

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

June 30, 2015 Actuarial Valuation Report  
Prepared as of July 1, 2015



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February 18, 2016

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, 2015. 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, 2017 which represents the contribution for the valuation year beginning July 1, 2015;
- to determine the Target Funded Ratio as of July 1, 2015 in accordance with N.J. Statutes to potentially provide for the formation of a special pension committee;
- to review the experience under the plan for the valuation year ending June 30, 2015.

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 Statements No. 67 and No. 68 are provided in a separate report and are for purposes of assisting TPAF and participating employers in fulfilling their financial accounting requirements. The computations prepared for these two purposes may differ. The calculations in the enclosed report have been made on a

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basis consistent with our understanding of the N.J. statutes. 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 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

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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.

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 near 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.

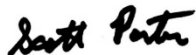
This actuarial valuation is based on the asset valuation method in compliance with New Jersey Statute. This method recognizes 20% of the difference between the market value of assets and the actuarial value of assets. Per Actuarial Standards of Practice (ASOP) No. 44, a reasonable asset valuation method 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, 2015, the Actuarial Value of Assets is 107.5% 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, 2015</u>	<u>June 30, 2014</u>	<u>June 30, 2013</u>	Percentage Change <u>2014 to 2015</u>	Percentage Change <u>2013 to 2014</u>
	<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u>		
<b>Active Contributing Members</b>					
Number	140,227	139,350	138,921	0.6 %	0.3 %
Number of Veteran Members	400	462	506	(13.4)	(8.7)
Average Pay	\$ 73,522	\$ 72,957	\$ 72,292	0.8	0.9
Total Payroll	10,309,792,863	10,166,606,997	10,042,860,779	1.4	1.2
Total Appropriation Payroll *	10,305,472,484	10,162,263,470	10,038,792,896	1.4	1.2
Avg. Member Accumulated Contributions	75,435	72,436	69,239	4.1	4.6
Total Member Accumulated Contributions	10,577,991,354	10,093,952,591	9,618,768,093	4.8	4.9
<b>Non-Contributing Members</b>					
Number	13,225	13,462	12,397	(1.8) %	8.6 %
Number of Veteran Members	48	61	63	(21.3)	(3.2)
Number of Active Members **	2,227	2,524	12,397	(11.8)	(79.6)
Average Pay for Active Members	\$ 64,384	\$ 63,140	\$ 53,849	2.0	17.3
Total Payroll for Active Members	143,383,785	159,365,746	667,563,967	(10.0)	(76.1)
Avg. Member Accumulated Contributions	41,721	39,431	37,200	5.8	6.0
Total Member Accumulated Contributions	551,754,254	530,825,507	461,170,035	3.9	15.1

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

\*\* The Division terminated numerous noncontributory records prior to the June 30, 2014 valuation

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

**SECTION I - SUMMARY**

(continued)

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

**PARTICIPANT DATA**

	<u>June 30, 2015</u>	<u>June 30, 2014</u>	<u>June 30, 2013</u>	<u>Percentage</u>	<u>Percentage</u>
	<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u>	<u>Change</u>	<u>Change</u>
				<u>2014 to 2015</u>	<u>2013 to 2014</u>
<b>Service Retirees, Including Domestic Relations Beneficiaries</b>					
Number	89,092	86,017	83,265	3.6 %	3.3 %
Average Annual Pension	\$ 41,233	\$ 40,911	\$ 40,493	0.8	1.0
Total Annual Pensions	\$ 3,673,500,726	\$ 3,519,020,046	\$ 3,371,687,147	4.4	4.4
Average Retirement Age of New Retirees	62.1	61.9	61.9	0.3	0.0
Average Annual Pension of New Retirees	\$ 47,230	\$ 48,145	\$ 47,827	(1.9)	0.7
<b>Disabled Retirees</b>					
Number	3,298	3,190	3,085	3.4 %	3.4 %
Average Annual Pension	\$ 28,350	\$ 28,012	\$ 27,646	1.2	1.3
Total Annual Pensions	\$ 93,498,895	\$ 89,357,528	\$ 85,286,951	4.6	4.8
<b>Beneficiaries and Dependents</b>					
Number	5,840	5,615	5,379	4.0 %	4.4 %
Average Annual Pension	\$ 25,677	\$ 25,343	\$ 24,918	1.3	1.7
Total Annual Pensions	\$ 149,956,523	\$ 142,302,680	\$ 134,033,364	5.4	6.2
<b>Terminated Vested Participants</b>					
Number	210	276	351	(23.9) %	(21.4) %
Average Annual Pension	\$ 15,006	\$ 14,317	\$ 14,454	4.8	(0.9)
Total Annual Pensions	\$ 3,151,200	\$ 3,951,528	\$ 5,073,360	(20.3)	(22.1)

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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, 2015	June 30, 2014	June 30, 2013	Percentage	Percentage
	Valuation (State's	Valuation (State's	Valuation (State's	Change	Change
	Fiscal Year 2017	Fiscal Year 2016	Fiscal Year 2015	2014 to 2015	2013 to 2014
	<u>Contributions)</u>	<u>Contributions)</u>	<u>Contributions)</u>		
Normal Contribution (1/60th formula) <sup>1</sup>	\$ 284,765,709	\$ 300,837,572	\$ 308,712,803	(5.3) %	(2.6) %
Additional Formula Contribution	71,559,513	70,146,274	71,184,388	2.0 %	(1.5) %
Accrued Liability Contribution	<u>2,380,849,929</u>	<u>2,173,827,688</u>	<u>1,926,714,524</u>	9.5 %	12.8 %
<b>Total Pension Contribution by Statute <sup>2</sup></b>	<b>\$ 2,737,175,151</b>	<b>\$ 2,544,811,534</b>	<b>\$ 2,306,611,715 *</b>	<b>7.6 %</b>	<b>10.3 %</b>
State Appropriation for Pension <sup>3</sup>	(1,094,870,060)	(763,443,461)	(504,320,000)	43.4 %	51.4 %
<b>Percentage of Statutory Pension Contribution Appropriated</b>	<b>40.0%</b>	<b>30.0%</b>	<b>21.9%</b>	<b>10.0 %</b>	<b>8.1 %</b>

<sup>1</sup> Excludes cost of non-contributory group life insurance. State reimburses TPAF for actual amounts paid.

<sup>2</sup> These amounts should be increased for assumed interest at the rate of 7.90%, per annum if payment is delayed beyond June 30, 2016, June 30, 2015 and June 30, 2014.

<sup>3</sup> 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. The Chapter 1 contribution percentages are 57.1%, 71.4% and 85.7% for fiscal years ending June 30, 2015, 2016 and 2017, respectively. A portion of the appropriation will be allocated to State ERI 3 & 5 beginning with the fiscal year ending June 30, 2016.

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

**SECTION I - SUMMARY**

(continued)

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

**LOCAL EMPLOYER CONTRIBUTIONS**

	June 30, 2015	June 30, 2014	June 30, 2013	Percentage	Percentage
	<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u>	Change	Change
				<u>2014 to 2015</u>	<u>2013 to 2014</u>
<b>Early Retirement Incentive Contributions payable April 1, 2017</b>					
<b>April 1, 2016 and April 1, 2015, respectively</b>					
ERI 1 - Local Employers	\$ 901,208	\$ 901,208	\$ 901,208	0.0 %	0.0 %
ERI 2 - Local Employers	355,700	975,324	974,314	(63.5) %	0.1 %
ERI 4 - Local Employers	2,812,524	2,812,524	2,812,523	0.0 %	0.0 %
Unauthorized ERIs - Local Employers *	<u>8,393,900</u>	<u>8,393,900</u>	<u>11,375,100</u>	<u>0.0</u> %	<u>(26.2)</u> %
Total	\$ 12,463,332	\$ 13,082,956	\$ 16,063,145	(4.7) %	(18.6) %

\* One Local Employer has settled their unauthorized ERI. A receivable has been included for remaining Local Employers first established in the 2011 valuation. The amount of the receivable has been reduced to exclude any interest for delayed payment after date of retirement.

**Terminal Funding Contributions payable April 1, 2017, April 1, 2016 and April 1, 2015, respectively**

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

**SECTION I - SUMMARY**

(continued)

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

	<b>ASSETS AND LIABILITIES</b>				
	<u>June 30, 2015</u>	<u>June 30, 2014</u>	<u>June 30, 2013</u>	Percentage	Percentage
	<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u> <sup>1</sup>	Change	Change
				<u>2014 to 2015</u>	<u>2013 to 2014</u>
Market Value of Pension Assets	\$ 26,320,738,690	\$ 27,643,078,116	\$ 26,859,612,370	(4.8) %	2.9 %
Actuarial Value of Pension Assets	\$ 28,301,404,184	\$ 29,044,777,902	\$ 30,469,857,304	(2.6) %	(4.7) %
Ratio of Actuarial Value to Market Value	107.5 %	105.1 %	113.4 %	2.4 %	(8.3) %
Actuarial Accrued Pension Liability	\$ 55,359,377,071	\$ 53,749,976,641	\$ 52,366,655,055	3.0 %	2.6 %
Unfunded Pension Liability					
Based on Market Value	\$ 29,038,638,381	\$ 26,106,898,525	\$ 25,507,042,685	11.2 %	2.4 %
Based on Actuarial Value	\$ 27,057,972,887	\$ 24,705,198,739	\$ 21,896,797,751	9.5 %	12.8 %
Funded Ratio					
Based on Market Value	<b>47.55 %</b>	<b>51.43 %</b>	<b>51.29 %</b>	<b>(3.88) %</b>	<b>0.14 %</b>
Based on Actuarial Value	<b>51.12 %</b>	<b>54.04 %</b>	<b>58.19 %</b>	<b>(2.92) %</b>	<b>(4.15) %</b>
Target Funded Ratio	<b>78.571 %</b>	<b>77.857 %</b>	<b>77.143 %</b>	<b>0.71 %</b>	<b>0.71 %</b>
Change in Funded Ratio since June 30, 2005, 2004 and 2003, respectively					
Based on Market Value	<b>(21.5) %</b>	<b>(19.4) %</b>	<b>(19.4) %</b>	<b>(2.1) %</b>	<b>0.0 %</b>
Based on Actuarial Value	<b>(29.7) %</b>	<b>(31.6) %</b>	<b>(34.5) %</b>	<b>1.9 %</b>	<b>3.0 %</b>

<sup>1</sup> **Information Based on 2013 Actuarial Valuation and excludes any subsequent adjustments to the market value of assets as of June 30, 2013**

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

**SECTION I - SUMMARY**

(continued)

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

	<b>RISK MEASURES</b>				
	June 30, 2015	June 30, 2014	June 30, 2013	Percentage	Percentage
	<u>Valuation</u>	<u>Valuation</u>	<u>Valuation</u>	Change	Change
				<u>2014 to 2015</u>	<u>2013 to 2014</u>
Market Value of Pension Assets	\$ 26,320,738,690	\$ 27,643,078,116	\$ 26,859,612,370	(4.8) %	2.9 %
Annuity Savings Fund **	<u>11,199,306,391</u>	<u>10,695,781,560</u>	<u>10,145,584,757</u>	4.7 %	5.4 %
Net Market Value of Pension Assets	15,121,432,299	16,947,296,556	16,714,027,613	(10.8) %	1.4 %
Actuarial Accrued Liability (AAL) for Retirees	36,103,778,885	34,555,715,163	33,270,993,054	4.5 %	3.9 %
% of AAL for Retirees Covered by Assets *	72.9%	80.0%	80.7%	(7.1) %	(0.7) %
% of AAL for Retirees Covered by Net Assets *	41.9%	49.0%	50.2%	(7.1) %	(1.2) %
Prior Year's Benefit Payments for Retirees	3,920,924,262	3,755,010,520	3,601,020,357	4.4 %	4.3 %
Ratio of Assets to Benefit Payments ^	6.7	7.4	7.5	(9.5) %	(1.3) %
Ratio of Net Assets to Benefit Payments ^	3.9	4.5	4.6	(13.3) %	(2.2) %
Ratio of AAL to Benefit Payments ^	9.2	9.2	9.2	0.0 %	0.0 %

\* 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.

# 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, 2015, which determines the statutory contribution payable for the fiscal year ending June 30, 2017. This valuation reflects that the State is expected to appropriate contributions less than those required by Chapter 1, P.L. 2010 for the 2017 fiscal year (40% versus 85.7%). State contributions have been or are expected to be less than Chapter 1 phase-in contributions since the 2014 fiscal year. Chapter 1 provided for a 7-year phase-in to the full statutory contribution beginning with the 2012 fiscal year. The State anticipates utilizing a 10-year phase-in approach, with fiscal year 2017 being the fourth year of the phase-in. Unless State contributions follow a reasonable pattern to reach full funding of the statutory contribution, ***continued funding at these low levels would put TPAF at significant risk of insolvency within a relatively short period of time.***

#### Assumptions

This valuation reflects the actuarial assumptions based on the July 1, 2009 – June 30, 2012 Experience Study.

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 near 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.

#### 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 1/60<sup>th</sup> benefit formula and the additional formula component.

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

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

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.

Beginning with the July 1, 2012 valuation, a change was made in the treatment of the contributions in excess of 5.5% to serve as a direct offset to the State's Normal Contribution. 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 a decrease in the projected funded ratio.

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, 2015, the Actuarial Value of Assets is 107.5% of market value, which is an increase from the prior year of 105.1%. 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 contribution is paid). The amortization period will remain at 30 years until the June

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

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

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 requirements are highlighted on the Summary Exhibits shown on page 3. Included on these exhibits is our understanding of the contributions appropriated or to be appropriated for the 2016 and 2017 fiscal years as well as the actual paid contribution in the 2015 fiscal year.

In the prior actuarial valuation, the contribution appropriated of \$379.9 million for the 2015 fiscal year represented 16.5% of the statutory contribution. At the end of the 2015 fiscal year, the State contributed an additional \$124.4 million into TPAF. The total contribution made for the 2015 fiscal year totaled \$504.3 million or 21.9% of the full statutory contribution.

For the 2016 fiscal year, the State has appropriated 30% of the statutory contribution, which equals \$763.4 million. For the 2017 fiscal year, the State anticipates funding 40% of the statutory contribution, which equals \$1,094.9 million. These contribution levels are less than those indicated by the Chapter 1 phase-in percentages of 57.1%, 71.4% and 85.7% for fiscal years 2015 – 2017, respectively.

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, 2015, there are no assets in the BEF. Furthermore, since there are no Excess Assets as of July 1, 2015, no assets will be transferred to the BEF.

The statutory contribution increased 7.6% from \$2,544.8 million for the 2016 fiscal year to \$2,737.2 million for the 2017 fiscal year. This increase is due to the increase in the Accrued Liability Contribution and a slight increase in the Additional Formula Normal Cost, offset by the decrease in the Normal Contribution. The increase in the Accrued Liability Contribution of 9.5% from \$2,173.8 million for the 2016 fiscal year to \$2,380.8 million for the 2017 fiscal year is due to the increase in the unfunded liability discussed in detail below. The Normal Contribution decreased by 5.3% from \$300.8

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

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

million for the 2016 fiscal year to \$284.8 million for the 2017 fiscal year and the Additional Formula Normal Cost increased by 2.0% from \$70.1 million for the 2016 fiscal year to \$71.6 million for the 2017 fiscal year, respectively. The primary reason for the decrease in the combined normal cost is the increase in the expected member contributions. The member contribution rate increased from 6.92% as of July 1, 2014 to 7.06% as of July 1, 2015. 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. In years prior to the 2014 valuation, the costs for past ERI programs had been segregated as a receivable contribution and was included in the market value of assets. Beginning with the 2014 valuation, the receivable contribution has been removed from the asset value and the ERI contributions are now included in the development of the Accrued Liability Contribution.

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

## SECTION I - SUMMARY (continued)

### 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 5, the funded ratio as of July 1, 2015 is 51.12%, which is lower than the TFR of 78.571%. Thus, no changes in benefits can be contemplated for the 2017 fiscal year.

#### Unfunded Actuarial Accrued Liability

The unfunded Actuarial Accrued Liability increased by \$2,352.8 million from \$24,705.2 million as of July 1, 2014 to \$27,058.0 million as of July 1, 2015. The following table summarizes the reasons for the increase in the unfunded liability.

Unfunded Liability as of June 30, 2014	\$24,705.2
Scheduled Amortization Payment less/(more) than Interest Accrual	(222.1)
State Appropriation more than 2015 Receivable Contribution <sup>1</sup>	(123.8)
State Appropriation less than Statutorily Required Contribution	1,837.3
Actuarial Loss/(Gain)	908.1
Member Contributions Less/(More) than current level anticipated	<u>(46.7)</u>
Total Change in Unfunded Liability	\$2,352.8
Unfunded Liability as of June 30, 2015	\$27,058.0

<sup>1</sup> includes adjustment for local unauthorized ERI contribution not paid

#### Funded Ratio

As a result of the increase in the unfunded liability, the funded ratio based on the actuarial value of assets was reduced 2.9% from 54.0% as of June 30, 2014 to 51.1% as of June 30, 2015. Due to the asset valuation method, investment losses are expected on an actuarial value basis as the actuarial value of assets was 105.1% 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

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

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

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 decreased 3.8% from 51.4% to 47.6%. The ratio decreased on a market value basis due to 1) investment performance less than expected during the prior year and 2) State contributions less than the statutory required contribution for the 2016 fiscal year offset by an additional State contribution for the 2015 fiscal year. Since July 1, 2005, the funded ratio on a market value basis has been reduced by 21.5%. This decrease is primarily due to investment losses experienced over the period, State contributions less than the statutory required contribution, and changes to the actuarial assumptions.

As of June 30, 2015, 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 statutory 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 41.9%.

As of June 30, 2015, the ratio of market value of assets to the prior year's benefit payments decreased from 7.4 to 6.7. 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 3.9. The ratio for the prior year was 4.5.

#### Actuarial Gain/(Loss) Analysis

TPAF experienced an actuarial loss of \$908.1 million during the period July 1, 2014 to June 30, 2015 based on the actuarial assumptions adopted in the 2012 Experience Study. This loss is approximately 1.6% of the Actuarial Accrued Liability as of July 1, 2015. The major factors contributing to this loss are summarized below and are compared to the experience for the prior two plan years.

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## TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

### SECTION I - SUMMARY (continued)

#### B. General Comments (continued)

	<u>June 30, 2015</u>	<u>Gain/(Loss)</u> <i>(Amounts in Millions)</i> <u>June 30, 2014</u>	<u>June 30, 2013</u>
Economic Factors:			
Investment Return	\$(495.2)	\$(350.4)	\$(902.6)
Salary Increases	50.0	33.8	76.1
Expenses	(14.3)	(12.5)	(12.8)
Demographic Factors:			
Active Members *	(22.8)	(41.9)	(3.2)
New Entrants	(48.1)	(44.1)	(46.6)
Non-Contributing Members	(32.7)	(8.2)	(11.7)
Retirees and Beneficiaries	5.0	(18.4)	(36.7)
Year of Mortality Improvement <sup>1</sup>	(54.1)	(36.1)	N/A
Other <sup>2</sup>	<u>(295.9)</u>	<u>N/A</u>	<u>N/A</u>
Total	(908.1)	(477.8)	(937.5)

<sup>1</sup> For 2014, reflects impact on only retirees. For 2015, reflects impact on both actives and retirees

<sup>2</sup> Includes changes in method to determine gain/loss and valuation system to determine liabilities

Total pension assets earned investment returns of approximately 4.15% on a market value basis and 6.10% on an actuarial value basis for the period ending June 30, 2015. 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 reported by the Division of Investments. The resulting loss to the plan of \$495.2 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, 2014 and July 1, 2015 averaged 3.06% versus expected salary increases of 3.35% resulting in an actuarial gain of \$50.0 million. Salaries for new entrants averaged \$54,274, which is significantly below the average salary of all contributory members of \$73,522. This resulted in the average salary of all contributory members increasing by 0.8% over last year and combined with the number of active contributing members increasing by 0.6%, total contributory payroll increased by 1.4%.

Actuarial losses among active members include the impact of changes in participant data, including changes in service partially due to service purchases. The actuarial gain among retirees is due to reflecting 7 years of mortality improvement included in the valuation, offset by the impact of participant data changes, including changes in

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

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

benefit amounts and beneficiaries who appear in the valuation for the first time where a prior member record was not determined. The impact of maintaining the 7-year mortality improvement margin on retirees and the 15-year mortality improvement margin on active members results in an actuarial loss of \$54.1 million.

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

### C. Discussion of Supporting Exhibits

#### Assets

Section II summarizes the System assets taken into account in the preparation of the actuarial valuation. Subsection A summarizes the market value of System assets as of June 30, 2015 and includes expected contributions from local employers for ERI and Terminal Funding retirements plus the discounted value of expected contributions from the State as of June 30, 2015.

Subsection B reconciles the development of the market value of pension assets starting from the market values as of June 30, 2014. Subsection C summarizes the development of the actuarial value of pension assets as of July 1, 2015. 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, 2015 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 5.23% and 10.38%, 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, 2015, 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, 2015 for all current members and indicates the portion of those present values attributable to active participants, retirees and beneficiaries, and terminated vested participants. Projected benefits based on compensation in excess of the 401(a)(17) compensation cap for a group of grandfathered employees for certain School Districts under Chapter 113, P.L. 1997 have been included in the determination of the Accrued Liability.

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## TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

### SECTION I - SUMMARY (continued)

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

Subsection B summarizes the development of the pension Normal Cost under the 1/60 and 1/55 formulas payable July 1, 2015. 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, 2015 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, 2015.

Subsection D summarizes the development of the Excess Valuation Assets which are \$0 as of July 1, 2015. 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 2016) from the Valuation Assets.

Subsection E summarizes the development of the BEF as of July 1, 2015 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, 2015. The BEF is credited with excess assets not to exceed actual member contributions made to the system nor the present value of expected additional normal costs due to the formula change. Since there are no excess assets, there is no contribution to the BEF. Since the BEF is \$0, there is no offset to the additional formula normal cost.

Subsection F summarizes the development of the State's fiscal year 2017 pension Statutory Required Contributions to TPAF. The total pension contribution of \$2,737,175,151 equals the Normal Contribution of \$284,765,709 based on the 1/60 formula plus the Additional Formula Normal Contribution of \$71,559,513 plus the Accrued Liability Contribution of \$2,380,849,929. The State's combined ERI-3 and ERI-5 contributions are \$3,667,041, which is included in the Accrued Liability Contribution. In addition to these contributions, the State reimburses TPAF for actual

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## TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

### SECTION I - SUMMARY (continued)

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

noncontributory group insurance claims paid throughout the year. Since the State reimburses the actual amount, we have removed an estimate from the report.

Subsection G shows the Statutory Required Contribution as a percentage of appropriation payroll on two bases: (1) on a statutory basis – 26.55% and (2) if the Market Value of Assets were used to determine the Accrued Liability Contribution – 28.24%, which is 6.4% higher. Without future investment returns exceeding the assumed rate of return by a significant margin, contributions in future years will continually approach the amount based on market value.

Subsection H summarizes these contributions as a percentage of appropriation pay for the five previous fiscal years. The percentages shown have been adjusted to exclude the portion associated with noncontributory group life insurance claims from 2014 and earlier valuations.

Subsection I shows the fiscal year 2017 Statutory Required Contribution based on the 1/60 formula, the Additional Formula Contribution after application of the BEF, and the Accrued Liability Contribution, which includes the State ERI contribution, payable by the State and certain State Colleges. It does not reflect the phase-in under Chapter 1, P.L. 2010. In addition, a portion of the non-contributory group life insurance claims will also be allocated to each employer. The State's contribution is allocated between the Department of Higher Education, Department of Education, County Colleges, Charter Schools and other.

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

Subsection K shows the estimated benefit payments over the next 10 fiscal years based on the actuarial assumptions used in this valuation.

Subsection L shows a summary of the assets and liabilities over the past 10 actuarial valuations.

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## TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

### SECTION I - SUMMARY (continued)

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

Subsection M shows a summary of the statutory contributions determined over the past 10 actuarial valuations and the actual contributions made by fiscal year. The 5-year average of the percentage of the statutory contribution made is 16.58% as of June 30, 2015 and 22.58% as of June 30, 2016, reflecting the contribution appropriated for June 30, 2016.

#### Actuarial Balance Sheet

Section IV provides the actuarial balance sheet summarizing the assets and liabilities by Fund as of June 30, 2015. The assets credited to the various funds include the portion of the investment income allocated to each fund for the year ending June 30, 2015. The actuarial value of assets is used as the basis for the balance sheet. Note that the actuarial value of assets is 7% 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, if any, 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, 2015, the Retirement Reserve Fund has present assets of \$35,506,919,076 including accrued interest. The liabilities of the fund amount to \$36,103,778,885 so that there is a deficit of \$596,859,809 in the fund as of the valuation date. New Jersey statute states that the fund be put in balance as of June 30, 2015 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.

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## TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

### SECTION I - SUMMARY (continued)

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

##### (2) 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 \$11,199,306,391 as of June 30, 2015 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 \$(19,001,681,092) as of June 30, 2015 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 \$(20,982,346,586).

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.

##### (3) 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, 2015, the BEF has no assets.

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

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

#### (4) 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, 2015.

#### Census Data

Section V 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, 2015.

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

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# TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

## SECTION I - SUMMARY (continued)

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

a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

#### Actuarial Assumptions and Methods

Section VI 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 VII 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 2017 fiscal year. It also provides the present value of the future contributions as of June 30, 2015. This list reflects locations which paid off their ERI liabilities through June 2015 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 Pension Assets as of June 30, 2015**

1. Assets

Cash	\$ 3,194,842
Investment Holdings	25,650,348,595
Employers' Contributions Receivable - NCGI	5,511,853
Employers' Contributions Receivable - State	0
Employers' Contributions Receivable - Local	23,301,021
Employers' Contributions Receivable - Delayed Enrollments	385,447
Employers' Contributions Receivable - Delayed Appropriations	4,959,939
Members' Contributions Receivable	80,081,731
Accrued Interest on Investments	3,012
Accounts Receivable	4,931,424
Loans Receivable	247,772,712
Dividends Receivable	<u>0</u>
Total	\$ <u>26,020,490,576</u>

2. Liabilities

Pension Payroll Payable	\$ 262,694,985
Pension Adjustment Payroll Payable	29,391,977
Withholdings Payable	45,151,473
CGIPF Payable	892,173
Death Benefits Payable	5,511,853
Net Securities Lending Collateral	(437,814)
Accounts Payable - Other	<u>72,488,369</u>
Total	\$ <u>415,693,016</u>

3. Market Value of Pension Assets as of June 30, 2015: (1) - (2) \$ 25,604,797,560

4. Unauthorized Local ERI Receivable Contributions 8,393,900

5. FY 2016 Discounted Receivable Contributions from State \* 707,547,230

6. Adjusted Market Value of Pension Assets as of June 30, 2015:

(3) + (4) + (5) \$ 26,320,738,690

\* Receivable contribution of \$763,443,461 discounted with a year of interest at 7.90%

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

**SECTION II - ASSETS**

(continued)

**B. Reconciliation of Market Value of Pension Assets from June 30, 2014 to June 30, 2015**

	<u>Pension</u>
1. Market Value of Pension Assets as of June 30, 2014 (excluding receivable)	\$ 27,282,601,555
FY2015 Discounted Receivable Contributions from State and Local Employers	<u>360,476,561</u>
Adjusted Market Value of Assets as of June 30, 2014	\$ 27,643,078,116
2. Increases	
Member Contributions excluding transfers from Other Systems	\$ 729,770,324
Member Transfer Contributions	8,052,693
Other Employer Contributions including Transfers From Other Systems, Delayed Appropriations and Delayed Enrollments	6,787,696
State and Local Appropriations (adjusted by unauthorized ERI receivable)	180,126,974
CGIPF Adjustment	(349,094)
Investment Income	<u>1,066,062,924</u>
Total	\$ <u>1,990,451,517</u>
3. Decreases	
Withdrawal of Member Contributions and Transfer Contributions	\$ 57,795,787
Retirement Allowances	3,576,672,146
Pension Adjustment Benefits	344,252,116
Death Benefit Claims	36,283,535
Administrative Expense	<u>13,728,489</u>
Total	\$ <u>4,028,732,073</u>
4. Market Value of Pension Assets as of June 30, 2015: (1) + (2) - (3)	\$ 25,604,797,560
5. FY2016 Discounted Receivable Contributions from State* and Local Employers	<u>715,941,130</u>
6. Adjusted Market Value of Pension Assets as of June 30, 2015: (4) + (5)	\$ <u>26,320,738,690</u>

\* Receivable contribution of \$763,443,461 discounted with a year of interest at 7.90%

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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, 2015**

1. Actuarial Value of Pension Assets as of July 1, 2014	\$ 29,044,777,902
2. Net Cash Flow without Investment Income	(3,132,158,010)
3. Investment Income at Actuarially Assumed Rate @ 7.90%	2,168,009,536
4. Receivable Contributions from State and Local Employers	<u>715,941,130</u>
5. Expected Actuarial Value of Pension Assets: (1) + (2) + (3) + (4)	28,796,570,558
6. Adjusted Market Value of Pension Assets as of June 30, 2015	26,320,738,690
7. Excess Market Value over Expected Actuarial Value Assets: (6) - (5)	(2,475,831,868)
8. 20% mark-up to reflect growth in Market Value: 20% x (7)	<u>(495,166,374)</u>
9. Actuarial Value of Pension Assets as of July 1, 2015: (5) + (8)	\$ <u>28,301,404,184</u>
10. Pension Actuarial/Market Value Ratio: (9) / (6)	107.5%

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

**SECTION II - ASSETS**

(continued)

**D. Estimated Annual Rate of Return for year ending June 30, 2015**

	<u>Pension Actuarial Value</u>	<u>Pension Market Value</u>
1. Value of Assets as of July 1, 2014	\$ 29,044,777,902	\$ 27,282,601,555
2. Employee Contributions	744,261,619	744,261,619
3. State and Local Appropriations (adjusted for prior year receivable contribution differences)	152,312,444	540,603,535
4. Receivable Contributions - State and Local Employers	715,941,130	715,941,130
5. Benefit Payments and Expenses	4,028,732,073	4,028,732,073
6. Value of Assets as of June 30, 2015	28,301,404,184	26,320,738,690
7. Non-Investment Increment: (2) + (3) - (5)	(3,132,158,010)	(2,743,866,919)
8. Investment Increment: (6) - (1) - (4) - (7)	1,672,843,162	1,066,062,924
9. Time Weighted Value: (1) +.5 x (7)	27,412,290,543	25,658,508,096
10. Estimated Annual Rate of Return: (8) / (9)	6.10%	4.15%

**E. Estimated Historical Rates of Return**

<u>Plan Year Ending</u>	<u>Actuarial Value</u>	<u>Market Value</u>
June 30, 2015	6.10%	4.15%
June 30, 2014	6.67%	16.58%
June 30, 2013	4.86%	11.69%
June 30, 2012	3.85%	2.46%
June 30, 2011	4.71%	17.91%
5-Year Compounded Annual Rate of Return	5.23%	10.38%

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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, 2015- 1/55th Formula**

1. Projected Benefits Payable to Beneficiaries and Retirees	
Service Retirees (Including ERI Benefits)	\$ 34,176,358,407
Disability Retirees	779,426,350
Beneficiaries	<u>1,147,994,128</u>
Total	\$ 36,103,778,885
2. Projected Benefits for Vested Terminated Members	24,351,144
3. Projected Benefits for Non-Contributory Members	\$ 696,521,676
4. Projected Benefits for Active Members	
Service Retirement	\$ 17,390,193,629
Ordinary Disability Retirement	479,726,110
Accidental Disability Retirement	22,926,706
Return of Members' Contributions - Death	115,000,920
Return of Members' Contributions - Withdrawal	153,112,483
Deferred Retirement	373,765,518
Pension Adjustment Benefits	<u>0</u>
Total	\$ 18,534,725,366
5. Total Pension Accrued Liability: (1) + (2) + (3) + (4)	\$ 55,359,377,071

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

**SECTION III - LIABILITIES AND CONTRIBUTIONS**

(continued)

**B. Development of Normal Cost payable July 1, 2015**

	<u>1/60th Formula</u>	<u>1/55th Formula</u>
1. Basic Allowances	\$ 961,480,851	\$ 1,027,801,067
2. Expected Member Contributions (adjusted to valuation date)	<u>697,564,531</u>	<u>697,564,531</u>
3. Net Pension Normal Cost: (1) - (2)	263,916,320	330,236,536

**C. Summary of Active Member Actuarial Accrued Liability & Normal Cost payable July 1, 2015**

<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	95,350	\$7,738,913,226	\$17,613,057,642	\$838,501,681
Class D	11,129	675,708,538	452,502,683	56,672,785
Class E	5,609	329,117,369	166,930,519	26,391,856
Class F	3,295	190,621,140	69,699,057	13,645,164
Class G	<u>24,844</u>	<u>1,371,112,211</u>	<u>232,535,465</u>	<u>92,589,581</u>
Total	140,227	\$10,305,472,484	\$18,534,725,366	\$1,027,801,067

\* 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, 2015**

1. Valuation Assets	\$ 28,301,404,184
2. Actuarial Accrued Liability for Basic Allowances & Pension Adjustment Benefits	55,359,377,071
3. Present Value of Total Projected Normal Cost in Excess of the Projected Phased-in Normal Cost for Pension Adjustment Benefits	0
4. Benefit Enhancement Fund (prior to reduction for additional formula normal cost)	<u>0</u>
5. Excess Valuation Assets as of July 1, 2015: (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, 2015**

1. Benefit Enhancement Fund as of July 1, 2014	\$	0
2. Accrued Interest		<u>0</u>
3. Benefit Enhancement Fund as of July 1, 2015		0
4. Additional Formula Normal Cost to be paid by Benefit Enhancement Fund		
a. Gross Normal Cost payable July 1, 2015 - 1/55th Formula (B)(3)(a)	1,027,801,067	
b. Gross Normal Cost payable July 1, 2015 - 1/60th Formula (B)(3)(a)	<u>961,480,851</u>	
c. Additional Formula Normal Cost: (a) - (b)	66,320,216	
5. Net Benefit Enhancement Fund Balance as of July 1, 2015 before Fiscal Year 2017 Contribution: (3) - (4c), not less than \$0		0
6. State Additional Formula Contribution as of July 1, 2015: (4c) - (3), not less than \$0		66,320,216
7. Estimated Fiscal Year 2017 Employee Contributions as of July 1, 2015		685,684,102
8. Limit on Fiscal Year 2017 Contribution to Benefit Enhancement Fund		
a. Present Value of Future Normal Costs as of June 30, 2015 - 1/55th Formula	10,255,966,804	
b. Present Value of Future Normal Costs as of June 30, 2015 - 1/60th Formula	<u>9,539,761,734</u>	
c. Limit: (a) - (b) - (5)	716,205,070	
9. Excess Assets Available (D6)		0
10. Fiscal Year 2017 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 2017 Statutory Required Contributions

1. Net Pension Normal Contribution as of July 1, 2015: B(3)	\$ 263,916,320
2. Net Pension Normal Contribution as of June 30, 2016	284,765,709
3. Additional Formula Contribution as of July 1, 2015: E(6)	66,320,216
4. Additional Formula Contribution as of June 30, 2016	71,559,513
5. Accrued Liability Contribution	
a. Actuarial Accrued Liability for Basic Allowances & Pension Adjustment Benefits	\$ 55,359,377,071
b. Adjusted Actuarial Value of Assets (excluding BEF)	<u>28,301,404,184</u>
c. Unfunded Pension Accrued Liability: (a) - (b)	\$ 27,057,972,887
d. 30 - Year Level Dollar Amortization with payments of Unfunded Pension Accrued Liability payable June 30, 2016	2,380,849,929
6. Total Pension Contribution for State's Fiscal Year 2017: (2) + (4) + (5d) *	\$ 2,737,175,151

\* State ERI contributions included in Accrued Liability Contribution. In addition, State will also reimburse the actual amount of noncontributory group insurance claims paid from TPAF

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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	2.76%
Additional Formula Normal Cost (after any BEF reductions)	0.69%
Accrued Liability Contribution	<u>23.10%</u>
<b>Total Pension Contribution for State's Fiscal Year 2017</b>	<b>26.55%</b>
Increases in contribution if:	
No BEF reductions existed	0.00%
Market Value of Assets used to determine the Accrued Liability Contribution	<u>1.69%</u>
Total Increases as a percent of payroll	1.69%
<b>Total Contribution with these increases as a percent of payroll</b>	<b>28.24%</b>

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

Fiscal Year <u>Ending</u>	Statutory <u>Pension</u>	With Increases Above <u>Included</u>
June 30, 2017	26.55%	28.24%
June 30, 2016	25.04%	26.25%
June 30, 2015	22.98%	26.14%
June 30, 2014	22.07%	26.61%
June 30, 2013	22.19%	25.52%

\* Historical percentages have been modified to remove noncontributory group insurance claims since the actual amounts are reimbursed by the State

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

**SECTION III - LIABILITIES AND CONTRIBUTIONS**

(continued)

**I. Fiscal Year 2017 Full Statutory Required Contributions Payable by the State and Certain State Colleges \***

<u>Group</u>	<u>Normal Contribution (1/60 Formula)</u>	<u>Additional Formula Contribution (After BEF reductions)</u>	<u>Accrued Liability Contribution **</u>	<u>Total</u>
<b><u>Certain State Colleges</u></b>				
NJ Institute of Technology	\$0	\$0	\$73,618	\$73,618
Rowan University	0	0	62,095	\$62,095
New Jersey University	3,407	856	394,519	\$398,782
Kean University	6,210	1,560	243,317	\$251,087
William Patterson University	10,316	2,592	156,816	\$169,724
Montclair State U. (Group 4)	0	0	151,481	\$151,481
The College of NJ	0	0	38,934	\$38,934
Stockton State College	<u>9,721</u>	<u>2,443</u>	<u>81,147</u>	<u>\$93,311</u>
<b>Total for Certain State Colleges</b>	<b>\$29,654</b>	<b>\$7,451</b>	<b>\$1,201,927</b>	<b>\$1,239,032</b>
<b><u>State</u></b>				
Dept of Higher Education	0	0	0	\$0
Dept of Education	351,758	88,394	5,649,078	\$6,089,230
County Colleges	29,095	7,311	242,881	\$279,287
Charter Schools	5,576,238	1,401,267	46,549,625	\$53,527,130
Other	<u>278,778,964</u>	<u>70,055,090</u>	<u>2,327,206,418</u>	<u>\$2,676,040,472</u>
<b>Total for State</b>	<b><u>\$284,736,055</u></b>	<b><u>\$71,552,062</u></b>	<b><u>\$2,379,648,002</u></b>	<b><u>\$2,735,936,119</u></b>
<b>Total for System</b>	<b><u>\$284,765,709</u></b>	<b><u>\$71,559,513</u></b>	<b><u>\$2,380,849,929</u></b>	<b><u>\$2,737,175,151</u></b>

\* In addition, a portion of the non-contributory group life insurance claims will also be allocated to each employer.

\*\* Includes State ERI contributions

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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, 2015**

1. Unfunded Accrued Liability as of June 30, 2014	\$	24,705,198,739
2. Gross Normal Cost as of June 30, 2014		1,017,002,428
3. Interest: ((1) + (2)) * 7.90%		2,032,053,892
4. Employee and Employer Contributions Made with Interest		<u>1,604,408,118</u>
5. Expected Unfunded Accrued Liability as of June 30, 2015: (1) + (2) + (3) - (4)	\$	26,149,846,941
6. Increase/(Decrease) in liability due to assumption changes		0
7. Increase/(Decrease) in liability due to statutory changes		0
8. Expected Unfunded Accrued Liability after changes as of June 30, 2015: (5) + (6) + (7)	\$	26,149,846,941
9. Actual Unfunded Accrued Liability as of June 30, 2015		<u>27,057,972,887</u>
10. Gain/(Loss): (8) - (9)	\$	<u>(908,125,946)</u>

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

**SECTION III - LIABILITIES AND CONTRIBUTION**

(continued)

**K. Estimated Benefit Payments for next 10 Fiscal Years - Pension Only**

<u>Fiscal Year Ending</u>	<u>Estimated Benefit Payments</u>
June 30, 2016	\$ 4,097,024,000
June 30, 2017	4,220,763,000
June 30, 2018	4,347,741,000
June 30, 2019	4,462,477,000
June 30, 2020	4,567,201,000
June 30, 2021	4,664,115,000
June 30, 2022	4,753,149,000
June 30, 2023	4,837,181,000
June 30, 2024	4,921,431,000
June 30, 2025	5,008,848,000

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

**SECTION III - LIABILITIES AND CONTRIBUTION**

(continued)

**L. Historical Summary of Assets and Liabilities**

Valuation Date	Market Value of Assets	Actuarial Value of Assets	Actuarial Accrued Liability	Funded Ratio	
				Market Value	Actuarial Value
2015	\$ 26,320,738,690	\$ 28,301,404,184	\$ 55,359,377,071	47.55%	51.12%
2014	27,643,078,116	29,044,777,902	53,749,976,641	51.43%	54.04%
2013	26,859,612,370	30,469,857,304	52,366,655,055	51.29%	58.19%
2012	26,037,983,392	31,079,212,983	51,194,110,587	50.86%	60.71%
2011	27,654,006,602	32,156,229,300	50,222,688,750	55.06%	64.03%
2010	25,763,644,836	33,136,475,630	48,417,932,345	53.21%	68.44%
2009	24,973,886,910	34,708,001,341	53,418,328,576	46.75%	64.97%
2008	32,358,227,689	36,541,083,946	50,658,278,274	63.88%	72.13%
2007	35,070,757,170	36,594,817,062	48,127,453,410	72.87%	76.04%
2006	31,495,000,296	35,422,799,539	45,439,278,166	69.31%	77.96%

**M. Historical Summary of State Appropriation for Pension**

Fiscal Year Ending June 30	Full Statutory Contribution	Actual State Appropriation	Contribution Deficiency (Excess)	Percentage of Contribution Made
2016 *	\$ 2,544,811,534	\$ 763,443,461	\$ 1,781,368,073	30.00%
2015	2,306,611,715	504,320,000	1,802,291,715	21.86%
2014	2,158,287,358	392,035,985	1,766,251,373	18.16%
2013	2,148,185,001	613,766,799	1,534,418,202	28.57%
2012	2,009,810,329	287,115,915	1,722,694,414	14.29%
2011	1,826,722,370	0	1,826,722,370	0.00%
2010	1,526,168,830	0	1,526,168,830	0.00%
2009	1,348,105,853	64,376,207	1,283,729,646	4.78%
2008	1,286,147,106	663,791,615	622,355,491	51.61%
2007	1,156,140,571	663,415,668	492,724,903	57.38%
2006	915,892,281	67,275,588	848,616,693	7.35%

\* Reflects budgeted contribution of \$763,443,461 to be paid June 30, 2016

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

**SECTION IV - ACTUARIAL BALANCE SHEET AS OF JUNE 30, 2015**

<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	\$35,506,919,076	Retirees, Disableds and Beneficiaries	
Add/(deduct) reserve transferable from/(to) CRF	<u>596,859,809</u>	currently receiving benefits	\$36,103,778,885
Adjusted Total	36,103,778,885		
 <u>Pension Fund (PF)</u>		 <u>Payable from Pension Fund</u>	
Credited to Fund w/ Distribution of Income	0	Retirees, Disableds and Beneficiaries	
Add/(deduct) reserve transferable from/(to) CRF	<u>0</u>	currently receiving benefits	0
Adjusted Total	0		
Annuitiy Savings Fund (ASF) w/ Distribution of Income	11,199,306,391	 <u>Payable from Annuity Savings Fund</u>	
		<u>and Contingent Reserve Fund</u>	
 <u>Contingent Reserve Fund (CRF)</u>		Active Members	19,231,247,042
Credited to Fund w/ Distribution of Income	(18,404,821,283)	Term Vested Members	<u>24,351,144</u>
Add/(Deduct) from/(to) RRF, PF & SRF	<u>(596,859,809)</u>	Total	19,255,598,186
Adjusted Total	(19,001,681,092)		
 <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, 2015	\$28,301,404,184		
Present Value of Prospective Contributions to the CRF and BEF for service accrued as of July 1, 2015	<u>27,057,972,887</u>		
Total Assets	\$55,359,377,071	Total Liabilities	\$55,359,377,071

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

**SECTION V - 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, 2014	139,350	13,462	276	85,209	3,190	5,615	808	247,910
Terminated Vested	(7)	(7)	14	-	-	-	-	0
Terminated with Refund	(618)	(1,852)	-	-	-	-	-	(2,470)
Retired	(4,451)	(448)	(79)	4,978	-	-	-	0
Disabled	(160)	(71)	-	-	231	-	-	0
Died with Beneficiary	-	-	-	(401)	(32)	433	-	0
Died without Beneficiary	(53)	(29)	-	(1,551)	(95)	(260)	-	(1,988)
Payments Began	-	-	-	-	-	-	82	82
Payments Ceased	-	-	-	-	-	(6)	(36)	(42)
New Actives and Rehires	8,048	136	-	-	-	-	-	8,184
Changed to Contributing	2,501	(2,501)	-	-	-	-	-	0
Changed to Noncontributing	(4,382)	4,382	-	-	-	-	-	0
Data Corrections	<u>(1)</u>	<u>153</u>	<u>(1)</u>	<u>3</u>	<u>4</u>	<u>58</u>	<u>-</u>	<u>216</u>
Members as of June 30, 2015	<u>140,227</u>	<u>13,225</u>	<u>210</u>	<u>88,238</u>	<u>3,298</u>	<u>5,840</u>	<u>854</u>	<u>251,892</u>

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

SECTION V - 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	132	12,729,888
New Jersey Institute of Technology	0	0	0
State Colleges	3	6	721,325
County Colleges	5	9	1,052,929
Charter Schools	90	3,475	201,800,158
Other	<u>594</u>	<u>136,605</u>	<u>10,089,168,184</u>
Total	<u>694</u>	<u>140,227</u>	\$ <u>10,305,472,484</u>

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

TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

**SECTION V - 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)	89,092	\$ 3,673,500,726
Ordinary Disability Retirements	3,043	82,622,486
Accidental Disability Retirements	255	10,876,409
Ordinary Death Benefits	1	394
Accidental Death Benefits	1	41,390
Dependents of Deceased Beneficiaries	5,775	148,419,207
Dependents of Deceased Beneficiaries who elected to receive annuities certain instead of lump sum	<u>63</u>	<u>1,495,532</u>
Total	<u>98,230</u>	\$ <u>3,916,956,144</u>

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

**SECTION V - 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	846	3,585	4,431
Total Annual Pension	\$20,116,159	\$189,161,829	\$209,277,987
Average Annual Pension	\$23,778	\$52,765	\$47,230
Average Age at Retirement	64.5	61.5	62.1
Average Service at Retirement	16.3	31.6	28.7

\* 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>
<b>New Retirees from Active Contributory Status</b>			
Service Retirement	64.1	\$46,014	3,199
Early Retirement	56.8	50,382	1,232
Ordinary Disability	57.0	31,675	145
Accidental Disability	53.0	41,138	4
Survivors **	58.8	30,704	17
<b>All Retirees</b>			
Service Retirement	63.0	\$36,455	52,592
Early Retirement	56.3	40,859	35,646
Ordinary Disability	54.2	24,688	3,043
Accidental Disability	52.3	37,626	255
Survivors	55.8	20,693	5,840

\*\* 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 V - 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	273	0	0	0	0	0	0	0	0	273	51,271
25-29	2,339	443	3	0	0	0	0	0	0	2,785	53,833
30-34	1,421	2,442	710	0	0	0	0	0	0	4,573	59,679
35-39	622	1,256	3,097	618	1	0	0	0	0	5,594	70,988
40-44	392	585	1,517	2,292	244	1	0	0	0	5,031	81,703
45-49	283	373	864	1,429	1,251	153	1	0	0	4,354	88,156
50-54	211	294	596	671	704	719	147	0	0	3,342	88,765
55-59	156	223	494	512	449	401	581	160	0	2,976	91,272
60-64	101	180	413	367	325	264	249	455	120	2,474	93,665
65 & Up	26	75	244	201	190	119	65	79	221	1,220	98,127
Total	5,824	5,871	7,938	6,090	3,164	1,657	1,043	694	341	32,622	
				Average Age	=	43.9					
				Average Service	=	13.7					
				Average Annual Salary	=	\$78,123					

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	1,257	0	0	0	0	0	0	0	0	1,257	51,482
25-29	9,217	1,880	6	0	0	0	0	0	0	11,103	53,815
30-34	4,036	8,879	2,273	6	0	0	0	0	0	15,194	58,930
35-39	1,941	3,678	8,958	1,332	2	0	0	0	0	15,911	66,930
40-44	1,608	1,980	4,452	5,619	610	1	0	0	1	14,271	74,110
45-49	1,398	1,902	2,715	3,326	3,159	531	0	0	0	13,031	77,398
50-54	815	1,517	2,637	2,100	1,594	2,582	552	0	0	11,797	79,500
55-59	432	959	2,433	2,630	1,842	1,658	1,754	368	2	12,078	82,547
60-64	180	416	1,344	1,929	1,949	1,514	911	972	191	9,406	86,757
65 & Up	45	110	468	588	764	691	354	209	328	3,557	90,146
Total	20,929	21,321	25,286	17,530	9,920	6,977	3,571	1,549	522	107,605	
				Average Age	=	44.0					
				Average Service	=	13.2					
				Average Annual Salary	=	\$72,118					

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

**SECTION V - CENSUS DATA**

(continued)

**G. Age, Service and Salary Profile of Active 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	10	0	0	0	0	0	0	0	0	10	50,919
25-29	29	2	0	0	0	0	0	0	0	31	52,995
30-34	24	19	2	0	0	0	0	0	0	45	57,058
35-39	10	10	23	1	0	0	0	0	0	44	69,301
40-44	11	8	10	13	0	0	0	0	0	42	79,398
45-49	6	4	11	10	4	0	0	0	0	35	80,094
50-54	8	2	6	7	2	0	0	0	0	25	76,726
55-59	5	4	10	5	2	1	0	0	0	27	78,253
60-64	1	3	2	1	4	1	1	0	0	13	91,915
65 & Up	0	1	3	2	2	0	0	0	0	8	81,835
<b>Total</b>	<b>104</b>	<b>53</b>	<b>67</b>	<b>39</b>	<b>14</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>280</b>	
				Average Age	=	42.0					
				Average Service	=	8.9					
				Average Annual Salary	=	\$70,669					

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	10	0	0	0	0	0	0	0	0	10	51,680
25-29	182	37	0	0	0	0	0	0	0	219	52,510
30-34	172	437	55	0	0	0	0	0	0	664	58,509
35-39	57	159	271	11	0	0	0	0	0	498	65,036
40-44	34	49	75	44	3	0	0	0	0	205	69,753
45-49	22	15	31	26	9	0	0	0	0	103	71,442
50-54	15	18	23	8	9	6	0	0	0	79	71,416
55-59	12	11	37	25	9	6	0	0	0	100	74,259
60-64	2	7	16	13	8	1	4	1	1	53	81,971
65 & Up	1	4	2	4	2	1	0	1	1	16	79,519
<b>Total</b>	<b>507</b>	<b>737</b>	<b>510</b>	<b>131</b>	<b>40</b>	<b>14</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>1,947</b>	
				Average Age	=	37.7					
				Average Service	=	8.6					
				Average Annual Salary	=	\$63,480					

\* Excludes 10,998 terminated noncontributory records



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

**SECTION V - CENSUS DATA**

(continued)

**H. Age and Benefit Profiles**

**Terminated Vested Participants**

Age	Male		Female		Total	
	Number	Annual Pension	Number	Annual Pension	Number	Annual Pension
Under 35	0	\$0	0	\$0	0	\$0
35-39	0	\$0	3	\$32,376	3	32,376
40-44	4	\$94,272	12	\$160,884	16	255,156
45-49	3	\$49,320	19	\$249,840	22	299,160
50-54	11	\$213,564	38	\$540,168	49	753,732
55-59	17	\$245,868	56	\$783,192	73	1,029,060
60 & Up	<u>5</u>	<u>\$73,188</u>	<u>42</u>	<u>\$708,528</u>	<u>47</u>	<u>781,716</u>
Total	40	\$676,212	170	\$2,474,988	210	\$3,151,200
Average Age		=	54.4			
Average Annual Pension		=	\$15,006			

**Service Retired Participants**

Age	Male		Female		Total	
	Number	Annual Pension	Number	Annual Pension	Number	Annual Pension
Under 50	2	\$66,429	18	\$365,934	20	\$432,363
50-54	63	2,652,413	227	7,613,738	290	10,266,151
55-59	584	28,883,498	1,995	91,296,771	2,579	120,180,269
60-64	3,002	148,201,219	9,996	434,127,228	12,998	582,328,447
65-69	7,975	391,730,533	18,649	786,669,114	26,624	1,178,399,647
70-74	6,555	306,575,782	12,941	509,666,973	19,496	816,242,755
75-79	3,805	172,565,777	7,149	263,242,270	10,954	435,808,047
80-84	2,895	124,876,335	4,993	167,413,258	7,888	292,289,593
85-89	1,747	67,158,906	3,523	100,168,331	5,270	167,327,237
90-94	571	17,774,350	1,641	37,107,546	2,212	54,881,896
95-99	100	2,601,925	554	10,827,621	654	13,429,546
100 & Up	<u>9</u>	<u>187,808</u>	<u>98</u>	<u>1,726,967</u>	<u>107</u>	<u>1,914,775</u>
Total	27,308	\$1,263,274,975	61,784	\$2,410,225,751	89,092	\$3,673,500,726
Average Age		=	71.7			
Average Annual Pension		=	\$41,233			

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

**SECTION V - 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	\$25,338	2	\$51,112	3	\$76,450
35-39	4	119,459	20	483,625	24	603,084
40-44	11	297,325	33	863,047	44	1,160,372
45-49	22	632,981	78	2,273,369	100	2,906,350
50-54	29	887,911	154	4,586,728	183	5,474,639
55-59	69	2,079,795	302	9,143,976	371	11,223,771
60-64	125	3,657,411	481	14,506,052	606	18,163,463
65-69	184	5,554,646	582	17,065,945	766	22,620,591
70-74	132	3,757,575	457	12,690,871	589	16,448,446
75-79	77	2,010,210	243	6,647,766	320	8,657,976
80-84	38	836,142	140	3,274,579	178	4,110,721
85 & Up	<u>23</u>	<u>390,733</u>	<u>91</u>	<u>1,662,299</u>	<u>114</u>	<u>2,053,032</u>
<b>Total</b>	715	\$20,249,526	2,583	\$73,249,369	3,298	\$93,498,895
		Average Age	=	66.3		
		Average Annual Pension	=	\$28,350		

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

**SECTION V - 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	4	\$50,689	4	\$58,103	8	\$108,792
25-29	7	102,871	3	45,428	10	148,299
30-34	8	52,572	14	118,194	22	170,766
35-39	5	51,576	13	202,394	18	253,970
40-44	12	214,108	17	419,905	29	634,013
45-49	19	395,105	25	491,151	44	886,256
50-54	37	751,013	45	980,444	82	1,731,457
55-59	42	966,470	110	2,868,988	152	3,835,458
60-64	160	3,920,805	218	5,891,625	378	9,812,430
65-69	297	7,452,707	523	16,123,207	820	23,575,914
70-74	321	7,534,414	626	18,724,001	947	26,258,415
75-79	229	5,479,209	709	20,749,591	938	26,228,800
80-84	184	4,067,221	762	21,593,774	946	25,660,995
85-89	156	2,913,718	692	17,164,449	848	20,078,167
90-94	75	1,151,695	345	6,476,607	420	7,628,302
95-99	20	261,100	132	2,341,179	152	2,602,279
100 & Up	4	<u>25,899</u>	<u>22</u>	<u>316,311</u>	<u>26</u>	<u>342,210</u>
Total	1,580	35,391,172	4,260	114,565,351	5,840	149,956,523
		Average Age	=	76.1		
		Average Annual Pension	=	\$25,677		

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

**SECTION VI - ACTUARIAL ASSUMPTIONS AND METHODS**  
**AS OF JUNE 30, 2015**

**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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**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**  
**SECTION VI - ACTUARIAL ASSUMPTIONS AND METHODS**  
**AS OF JUNE 30, 2015**

**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>&lt;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 VI - ACTUARIAL ASSUMPTIONS AND METHODS**  
**AS OF JUNE 30, 2015**

**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 VI - ACTUARIAL ASSUMPTIONS AND METHODS**  
**AS OF JUNE 30, 2015**

**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</u>		<u>Attainment of Age 55 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	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 VI - ACTUARIAL ASSUMPTIONS AND METHODS**  
**AS OF JUNE 30, 2015**

**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 VI - ACTUARIAL ASSUMPTIONS AND METHODS**  
**AS OF JUNE 30, 2015**

**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 Less than 25 Years of Service</u>			<u>Attainment of Age 62 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>	<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 VI - ACTUARIAL ASSUMPTIONS AND METHODS**  
**AS OF JUNE 30, 2015**

**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 VI - ACTUARIAL ASSUMPTIONS AND METHODS**  
**AS OF JUNE 30, 2015**

**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 these 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 VI - ACTUARIAL ASSUMPTIONS AND METHODS**  
**AS OF JUNE 30, 2015**

**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 VI - ACTUARIAL ASSUMPTIONS AND METHODS AS OF JUNE 30, 2015

Non-contributory Active Members: 25% 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.

Member Annuity: Valuation mortality and interest are assumed to be the basis for determining the member annuity in future years.

#### Special Data Adjustments:

- Determination of employee type is based on Class Code as provided by the Division.
- For non-contributory members where no salary was provided, no date of birth was provided, or ASF was negative a liability equal to the ASF was held.
- For terminated non-contributory members, the liability is based on an estimated benefit using last known salary.
- 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.

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## TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

### SECTION VI - ACTUARIAL ASSUMPTIONS AND METHODS AS OF JUNE 30, 2015

#### **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.

#### **C. Asset Valuation Method**

The actuarial value is equal's the prior year' actuarial value increased with interest and cash flows plus 20% of the difference between it and the market value of assets. Cash flows are based on an accrual accounting approach. This method is prescribed by statute.

#### **D. Changes in Actuarial Assumptions**

There are no changes in assumptions since the last valuation. Procedures regarding the treatment of noncontributory records that were terminated by the Division since the prior valuation have been modified to appropriately value these records.

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Section VI – D

## TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

### SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

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, 2015, the contribution rate is 7.06%. For members hired on or after July 1, 2007, compensation for contributions is capped at the Social Security Taxable Wage Base (\$118,500 for 2015). 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 VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

#### 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 VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

#### 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 25<sup>th</sup> 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 1/64<sup>th</sup> of Final Compensation for each year of service for Class A members, 1/55<sup>th</sup> of Final Compensation for each year of service for Class B, D and E members and 1/60<sup>th</sup> 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 VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS**  
**AS OF JUNE 30, 2015**

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 VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS**  
**AS OF JUNE 30, 2015**

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 VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS**  
**AS OF JUNE 30, 2015**

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

**SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS**  
**AS OF JUNE 30, 2015**

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 VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS**  
**AS OF JUNE 30, 2015**

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 VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

#### 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 \$210,000 and the 401(a)(17) compensation cap is \$265,000 for 2015 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 VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2015

#### 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.

This work product was prepared solely for the State of NJ and may not be appropriate for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.



**TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY**  
**SECTION VII – SUMMARY OF PRINCIPAL PLAN PROVISIONS**  
**AS OF JUNE 30, 2015**

16. Changes in Plan Provisions Since Prior Valuation

None.

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Section VII

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

**APPENDIX I - EARLY RETIREMENT INCENTIVE CONTRIBUTION SCHEDULE**

<u>Group Number</u>	<u>Location Name</u>	<u>ERI 1 Present Value June 30, 2015</u>	<u>ERI 1 Fiscal Year 2017 Payment</u>	<u>ERI 2 Present Value June 30, 2015</u>	<u>ERI 2 Fiscal Year 2017 Payment</u>
3	981 NJ INST OF TECH	\$119,022	\$25,185	\$385,745	\$33,191
6	911 ALLAMUCHY BD OF ED	N/A	N/A	99,088	10,302
6	300 ASBURY PARK BD OF ED	1,933,087	409,039	N/A	N/A
6	969 ATLANTIC CO VOCATIONAL SCHOOLS	116,291	24,607	N/A	N/A
6	4015 BERLIN TWP BD OF ED	110,705	23,425	24,706	N/A
6	412 BOONTON TWP BD OF ED	75,393	15,953	N/A	N/A
6	774 BYRAM TWP BD OF ED	132,600	28,058	N/A	N/A
6	4017 CHESILHURST BORO BD OF ED	16,834	3,562	3,757	N/A
6	4018 CLEMENTON BD OF ED	62,628	13,252	13,976	N/A
6	121 EAST WINDSOR REG SCHOOL DIST	N/A	N/A	30,817	N/A
6	753 GREEN BROOK BD OF ED	176,102	37,263	N/A	N/A
6	8082 GUTTENBERG BORO BD OF ED	94,717	20,042	N/A	N/A
6	956 HUDSON CO VOCATIONAL SCHOOL	N/A	N/A	665,619	69,203
6	6040 IRVINGTON TWP BD OF ED	N/A	N/A	491,757	N/A
6	521 LAKEHURST BORO BD OF ED	49,485	10,471	N/A	N/A
6	645 LAKELAND REGIONAL	444,889	94,138	N/A	N/A
6	111 MERCER CO SPECIAL SERVICES	219,968	46,545	N/A	N/A
6	346 MONMOUTH BEACH BD OF ED	60,317	12,763	N/A	N/A
6	987 MONMOUTH CO VOCATIONAL SCHOOLS	355,909	75,310	N/A	N/A
6	4069 PINE HILL BORO BD OF ED	\$160,119	\$33,881	\$21,253	N/A
6	5071 SHILOH TOWNSHIP	6,578	1,392	N/A	N/A
6	8070 WEST NEW YORK TWP BD OF ED	N/A	N/A	\$2,337,300	\$243,004
6	934 WHITE TWP BD OF ED	\$124,396	\$26,322	N/A	N/A
	<b>Grand total for Local Employers</b>	<b>\$4,259,040</b>	<b>\$901,208</b>	<b>\$4,074,018</b>	<b>\$355,700</b>

**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 <u>June 30, 2015</u>	Fiscal Year <u>2017 Payment</u>	Present Value <u>June 30, 2015</u>	Fiscal Year <u>2017 Payment</u>
2 90400	EDUCATION DEPARTMENT	\$19,037,138	\$1,763,206	N/A	N/A
2 90416	MARIE KATZENBACK SCH FOR DEAF	\$3,387,778	\$313,774	N/A	N/A
2 90207	OFFICE OF ADM LAW	\$801,560	\$74,240	N/A	N/A
3 981	NJ INST OF TECH	\$794,846	\$73,618	N/A	N/A
4 90411	NEW JERSEY UNIVERSITY	\$3,952,522	\$366,080	N/A	N/A
4 90412	KEAN UNIVERSITY	\$2,067,387	\$191,480	N/A	N/A
4 90414	MONTCLAIR STATE UNIVERSITY	\$1,635,523	\$151,481	N/A	N/A
4 90410	ROWAN UNIVERSITY	\$670,436	\$62,095	N/A	N/A
4 90415	THE COLLEGE OF NEW JERSEY	\$420,371	\$38,934	N/A	N/A
4 90413	WILLIAM PATERSON UNIVERSITY	\$763,358	\$70,702	N/A	N/A
6 8083	HARRISON TWP BD OF ED	N/A	N/A	\$940,667	\$199,044
6 956	HUDSON CO VOCATIONAL SCHOOL	N/A	N/A	\$741,478	\$156,896
6 620	PASSAIC BD OF ED	N/A	N/A	\$11,609,626	\$2,456,584
<b>Grand total for State Locations and Local Employers</b>		<b>\$33,530,919</b>	<b>\$3,105,610</b>	<b>\$13,291,771</b>	<b>\$2,812,524</b>

<u>Group Number</u>	<u>Location Name</u>	ERI 5	ERI 5
		Present Value <u>June 30, 2015</u>	Fiscal Year <u>2017 Payment</u>
2 90400	EDUCATION DEPARTMENT	\$4,689,757	\$434,362
2 90416	MARIE KATZENBACK SCH FOR DEAF	\$1,371,952	\$127,069
<b>Grand total for State Locations</b>		<b>\$6,061,709</b>	<b>\$561,431</b>