,857,304	\$ 31,079,212,983	\$ 32,156,229,300	(2.0) %	(3.3) %
Ratio of Actuarial Value to Market Value	113.4 %	119.4 %	116.3 %	(6.0) %	3.1 %
Actuarial Accrued Pension Liability	\$ 52,366,655,055	\$ 51,194,110,587	\$ 50,222,688,750	2.3 %	1.9 %
Unfunded Pension Liability					
Based on Market Value	\$ 25,507,042,685	\$ 25,156,127,195	\$ 22,568,682,148	1.4 %	11.5 %
Based on Actuarial Value	\$ 21,896,797,751	\$ 20,114,897,604	\$ 18,066,459,450	8.9 %	11.3 %
Funded Ratio					
Based on Market Value	51.29 %	50.86 %	55.06 %	0.43 %	(4.20) %
Based on Actuarial Value	58.19 %	60.71 %	64.03 %	(2.52) %	(3.32) %
Target Funded Ratio	77.143 %	76.429 %	75.714 %	0.71 %	0.71 %
Change in Funded Ratio since June 30, 2003, 2002 and 2001, respectively					
Based on Market Value	(19.4) %	(26.3) %	(39.1) %	6.9 %	12.8 %
Based on Actuarial Value	(34.5) %	(39.3) %	(44.0) %	4.8 %	4.7 %

¹ **Modified 2012 valuation results reflecting change in salary scale assumption.**

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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, 2013	June 30, 2012	Revised June 30, 2011	Percentage Change	Percentage Change
	<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u>	<u>2012 to 2013</u>	<u>2011 to 2012</u>
Market Value of Pension Assets	\$ 26,859,612,370	\$ 26,037,983,392	\$ 27,654,006,602	3.2 %	(5.8) %
Annuity Savings Fund **	<u>10,145,584,757</u>	<u>9,493,983,997</u>	<u>9,065,132,234</u>	6.9 %	4.7 %
Net Market Value of Pension Assets	16,714,027,613	16,543,999,395	18,588,874,368	1.0 %	(11.0) %
Actuarial Accrued Liability (AAL) for Retirees	33,270,993,054	32,364,738,715	30,714,824,113	2.8 %	5.4 %
% of AAL for Retirees Covered by Assets *	80.7%	80.5%	90.0%	0.2 %	(9.5) %
% of AAL for Retirees Covered by Net Assets *	50.2%	51.1%	60.5%	(0.9) %	(9.4) %
Prior Year's Benefit Payments for Retirees	3,601,020,357	3,470,573,026	3,278,676,346	3.8 %	5.9 %
Ratio of Assets to Benefit Payments for Retirees ^	7.5	7.5	8.4	0.0 %	(10.7) %
Ratio of Net Assets to Benefit Payments for Retirees ^	4.6	4.8	5.7	(4.2) %	(15.8) %
Ratio of AAL to Benefit Payments for Retirees ^	9.2	9.3	9.4	(1.1) %	(1.1) %

* 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, 2013. This valuation reflects (1) the adoption of the 2012 Experience Study, which incorporated the change to the salary scale assumption retroactive to the 2012 valuation and (2) a change in the treatment of employee contributions in excess of 5.5% of payroll in determining the Normal Contribution, which was also reflected retroactive to the 2012 valuation.

Assumptions

This valuation reflects the actuarial assumptions based on the July 1, 2009 – June 30, 2012 Experience Study. The experience study slightly modified the rates of termination, retirement and disability from the prior assumptions. It also modified the number of years of mortality improvement subsequent to the valuation date from a generational approach to 7 years for postretirement mortality and 15 years for preretirement mortality. The mortality improvement assumption will be adjusted each year to maintain the 7 and 15 year periods.

Furthermore, the Experience Study reflected a decrease in the salary scale assumption for periods prior to June 30, 2021. This change was applied retroactive to the 2012 valuation, and this report contains the modified results of the 2012 valuation incorporating this change.

The adoption of these assumptions decreased the Actuarial Accrued Liability as of June 30, 2013 by \$404.3 million or 0.8% and the Total Pension Contribution by Statute for the fiscal year ending June 30, 2015 by \$57.5 million or 2.4%. It also decreased the Actuarial Accrued Liability as of June 30, 2012 by \$210.5 million or 0.4% and the Total Pension Contribution by Statute for the fiscal year ending June 30, 2014 by \$31.3 million or 1.4%.

Reflecting the Chapter 1, P.L. 2010 phase-in, the reduction in the State pension appropriation is \$32.7 million for the fiscal year ending June 30, 2015 and \$13.4 million for the fiscal year ending June 30, 2014.

In compliance with New Jersey statute, this actuarial valuation is based on an investment return assumption of 7.90%. The investment return assumption is specified by the State Treasurer. Based on Milliman's capital market outlook model, this assumption is above the 75th percentile of projected annualized 30-year

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY (continued)

B. General Comments (continued)

returns. We believe consideration should be given to reducing the investment return assumption. If the investment return was lowered, the actuarial accrued liability and statutory contributions would increase and the funded ratio would decrease. Determining results at an alternative investment return assumption is outside the scope of our assignment.

Funding Methods

The actuarial funding method for determining the statutory contributions is the Projected Unit Credit method. This method determines the actuarial accrued liability for each member based on service accrued as of the valuation date and projected compensation increases. The normal cost is equal to the present value of the benefit based on projected compensation and service assumed to be earned in the upcoming year. For statutory contribution purposes, the normal cost is divided between the portion based on the 1/60th benefit formula and the additional formula component.

The State portion of the normal cost is reduced by expected member contributions during the upcoming year. Chapter 78, P.L. 2011 increased the employee contribution rate from 5.5% to 6.5% effective October 1, 2011 and by 1/7 of 1% each following July 1 over the next 7 years until 7.5% is attained effective July 1, 2018. Typically, all member contributions are used as an offset in developing an employer's normal cost.. When Chapter 78 was passed, it was our understanding that the additional member contributions in excess of 5.5% would serve to reduce the unfunded actuarial accrued liability rather than serve as a direct offset to the State's Normal Contribution.

This valuation reflects a change in the treatment of the contributions in excess of 5.5% to now serve as a direct offset to the State's Normal Contribution for the fiscal year ending June 30, 2015. This change was also applied retroactive to the 2012 valuation for determining the State's Normal Contribution for the fiscal year ending June 30, 2014. This report contains the modified results of the 2012 valuation incorporating this change.

The change in this treatment reduced the State's Normal Contribution by \$132.6 million for the fiscal year ending June 30, 2015 and by \$115.6 million for the fiscal year ending June 30, 2014.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY (continued)

B. General Comments (continued)

Reflecting the Chapter 1, P.L. 2010 phase-in, the reduction in the State Normal Contribution is \$75.8 million for the fiscal year ending June 30, 2015 and \$49.5 million for the fiscal year ending June 30, 2014.

The combined impact of this change and the salary scale change on the State's pension contribution on a phased-in basis for the fiscal year ending June 30, 2014 is \$62.9 million. This reduction in the State's pension contribution for the fiscal year ending June 30, 2014 will increase the unfunded accrued liability as of June 30, 2013 dollar for dollar (as it is held as a receivable) resulting in an increase in the Accrued Liability Contribution of \$5.5 million for the fiscal year ending June 30, 2015.

The long-term impact of this change in treatment of member contributions in excess of 5.5% of pay is that fewer contributions will be made to TPAF each year in the future resulting in an estimated decrease in the projected funded ratio in 30 years of approximately 10%, based on the current investment return assumption and other assumptions and methods.

This actuarial valuation is based on the asset valuation method in compliance with Statute. This method recognizes 20% of the difference between the market value of assets and the actuarial value of assets. Per Actuarial Standards of Practice (ASOP) No. 44, a reasonable asset valuation method produces values within a sufficiently narrow range around market value or recognizes differences from market value in a sufficiently short period. As of June 30, 2013, the Actuarial Value of Assets is 113.4% of market value, which is a decrease from the prior year of 119.4%. Investment losses have occurred each year since the July 1, 2000 actuarial valuation on an actuarial value of asset basis. Combining an optimistic investment return assumption with a current actuarial value of assets that exceeds the market value of assets, along with an asset smoothing method which recognizes investment losses very slowly over time, will result in upward pressure on actuarially determined contribution requirements in future years.

The unfunded liability equals the difference in the actuarial accrued liability and the actuarial value of assets. For purposes of determining the statutory contributions, the unfunded liability is amortized over 30 years on a level dollar basis. Since a level dollar method is used, the full amount of interest on the unfunded liability plus a principal portion of the unfunded liability is expected to be paid each year (if the total

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SECTION I - SUMMARY (continued)

B. General Comments (continued)

contribution is paid). The amortization period will remain at 30 years until the June 30, 2019 valuation (2021 fiscal year). At that time, the period will be reduced by 1 each year until 20 years is attained with the June 30, 2028 valuation (2030 fiscal year).

Statutory Contributions

The statutory pension contribution consists of the Normal Contribution, the Additional Formula Contribution and the Accrued Liability Contribution. Chapter 133 P.L. 2001 allows the Additional Formula Contribution to be reduced based on the balance in the Benefit Enhancement Fund (BEF). As of July 1, 2013, there are no assets in the BEF. Furthermore, since there are no Excess Assets as of July 1, 2013, no assets will be transferred to the BEF.

Chapter 1, P.L. 2010 allows the State to phase-in to full funding of the statutory contribution over 7 years beginning with the 2012 fiscal year. This valuation determines the statutory contribution for the 2015 fiscal year, which is the fourth year of the phase-in. As shown on page 3, the statutory pension contribution for the 2015 fiscal year is \$2,306.6 million and the phased-in portion is \$1,318.1 million (57.1%).

For the 2014 fiscal year, it is anticipated that the State will contribute the phased-in portion of the statutory contribution. As we noted previously, the statutory contribution for the 2014 fiscal year has been modified from the original 2012 valuation. The total statutory contribution for the 2014 fiscal year is \$2,158.3 and the phase-in portion is \$925.0 million. The phase-in portion is held as a receivable in the plan assets for this valuation. The difference of \$1,233.3 million between the statutory contribution and the phased-in portion increases the Unfunded Actuarial Liability by this amount. This results in an increase in the statutory contribution for the 2015 fiscal year of \$108.5 million.

The statutory contribution increased 6.9% from \$2,158.3 million for the 2014 fiscal year to \$2,306.6 million for the 2015 fiscal year. This increase is due to the increase in the Accrued Liability Contribution offset by the decrease in the Normal Contribution and the Additional Formula Normal Cost. The increase in the Accrued Liability Contribution of 8.9% from \$1,769.9 million for the 2014 fiscal year to \$1,926.7 million for the 2015 fiscal year is due to the increase in the unfunded liability discussed in detail below. The Normal Contribution and the Additional

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B. General Comments (continued)

Formula Normal Cost have decreased by 2.2% from \$315.8 million for the 2014 fiscal year to \$308.7 million for the 2015 fiscal year and by 1.9% from \$72.6 million for the 2014 fiscal year to \$71.2 million for the 2015 fiscal year, respectively. The primary reasons for the decrease in the normal cost components are due to the assumption changes adopted in the 2012 Experience Study and the increase in the expected member contributions. The member contribution rate increased from 6.64% as of July 1, 2012 to 6.78% as of July 1, 2013. Since all member contributions are used as a direct offset to the Normal Contribution, this increase will result in a decrease in the Normal Contribution.

In addition to the pension contributions, the State contributes the actual amount of non-contributory group insurance claims and segregates the costs for past ERI programs. As shown on page 5, the estimated non-contributory group insurance claims are \$33.2 million and \$34.4 million for the 2014 and 2015 fiscal years, respectively. For ERI contributions, the State applies the same amortization method and Chapter 1 phase-in percentages. For the 2015 fiscal year, the total contribution is \$3.1 million and the phase-in amount is \$1.8 million.

Per Chapter 78, P.L. 2011, each member of TPAF has a contractual right to the annual required contribution made by the employer requiring the contribution to be made timely to help ensure the retirement system is securely funded.

GASB Annual Required Contribution

GASB has issued two new statements on how pensions are accounted for on the pension plan's statements as well as the employer's financial statements. Statement No. 67 Financial Reporting for Pension Plans is effective for the plan year ending June 30, 2014 and replaces Statement No. 25. Statement No. 68 Accounting and Financial Reporting for Pensions is effective for the fiscal year ending June 30, 2015 and replaces Statement No. 27. These standards are vastly different than the prior standards, but like the prior standards, do not dictate the funding of the pension plan. This valuation report does not reflect the new standards.

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

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SECTION I - SUMMARY (continued)

B. General Comments (continued)

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. GASB 27 does 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 or 3) 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 the non-contributory group life insurance.

As shown on page 4, the ARC for the 2015 fiscal year is \$2,588.3 million, which is \$247.3 million or 10.6% higher than the sum of the required statutory pension contribution of \$2,306.6 million and the estimated non-contributory group life insurance term cost of \$34.4 million for a total of \$2,341.0 million.

Plan Provisions

There have been several changes to TPAF over the past several years modifying the retirement conditions, determination of final average compensation, disability benefits, and the benefit accrual rate for newly hired members. This has resulted in many new tiers of members. The effect of these tiers will take many years to have a significant impact on the normal cost portions of the contribution. Section VIII outlines the plan provisions of TPAF in detail.

In addition, Chapter 78, P.L. 2011 eliminated additional pension adjustment benefits (COLAs) effective July 1, 2011 for all members of TPAF. However, upon attainment of the Target Funded Ratio (TFR), a new pension committee will be formed to review possible changes to member contributions, retirement benefits including eligibility conditions, and with priority consideration, reactivation of pension adjustment benefits. The committee may modify the basis for the calculation of the adjustment and set the duration and extent of the reactivation. No decision of the committee will be implemented if the system's funded ratio falls below the TFR in any projected valuation period during the 30 years following implementation.

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B. General Comments (continued)

The Target Funded Ratio (TFR) is defined as the ratio of the Actuarial Value of Assets to the Actuarially Accrued Liability and equals 75% for fiscal year 2012 (June 30, 2010 actuarial valuation) increasing to 80% in equal increments over the following 7 years. As shown on page 7, the funded ratio as of July 1, 2013 is 58.19%, which is lower than the TFR of 77.143%. Thus, no changes in benefits can be contemplated for the 2015 fiscal year.

Unfunded Actuarial Accrued Liability

The unfunded Actuarial Accrued Liability increased by \$1,781.9 million from \$20,114.9 million as of July 1, 2012 to \$21,896.8 million as of July 1, 2013. The 2012 numbers reflect the modified 2012 valuation results. This increase in the unfunded liability resulted in an increase in the Accrued Liability Contribution of \$156.8 million from \$1,769.9 million for the 2014 fiscal year to \$1,926.7 million for the 2015 fiscal year. The following table summarizes the reasons for the increase in the unfunded liability.

Unfunded Liability as of June 30, 2012 (modified valuation results)	\$20,114.9
State Appropriation Less than Statutorily Required Contribution due to Chapter 1, P.L. 2010 phase-in	1,233.3
Amortization Payment Less/(More) than Interest Accrual	(180.9)
Actuarial Loss/(Gain)	937.5
Assumption Changes	(404.3)
Impact of 2012 Valuation Restatement	241.7
Interest accrual on unauthorized ERI payment not made	1.1
Member Contributions Less/(More) than current level anticipated	<u>(46.5)</u>
Total Change in Unfunded Liability	\$1,781.9
Unfunded Liability as of June 30, 2013	\$21,896.8

Funded Ratio

As a result of the increase in the unfunded liability, the funded ratio based on the actuarial value of assets was reduced 2.5% from 60.7% as of June 30, 2012 to

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SECTION I - SUMMARY (continued)

B. General Comments (continued)

58.2% as of June 30, 2013. Due to the asset valuation method, investment losses are expected on an actuarial value basis as the actuarial value of assets was 119.4% of market value as of the beginning of the year. Investment losses have occurred each year since the July 1, 2000 actuarial valuation on an actuarial value of asset basis. Without significant investment gains, the current method recognizes investment losses very slowly. Combining an optimistic investment return assumption with a current actuarial value of assets that exceeds the market value of assets, along with an asset smoothing method which recognizes investment losses very slowly over time, will result in continued downward pressure on the funded ratio on an actuarial value basis.

On a market value basis, the funded ratio was increased 0.4% from 50.9% to 51.3%. The ratio increased on a market value basis due to adoption of the 2012 Experience Study and strong investment performance during the prior year offset by the phase-in of the State contribution for the 2014 fiscal year. Since July 1, 2003, the funded ratio on a market value basis has been reduced by 19.4%. This decrease is primarily due to investment losses experienced over the period, State contributions less than the GASB Annual Required Contribution and changes to the actuarial assumptions. By changing the treatment of member contributions in excess of 5.5%, the funded ratio is not expected to increase as quickly in future years. This change is expected to reduce the projected funded ratio in 30 years by approximately 10%.

As of June 30, 2013, the market value of assets is significantly below the actuarial liability attributable to retirees primarily due to significant investment losses, State contributions significantly less than the statutorily required contribution and other factors. 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 50.2%.

As of June 30, 2013, the ratio of market value of assets to the prior year's benefit payments is 7.5, which remained the same as the prior year. 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. If ASF assets are excluded, since they represent accumulated contributions from active and inactive members, the ratio is 4.6. The ratio for the

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SECTION I - SUMMARY (continued)

B. General Comments (continued)

prior year is 4.8. This ratio decreased as the increase in the ASF is higher (6.9%) than the remaining net assets (1.0%) due to increases in member contributions.

Actuarial Gain/(Loss) Analysis

TPAF experienced an actuarial loss of \$937.5 million during the period July 1, 2012 to June 30, 2013 based on the actuarial assumptions adopted in the 2009 Experience Study with modifications to the investment return and salary scale assumptions effective with the original June 30, 2012 actuarial valuation. The results of the modified June 30, 2012 actuarial valuation are not reflected in this analysis. This loss is approximately 1.8% of the Actuarial Accrued Liability as of July 1, 2013. The major factors contributing to this loss are summarized below and are compared to the experience for the prior two plan years.

	<u>June 30, 2013</u>	<u>Gain/(Loss)</u> <i>(Amounts in Millions)</i> <u>June 30, 2012</u>	<u>June 30, 2011</u>
Economic Factors:			
Investment Return	(\$902.6)	(\$1,260.3)	(\$1,125.6)
Salary Increases	76.1	119.5	330.0
Pension Adjustments (COLA)	N/A*	N/A*	251.3
Expenses	(12.8)	(11.8)	(12.7)
Demographic Factors:			
Active Members	(3.2)	(100.8)	(272.3)
New Entrants	(46.6)	(35.5)	(26.5)
Non-Contributing Members	(11.7)	(15.6)	(17.1)
Retirees and Beneficiaries	<u>(36.7)</u>	<u>(40.1)</u>	<u>(52.9)</u>
Total	(937.5)	(1,344.6)	(925.8)

* Some very small increases were provided during the year to offset negative adjustments from prior years. These increases are included in the demographic factors for retirees and beneficiaries.

Total pension assets earned investment returns of approximately 11.69% on a market value basis and 4.86% on an actuarial value basis for the period ending June 30, 2013. 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 than

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B. General Comments (continued)

reported by the Division of Investments. The resulting loss to the plan of \$902.6 million represents the shortfall in the actuarial value of assets relative to the 7.9% assumed investment return.

Salary increases for contributory members who were active on both July 1, 2012 and July 1, 2013 averaged 3.30% versus expected salary increases of 3.68% resulting in an actuarial gain of \$76.1 million, excluding the impact of the modified 2012 valuation results. Salaries for new entrants averaged \$53,247, which is significantly below the average salary of all contributory members of \$72,292. This resulted in the average salary of all contributory members increasing by 1.1% over last year and combined with the number of active contributing members increasing by 1.6%, total contributory payroll increased by 2.7%.

Actuarial losses among active members include the impact of changes in participant data, including changes in service partially due to service purchases. Actuarial losses among retirees include the impact of participant data changes, including changes in benefit amounts and beneficiaries who appear in the valuation for the first time where a prior member record was not determined.

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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, 2013 and includes the present value of expected contributions from State and local employers for ERI and Terminal Funding retirements as of June 30, 2013.

Subsection B reconciles the development of the market value of pension assets starting from the market values as of June 30, 2012. Subsection C summarizes the development of the actuarial value of pension assets as of July 1, 2013. The exhibit reflects the growth in the pension assets based on the expected investment income at an assumed rate of 7.90% 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, 2013 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 3.50% and 5.16%, 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, 2013, which reflect the assumptions developed in the 2012 Experience Study and the economic assumptions prescribed by the Treasurer.

Subsection A summarizes the development of the Actuarial Accrued Liability as of July 1, 2013 for all current members and indicates the portion of those present values attributable to active participants, retirees and beneficiaries, and terminated vested participants. 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)

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SECTION I - SUMMARY (continued)

C. Discussion of Supporting Exhibits (continued)

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, 2013. The schedule shows the portion of the Normal Cost covered by expected member contributions. All member contributions are used as a direct offset in determining the net employer cost. The Normal Cost as of July 1, 2013 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 under the 1/55 formula (1/60 formula for Class F and G employees) for active contributory members by employee type as of July 1, 2013.

Subsection D summarizes the development of the Excess Valuation Assets which are \$0 as of July 1, 2013. 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 for pension adjustment benefits of active members and the BEF (prior to reduction for the additional formula normal contribution for fiscal year 2014) from the Valuation Assets.

Subsection E summarizes the development of the BEF as of July 1, 2013 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, 2013. 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.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY (continued)

C. Discussion of Supporting Exhibits (continued)

Subsection F summarizes the development of the State's estimated fiscal year 2015 Statutory Required Contributions to TPAF comprising three components: pension, non-contributory group life insurance, and ERI. The total pension contribution of \$2,306,611,715 equals the Normal Contribution of \$308,712,803 based on the 1/60 formula plus the Additional Formula Normal Contribution of \$71,184,388 plus the Accrued Liability Contribution of \$1,926,714,524. 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 \$34,400,000. The State's combined ERI-3 and ERI-5 contributions are \$3,115,873. The total Statutory Required Contribution for the State's fiscal year 2015 is estimated to be \$2,344,127,588. This is an estimate because the State will contribute the actual 2015 fiscal year non-contributory group life insurance benefits, not the estimated amount shown above. For the 2015 fiscal year, Chapter 1, P.L. 2010 requires the State to contribute 4/7th of the pension and ERI portions of the contribution. Combined with the estimated contribution for the non-contributory group life insurance benefits, the expected amount to be appropriated is \$1,354,244,336.

Subsection G shows the Statutory Required Contribution as a percentage of appropriation payroll on two bases: (1) on a statutory basis – 23.32% and (2) if the Market Value of Assets were used to determine the Accrued Liability Contribution – 26.48%. This is an increase of 13.6%. Without future investment returns exceeding the assumed rate of return by a significant margin, contributions in future years will continually move toward the amount based on market value.

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

Subsection I shows the fiscal year 2015 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. It does not reflect the phase-in under Chapter 1, P.L. 2010. The State's contribution is allocated between the Department of Higher Education, Department of Education, County Colleges, Charter Schools and other.

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SECTION I - SUMMARY (continued)

C. Discussion of Supporting Exhibits (continued)

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, 2013. 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, 2013. The actuarial value of assets is used as the basis for the balance sheet. Note that the actuarial value of assets is 13% higher than market value. The liabilities presented are based on the actuarial accrued liabilities summarized in Section III.

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, 2013, the Retirement Reserve Fund has present assets of \$33,042,350,394 including accrued interest. The liabilities of the fund amount to \$33,270,983,199 so that there is a deficit of \$228,632,805 in the fund as of the valuation date. New Jersey statute states that the fund be put in balance as of June 30, 2013 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 the Retirement Reserve 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, 2013, the Pension Fund has assets credited to it amounting to

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SECTION I - SUMMARY (continued)

C. Discussion of Supporting Exhibits (continued)

\$70,743 including accrued interest. The liabilities of the fund amount to \$9,855 so that there is a surplus of \$60,888 in the fund as of the valuation date. It is recommended that the fund be put in balance as of June 30, 2013 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 \$10,145,584,757 as of June 30, 2013 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 \$(12,946,720,507) as of June 30, 2013 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 \$(16,556,965,441).

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 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.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY (continued)

C. Discussion of Supporting Exhibits (continued)

(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, 2013, 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, 2013.

Accounting Information

GASB has issued two new statements on how pensions are accounted for on the pension plan's statements as well as the employer's financial statements. Statement No. 67 Financial Reporting for Pension Plans is effective for the plan year ending June 30, 2014 and replaces Statement No. 25. Statement No. 68 Accounting and Financial Reporting for Pensions is effective for the fiscal year ending June 30, 2015 and replaces Statement No. 27. These standards are vastly different than the prior standards, but like the prior standards, do not dictate the funding of the pension plan. This valuation report does not reflect the new standards.

Section V presents the accounting information required under Governmental Accounting Standards Statement No. 27 (GASB 27). Schedule A outlines the development of the Annual Required Contribution (ARC). The ARC comprises the employer's normal cost (based on all expected member contributions) plus a

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY (continued)

C. Discussion of Supporting Exhibits (continued)

specified amortization of the unfunded actuarial accrued liability (UAAL). For 2012 and later fiscal years (2010 and subsequent valuations), the amortization method selected for this system is an open level dollar method (level percentage of projected payroll based on an assumed payroll growth rate of 4.0% was used prior to the 2012 fiscal year) for 30 years. For fiscal years 2021 and later (2019 and subsequent valuations), the amortization period will close until the period reaches 20 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 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 2015 fiscal year attributable to group life insurance benefits is \$99.5 million. The total ARC for the 2015 fiscal year is \$2,588.3 million.

Schedule B shows the projection of the Estimated Net Pension Obligation (NPO) as of June 30, 2014 and June 30, 2015. The NPO represents the cumulative difference between the Annual Pension Costs for the system and the contributions made. After the expected contributions of \$958.1 million for fiscal year 2014 and \$1,352.5 million for fiscal year 2015, the NPO as of June 30, 2015 is expected to be \$15,994.4 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.

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, 2014 the employer contributions are 39.5% of the ARC and for the fiscal year ending June 30, 2015, the expected employer contributions are 52.3% of the ARC. Six years of historical information are shown. Schedule E presents the funding policy for the fiscal year. This disclosure includes the valuation date, the

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY (continued)

C. Discussion of Supporting Exhibits (continued)

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 less than and more than 25 years of service. Subsection E provides additional retiree information. Subsections F and G present a profile of Contributory and Non-contributory members split by gender, summarized by 5-year age and service groupings. Subsection H 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, 2013.

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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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION I - SUMMARY (continued)

C. Discussion of Supporting Exhibits (continued)

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, 2009 to June 30, 2012 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.

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 displays the contribution schedule for the early retirement incentive programs (ERI-1, ERI-2, ERI-3, ERI-4 and ERI-5) by location for the 2015 fiscal year. It also provides the present value of the future contributions as of June 30, 2013. This list reflects locations which paid off their ERI liabilities through June 2013 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, 2013

1. Assets		
Cash	\$	1,365,512
Investment Holdings		25,913,044,376
Employers' Contributions Receivable - NCGI		3,004,829
Employers' Contributions Receivable - State		34,007,248
Employers' Contributions Receivable - Local		29,210,660
Employers' Contributions Receivable - Delayed Enrollments		346,837
Employers' Contributions Receivable - Delayed Appropriations		4,900,021
Members' Contributions Receivable		78,322,751
Accrued Interest on Investments		2,440
Accounts Receivable		2,215,830
Loans Receivable		222,215,999
Dividends Receivable		<u>0</u>
Total	\$	<u>26,288,636,503</u>
2. Liabilities		
Pension Payroll Payable	\$	236,621,506
Pension Adjustment Payroll Payable		31,436,152
Withholdings Payable		40,929,064
Death Benefits Payable		3,004,829
Net Securities Lending Collateral		(328,183)
Accounts Payable - Other		<u>53,716,161</u>
Total	\$	<u>365,379,529</u>
3. Market Value of Assets as of June 30, 2013: (1) - (2)	\$	25,923,256,974
4. Unauthorized Local ERI Receivable Contributions		11,375,100
5. FY 2014 Receivable Contributions from State		<u>924,980,296</u>
6. Adjusted Market Value of Assets as of June 30, 2013: (3) + (4) + (5)	\$	<u>26,859,612,370</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, 2012 to June 30, 2013

	<u>Pension</u>
1. Market Value of Assets as of June 30, 2012	\$ 26,037,983,392
2. Increases	
Member Contributions excluding transfers from Other Systems	\$ 677,200,654
Member Transfer Contributions	7,493,306
Other Employer Contributions including Transfers From Other Systems, Delayed Appropriations and Delayed Enrollments	5,034,645
State and Local Appropriations (adjusted by unauthorized ERI receivable)	21,759,088
Investment Income	<u>2,867,652,095</u>
Total	\$ <u>3,579,139,788</u>
3. Decreases	
Withdrawal of Member Contributions and Transfer Contributions	\$ 47,225,502
Retirement Allowances	3,230,673,227
Pension Adjustment Benefits	370,347,130
Death Benefit Claims	33,292,536
Administrative Expense	12,327,811
Medical Benefits and Expenses	<u>0</u>
Total	\$ <u>3,693,866,206</u>
4. Market Value of Assets as of June 30, 2013: (1) + (2) - (3)	\$ 25,923,256,974
5. FY 2014 Receivable Contributions from State and Local Employers	<u>936,355,396</u>
6. Adjusted Market Value of Assets as of June 30, 2013: (4) + (5)	\$ <u>26,859,612,370</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, 2013

1. Actuarial Value of Pension Assets as of July 1, 2012	\$ 31,079,212,983
2. Net Cash Flow without Investment Income	(2,982,378,513)
3. Investment Income at Actuarially Assumed Rate @ 7.90%	2,339,228,672
4. Receivable Contributions from State and Local Employers	<u>936,355,396</u>
5. Expected Actuarial Value of Pension Assets: (1) + (2) + (3) + (4)	31,372,418,538
6. Adjusted Market Value of Pension Assets as of June 30, 2013	26,859,612,370
7. Excess Market Value over Expected Actuarial Value Assets: (6) - (5)	(4,512,806,168)
8. 20% mark-up to reflect growth in Market Value: 20% x (7)	<u>(902,561,234)</u>
9. Actuarial Value of Pension Assets as of July 1, 2013: (5) + (8)	\$ <u>30,469,857,304</u>
10. Pension Actuarial/Market Value Ratio: (9) / (6)	113.4%

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Section II - C

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION II - ASSETS

(continued)

D. Estimated Annual Rate of Return for year ending June 30, 2013

	<u>Pension Actuarial Value</u>	<u>Pension Market Value</u>
1. Value of Assets as of July 1, 2012	\$ 31,079,212,983	\$ 26,037,983,392
2. Employee Contributions	689,728,605	689,728,605
3. State and Local Appropriations	21,759,088	21,759,088
4. Receivable Contributions - State and Local Employers	936,355,396	936,355,396
5. Benefit Payments and Expenses	3,693,866,206	3,693,866,206
6. Value of Assets as of June 30, 2013	30,469,857,304	26,859,612,370
7. Non-Investment Increment: (2) + (3) - (5)	(2,982,378,513)	(2,982,378,513)
8. Investment Increment: (6) - (1) - (4) - (7)	1,436,667,438	2,867,652,095
9. Time Weighted Value: (1) +.5 x (7)	29,582,257,003	24,541,027,412
10. Estimated Annual Rate of Return: (8) / (9)	4.86%	11.69%

E. Estimated Historical Rates of Return

<u>Plan Year Ending</u>	<u>Actuarial Value</u>	<u>Market Value</u>
June 30, 2013	4.86%	11.69%
June 30, 2012	3.85%	2.46%
June 30, 2011	4.71%	17.91%
June 30, 2010	2.74%	13.83%
June 30, 2009	1.36%	-16.29%
 5-Year Compounded Annual Rate of Return	 3.50%	 5.16%

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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, 2013- 1/55th Formula

1. Projected Benefits Payable to Beneficiaries and Retirees	
Service Retirees (Including ERI Benefits)	\$ 31,517,066,011
Disability Retirees	711,026,065
Beneficiaries	<u>1,042,900,978</u>
Total	\$ 33,270,993,054
2. Projected Benefits for Vested Terminated Members	41,977,481
3. Projected Benefits for Non-Contributory Members	\$ 630,686,724
4. Projected Benefits for Active Members	
Service Retirement	\$ 17,347,343,048
Ordinary Disability Retirement	458,218,569
Accidental Disability Retirement	22,883,451
Return of Members' Contributions - Death	104,684,435
Return of Members' Contributions - Withdrawal	141,993,317
Deferred Retirement	347,874,976
Pension Adjustment Benefits	<u>0</u>
Total	\$ 18,422,997,796
5. Total Pension Accrued Liability: (1) + (2) + (3) + (4)	\$ 52,366,655,055

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Section III - A

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION III - LIABILITIES AND CONTRIBUTIONS

(continued)

B. Development of Normal Cost payable July 1, 2013

	<u>1/60th Formula</u>	<u>1/55th Formula</u>
1. Basic Allowances	\$ 937,200,465	\$ 1,003,173,021
2. Expected Member Contributions	<u>651,090,360</u>	<u>651,090,360</u>
3. Net Pension Normal Cost: (1) - (2)	286,110,105	352,082,661

C. Summary of Active Member Actuarial Accrued Liability & Normal Cost payable July 1, 2013

<u>Employee Type</u>	<u>Number of Members</u>	<u>Total Appropriation Salary</u>	<u>Actuarial Accrued Liability</u>	<u>Gross Pension Normal Cost (1/55th Formula) *</u>
Class A & B	106,094	\$8,236,264,983	\$17,921,700,207	\$873,870,403
Class D	11,590	656,032,510	300,250,294	51,595,513
Class E	5,744	315,382,916	99,729,009	23,739,979
Class F	3,470	188,996,702	37,750,374	12,429,426
Class G	<u>12,023</u>	<u>642,115,785</u>	<u>63,567,912</u>	<u>41,537,700</u>
Total	138,921	\$10,038,792,896	\$18,422,997,796	\$1,003,173,021

* 1/60th formula for Class F and G employees

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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, 2013

1. Valuation Assets	\$ 30,469,857,304
2. Actuarial Accrued Liability for Basic Allowances & Pension Adjustment Benefits	52,366,655,055
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	0
5. Benefit Enhancement Fund (prior to reduction for additional formula normal cost)	<u>0</u>
6. Excess Valuation Assets as of July 1, 2013: (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, 2013**

1. Benefit Enhancement Fund as of July 1, 2012	\$	0
2. Accrued Interest		<u>0</u>
3. Benefit Enhancement Fund as of July 1, 2013		0
4. Additional Formula Normal Cost to be paid by Benefit Enhancement Fund		
a. Gross Normal Cost payable July 1, 2013 - 1/55th Formula (B)(3)(a)		1,003,173,021
b. Gross Normal Cost payable July 1, 2013 - 1/60th Formula (B)(3)(a)		<u>937,200,465</u>
c. Additional Formula Normal Cost: (a) - (b)		65,972,556
5. Net Benefit Enhancement Fund Balance as of July 1, 2013 before Fiscal Year 2015 Contribution: (3) - (4c), not less than \$0		0
6. State Additional Formula Contribution as of July 1, 2013: (4c) - (3), not less than \$0		65,972,556
7. Estimated Fiscal Year 2015 Employee Contributions as of July 1, 2013		640,515,377
8. Limit on Fiscal Year 2015 Contribution to Benefit Enhancement Fund		
a. Present Value of Future Normal Costs as of June 30, 2013 - 1/55th Formula		9,832,080,823
b. Present Value of Future Normal Costs as of June 30, 2013 - 1/60th Formula		<u>9,118,989,745</u>
c. Limit: (a) - (b) - (5)		713,091,078
9. Excess Assets Available (D6)		0
10. Fiscal Year 2015 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 2015 Statutory Required Contributions

1. Net Pension Normal Contribution as of July 1, 2013: B(3)	\$ 286,110,105
2. Net Pension Normal Contribution as of June 30, 2014	308,712,803
3. Additional Formula Contribution as of July 1, 2013: E(6)	65,972,556
4. Additional Formula Contribution as of June 30, 2014	71,184,388
5. Accrued Liability Contribution	
a. Actuarial Accrued Liability for Basic Allowances & Pension Adjustment Benefits	\$ 52,366,655,055
b. Adjusted Actuarial Value of Assets (excluding BEF)	<u>30,469,857,304</u>
c. Unfunded Pension Accrued Liability: (a) - (b)	\$ 21,896,797,751
d. 30 - Year Level Dollar Amortization with payments of Unfunded Pension Accrued Liability payable June 30, 2014	1,926,714,524
6. Total Pension Contribution for State's Fiscal Year 2015: (2) + (4) + (5d)	\$ 2,306,611,715
7. State's FY 2015 Est. Non-contributory Group Life Insurance Contribution (NCGI)	34,400,000
8. State's Fiscal Year 2015 ERI-3 and ERI-5 Contributions	<u>3,115,873</u>
9. Total State's Fiscal Year 2015 Contribution for Pension, NCGI and ERI: (6) + (7) + (8)	\$ <u>2,344,127,588</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	3.08%
Additional Formula Normal Cost (after any BEF reductions)	0.71%
Accrued Liability Contribution	<u>19.19%</u>
Total Pension Contribution for State's Fiscal Year 2015	22.98%
 Estimated Non-contributory Group Life Insurance Benefits (NCGI)	 0.34%
 Total State's Fiscal Year 2015 Contribution for Pension and NCGI	 23.32%
 Increases in contribution if:	
No BEF reductions existed	0.00%
Market Value of Assets used to determine the Accrued Liability Contribution	<u>3.16%</u>
Total Increases as a percent of payroll	3.16%
 Total Contribution with these increases as a percent of payroll	 26.48%

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

<u>Fiscal Year Ending</u>	<u>Statutory Pension and NCGI</u>	<u>With Increases Above Included</u>
June 30, 2015	23.32%	26.48%
June 30, 2014	22.41%	26.95%
June 30, 2013	22.53%	25.86%
June 30, 2012	20.41%	27.10%
June 30, 2011	19.10%	25.88%

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION III - LIABILITIES AND CONTRIBUTIONS

(continued)

I. Fiscal Year 2015 Statutory Required Contributions Payable by the State and Certain State Colleges (excluding Ch. 1 phase-in)

<u>Group</u>	<u>Normal Contribution (1/60 Formula)</u>	<u>Additional Formula Contribution (After BEF reductions)</u>	<u>Accrued Liability Contribution</u>	<u>Estimated Non-Contributory Group Life Insurance</u>	<u>Total</u>
<u>Certain State Colleges</u>					
NJ Institute of Technology	\$0	\$0	\$0	\$0	\$0
Rowan University	157	36	979	17	\$1,189
New Jersey University	6,756	1,558	42,163	753	\$51,230
Kean University	10,462	2,412	65,294	1,166	\$79,334
William Patterson University	11,223	2,588	70,043	1,251	\$85,105
Montclair State U. (Group 4)	7,793	1,797	48,637	868	\$59,095
The College of NJ	3,622	835	22,606	404	\$27,467
Stockton State College	<u>11,183</u>	<u>2,579</u>	<u>69,796</u>	<u>1,246</u>	<u>\$84,804</u>
Total for Certain State Colleges	\$51,196	\$11,805	\$319,518	\$5,705	\$388,224
<u>State</u>					
Dept of Higher Education	0	0	0	0	\$0
Dept of Education	457,659	105,529	2,856,304	50,997	\$3,470,489
County Colleges	46,562	10,736	290,599	5,188	\$353,085
Charter Schools	4,797,824	1,106,304	29,943,809	534,624	\$36,382,561
Other	<u>303,359,562</u>	<u>69,950,014</u>	<u>1,893,304,294</u>	<u>33,803,486</u>	<u>\$2,300,417,356</u>
Total for State	<u>\$308,661,607</u>	<u>\$71,172,583</u>	<u>\$1,926,395,006</u>	<u>\$34,394,295</u>	<u>\$2,340,623,491</u>
Total for System	<u>\$308,712,803</u>	<u>\$71,184,388</u>	<u>\$1,926,714,524</u>	<u>\$34,400,000</u>	<u>\$2,341,011,715</u>

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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, 2013

1. Unfunded Accrued Liability as of June 30, 2012 *	\$	20,325,429,754
2. Gross Normal Cost as of June 30, 2012 *		994,289,959
3. Interest: ((1) + (2)) * 7.90%		1,684,257,857
4. Employee and Employer Contributions Made with Interest		<u>1,640,365,875</u>
5. Expected Unfunded Accrued Liability as of June 30, 2013: (1) + (2) + (3) - (4)	\$	21,363,611,695
6. Increase/(Decrease) in liability due to assumption changes		(404,297,149)
7. Increase/(Decrease) in liability due to statutory changes		0
8. Expected Unfunded Accrued Liability after changes as of June 30, 2013: (5) + (6) + (7)	\$	20,959,314,546
9. Actual Unfunded Accrued Liability as of June 30, 2013		<u>21,896,797,751</u>
10. Gain/(Loss): (8) - (9)	\$	<u>(937,483,205)</u>

* Prior to changes due to modified 2012 valuation results

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION IV - ACTUARIAL BALANCE SHEET AS OF JUNE 30, 2013

<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	\$33,042,350,394	Retirees, Disableds and Beneficiaries	
Add/(deduct) reserve transferable from/(to) CRF	<u>228,632,805</u>	currently receiving benefits	\$33,270,983,199
Adjusted Total	33,270,983,199		
 <u>Pension Fund (PF)</u>		 <u>Payable from Pension Fund</u>	
Credited to Fund w/ Distribution of Income	70,743	Retirees, Disableds and Beneficiaries	
Add/(deduct) reserve transferable from/(to) CRF	<u>(60,888)</u>	currently receiving benefits	9,855
Adjusted Total	9,855		
 Annuity Savings Fund (ASF) w/ Distribution of Income	 10,145,584,757	 <u>Payable from Annuity Savings Fund</u>	
		<u>and Contingent Reserve Fund</u>	
 <u>Contingent Reserve Fund (CRF)</u>		Active Members	19,053,684,520
Credited to Fund w/ Distribution of Income	(12,718,148,590)	Term Vested Members	<u>41,977,481</u>
Add/(Deduct) from/(to) RRF, PF & SRF	<u>(228,571,917)</u>	Total	19,095,662,001
Adjusted Total	(12,946,720,507)		
 <u>Benefit Enhancement Fund (BEF)</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, 2013	 \$30,469,857,304		
 Present Value of Prospective Contributions to the CRF and BEF for service accrued as of July 1, 2013	 <u>21,896,797,751</u>		
 Total Assets	 \$52,366,655,055	 Total Liabilities	 \$52,366,655,055

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

**SECTION V - GASB NO. 27 ACCOUNTING INFORMATION FOR
STATE'S FISCAL YEAR 2015**

A. Development of Annual Required Contribution as of June 30, 2015

1. Actuarial Value of Assets as of July 1, 2013		
a. Actuarial Value of Pension Assets	\$30,469,857,304	
b. Market Value of Contributory Group Insurance Premium Fund	<u>136,115,767</u>	
c. Actuarial Value of Assets for GASB purposes: (a) + (b)		\$30,605,973,071
2. Actuarial Accrued Liability as of July 1, 2013		
a. Actuarial Accrued Liability for pension benefits	\$52,366,655,055	
b. Non-contributory and Contributory Group Insurance Benefits	<u>1,278,822,911</u>	
c. Accrued Liability for GASB purposes: (a) + (b)		<u>53,645,477,966</u>
3. Unfunded Accrued Liability as of July 1, 2013: (2c) - (1c)		\$23,039,504,895
4. Amortization Payment payable July 1, 2013		1,878,834,221
5. Net Normal Cost as of July 1, 2013		
a. Basic Allowances and pension adjustments (including full cost of pension adjustment benefits)	\$1,003,173,021	
b. Non-contributory and Contributory Group Insurance Benefits	30,198,969	
c. Expected Employee Contributions for pension benefits	651,090,360	
d. Expected Employee Contributions for Contributory Group Insurance Benefits	<u>37,931,599</u>	
e. Net Normal Cost as of July 1, 2013: (a) + (b) - (c) - (d)		<u>344,350,031</u>
6. Annual Required Contribution as of June 30, 2015		
a. Annual Required Contribution as of July 1, 2013: (4) + (5e)		\$2,223,184,252
b. Interest to Expected Payment Date		<u>365,138,005</u>
c. Annual Required Contribution: (a) + (b)		\$2,588,322,257

This information does not reflect the new GASB Standards: No. 67 Financial Reporting for Pension Plans effective fiscal year 2014 and No. 68 Accounting and Financial Reporting for Pensions effective fiscal year 2015.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION V - ACCOUNTING INFORMATION FOR STATE'S FISCAL YEAR 2015

(continued)

B. Projection of Net Pension Obligation as of June 30, 2014 and June 30, 2015

1. Net Pension Obligation as of June 30, 2013		\$13,548,639,703
2. Annual Pension Cost for Fiscal Year 2014		
a. Annual Required Contribution	\$2,423,790,461	
b. Interest on Net Pension Obligation	1,070,342,537	
c. Adjustment to ARC	<u>1,192,154,268</u>	
d. Annual Pension Cost: (a) + (b) - (c)		2,301,978,730
3. Fiscal Year 2014 Contributions (42.9% of pension contribution plus actual NCGI)		<u>958,145,216</u>
4. Net Pension Obligation as of June 30, 2014: (1) + (2d) - (3)		\$14,892,473,217
5. Annual Pension Cost for Fiscal Year 2015		
a. Annual Required Contribution	\$2,588,322,257	
b. Interest on Net Pension Obligation	1,176,505,384	
c. Adjustment to ARC	<u>1,310,399,118</u>	
d. Annual Pension Cost: (a) + (b) - (c)		2,454,428,523
6. Expected Fiscal Year 2015 Contributions (57.1% of pension contribution plus est. NCGI)		<u>1,352,463,837</u>
7. Estimated Net Pension Obligation as of June 30, 2015: (4) + (5d) - (6)		\$15,994,437,903

This information does not reflect the new GASB Standards: No. 67 Financial Reporting for Pension Plans effective fiscal year 2014 and No. 68 Accounting and Financial Reporting for Pensions effective fiscal year 2015.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION V - ACCOUNTING INFORMATION FOR STATE'S FISCAL YEAR 2015

(continued)

C. Schedule of Funding Progress

Valuation Year	(1) Actuarial Value of Assets for GASB Purposes	(2) Accrued Liability for GASB Purposes	(3) Unfunded Accrued Liability (2) - (1)	(4) Funded Ratio (1) / (2)	(5) Appropriation Payroll	(6) Unfunded Accrued Liability as a % of Payroll: (3) / (5)
2008	\$36,664,627,629	\$51,754,814,521	\$15,090,186,892	70.84%	\$9,419,083,203	160.21%
2009	34,838,211,259	54,576,061,024	19,737,849,765	63.83%	9,747,020,060	202.50%
2010	33,265,326,627	49,543,347,849	16,278,021,222	67.14%	10,025,401,658	162.37%
2011	32,289,888,420	51,406,540,290	19,116,651,870	62.81%	9,682,318,739	197.44%
2012	31,214,185,683	52,417,751,753	21,203,566,070	59.55%	9,779,212,916	216.82%
2013	30,605,973,071	53,645,477,966	23,039,504,895	57.05%	10,038,792,896	229.50%

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION V - ACCOUNTING INFORMATION FOR STATE'S FISCAL YEAR 2015

(continued)

D. Schedule of Employer Contributions

<u>Fiscal Year</u>	<u>State's Annual Required Contribution</u>	<u>Employer Contributions</u>	<u>Percentage of ARC Contributed</u>
2010	\$1,796,358,016	\$33,199,655	1.85%
2011	2,123,175,951	30,655,332	1.44%
2012	2,269,823,968	317,927,358	14.01%
2013	2,331,811,395	647,059,335	27.75%
2014	2,423,790,461	958,145,216 *	39.53%
2015	2,588,322,257	1,352,463,837 *	52.25%

* Estimated based on current understanding of state budget resolutions

E. Funding Policy for State's Fiscal Year 2015

Valuation Date	July 1, 2013
Actuarial Cost Method	Projected Unit Credit
Amortization Method	Level Dollar, Open until 2018 valuation
Remaining Amortization Period	30 years
Asset Valuation Method	Actuarial Value
<u>Actuarial Assumptions</u>	
Investment Rate of Return	7.90%
Projected Salary Increases***	3.33%

*** Variable scale, with 4 year select period beginning 2012, and 5 year select period beginning 2016 and ultimate period beginning 2021, averaging approximately 3.33%, 3.86%, and 4.67%, respectively, thereafter

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VI - CENSUS DATA

A. Reconciliation with Prior Year

	<u>Active Contrib</u>	<u>Active NonContrib</u>	<u>Deferred Vested</u>	<u>Retirees</u>	<u>Disableds</u>	<u>Beneficiaries</u>	<u>Domestic Relation Beneficiaries</u>	<u>Total</u>
Members as of June 30, 2012	136,797	13,403	392	80,514	2,946	5,153	695	239,901
Terminated Vested	(24)	(36)	60	-	-	-	-	0
Terminated with Refund	(438)	(2,129)	(1)	-	-	-	-	(2,568)
Retired	(3,488)	(266)	(99)	3,853	-	-	-	0
Disabled	(140)	(67)	-	-	207	-	-	0
Died with Beneficiary	-	-	-	(394)	(10)	404	-	0
Died without Beneficiary	(58)	(30)	-	(1,453)	(62)	(246)	-	(1,849)
Payments Began	-	-	-	-	-	-	72	72
Payments Ceased	-	-	-	-	-	-	(28)	(28)
New Actives and Rehires	7,670	132	(1)	-	-	-	-	7,801
Changed to Contributing	2,533	(2,533)	-	-	-	-	-	0
Changed to Noncontributing	(3,926)	3,926	-	-	-	-	-	0
Data Corrections	<u>(5)</u>	<u>(3)</u>	<u>-</u>	<u>6</u>	<u>4</u>	<u>68</u>	<u>-</u>	<u>69</u>
Members as of June 30, 2013	<u>138,921</u>	<u>12,397</u>	<u>351</u>	<u>82,526</u>	<u>3,085</u>	<u>5,379</u>	<u>739</u>	<u>243,398</u>

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VI - CENSUS DATA

(continued)

B. Appropriation Number and Salary by Group *

<u>Group</u>	<u>Number of Employers</u>	<u>Number of Members</u>	<u>Appropriation Salary</u>
Department of Higher Education	0	0	\$ 0
Department of Education	2	161	14,882,250
New Jersey Institute of Technology	0	0	0
State Colleges	6	12	1,301,131
County Colleges	5	14	1,514,112
Charter Schools	79	2,722	156,016,731
Other	<u>595</u>	<u>136,012</u>	<u>9,865,078,672</u>
Total	<u>687</u>	<u>138,921</u>	\$ <u>10,038,792,896</u>

* Excludes salary in excess of Taxable Wage Base for members hired after June 30, 2007

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VI - CENSUS DATA

(continued)

C. Number and Annual Benefits Including Pension Adjustments of Retirees, Beneficiaries, and Dependents on Roll

<u>Group</u>	<u>Number</u>	<u>Annual Benefit</u>
Service and Early Retirements (incl Domestic Relation Beneficiaries)	83,265	\$ 3,371,687,147
Ordinary Disability Retirements	2,832	74,684,756
Accidental Disability Retirements	253	10,602,195
Ordinary Death Benefits	1	394
Accidental Death Benefits	1	41,390
Dependents of Deceased Beneficiaries	5,309	132,507,636
Dependents of Deceased Beneficiaries who elected to receive annuities certain instead of lump sum	<u>68</u>	<u>1,483,944</u>
Total	<u>91,729</u>	\$ <u>3,591,007,462</u>

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VI - CENSUS DATA

(continued)

D. New* Retirees from Active Contributory Status

	<u>Less than 25</u> <u>years of service</u>	<u>At least 25</u> <u>years of service</u>	<u>Total</u>
Number of Retirements	583	2,891	3,474
Total Annual Pension	\$14,182,803	\$151,969,852	\$166,152,655
Average Annual Pension	\$24,327	\$52,567	\$47,827
Average Age at Retirement	64.6	61.3	61.9
Average Service at Retirement	16.1	32.0	29.3

* Members indicated as retired since last actuarial valuation and have not subsequently died prior to the valuation date.

E. Average Age and Average Annual Pension at Retirement

	<u>Average Age</u> <u>at Retirement</u>	<u>Average Annual</u> <u>Pension at Retirement</u>	<u>Count</u>
New Retirees from Active Contributory Status			
Service Retirement	63.9	\$46,512	2,442
Early Retirement	57.1	50,924	1,032
Ordinary Disability	57.7	34,594	134
Accidental Disability	55.0	45,776	6
Survivors **	55.5	49,885	11
All Retirees			
Service Retirement	62.9	\$34,860	48,393
Early Retirement	56.2	39,813	34,133
Ordinary Disability	54.0	23,472	2,832
Accidental Disability	52.1	36,292	253
Survivors	55.8	19,664	5,379

** Members indicated as retired since last actuarial valuation and have subsequently died prior to the valuation date.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VI - CENSUS DATA

(continued)

F. Age, Service and Salary Profile of Active Contributing Participants

Age Group	Males									Total	Average Annual Salary
	Years of Service										
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
15-19	0	0	0	0	0	0	0	0	0	0	\$0
20-24	258	0	0	0	0	0	0	0	0	258	51,398
25-29	2,099	670	2	0	0	0	0	0	0	2,771	52,548
30-34	1,092	2,957	738	0	0	0	0	0	0	4,787	59,123
35-39	498	1,472	3,006	379	0	0	0	0	0	5,355	70,094
40-44	369	743	1,703	1,875	221	1	0	0	0	4,912	79,655
45-49	227	490	910	1,055	950	166	1	0	0	3,799	84,572
50-54	209	391	645	562	549	710	149	0	0	3,215	86,623
55-59	152	337	560	461	409	519	731	261	0	3,430	90,250
60-64	106	285	434	324	336	278	300	600	208	2,871	94,473
65 & Up	<u>15</u>	<u>109</u>	<u>237</u>	<u>141</u>	<u>162</u>	<u>103</u>	<u>53</u>	<u>70</u>	<u>215</u>	<u>1,105</u>	97,108
Total	5,025	7,454	8,235	4,797	2,627	1,777	1,234	931	423	32,503	

Average Age = 44.1
 Average Service = 13.7
 Average Age at Entry = 30.4
 Average Annual Salary = \$76,805

Age Group	Females									Total	Average Annual Salary
	Years of Service										
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
15-19	0	0	0	0	0	0	0	0	0	0	\$0
20-24	1,134	1	0	0	0	0	0	0	0	1,135	50,629
25-29	7,882	2,832	5	0	0	0	0	0	0	10,719	52,685
30-34	3,177	10,011	2,368	2	0	0	0	0	0	15,558	58,051
35-39	1,638	4,010	8,059	882	3	0	0	0	0	14,592	65,367
40-44	1,512	2,502	4,646	4,476	611	3	0	1	0	13,751	71,799
45-49	1,171	2,211	2,651	2,257	2,564	565	1	0	0	11,420	74,606
50-54	695	1,976	2,903	1,814	1,728	2,759	466	1	0	12,342	77,593
55-59	395	1,278	2,775	2,456	2,140	1,890	2,100	557	0	13,591	81,507
60-64	149	505	1,448	1,534	2,213	1,801	1,016	1,145	271	10,082	86,694
65 & Up	<u>31</u>	<u>158</u>	<u>392</u>	<u>427</u>	<u>719</u>	<u>652</u>	<u>333</u>	<u>202</u>	<u>314</u>	<u>3,228</u>	88,797
Total	17,784	25,484	25,247	13,848	9,978	7,670	3,916	1,906	585	106,418	

Average Age = 44.4
 Average Service = 13.4
 Average Age at Entry = 31.0
 Average Annual Salary = \$70,896

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VI - CENSUS DATA

(continued)

G. Age, Service and Salary Profile of Non-Contributing Participants

Age Group	Males									Total	Average Annual Salary
	Years of Service										
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
15-19	0	0	0	0	0	0	0	0	0	0	\$0
20-24	5	0	0	0	0	0	0	0	0	5	48,128
25-29	198	8	0	0	0	0	0	0	0	206	48,267
30-34	188	75	4	0	0	0	0	0	0	267	51,870
35-39	115	72	52	4	0	0	0	0	0	243	57,829
40-44	90	39	102	28	2	0	0	0	0	261	62,191
45-49	59	33	107	27	8	0	0	0	0	234	62,308
50-54	82	24	91	37	20	7	0	0	0	261	63,242
55-59	54	21	88	55	23	1	6	1	0	249	61,363
60-64	52	17	78	34	12	5	3	1	0	202	55,349
65 & Up	<u>139</u>	<u>26</u>	<u>36</u>	<u>21</u>	<u>16</u>	<u>11</u>	<u>6</u>	<u>3</u>	<u>6</u>	<u>264</u>	49,798
Total	982	315	558	206	81	24	15	5	6	2,192	

Average Age = 47.4
 Average Service = 8.0
 Average Age at Entry = 39.5
 Average Annual Salary = \$57,030

Age Group	Females									Total	Average Annual Salary
	Years of Service										
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
15-19	0	0	0	0	0	0	0	0	0	0	\$0
20-24	28	0	0	0	0	0	0	0	0	28	48,359
25-29	798	103	0	0	0	0	0	0	0	901	49,291
30-34	910	1,050	94	0	0	0	0	0	0	2,054	53,425
35-39	407	553	666	10	0	0	0	0	0	1,636	57,724
40-44	313	216	715	98	5	0	0	0	0	1,347	56,286
45-49	276	145	602	112	31	0	0	0	0	1,166	53,529
50-54	226	121	472	135	38	18	0	0	0	1,010	52,710
55-59	197	94	496	183	60	10	6	1	0	1,047	52,351
60-64	127	58	274	83	37	10	4	3	1	597	47,462
65 & Up	<u>199</u>	<u>31</u>	<u>83</u>	<u>57</u>	<u>16</u>	<u>12</u>	<u>6</u>	<u>11</u>	<u>3</u>	<u>418</u>	42,930
Total	3,481	2,371	3,402	678	187	50	16	15	4	10,204	

Average Age = 43.3
 Average Service = 8.1
 Average Age at Entry = 35.2
 Average Annual Salary = \$53,165

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VI - CENSUS DATA

(continued)

H. Age and Benefit Profiles

Terminated Vested Participants

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>
Under 35	0	\$0	1	\$9,168	1	\$9,168
35-39	1	\$22,092	3	\$38,580	4	60,672
40-44	4	\$80,568	18	\$225,984	22	306,552
45-49	3	\$62,616	32	\$452,808	35	515,424
50-54	13	\$228,012	35	\$492,276	48	720,288
55-59	21	\$278,424	141	\$1,979,592	162	2,258,016
60 & Up	<u>11</u>	<u>\$155,040</u>	<u>68</u>	<u>\$1,048,200</u>	<u>79</u>	<u>1,203,240</u>
Total	53	\$826,752	298	\$4,246,608	351	\$5,073,360
Average Age			=	55.2		
Average Annual Pension			=	\$14,454		

Service Retired Participants

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>
Under 50	2	\$58,206	14	\$257,471	16	\$315,677
50-54	55	2,060,968	175	5,655,493	230	7,716,461
55-59	692	34,255,299	2,243	100,423,739	2,935	134,679,038
60-64	3,982	197,380,850	11,095	476,523,377	15,077	673,904,227
65-69	7,713	373,763,921	16,045	661,739,099	23,758	1,035,503,020
70-74	5,700	264,802,956	10,603	407,527,707	16,303	672,330,663
75-79	3,520	156,727,913	6,352	226,309,980	9,872	383,037,893
80-84	2,804	115,313,668	4,807	152,101,000	7,611	267,414,668
85-89	1,515	53,519,096	3,260	83,513,848	4,775	137,032,944
90-94	487	13,936,304	1,521	32,570,420	2,008	46,506,724
95-99	87	2,081,972	485	9,129,041	572	11,211,013
100 & Up	<u>7</u>	<u>154,212</u>	<u>101</u>	<u>1,880,607</u>	<u>108</u>	<u>2,034,819</u>
Total	26,564	\$1,214,055,365	56,701	\$2,157,631,782	83,265	\$3,371,687,147
Average Age			=	71.2		
Average Annual Pension			=	\$40,493		

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VI - CENSUS DATA

(continued)

H. Age and Benefit Profiles (continued)

Disabled Retired Participants

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>
Under 35	1	\$36,624	1	\$20,951	2	\$57,575
35-39	2	53,256	15	336,256	17	389,512
40-44	9	231,348	28	717,302	37	948,650
45-49	17	530,162	72	1,950,917	89	2,481,079
50-54	28	772,624	153	4,501,727	181	5,274,351
55-59	76	2,202,977	282	8,456,961	358	10,659,938
60-64	142	4,185,824	511	14,741,015	653	18,926,839
65-69	189	5,544,757	534	15,495,538	723	21,040,295
70-74	96	2,535,157	388	10,525,698	484	13,060,855
75-79	68	1,781,867	220	5,638,245	288	7,420,112
80-84	34	708,164	115	2,411,466	149	3,119,630
85 & Up	18	336,317	86	1,571,798	104	1,908,115
Total	680	\$18,919,077	2,405	\$66,367,874	3,085	\$85,286,951
		Average Age	=	66.0		
		Average Annual Pension	=	\$27,646		

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VI - CENSUS DATA

(continued)

H. Age and Benefit Profiles (continued)

Beneficiaries and Dependents

<u>Age</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>
Under 25	6	\$77,078	4	\$58,103	10	\$135,181
25-29	7	81,780	6	73,045	13	154,825
30-34	10	91,421	12	103,166	22	194,587
35-39	4	50,869	12	218,984	16	269,853
40-44	15	280,522	18	433,271	33	713,793
45-49	19	416,108	23	528,170	42	944,278
50-54	24	450,369	52	1,040,333	76	1,490,702
55-59	58	1,453,142	107	2,775,389	165	4,228,531
60-64	168	4,114,146	296	8,455,817	464	12,569,963
65-69	295	7,421,160	452	14,031,323	747	21,452,483
70-74	204	4,847,851	584	17,121,333	788	21,969,184
75-79	198	4,620,339	702	19,749,128	900	24,369,467
80-84	156	3,189,233	694	18,727,568	850	21,916,801
85-89	113	1,918,968	595	13,065,679	708	14,984,647
90-94	61	817,424	344	5,697,329	405	6,514,753
95-99	11	146,789	107	1,761,584	118	1,908,373
100 & Up	2	12,252	20	203,691	22	215,943
Total	1,351	29,989,451	4,028	104,043,913	5,379	134,033,364
		Average Age	=	75.4		
		Average Annual Pension	=	\$24,918		

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

A. Actuarial Assumptions

Interest: 7.90% per annum, compounded annually (as prescribed by the State Treasurer).

Salary Scale: Salary increases vary by years of employment and time period averaging 3.33% for periods prior to June 30, 2016, averaging 3.86% for a five year select period (June 30, 2016 – June 30, 2021) and averaging 4.67% thereafter. Average percentages based on 2012 Experience Study. Schedule of annual rates are shown below.

<u>Years of Employment</u>	<u>Select Period Ending</u>		<u>Ultimate Period</u>
	<u>June 30, 2016</u>	<u>June 30, 2021</u>	
0-8	3.80%	4.30%	5.40%
9-12	4.35	5.05	5.95
13	4.10	4.80	5.80
14	3.95	4.65	5.45
15	3.95	4.45	5.05
16	3.30	3.90	4.50
17	3.15	3.65	4.15
18	2.85	3.35	3.95
19	2.70	3.20	3.70
20	2.50	3.00	3.60
21	2.35	2.75	3.25
22	2.10	2.50	3.10
23-25	2.00	2.40	2.95
26-30	1.80	2.20	2.80
31+	1.75	2.05	2.50

Increases in Compensation Limits: The IRC Section 401(a)(17) limit is assumed to increase 2.75% per annum, compounded annually. The Social Security Taxable Wage Base is assumed to increase 3.75% per annum, compounded annually.

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Section VII - A

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY
SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

A. Actuarial Assumptions (Continued)

Termination: Withdrawal rates vary by age, years of employment and gender. Illustrative rates are shown below:

Less Than 10 Years of Employment

<u>Years of Employment</u>	<u>Male</u>	<u>Female</u>	
		<u><40</u>	<u>40+</u>
0	9.65%	10.29%	10.29%
1	8.05	7.42	7.42
2	7.36	6.91	6.91
3	4.87	5.74	5.27
4	3.39	5.07	3.06
5	2.68	4.84	2.74
6	2.05	4.58	2.07
7	1.81	4.28	1.78
8	1.46	4.01	1.43
9	1.25	3.41	1.33

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

A. Actuarial Assumptions (Continued)

Annual Rates for Those With Deferred Annuity Benefits*

<u>Age</u>	<u>10-14 Years of Employment</u>		<u>15-19 Years of Employment</u>		<u>20-24 Years of Employment</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
30	0.65%	3.06%	0.47%	2.50%	0.31%	1.66%
35	0.66	2.27	0.48	1.86	0.32	1.24
40	0.69	1.34	0.50	0.93	0.33	0.62
45	0.57	0.61	0.41	0.42	0.27	0.28
50	0.65	0.62	0.47	0.43	0.31	0.29
55	1.18	1.29	0.85	0.89	0.57	0.59

*Members must have attained 10 years of service or 60 years of age (62 years of age for Class E and F members, 65 years of age for Class G members) in order to receive an annuity benefit.

Annual Rates for Those Receiving Return of Contributions

<u>Age</u>	<u>10-14 Years of Employment</u>		<u>15-19 Years of Employment</u>		<u>20-24 Years of Employment</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
30	0.44%	0.76%	0.31%	0.62%	0.21%	0.42%
35	0.43	0.57	0.30	0.47	0.20	0.31
40	0.36	0.33	0.26	0.23	0.17	0.16
45	0.23	0.15	0.17	0.11	0.11	0.07
50	0.21	0.15	0.15	0.11	0.10	0.07
55	0.28	0.14	0.20	0.10	0.13	0.07

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

A. Actuarial Assumptions (Continued)

Retirement: Rates of retirement vary by age, gender and eligibility for an unreduced pension and post-retirement medical benefits.

The rates listed below are for members hired prior to July 1, 2007 (Class A and B employees). Illustrative rates are shown below.

	<u>Less than Age 55 or Less than 25 Years of Service</u>		<u>Attainment of Age 55 and 25 Years of Service</u>			
	<u>Age</u>		<u>First Eligibility</u>		<u>After First Eligibility</u>	
			<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<47	1.2%	1.2%	N/A	N/A	N/A	N/A
48	1.5	1.5	N/A	N/A	N/A	N/A
49	1.7	1.7	N/A	N/A	N/A	N/A
50	2.0	2.0	N/A	N/A	N/A	N/A
51	2.4	2.4	N/A	N/A	N/A	N/A
52	2.8	2.8	N/A	N/A	N/A	N/A
53	3.8	3.8	N/A	N/A	N/A	N/A
54	4.8	4.8	N/A	N/A	N/A	N/A
55	N/A	N/A	15.0%	16.0%	N/A	N/A
56	N/A	N/A	22.0	18.0	12.0%	13.0%
57	N/A	N/A	22.0	18.0	13.0	14.0
58	N/A	N/A	26.0	26.0	14.0	15.0
59	N/A	N/A	26.0	26.0	16.0	17.0
60	8.0	5.5	32.0	32.0	21.0	21.0
61	8.0	5.5	35.0	35.0	24.0	23.0
62	8.5	7.5	45.0	50.0	36.0	32.0
63	9.5	8.0	45.0	48.0	30.0	29.0
64	9.5	8.0	45.0	48.0	30.0	29.0
65	14.5	12.0	50.0	50.0	35.0	35.0
66-70	18.0	14.0	50.0	50.0	30.0	30.0
71+	18.0	16.0	50.0	50.0	30.0	30.0

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

A. Actuarial Assumptions (Continued)

The rates listed below are for members hired on or after July 1, 2007 and before November 2, 2008 (Class D employees). Illustrative rates are shown below.

	<u>Less than Age 60 or</u>		<u>Attainment of Age 60 and 25 Years of Service</u>			
	<u>Less than 25</u>		<u>First</u>		<u>After First</u>	
	<u>Years of Service</u>		<u>Eligibility</u>		<u>Eligibility</u>	
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<47	0.6%	0.6%	N/A	N/A	N/A	N/A
48	0.8	0.8	N/A	N/A	N/A	N/A
49	0.9	0.9	N/A	N/A	N/A	N/A
50	1.0	1.0	N/A	N/A	N/A	N/A
51	1.2	1.2	N/A	N/A	N/A	N/A
52	1.4	1.4	N/A	N/A	N/A	N/A
53	1.9	1.9	N/A	N/A	N/A	N/A
54	2.4	2.4	N/A	N/A	N/A	N/A
55	11.5	11.5	N/A	N/A	N/A	N/A
56	12.0	12.0	N/A	N/A	N/A	N/A
57	12.5	12.5	N/A	N/A	N/A	N/A
58	13.5	13.5	N/A	N/A	N/A	N/A
59	14.0	14.0	N/A	N/A	N/A	N/A
60	8.0	5.5	34.0%	32.0%	N/A	N/A
61	8.0	5.5	35.0	35.0	24.0%	23.0%
62	8.5	7.5	45.0	50.0	36.0	32.0
63	9.5	8.0	45.0	48.0	30.0	29.0
64	9.5	8.0	45.0	48.0	30.0	29.0
65	14.5	12.0	50.0	50.0	35.0	35.0
66-70	18.0	14.0	50.0	50.0	30.0	30.0
71+	18.0	16.0	50.0	50.0	30.0	30.0

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

A. Actuarial Assumptions (Continued)

The rates listed below are for members hired after November 1, 2008 and before June 28, 2011 (Class E and Class F employees). Illustrative rates are shown below.

	<u>Less than Age 62 or</u>		<u>Attainment of Age 62 and 25 Years of Service</u>			
	<u>Less than 25</u>		<u>First</u>		<u>After First</u>	
	<u>Years of Service</u>		<u>Eligibility</u>		<u>Eligibility</u>	
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<47	0.6%	0.6%	N/A	N/A	N/A	N/A
48	0.7	0.7	N/A	N/A	N/A	N/A
49	0.8	0.8	N/A	N/A	N/A	N/A
50	0.9	0.9	N/A	N/A	N/A	N/A
51	1.1	1.1	N/A	N/A	N/A	N/A
52	1.3	1.3	N/A	N/A	N/A	N/A
53	1.7	1.7	N/A	N/A	N/A	N/A
54	2.2	2.2	N/A	N/A	N/A	N/A
55	10.5	10.5	N/A	N/A	N/A	N/A
56	10.8	10.8	N/A	N/A	N/A	N/A
57	11.0	11.0	N/A	N/A	N/A	N/A
58	12.0	12.0	N/A	N/A	N/A	N/A
59	12.5	12.5	N/A	N/A	N/A	N/A
60	20.0	20.0	N/A	N/A	N/A	N/A
61	22.0	22.0	N/A	N/A	N/A	N/A
62	23.0	18.0	50.0%	50.0%	N/A	N/A
63	9.5	8.0	45.0	48.0	30.0%	29.0%
64	9.5	8.0	45.0	48.0	30.0	29.0
65	14.5	12.0	50.0	50.0	35.0	35.0
66-70	18.0	14.0	50.0	50.0	30.0	30.0
71+	18.0	16.0	50.0	50.0	30.0	30.0

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

A. Actuarial Assumptions (Continued)

The rates listed below are for members hired on or after June 28, 2011 (Class G employees). Illustrative rates are shown below.

	<u>Less than Age 65 or</u>		<u>Attainment of Age 65 and 30 Years of Service</u>			
	<u>Less than 30</u>		<u>First</u>		<u>After First</u>	
	<u>Years of Service</u>		<u>Eligibility</u>		<u>Eligibility</u>	
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
<47	0.3%	0.3%	N/A	N/A	N/A	N/A
48	0.4	0.4	N/A	N/A	N/A	N/A
49	0.4	0.4	N/A	N/A	N/A	N/A
50	0.5	0.5	N/A	N/A	N/A	N/A
51	0.6	0.6	N/A	N/A	N/A	N/A
52	0.7	0.7	N/A	N/A	N/A	N/A
53	0.9	0.9	N/A	N/A	N/A	N/A
54	1.1	1.1	N/A	N/A	N/A	N/A
55	5.0	5.0	N/A	N/A	N/A	N/A
56	6.0	6.0	N/A	N/A	N/A	N/A
57	7.0	7.0	N/A	N/A	N/A	N/A
58	8.0	8.0	N/A	N/A	N/A	N/A
59	9.0	9.0	N/A	N/A	N/A	N/A
60	15.0	15.0	N/A	N/A	N/A	N/A
61	16.0	16.0	N/A	N/A	N/A	N/A
62	36.0	32.0	N/A	N/A	N/A	N/A
63	28.0	28.0	N/A	N/A	N/A	N/A
64	28.0	28.0	N/A	N/A	N/A	N/A
65	34.0	32.0	50.0%	50.0	N/A	N/A
66-70	18.0	14.0	50.0	50.0	30.0	30.0
71+	18.0	16.0	50.0	50.0	30.0	30.0

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

A. Actuarial Assumptions (Continued)

Disability: Incidence of ordinary disabilities among active members apply upon the attainment of 10 years of service until the attainment of first eligibility for retirement. For members eligible for early retirement, the greater of the early retirement and disability benefit is valued. The rates vary by age, gender and type of disability. Illustrative rates are shown below:

<u>Age</u>	<u>Ordinary</u>		<u>Accidental</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
25	0.0301%	0.0379%	0.0060%	0.0060%
30	0.0473	0.0550	0.0060	0.0060
35	0.0609	0.0674	0.0060	0.0060
40	0.0701	0.0893	0.0060	0.0060
45	0.1023	0.1317	0.0060	0.0060
50	0.1421	0.1759	0.0060	0.0060
55	0.4686	0.3506	0.0060	0.0060

For Class F and G members assumed to receive a disability benefit under Chapter 3, P.L. 2010, it is assumed that Class F members will begin receiving their retirement benefit at the earlier of age 70 or 36 years of service and Class G members will begin receiving their retirement benefit at age 70. The valuation excludes benefits paid from any disability income policy prior to retirement since these benefits are not paid from TPAF.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

A. Actuarial Assumptions (Continued)

Pre-retirement Mortality: Illustrative rates of mortality of active members which vary by age and gender are shown below. Mortality improvements are projected using Scale AA from the base year of 2000 until the valuation date plus 15 years to account for future mortality improvement. Illustrative rates for the base year are shown below. No accidental deaths are assumed.

<u>Age</u>	<u>Ordinary</u>	
	<u>Male</u>	<u>Female</u>
25	0.0345%	0.0170%
30	0.0376	0.0191
35	0.0353	0.0207
40	0.0591	0.0284
45	0.0890	0.0466
50	0.1342	0.0645
55	0.1978	0.1016
60	0.2747	0.1589
65	0.4263	0.2374
70	0.6725	0.3754

Post-retirement Mortality: Rates of mortality vary by age, gender and type of retirement. For non-disabled annuitants, mortality improvements are projected using Scale AA from the base year of 2000 for males and 2003 for females until the valuation date plus 7 years to account for future mortality improvement. Illustrative rates for the base year and Scale AA are shown below:

<u>Age</u>	<u>Service Retirements and Beneficiaries</u>		<u>Scale AA</u>		<u>Disability Retirement</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
45	0.3573%	0.1375%	1.3%	1.6%	1.6928%	0.6705%
50	0.5265	0.2151	1.8	1.7	2.1731	1.0382
55	0.4781	0.3066	1.9	0.8	2.6581	1.4890
60	0.5813	0.4937	1.6	0.5	3.1531	1.9655
65	1.0238	0.6602	1.4	0.5	3.7630	2.5223
70	1.6962	1.0497	1.5	0.5	4.6937	3.3871
75	2.9598	1.7342	1.4	0.8	6.1550	4.7007
80	5.2282	3.0118	1.0	0.7	8.2029	6.5081
85	9.2106	6.4019	0.7	0.6	10.6202	9.0183

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS AS OF JUNE 30, 2013

A. Actuarial Assumptions (Continued)

Non-contributory Members: 20% are assumed to return to contributory status.

Beneficiaries: 100% of active members are assumed to have a beneficiary for receipt of the lump sum death benefit or employee contribution refund upon death.

Form of Payment: Modified Cash Refund Annuity.

Special Data Adjustments: Determination of employee type is based on Class Code and was used as provided by the Division. Active members where no salary was provided, no date of birth was provided, or ASF was negative were excluded from the valuation. A liability equal to the ASF was held. For beneficiaries where no gender code or date of birth was provided, reasonable assumptions were made based on records provided in prior years or the deceased retiree's records. For retirees with a joint annuitant option code that was missing a spouse's date of birth, husbands are assumed to be 3 years older than wives. All such records were included in the valuation. Retiree members where no benefit and monthly allowance was provided, or no cause, class, or option was provided were excluded from the valuation.

B. Actuarial Valuation Method

The Projected Unit Credit Method was used as required by Chapter 62, P.L. 1994 as modified by Chapters 115, P.L. 1997 and 133, P.L. 2001. The minimum actuarial accrued liability was equal to the greater of formula benefit under the Projected Unit Credit Cost method, value of the estimated member annuity as of the valuation date and the contributions with interest as of the valuation date provided by the Division. The normal cost was determined using the same methodology but reflecting an additional year of service and contributions less the final amount determined for the actuarial accrued liability.

Non-contributory life insurance benefits are funded on a term cost basis.

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Section VII – A, B & C

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VII - ACTUARIAL ASSUMPTIONS AND METHODS
AS OF JUNE 30, 2013

C. Asset Valuation Method

A five year average of market value with write-up was used. This method takes into account appreciation (depreciation) in investments in order to smooth asset values by averaging the excess of the actual over the expected income, on a market value basis, over a five year period. Cash flows are based on an accrual accounting approach. This method is prescribed by statute.

The market value of assets is used for the Contributory Group Insurance Premium Fund for GASB purposes.

D. Changes in Actuarial Assumptions

This valuation reflects the adoption of the June 30, 2012 Experience Study.

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Section VII – D

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2013

This summary of plan provisions is intended only to describe the essential features of the plan. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself.

1. Type of Plan

The Plan is a contributory, defined benefit plan. Effective October 1, 2011, contributions by Members are 6.5% and increase by 1/7 of 1% each July thereafter until an ultimate rate of 7.5% is attained on July 1, 2018. As of July 1, 2013, the contribution rate is 6.78%. For members hired on or after July 1, 2007, compensation for contributions is capped at the Social Security Taxable Wage Base (\$113,700 for 2013). For compensation in excess of the Social Security Taxable Wage Base, contributions on the excess compensation are made to the Defined Contribution Retirement Program.

2. Effective Date

The Plan was established in 1919. It was reorganized and integrated with Social Security in 1955. Social Security integration was eliminated in 1966, i.e., reductions in retirement benefits based on Social Security benefits were eliminated.

3. Eligibility for Membership

Employees, appointed to positions requiring certification as members of a regular teaching or professional staff of a public school system in New Jersey, are required to enroll as a condition of employment. Employees of the Department of Education holding unclassified, professional and certificated titles are eligible for membership. Temporary or substitute employees are not eligible. The eligible employee must be scheduled to work at least 32 hours per week effective May 22, 2010, per Chapter 1, P.L. 2010.

4. Definitions

- a. Fiscal Year: A Fiscal Year is a 12-month period beginning on July 1 and ending on June 30.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS
AS OF JUNE 30, 2013

4. Definitions (continued)

- b. Credited Service: A year of Credited Service for each year an employee is a Member of the Retirement System plus service, if any, covered by a prior service liability. Class F members must be scheduled to work at least 32 hours per week, Class E members must have an annual salary of \$7,500 (indexed for inflation) and other members must have an annual salary of \$500.
- c. Final Compensation: This is the average annual compensation upon which contributions by a member are based on the period consecutive years of Creditable Service immediately preceding retirement or the period of highest fiscal years of Membership Service. The period equals three for members hired prior to May 22, 2010 and five for Class F and later members.
- d. Final Year Compensation: This is the compensation upon which contributions by a Member to the Annuity Savings Fund are based in the last year of Membership Service.
- e. Aggregate Member Contributions: This is the sum of all amounts deducted from the compensation of a Member or contributed by him or on his behalf without interest.
- f. Class A Member: Any member who contributes towards retirement allowance based on 1/64th benefit rate per year of creditable service.
- g. Class B Member: Any member hired prior to July 1, 2007 who contributes towards a retirement allowance based on 1/55th benefit rate per year of creditable service.
- h. Class D Member: Any member hired on or after July 1, 2007 and before November 2, 2008, who contributes up to the Social Security Taxable Wage Base towards a retirement allowance based on 1/55th benefit rate per year of creditable service payable at age 60.
- i. Class E Member: Any member hired after November 1, 2008 and before May 22, 2010 who contributes up to the Social Security Taxable Wage Base towards a retirement allowance based on 1/55th benefit rate per year of creditable service payable at age 62.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2013

4. Definitions (continued)

- j. Class F Member: Any member hired after May 21, 2010 and before June 28, 2011 who contributes up to the Social Security Taxable Wage Base towards a retirement allowance based on 1/60th benefit rate per year of creditable service payable at age 62.
- k. Class G Member: Any member hired on or after June 28, 2011 who contributes up to the Social Security Taxable Wage Base towards a retirement allowance based on 1/60th benefit rate per year of creditable service payable at age 65.

5. Cost-of-Living Adjustment

The Pension Adjustment Program provides a cost-of-living adjustment (COLA) to retirees and their survivors who receive a monthly retirement allowance from the TPAF. The first adjustment is received in the 25th month after the member's retirement. Subsequent cost-of-living adjustments are computed annually and are first reflected in February. The rate of increase is equal to 60 percent of the percentage change between the average CPI for the 12 month period ending December 31 in the year of retirement and the August 31 preceding the February adjustment. Pension adjustments to be paid on or after July 1, 2011 have been eliminated for all members unless the Target Funded Ratio is met as of the valuation date and for each of the next 30 years on a projected basis.

6. Retirement Benefits

a. Service Retirement

Service Retirement Eligibility: Eligibility means age 60 (Class A, B, and D), age 62 (Class E and F) or age 65 (Class G) with no minimum service requirement.

Service Retirement Benefit: An employee's annual service retirement allowance is equal to a member annuity plus an employer pension which together equals 1/64th of Final Compensation for each year of service for Class A members, 1/55th of Final Compensation for each year of service for Class B, D and E members and 1/60th of Final Compensation for each year of service for Class F and G members. The member annuity is based on the member contributions credited at the valuation interest rate.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS
AS OF JUNE 30, 2013

6. Retirement Benefits (continued)

Note: See Section 12 for special benefits for veteran members.

b. Early Retirement

Early Retirement Eligibility: Class A, B, D, E and F members may retire after completion of 25 years of Creditable Service and Class G members may retire after completion of 30 years of Creditable Service.

Early Retirement Benefit: The benefit may be either:

- (i) the lump sum withdrawal benefit described in 7.a. below; or
- (ii) the Service Retirement Benefit reduced by 1/4 of one percent for each month the retirement date precedes age 55 for Class B members; or
- (iii) the Service Retirement Benefit reduced by 1/12 of one percent for each month the retirement date precedes age 60 but over age 55 and by ¼ of one percent for each month the retirement date precedes age 55, for Class D members.
- (iv) the Service Retirement Benefit reduced by 1/12 of one percent for each month the retirement date precedes age 62 but over age 55 and by ¼ of one percent for each month the retirement date precedes age 55, for Class E and F members.
- (v) the Service Retirement Benefit reduced by ¼ of one percent for each month the retirement date precedes age 65, for Class G members.

c. Deferred Retirement

Eligibility: A Member is eligible upon termination of service prior to age 60 (Class A, B, D), age 62 (Class E and Class F) or age 65 (Class G) and after 10 years of Creditable Service.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS
AS OF JUNE 30, 2013

6. Retirement Benefits (continued)

Deferred Retirement Benefit: The benefit may be either:

- (i) the lump sum withdrawal benefit described in 7.a. above; or
- (ii) a deferred retirement benefit, commencing at age 60 (Class A, B, D), age 62 (Class E and Class F) or age 65 (Class G), equal to a member annuity plus an employer pension which together provide a retirement allowance equal to the service retirement benefit based on Final Compensation and Creditable Service at date of termination. Member annuity based on member contributions credited at the valuation interest rate.

7. Termination Benefits

a. Lump Sum Withdrawal

Eligibility: A Member is eligible upon termination of service.

Lump Sum Withdrawal Benefit: The benefit equals a refund of Aggregate Member Contributions plus, if the member has completed three years of service, interest accumulated at 2.0% per annum allowed thereon.

8. Death Benefits

a. Ordinary Death (Insured) Benefit - Lump Sum (Non-Contributory)

Pre-retirement Death Benefit Eligibility: Any current active member is eligible.

Pre-retirement Death Benefit: The benefit is a lump sum benefit equal to the Aggregate Contributions with interest allowed thereon plus an amount equal to 1-1/2 times Compensation at date of death.

Post-retirement Death Benefit Prior to Age 60 (Class A, B, D), Age 62 (Class E and Class F) or Age 65 (Class G) Eligibility: Eligible if disabled or retired early.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS
AS OF JUNE 30, 2013

8. Death Benefits (continued)

Post-retirement Death Benefit Prior to Age 60 (Class A, B, D), Age 62 (Class E and Class F) or Age 65 (Class G) Benefit: The benefit is as follows:

- (i) For death while a Disabled Retiree the benefit is equal to 1-1/2 times Compensation.
- (ii) For death while an Early Retiree, the benefit is equal to 3/16 times Compensation.
- (iii) For death while vested terminated, the benefit is equal to his Aggregate Contributions with interest allowed thereon.

Post-retirement Death Benefit After Age 60 (Class A, B, D), Age 62 (Class E and F) or Age 65 (Class G) Eligibility: Eligible after attainment of service retirement, deferred and disabled retirements (if not disabled, 10 years of Creditable Service required for members enrolling on or after July 1, 1971).

Post-retirement Death Benefit After Age 60 (Class A, B, D), Age 62 (Class E and F) or Age 65 (Class G) Benefit: The benefit payable is equal to 3/16 times Compensation.

- b. Contributory Death Benefit: An additional, employee-paid, death benefit is also available through group insurance purchased by the Board of Trustees. Contributions for this benefit are required by Members during the first year of enrollment. Participation may be terminated after the first year. The benefit prior to retirement is 2 times compensation. The benefit after retirement is 1/4 times final year compensation (coverage at retirement, and 10 years of participation for Members enrolling on or after July 1, 1970, is required).

- c. Pre-retirement Accidental Death Benefit:

Eligibility: A death resulting from injuries received from an accident during performance of duty and not a result of willful negligence is eligible.

Pre-retirement Lump Sum Benefit: The benefit is a lump sum equal to 1-1/2 times Compensation.

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Section VIII

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SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS
AS OF JUNE 30, 2013

8. Death Benefits (continued)

Pre-retirement Accidental Death Benefit: The benefit payable is as follows:

- (i) The annuity benefit to a widow or widower is equal to 50% of Compensation, payable for life or until remarriage.
- (ii) The annuity benefit, when there is no spouse, or the spouse is remarried, is equal to 20% of Compensation for one child, 35% for two children, 50% for three or more children. The benefit is payable while the children are under age 18 and it is payable for life if they are disabled.
- (iii) The annuity benefit, when there is no spouse or children, is equal to 25% of Compensation for one dependent parent and 40% for two dependent parents.
- (iv) The benefit, when there is no relation as stated above, is equal to the Aggregate Contributions with interest allowed thereon and is payable to a beneficiary or to the Member's estate. This is also the minimum benefit payable under (i), (ii) and (iii) above.

9. Disability Benefits

a. Ordinary Disability Retirement

Eligibility: A Member is eligible for Ordinary Disability Retirement if he (she) has 10 years of Creditable Service and is totally and permanently incapacitated from the performance of usual or available duties.

Ordinary Disability Retirement Benefit for Class A, B, D and E members: The total retirement allowance is equal to the greater of:

- (i) 1.64% of Final Compensation times the number of years of Creditable Service; or
- (ii) 43.6% of Final Compensation.

Note: See Section 12 for special benefits for veteran members.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS
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9. Disability Benefits (continued)

Ordinary and Accidental Disability Retirement Benefit for Class F and G members: A disability benefit equal to 60% of salary reduced by the initial Social Security benefit is paid until the earlier of age 70 or commencement of a retirement benefit from a disability income policy outside of TPAF. The policy also makes employee contributions during the period of disability.

b. Accidental Disability Retirement for Class A, B, D and E members

Eligibility: A Member is eligible upon total and permanent incapacitation as a direct result of a traumatic event occurring during and as a result of the performance of regular or assigned duties.

Accident Disability Retirement Benefit: The benefit payable is equal to a Member annuity plus an employer pension which together equals 72.7% of the Compensation at date of injury.

10. Additional Old-Plan Benefit: An additional pension is payable to any retiree who was a member of the old Teachers' Retirement Fund. This pension is the actuarial equivalent of his contributions to the old Teachers' Retirement Fund without interest.

11. Special Minimum Benefit: A member who retired prior to 1955 with 20 or more years of service may receive a minimum pension of \$500 a month inclusive of any amounts payable under any pension adjustments.

12. Special Benefits for Veterans:

a. Service Retirement: Eligible if member attains age 60 and completes 20 years of service or attains age 55 and completes 25 years of service. Benefit equals 54.5% of highest 12-month contributory compensation.

b. Chapter 97 Benefit: Eligible if age 55 and completes 35 years of service. Benefit equals 1/55th of final year compensation for each year of service.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2013

13. Benefit and Compensation Limits

The provisions of IRC Section 415 and IRC Section 401(a)(17), which limit benefits paid and limit compensation used in determining benefits, has been reflected in this report. The IRC Section 415 limit is \$205,000 and the 401(a)(17) compensation cap is \$255,000 for 2013 and is applied on a calendar year basis.

14. Forms of Payment

- a. Maximum Option – Single life annuity.
- b. Option 1 – Single life annuity with return of reserve option.
- c. Option 2 – 100% joint and survivor annuity.
- d. Option 3 – 50% joint and survivor annuity.
- e. Option 4 – Other percentage joint and survivor annuity.
- f. Option A – 100% pop-up joint and survivor annuity.
- g. Option B – 75% pop-up joint and survivor annuity.
- h. Option C – 50% pop-up joint and survivor annuity.
- i. Option D – 25% pop-up joint and survivor annuity.

15. Contributions

- a. Member Contributions: Each member becoming a member on or after January 1, 1956 and prior to July 1, 2007 contributes at the rate of contribution applicable to Class B members. Any members hired after June 30, 2007 and prior to November 2, 2008 are Class D members. Members hired after November 1, 2008 and prior to May 22, 2010 are Class E members. Members hired after May 21, 2010 are Class F members and members hired after June 28, 2011 are Class G members.
 - (i) Class D, E, F or G Membership: Class D, E, F or G members contribute at their applicable contribution rate up to the Social Security Taxable Wage Base.
 - (ii) Class B Membership: Any member on December 31, 1955 may elect to be classified as a Class B member and contribute at the rate of contribution applicable to Class B members at his age at membership. Any such member may elect to increase his accumulated deductions by the amount required by the Board to receive credit as a Class B member for all or part of his service prior to such election.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2013

15. Contributions (continued)

- (iii) Class A Membership: Any member who is not a veteran and does not elect to be classified as a Class B member continues to contribute at the rate of contribution applicable to his age at membership which was payable prior to the establishment of the integrated system, except that if he became a member subsequent to June 30, 1946 he will pay after January 1, 1955 at the rate of contribution in effect on June 30, 1946 applicable to his age at membership.

Prior to July 1, 1979 different contribution rates were established for men and women. Effective on that date members contribute at rates intermediate between the rates previously applicable to male and female members, computed to provide the same present value of future employee contributions at each entry age on the basis of the membership as constituted on the effective date.

b. Local Employer Contributions

- (i) Early Retirement Incentive Contributions: The State and Local employers which elected to participate in the early retirement incentive programs authorized by Chapters 137, 229 and 231, P.L. 1991, Chapters 48, 138 and 163, P.L. 1993, Chapter 23, P.L. 2001 and Chapters 128 and 129, P.L. 2003 pay contributions to cover the additional liability for these programs over amortization periods chosen by the employer (15 years for Chapters 128 and 129) or the amortization period for the Unfunded Accrued Liability of the system (Chapter 23, P.L. 2002 and Chapter 21, P.L. 2008). The remaining present values are re-amortized upon changes to the interest rate assumption. Effective with the revised June 30, 2011 actuarial valuation, for any local employer with an increasing payment amortization schedule, the increase factor is 3.25%
- (ii) Chapter 113 Contributions: Certain School Districts have elected to exempt a select group of employees from the compensation limit under IRC Section 401(a)(17) incorporated under Chapter 113. These school districts will pay the full cost of this exemption at a member's date of retirement.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION VIII – SUMMARY OF PRINCIPAL PLAN PROVISIONS
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16. Changes in Plan Provisions Since Prior Valuation

None.

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Section VIII

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

APPENDIX I - EARLY RETIREMENT INCENTIVE CONTRIBUTION SCHEDULE

<u>Group Number</u>	<u>Location Name</u>	ERI 1	ERI 1	ERI 2	ERI 2
		<u>Present Value</u> <u>June 30, 2013</u>	<u>Fiscal Year</u> <u>2015 Payment</u>	<u>Present Value</u> <u>June 30, 2013</u>	<u>Fiscal Year</u> <u>2015 Payment</u>
3 981	NJ INST OF TECH	\$148,068	\$25,185	\$387,063	\$31,134
5 1001	ATLANTIC COMMUNITY COLLEGE	N/A	N/A	N/A	N/A
6 911	ALLAMUCHY BD OF ED	N/A	N/A	103,859	10,302
6 300	ASBURY PARK BD OF ED	2,404,827	409,039	N/A	N/A
6 969	ATLANTIC CO VOCATIONAL SCHOOLS	144,670	24,607	N/A	N/A
6 4015	BERLIN TWP BD OF ED	137,721	23,425	68,824	26,156
6 412	BOONTON TWP BD OF ED	93,791	15,953	N/A	N/A
6 774	BYRAM TWP BD OF ED	164,959	28,058	N/A	N/A
6 4017	CHESILHURST BORO BD OF ED	20,942	3,562	10,465	3,977
6 4018	CLEMENTON BD OF ED	77,911	13,252	38,935	14,797
6 121	EAST WINDSOR REG SCHOOL DIST	N/A	N/A	85,846	32,625
6 753	GREEN BROOK BD OF ED	219,077	37,263	N/A	N/A
6 8082	GUTTENBERG BORO BD OF ED	117,831	20,042	N/A	N/A
6 956	HUDSON CO VOCATIONAL SCHOOL	N/A	N/A	697,668	69,203
6 6040	IRVINGTON TWP BD OF ED	N/A	N/A	1,369,897	520,616
6 521	LAKEHURST BORO BD OF ED	61,561	10,471	N/A	N/A
6 645	LAKELAND REGIONAL	553,457	94,138	N/A	N/A
6 111	MERCER CO SPECIAL SERVICES	273,648	46,545	N/A	N/A
6 346	MONMOUTH BEACH BD OF ED	75,036	12,763	N/A	N/A
6 987	MONMOUTH CO VOCATIONAL SCHOOLS	442,763	75,310	N/A	N/A
6 4069	PINE HILL BORO BD OF ED	\$199,194	\$33,881	\$59,204	\$22,500
6 5071	SHILOH TOWNSHIP	8,184	1,392	N/A	N/A
6 8070	WEST NEW YORK TWP BD OF ED	N/A	N/A	\$2,449,837	\$243,004
6 934	WHITE TWP BD OF ED	\$154,753	\$26,322	N/A	N/A
	Grand total for Local Employers	\$5,298,393	\$901,208	\$5,271,598	\$974,314

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

APPENDIX I - EARLY RETIREMENT INCENTIVE CONTRIBUTION SCHEDULE

(continued)

<u>Group Number</u>	<u>Location Name</u>	ERI 3	ERI 3	ERI 4	ERI 4
		Present Value	Fiscal Year	Present Value	Fiscal Year
		<u>June 30, 2013</u>	<u>2015 Payment</u>	<u>June 30, 2013</u>	<u>2015 Payment</u>
2 90400	EDUCATION DEPARTMENT	\$16,351,537	\$1,498,190	N/A	N/A
2 90416	MARIE KATZENBACK SCH FOR DEAF	\$2,909,861	\$266,613	N/A	N/A
2 90207	OFFICE OF ADM LAW	\$688,482	\$63,081	N/A	N/A
3 981	NJ INST OF TECH	\$682,713	\$62,553	N/A	N/A
4 90411	NEW JERSEY UNIVERSITY	\$3,394,930	\$311,056	N/A	N/A
4 90412	KEAN UNIVERSITY	\$1,775,737	\$162,700	N/A	N/A
4 90414	MONTCLAIR STATE UNIVERSITY	\$1,404,803	\$128,713	N/A	N/A
4 90410	ROWAN UNIVERSITY	\$575,859	\$52,762	N/A	N/A
4 90415	THE COLLEGE OF NEW JERSEY	\$361,070	\$33,083	N/A	N/A
4 90413	WILLIAM PATERSON UNIVERSITY	\$655,678	\$60,076	N/A	N/A
6 8083	HARRISON TWP BD OF ED	N/A	N/A	\$1,170,221	\$199,044
6 956	HUDSON CO VOCATIONAL SCHOOL	N/A	N/A	\$922,416	\$156,895
6 620	PASSAIC BD OF ED	N/A	N/A	\$14,442,778	\$2,456,584
Grand total for State Locations and Local Employers		\$28,800,670	\$2,638,827	\$16,535,415	\$2,812,523

<u>Group Number</u>	<u>Location Name</u>	ERI 5	ERI 5
		Present Value	Fiscal Year
		<u>June 30, 2013</u>	<u>2015 Payment</u>
2 90400	EDUCATION DEPARTMENT	\$4,028,161	\$369,075
2 90416	MARIE KATZENBACK SCH FOR DEAF	\$1,178,417	\$107,971
Grand total for State Locations		\$5,206,578	\$477,046