

# State Teachers' Retirement System of Vermont

Actuarial Valuation Report as of June 30, 2015

October 2015





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October 26, 2015

Board of Trustees  
State Teachers' Retirement System of Vermont  
Montpelier, Vermont 05609

Dear Board Members:

Section 1942, subsection (n), of Title 16, Chapter 55, Vermont Statutes Annotated, relating to the State Teachers' Retirement System of Vermont, provides in part that the actuary shall make annual valuations of the system.

The sixty-eighth actuarial valuation of the system, prepared as of June 30, 2015, has now been completed and the results are presented in this report, together with our recommendations in regard to contributions payable by the State. The Table of Contents, which immediately follows, outlines the material contained in this report.

On the basis of the current valuation, we recommend that a normal contribution of 1.39% of covered compensation and a payment of \$70,792,693 towards the liquidation of the unfunded accrued liability be made. Base on the reported payroll, the total contribution amounts to \$78,574,008 for the year beginning July 1, 2015. Schedule G provides the estimated contributions for the following two fiscal years.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

I am a Fellow of the Society of Actuaries and a Member of the American Academy of Actuaries. I meet the Qualification Standards of the Academy to render the actuarial opinions contained herein. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and I am available to answer questions concerning it.

Respectfully submitted,

David L. Driscoll, FSA, EA, MAAA  
Principal and Consulting Actuary

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## Section I – Summary of Principal Results

For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below:

	June 30, 2015	June 30, 2014
Active members		
Vested	7,295	7,720
Non-vested	<u>2,290</u>	<u>2,232</u>
Total	9,585	9,952
Compensation	\$ 557,708,310	\$ 567,073,601
Average age	46.23 years	46.53 years
Average service	12.88 years	13.15 years
Average compensation	\$ 58,186	\$ 56,981
Retired members and beneficiaries		
Number	8,484	8,086
Annual retirement allowances	\$ 160,847,936	\$ 147,409,221
Inactive members	2,260	2,416
Terminated vested members	1,163	740
Adjusted assets for valuation	\$ 1,662,345,707	\$ 1,610,285,523
Unfunded actuarial accrued liability	\$ 1,175,029,030	\$ 1,076,763,810
Annual actuarial accrued liability contribution	\$ 70,792,693	\$ 62,589,336
Normal contribution rate	1.39%	1.70%

Comments on the results of the valuation are given in Section IV and further discussion of the contribution levels is provided in Section V.

Schedule B outlines the full set of actuarial assumptions and methods employed in the current valuation. There have been changes in the assumptions since last valuation. The assumptions now in use are based on the new experience study covering the period from July 1, 2010, through June 30, 2014. A summary of the changes to the assumptions is included in Schedule B.

Schedule C outlines the benefit provisions taken into account in the valuation. There have been no changes in benefit provisions since the last valuation.

An analysis of the actuarial experience of the System during the past fiscal year is presented in Section IV of this report. Some aspects of this experience are presented in graphs included in Section VI of this report.

Schedule F shows a graph of projected benefit payments over the next ten years.

Schedule G shows projected state contributions to the System for the two following fiscal years.

## Section II – Member Data

Member data were furnished by the Retirement Division of the State Treasurer's Office. Buck did not audit the data, although they were reviewed for reasonableness and consistency with prior data. The results of the valuation are dependent upon the accuracy of the data.

Schedule D presents tables that summarize active members, by age and service and service pensioners, disability pensioners and beneficiaries by annual benefit levels.

The following tables provide a summary of membership of the system:

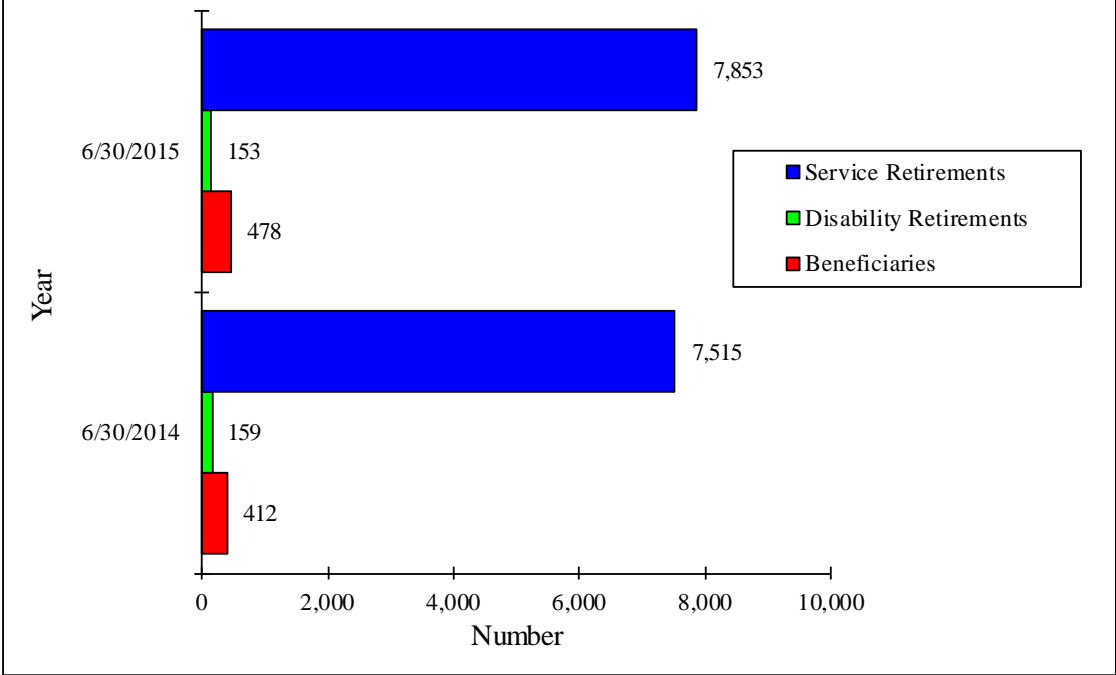
### Number and Annual Allowances of Retired Members and Beneficiaries

Group	Number	Annual Allowances
Service Retirements	7,853	\$ 152,800,125
Disability Retirements	153	\$ 2,292,158
Beneficiaries of Deceased Members	<u>478</u>	<u>\$ 5,755,653</u>
Total	8,484	\$ 160,847,936

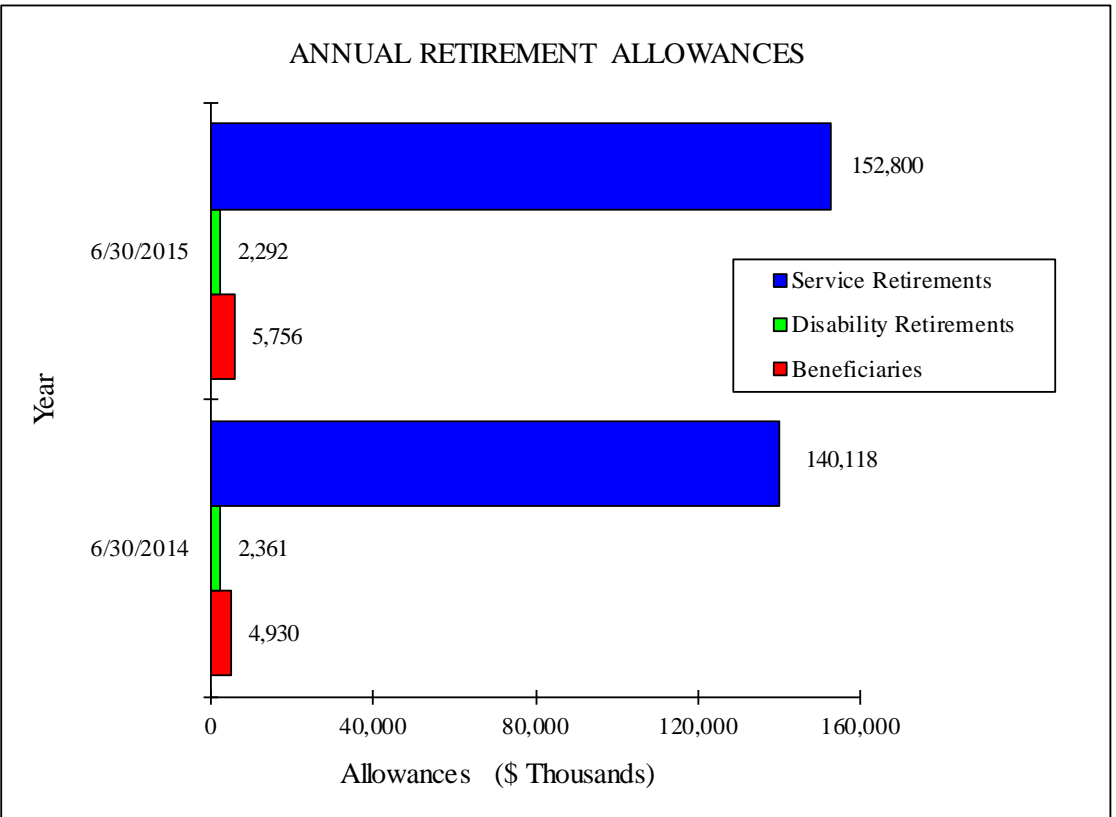
### Number and Annual Compensation of Active Members

Group	Number	Annual Compensation
Group A	9	\$ 650,192
Group C	9,576	\$ 557,058,118
Total	9,585	\$ 557,708,310

### NUMBER OF RETIRED MEMBERS AND BENEFICIARIES



### ANNUAL RETIREMENT ALLOWANCES



## Section III – Assets

The asset values and cash flow amounts shown below were taken from reports supplied by the Office of the State Treasurer. The information contained in the reports has not yet been audited but is believed to be sufficiently accurate for purposes of this valuation.

For actuarial purposes, the assets are valued using a method that reflects the market value of assets through gradual recognition of return on assets that differ from the assumed rate of return, provided the adjusted asset value is within 20% of the market value. The following shows the development of the valuation assets.

Assets for valuation purposes, June 30, 2014		\$ 1,610,285,523
Cash flow during year (net of investment income)		
Contributions paid	\$ 108,603,224	
Benefit payouts	(150,732,845)	
Expenses	(8,874,471)	
Net		(51,004,092)
Expected investment income (6.25%)		105,371,592
Preliminary asset value		\$ 1,664,653,023
Market value, June 30, 2015	\$ 1,653,116,441	
Preliminary asset value	1,664,653,023	
Unrecognized appreciation	(11,536,582)	
Adjustment	X 20%	\$ (2,307,316)
Assets for valuation purposes, June 30, 2015		\$ 1,662,345,707

The assets for valuation purposes are 100.6% of market value.

The investment rate of return for the year ending June 30, 2015 is 6.50%, based on the adjusted asset value.

## Section IV – Comments on Valuation

Schedule A of the report contains the valuation balance sheet, which shows the present and prospective assets and liabilities of the system as of June 30, 2015.

The adjusted assets of the system amount to \$1,662,345,707.

The actuarial accrued liability for current retired members terminated vested members and beneficiaries amounts to \$1,774,963,220, and the actuarial accrued liability for current active and inactive members amounts to \$1,062,411,517, for a total actuarial accrued liability of \$2,837,374,737. Therefore, after subtracting assets of \$1,662,345,707, the unfunded actuarial accrued liability is \$1,175,029,030.

The State's contributions consist of a normal contribution and an accrued liability contribution. The accrued liability contribution represents the amount necessary to liquidate the unfunded accrued liability as of June 30, 2015, over a 23-year period from that date in installments that increase by 5% per year. Normal contributions represent the contributions needed to fund the benefits earned during the year. Under the Entry Age Normal funding method, the normal contribution as of June 30, 2015, is \$7,781,315, or 1.39% of members' compensation.

The expected unfunded actuarial accrued liability as of June 30, 2015, may be compared to the actual actuarial accrued liability to determine the gain or loss during the year. The following table presents a summary of the approximate effects of major experience factors affecting the system's unfunded actuarial accrued liability since June 30, 2014.

The valuation reflected Act No. 179 of 2014 that, effective July 1, 2014, teachers who are have less than 5 years of service as of July 1, 2014 have their pension contribution increase from 5% to 6%.

1. Unfunded liability, June 30, 2014	\$1,076,763,810
2. Normal Cost	36,629,593
3. Contributions	(108,603,224)
4. Interest on 1, 2 and 3	66,244,671
5. Changes in Actuarial Assumptions	42,697,674
6. Changes in System Provisions	0
7. Restart of Select and Ultimate Interest Rate Set	52,268,706
8. Expected Unfunded Liability, June 30, 2014	1,166,001,230
9. Accrued Liability, June 30, 2014	2,837,374,737
10. Actuarial Value of Assets, June 30, 2014	1,662,345,707
11. Actual Unfunded Liability, 9. - 10.	1,175,029,030
12. Total gain/(loss), 8. - 11	(9,027,800)



### Sources of Gain/(Loss)

Investment experience	3,991,153
Expenses (investments)	(6,517,212)
Expenses (other than investments)	(2,630,383)
Salary experience	8,024
COLA experience	8,375,695
New members and rehires	(1,707,227)
Mortality among retirees, beneficiaries and terminated vested participants	12,176,395
Mortality among active participants	487,579
Retirement experience	(20,398,024)
Termination experience	(19,142,010)
Disability experience	83,400
<u>Other (data corrections, purchased service, etc.)</u>	<u>16,244,810</u>
Total	(9,027,800)

# Section V – Contributions Payable under the System

Section 1942, Subsection (n), of Title 16, Chapter 55, Vermont Statutes Annotated, relating to the State Teachers' Retirement System of Vermont, indicates that the actuary shall submit to the Board of Trustees his recommendation as to the contributions payable by the State based on annual valuations of the assets and liabilities of the system.

On the basis of the results of the current valuation, the actuary recommends that the Board of Trustees certify the following contributions for the fiscal year commencing July 1, 2015:

Normal contribution	\$	7,781,315
Accrued liability contribution		<u>70,792,693</u>
Total	\$	78,574,008

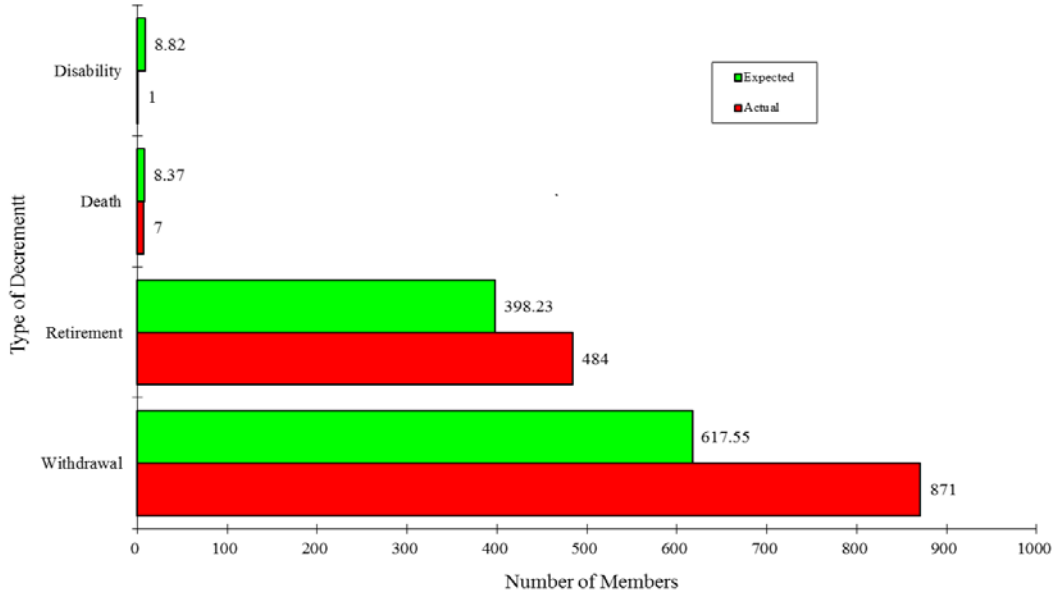
## Section VI - Experience

Records are maintained whereby the actual experience of the system may be compared with the expected experience based on the tables adopted by the Board of Trustees. This experience is reviewed periodically, in accordance with the applicable statutes, and any change suggested by the cumulative experience of the system will be recommended to the Board.

The active service and salary experience for the latest year is summarized in graphs on the following pages.

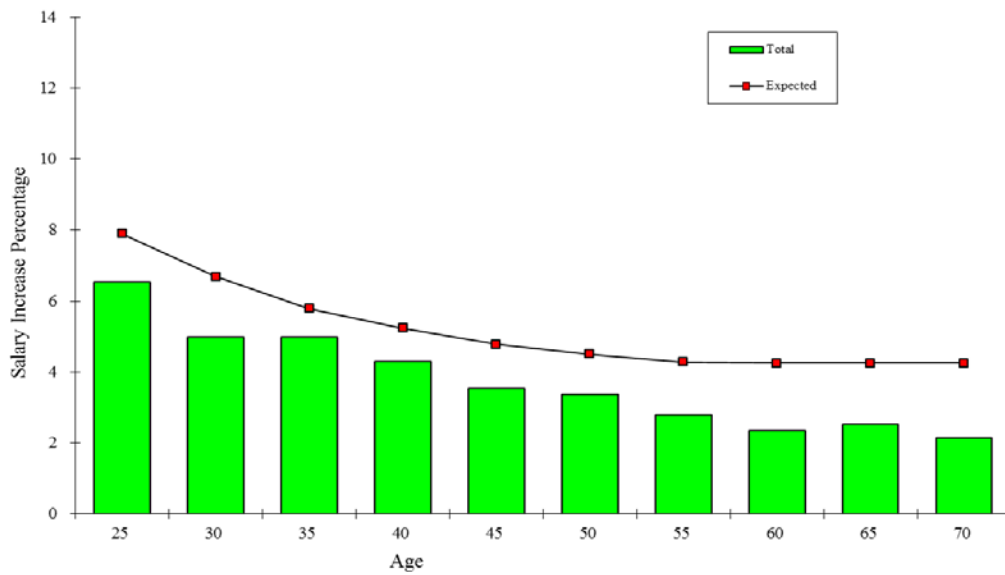
### ACTIVE SERVICE EXPERIENCE

July 1, 2014  
through June 30, 2015



### GROUP C SALARY EXPERIENCE

JULY 1, 2014 THROUGH JUNE 30, 2015



## Section VII - Accounting Information

The Governmental Accounting Standards Board (GASB) Statement No. 25 (GASB 25) is amended and replaced with the Governmental Accounting Standards Board (GASB) Statement No. 67 (GASB 67) effective for the fiscal year ending June 30, 2014 and a separate actuarial valuation report for the GASB 67 was prepared as of June 30, 2014.

# Schedule A: Balance Sheet Showing the Assets and Liabilities

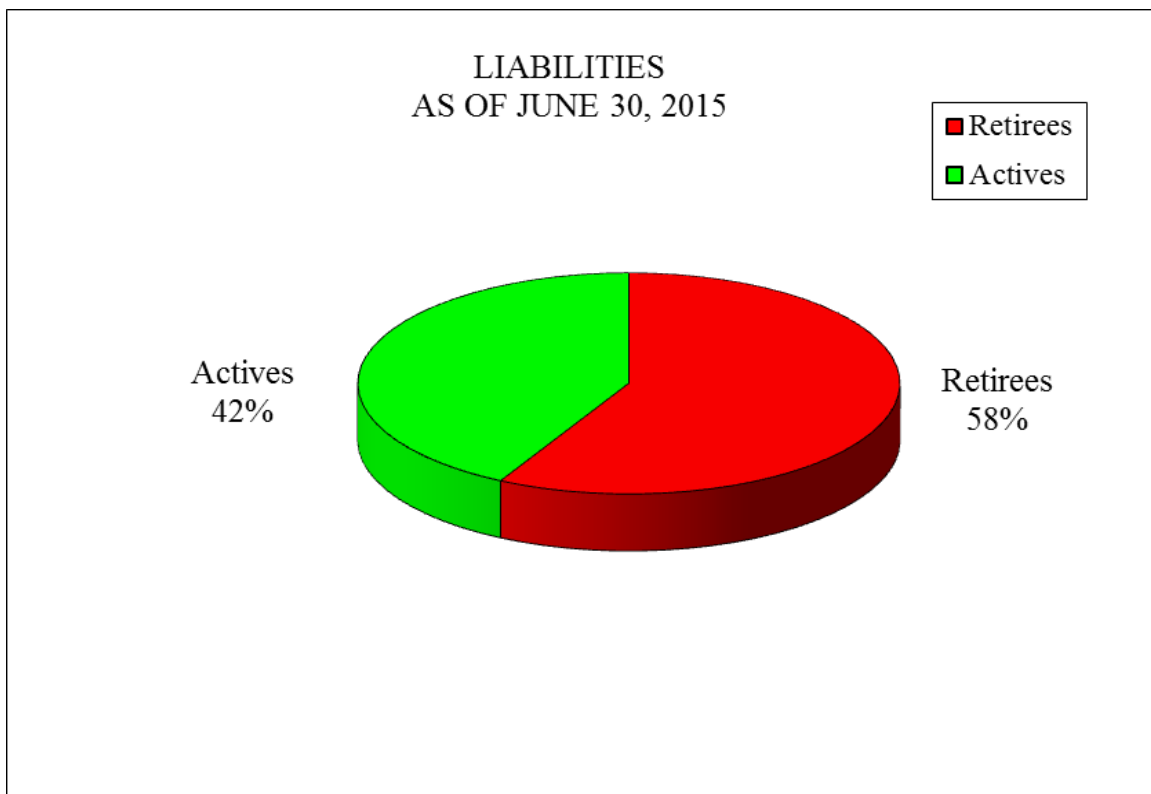
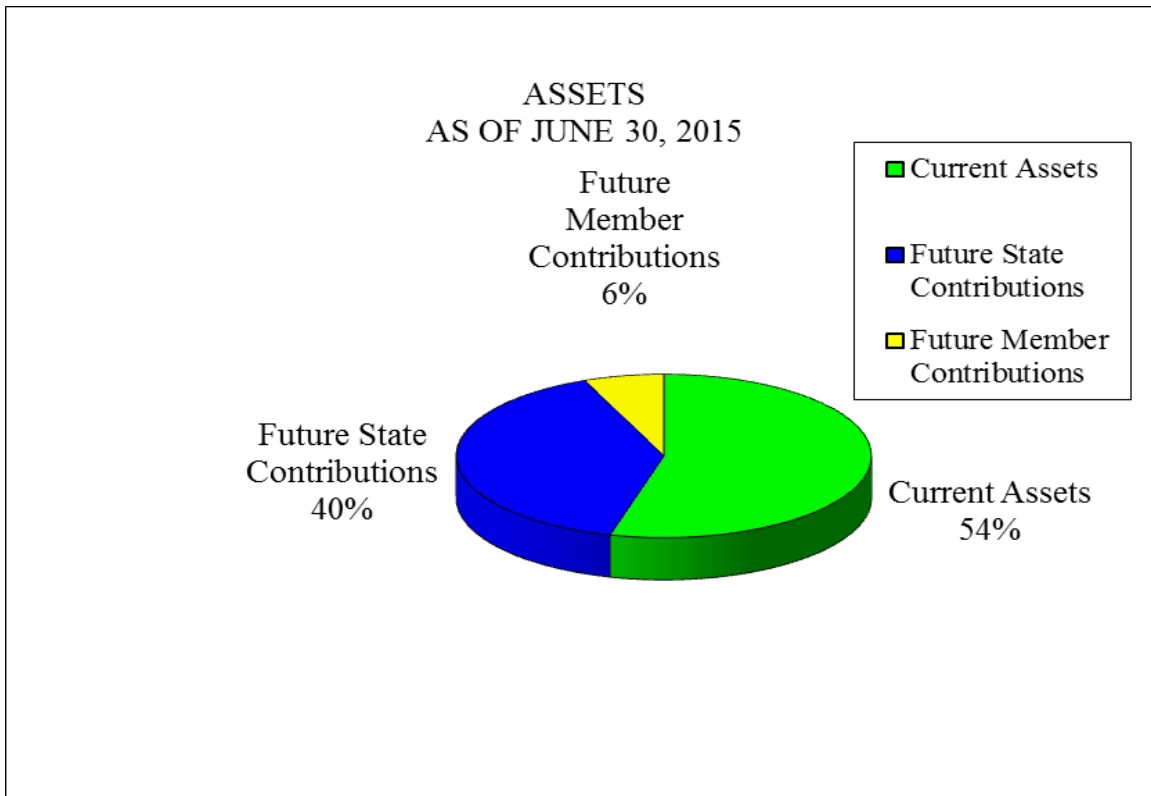
## Assets

Adjusted assets of the system		\$ 1,662,345,707
Present value of prospective contributions		
Members	\$ 191,622,773	
State		
Accrued liability contributions	1,175,029,030	
Normal contributions	<u>40,060,017</u>	
Total prospective contributions		<u>\$ 1,406,711,820</u>
Total assets		<u>\$ 3,069,057,527</u>

## Liabilities

Actuarial present value of benefits payable on account of present retired members, terminated vested members and beneficiaries		\$ 1,774,963,220
Actuarial present value of benefits expected to become payable on account of active and inactive members		<u>\$ 1,294,094,307</u>
Total liabilities		<u>\$ 3,069,057,527</u>

## Schedule A: Balance Sheet Showing the Assets and Liabilities (continued)



## Schedule B: Outline of Actuarial Assumptions and Methods

Please note: The actuarial assumptions used in this valuation were reviewed and either affirmed for continued use or reset on the basis of an experience study covering the period from July 1, 2010 through June 30, 2014. The findings and recommendations of the experience study are summarized in a separate report.

### Interest Rate

7.95%.

### Separations before Normal Retirement

Representative values of the assumed annual rates of withdrawal, vested retirement, early retirement, disability and death are as follows:

Current Year:

Age	Withdrawal and Vested Retirement		Disability		Death	
	Males	Females	Males	Females	Males	Females
25	21.00%	20.00%	.005%	.008%	.04%	.02%
30	12.60	14.00	.008	.008	.04	.03
35	8.40	11.30	.010	.008	.08	.05
40	6.50	9.03	.015	.010	.11	.07
45	5.80	6.30	.026	.023	.15	.11
50	5.40	5.25	.067	.070	.21	.17
55	5.40	5.04	.044	.048	.30	.25
59	5.40	5.04	.147	.071	.44	.36
60	5.40	5.04	.147	.084	.49	.39
61	5.40	5.04	.183	.101	.54	.43

Age	Reduced Early Retirement		Full Early Retirement
	Group A	Group C	Grandfathered (Group C)
50	N/A	N/A	N/A
55	6.13%	6.13%	6.13%
56	6.25	6.25	6.25
57	6.25	6.25	6.25
58	6.25	6.25	6.25
59	9.38	9.38	9.38
60	12.50	18.75	18.75
61	18.75	18.75	18.75



## Schedule B: Outline of Actuarial Assumptions and Methods (continued)

Prior Year:

Age	Withdrawal and Vested Retirement		Disability				Death	
			Current Valuation		Prior Valuation			
	Males	Females	Males	Females	Males	Females	Males	Females
25	20.00%	20.00%	.010%	.015%	.010%	.015%	.02%	.02%
30	12.00	14.00	.015	.015	.015	.015	.02	.02
35	8.00	11.30	.020	.015	.020	.015	.02	.02
40	6.50	8.60	.030	.020	.030	.020	.05	.02
45	5.80	6.00	.053	.045	.053	.045	.05	.04
50	5.40	5.00	.067	.070	.180	.180	.07	.06
55	5.40	4.84	.088	.095	.440	.390	.07	.10
59	5.40	4.84	.234	.142	1.170	.710	.09	.14
60	5.40	4.84	.294	.168	1.470	.840	.09	.15
61	5.40	4.84	.366	.202	1.830	1.010	.297	.17

Age	Reduced Early Retirement		Full Early Retirement	
	Grandfathered	Non-Grandfathered	Grandfathered	Non-Grandfathered
50	N/A	N/A	40.00%	25.00%
55	8.75%	8.75%	20.00	20.00
56	6.25	6.25	10.00	10.00
57	6.25	6.25	10.00	10.00
58	6.25	6.25	10.00	10.00
59	6.25	6.25	10.00	10.00
60	12.50	12.50	30.00	17.00
61	12.50	12.50	17.00	17.00

## Schedule B: Outline of Actuarial Assumptions and Methods (continued)

### Service Retirements

Occur between ages 62 (60 for Group A) and 70. The assumed rates of service retirement are as follows:

Current Year:

Age	Annual Rate of Retirement		
	Group A	Group C	
		Non-Grandfathered	Grandfathered
60	12.5%	17.0%	NA
61	18.8	17.0	NA
62	25.0	20.0	20.0%
63	22.0	22.0	22.0
64	22.0	22.0	22.0
65	33.0	33.0	33.0
66	33.0	33.0	33.0
67	33.0	33.0	33.0
68	22.0	22.0	22.0
69	33.0	33.0	33.0
70	100.0	100.0	100.0

Non Grandfathered participants have a 25% probability to go into service retirement if they are first eligible for service retirement on or before age 62 and 27.5% probability to go into service retirement if they are first eligible for service retirement between age 62 and age 65.

Group C, Grandfathered participants are assumed to retire at the following rates upon completion of 30 years of creditable service.

Age	Annual Rate of Retirement
49	0.0%
50	40.0
51	20.0
52	20.0
53	20.0
54	20.0
55	8.75
56	6.25
57	6.25
58	10.0
59	10.0
60	25.0
61	17.0

Group A participants are assumed to retire at the following rates upon completion of 30 years of creditable service.

Age	Annual Rate of Retirement
49	0.0%
50	40.0
51	20.0
52	20.0
53	20.0
54	20.0
55	20.0
56	10.0
57	10.0
58	10.0
59	10.0
60	30.0
61	25.5

Prior Year:

Age	Annual Rate of Retirement	
	Grandfathered	Non-Grandfathered
62	25.0%	20.0%
63	20.0	20.0
64	20.0	20.0
65	30.0	30.0
66	30.0	30.0
67	30.0	30.0
68	20.0	20.0
69	30.0	30.0
70	100.0	100.00

### Salary Increases

Representative values of the assumed annual rates of future salary increase are as follows:

Current Year:

Age	Annual Rate of Salary Increase	Age	Annual Rate of Salary Increase
25	8.15%	50	4.46%
30	6.84%	55	4.22%
35	5.97%	60	4.12%
40	5.29%	65	4.12%
45	4.80%		

## Schedule B: Outline of Actuarial Assumptions and Methods (continued)

Prior Year:

Age	Annual Rate of Salary Increase	Age	Annual Rate of Salary Increase
25	8.40%	50	4.60%
30	7.05%	55	4.35%
35	6.15%	60	4.25%
40	5.45%	64	4.25%
45	4.95%		

### Deaths after Retirement

Current Year:

The RP-2000 Mortality Tables Projected to 2029 using Scale BB for retirees, terminated vested members and beneficiaries, the RP-2000 Disabled Life Table with projection to 2020 using Scale AA for disabled retirees. The tables used contain a margin to reflect anticipated mortality improvement after the valuation date.

Prior Year:

The 1995 Buck Mortality Tables set back three years for males and one year for females, for retirees, terminated vested members and beneficiaries; the RP-2000 Disabled Life Table with projection to 2016 using Scale AA for disabled retirees. The tables used contain a margin to reflect anticipated mortality improvement after the valuation date.

### Inflation

The separately stated assumptions for investment return, salary increases and cost of living adjustments are consistent with an expected annual inflation rate of 3.00% to 3.25% per year.

### Future Expenses

No provision made.

### Spouse's Age

Husbands are assumed to be three years older than their wives.

## **Schedule B: Outline of Actuarial Assumptions and Methods (continued)**

### **Percent Married**

85% of the male members and 35% of the female members are assumed to be married.

### **Cost-of-living Adjustments**

Assumed to occur on January 1 following one year of retirement at the rate of 3% per annum for Group A members and 1.5% per annum for Group C member (beginning at age 62 for Group C members who elect reduced early retirement).

### **Inactive Members**

A liability equal to 350% of accumulated contributions of inactive members is included in the valuation liabilities.

### **Actuarial Cost Method**

The individual entry age normal actuarial cost method was used. For actuarial valuations prior to June 30, 2006, the entry age normal method with frozen initial liability was used.

### **Asset Valuation Method**

The amount of the assets for valuation purposes equals the preliminary asset value plus 20% of the difference between the market and preliminary asset values. The preliminary asset value is equal to the previous year's asset value (for valuation purposes) adjusted for contributions less benefit payments and expenses and expected investment income. If necessary, a further adjustment is made to ensure that the valuation assets are within 20% of the market value.

### **Member Data**

450 members terminated on June 30, 2015 and retired on July 1, 2015 were included with a valuation status as members receiving benefits. 254 members who were active on June 30, 2015 and terminated on July 1, 2015, were included with a valuation status as inactive. For those terminated members with at least five years of service, the system will automatically vest them six years after their termination if they do not withdraw.

### **Health and Medical Benefits for Retirees**

Not included in this valuation.

# Schedule C: Summary of Principal Plan Provisions

## Effective Date

July 1, 1947.

## Creditable Service

Service as a member plus purchased service.

## Average Final Compensation (AFC)

Average annual compensation during highest 3 successive years.

## Membership

Immediate upon employment.

## Grandfathered status

Group C members who were within five years of normal retirement eligibility as defined prior to July 1, 2010, are "grandfathered"

## Service Retirement Allowance

### Eligibility

- |         |  |
|---------|--|
| Group A | Age 60 or 30 years of creditable service.                            |
| Group C | Grandfathered      Age 62 or 30 years of creditable service for.     |
|         | Non-Grandfathered    Age 65 or age plus creditable service equal 90. |

### Amount of Allowance

- |         |   |
|---------|---|
| Group A | Member annuity based on accumulated contributions plus a pension which, with member annuity, equals 1/60 of AFC times creditable service.   |
| Group C | Grandfathered      Member annuity based on accumulated contributions plus a pension which, with member annuity, equals 1/80 of AFC times creditable service prior to July 1, 1990 plus 1/60 of AFC times creditable service after July 1, 1990.   |
|         | Non-Grandfathered    Member annuity based on accumulated contributions plus a pension which, with member annuity, equals 1/80 of AFC times creditable service prior to July 1, 1990 plus 1/60 of AFC times creditable service after July 1, 1990 up to 20 years of service, plus 1/50 of AFC for years of service after 20. |

If member already has 20 or more years of service on June 30, 2010, the 1/50 will be applied to all service accrued after July 1, 2010.

### Minimum

- |         |  |
|---------|--|
| Group A | \$6,600 after 30 years of creditable service (pro-rata portion if less than 30 years). |
| Group C | N/A  |

### Maximum

- |         |   |
|---------|---|
| Group A | None  |
| Group C | Grandfathered      50% of AFC up to June 30, 2010. May continue to accrue up to 53.34% of AFC with service earned after July 1, 2010. |
|         | Non-Grandfathered    60% of AFC.  |

## Schedule C: Summary of Principal Plan Provisions (continued)

### Early Retirement Allowance

#### Eligibility

- Group A Age 55.
- Group C Age 55 and 5 years of creditable service.

#### Amount of Allowance

- Group A Actuarial equivalent of service allowance using AFC and creditable service at early retirement.
- Group C Grandfathered Accrued normal benefit reduced 6% for each year under age 62.  
Non-Grandfathered Accrued normal benefit reduced by actuarial reduction from normal retirement age.

### Vested Retirement Allowance

#### Eligibility

- Group A and C 5 years of creditable service.

#### Amount of Allowance

- Group A and C Commencing at age 60 calculated as a service allowance using AFC and creditable service at termination.

### Disability Retirement Allowance

#### Eligibility

- Group A and C Total and permanent disability after 5 years of creditable service (5 years preceding retirement served in State).

#### Amount of Allowance

- Group A and C Calculated as a service allowance based on AFC and creditable service at disability retirement, subject to a 25% of AFC minimum.

### Death Benefits

#### Eligibility

- Group A Age 60 or 30 years of creditable service; 10 years of creditable service if in service at death.
- Group C Age 55 and 5 years of creditable service or 10 years of creditable service.

#### Amount of Allowance

- Group A and C Accrued allowance paid under 100% survivorship option. If the eligibility requirements are not met or if beneficiary so elects, the member's accumulated contributions are paid to the beneficiary or estate. Certain children's benefits may also be payable.

### Return of Contributions

- Group A and C If no other beneficiary is payable, a terminated member receives his accumulated contributions with interest.

### Options

- Group A and C The allowance may be paid in various optional forms at the election of the member.

## Schedule C: Summary of Principal Plan Provisions (continued)

### Post-retirement Adjustments

#### Group A

On each December 31 allowances in payment for at least one year are adjusted for cost-of-living changes based on the Consumer Price Index, but not in excess of 5%.

#### Group C

On each December 31, allowances in payment for at least one year are adjusted for cost-of-living changes based on one-half of the increase in the Consumer Price Index, but not in excess of 5%. For members receiving a reduced early retirement allowance, the adjustment will not apply before age 62.

### Contributions

#### Members

Group A 5.5% of earnable compensation. Contributions stop after 25 years of creditable service.

Group C 5% of earnable compensation with at least five years of service as of July 1, 2014.

6% of earnable compensation with less than five years of service as of July 1, 2014.

#### State

Group A and C Normal and accrued liability contributions actuarially determined to keep the system financially sound.



## Schedule D: Summary Tables of Member Data

Table 1: Number and Annual Compensation of Active Members Distributed by Age and Service

Age	0 - 4		5 - 9		10 - 14		15 - 19		20 - 24	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
< 20	0	0	0	0	0	0	0	0	0	0
20-24	151	5,133,554	0	0	0	0	0	0	0	0
25-29	602	24,609,013	119	5,537,841	0	0	0	0	0	0
30-34	474	20,565,140	448	21,974,920	98	5,349,322	0	0	0	0
35-39	318	14,213,724	425	22,380,771	367	21,630,140	97	6,000,274	0	0
40-44	237	11,176,668	272	14,868,194	364	22,414,232	365	24,197,319	59	4,112,874
45-49	192	9,021,065	265	14,823,421	250	15,540,393	313	20,931,217	236	16,652,212
50-54	133	6,039,772	188	10,741,572	228	13,879,086	255	17,324,238	212	15,328,601
55-59	97	4,293,646	143	7,868,406	219	13,324,203	236	15,433,728	177	12,343,475
60-64	63	3,558,537	89	5,086,159	135	8,198,577	204	12,919,951	159	10,816,590
65-69	19	675,469	30	1,869,058	27	1,711,815	28	1,980,491	22	1,503,620
70 ≥	4	100,058	2	81,093	3	191,433	3	169,710	1	69,767
Total	2,290	99,386,646	1,981	105,231,435	1,691	102,239,201	1,501	98,956,928	866	60,827,139

Age	25 - 29		30 - 34		35 - 39		40 & Up		Total	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
≤ 20	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	151	5,133,554
25-29	0	0	0	0	0	0	0	0	721	30,146,854
30-34	0	0	0	0	0	0	0	0	1,020	47,889,382
35-39	0	0	0	0	0	0	0	0	1,207	64,224,909
40-44	0	0	0	0	0	0	0	0	1,297	76,769,287
45-49	59	4,209,664	1	80,254	0	0	0	0	1,316	81,258,226
50-54	198	14,194,532	70	4,926,536	0	0	0	0	1,284	82,434,337
55-59	239	17,142,711	191	13,785,549	35	2,526,843	0	0	1,337	86,718,561
60-64	142	10,108,169	106	7,941,982	112	8,333,583	15	1,146,765	1,025	68,110,313
65-69	24	1,749,554	17	1,299,079	13	973,629	23	1,818,924	203	13,581,639
70 ≥	5	347,144	1	80,254	1	88,002	4	313,788	24	1,441,249
Total	667	47,751,774	386	28,113,654	161	11,922,057	42	3,279,477	9,585	557,708,310

## Schedule D: Summary Tables of Member Data (continued)

**Table 2: Number and Annual Compensation of Active Members Distributed by Age and Service Group A**

Age	0 - 4		5 - 9		10 - 14		15 - 19		20 - 24	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
≤ 20	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0	1	61,117
60-64	0	0	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0	0	0
70 ≥	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	61,117

Age	25 - 29		30 - 34		35 - 39		40 & Up		Total	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
≤ 20	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0	0	0
55-59	1	62,824	1	55,412	1	73,918	0	0	4	253,271
60-64	0	0	3	202,098	1	80,254	0	0	4	282,352
65-69	0	0	0	0	0	0	1	114,569	1	114,569
70 ≥	0	0	0	0	0	0	0	0	0	0
Total	1	62,824	4	257,510	2	154,172	1	114,569	9	650,192

## Schedule D: Summary Tables of Member Data (continued)

Table 3: Number and Annual Compensation of Active Members Distributed by Age and Service

### Group C

Age	0 - 4		5 - 9		10 - 14		15 - 19		20 - 24	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
≤ 20	0	0	0	0	0	0	0	0	0	0
20-24	151	5,133,554	0	0	0	0	0	0	0	0
25-29	602	24,609,013	119	5,537,841	0	0	0	0	0	0
30-34	474	20,565,140	448	21,974,920	98	5,349,322	0	0	0	0
35-39	318	14,213,724	425	22,380,771	367	21,630,140	97	6,000,274	0	0
40-44	237	11,176,668	272	14,868,194	364	22,414,232	365	24,197,319	59	4,112,874
45-49	192	9,021,065	265	14,823,421	250	15,540,393	313	20,931,217	236	16,652,212
50-54	133	6,039,772	188	10,741,572	228	13,879,086	255	17,324,238	212	15,328,601
55-59	97	4,293,646	143	7,868,406	219	13,324,203	236	15,433,728	176	12,282,358
60-64	63	3,558,537	89	5,086,159	135	8,198,577	204	12,919,951	159	10,816,590
65-69	19	675,469	30	1,869,058	27	1,711,815	28	1,980,491	22	1,503,620
70 ≥	4	100,058	2	81,093	3	191,433	3	169,710	1	69,767
Total	2,290	99,386,646	1,981	105,231,435	1,691	102,239,201	1,501	98,956,928	865	60,766,022

Age	25 - 29		30 - 34		35 - 39		40 & Up		Total	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
≤ 20	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	151	5,133,554
25-29	0	0	0	0	0	0	0	0	721	30,146,854
30-34	0	0	0	0	0	0	0	0	1,020	47,889,382
35-39	0	0	0	0	0	0	0	0	1,207	64,224,909
40-44	0	0	0	0	0	0	0	0	1,297	76,769,287
45-49	59	4,209,664	1	80,254	0	0	0	0	1,316	81,258,226
50-54	198	14,194,532	70	4,926,536	0	0	0	0	1,284	82,434,337
55-59	238	17,079,887	190	13,730,137	34	2,452,925	0	0	1,333	86,465,290
60-64	142	10,108,169	103	7,739,884	111	8,253,329	15	1,146,765	1,021	67,827,961
65-69	24	1,749,554	17	1,299,079	13	973,629	22	1,704,355	202	13,467,070
70 ≥	5	347,144	1	80,254	1	88,002	4	313,788	24	1,441,249
Total	666	47,688,950	382	27,856,144	159	11,767,885	41	3,190,746	9,576	557,058,118

## Schedule D: Summary Tables of Member Data (continued)

Table 4: Summary of Retired Member and Beneficiary Data by Level of Attained Age

All Teachers

Allowance Level	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
0 - 500	4	\$ 943	-	\$ -	-	\$ -
501 -1,000	13	10,368	-	-	-	-
1,001 – 1,500	26	32,570	-	-	3	3,680
1,501 – 2,000	50	89,295	-	-	10	16,808
2,001 – 2,500	82	185,588	-	-	11	24,868
2,501 – 3,000	115	317,281	-	-	9	24,349
3,001 – 3,500	115	375,128	-	-	8	26,475
3,501 – 4,000	119	446,921	-	-	8	29,301
4,001 – 4,500	152	645,599	-	-	16	67,585
4,501 – 5,000	138	655,553	-	-	12	56,783
5,001 – 5,500	154	805,768	-	-	6	31,119
5,501 – 6,000	127	725,875	-	-	17	97,198
6,001 – 6,500	127	792,838	-	-	14	87,244
6,501 – 7,000	147	992,480	1	6,757	17	114,582
7,001 – 7,500	121	879,768	2	14,466	14	101,327
7,501 – 8,000	121	937,241	3	23,311	9	70,148
8,001 – 8,500	114	940,961	1	8,032	14	115,004
8,501 – 9,000	103	902,640	4	34,840	16	139,834
9,001 – 9,500	135	1,249,058	5	46,035	23	212,801
9,501 – 10,000	115	1,123,137	8	77,753	7	68,262
10,001 – 10,500	103	1,055,520	7	71,408	18	185,119
10,501 – 11,000	116	1,246,534	13	140,369	19	204,799
11,001 – 11,500	132	1,485,161	6	67,993	13	146,184
11,501 – 12,000	106	1,243,751	9	105,551	11	128,805
12,001 – 12,500	104	1,274,297	3	36,905	20	245,144
12,501 – 13,000	72	919,424	4	50,972	15	190,699
13,001 – 13,500	93	1,230,381	8	105,893	11	146,117
13,501 – 14,000	80	1,102,310	8	109,200	11	152,142
14,001 – 14,500	89	1,267,119	5	71,397	5	71,327
14,501 – 15,000	89	1,311,936	5	74,030	7	103,143
15,001 – 15,500	100	1,523,979	6	91,578	8	121,810
15,501 – 16,000	101	1,588,978	3	47,151	13	203,436
16,001 – 16,500	88	1,429,924	4	65,164	9	147,192
16,501 – 17,000	95	1,591,204	3	50,084	10	167,343
17,001 – 17,500	98	1,690,241	4	69,438	6	104,035
17,501 – 18,000	104	1,850,124	4	71,503	10	177,856
18,001 – 18,500	93	1,696,503	3	55,303	7	127,628
18,501 – 19,000	90	1,685,044	1	18,842	5	93,755
19,001 – 19,500	109	2,096,667	1	19,341	3	57,901
19,501 – 20,000	103	2,032,100	6	117,771	4	78,840
20,001 – 20,501	102	2,066,391	2	40,055	5	100,725

## Schedule D: Summary Tables of Member Data (continued)

Table 4: Summary of Retired Member and Beneficiary Data by Level of Attained Age (continued)

All Teachers (continued)

Allowance Level	Service Pensioners		Disability Pensioners		Beneficiaries	
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance
20,501 – 21,000	127	\$ 2,637,144	1	\$ 20,919	5	\$ 103,660
21,001 – 21,500	117	2,488,092	3	63,813	3	63,888
21,501 – 22,000	133	2,893,568	4	87,142	2	43,861
22,001 – 22,500	116	2,581,708	4	89,302	6	133,124
22,501 – 23,000	139	3,161,554	1	22,676	1	22,897
23,001 – 23,500	142	3,298,585	2	46,561	-	-
23,501 – 24,000	119	2,826,661	-	-	2	47,644
24,001 – 24,500	132	3,201,033	1	24,465	4	96,836
24,501 – 25,000	108	2,671,182	-	-	-	-
25,001 – 25,500	109	2,753,643	-	-	1	25,360
25,501 – 26,000	120	3,089,480	-	-	2	51,655
26,001 – 26,500	129	3,386,051	1	26,416	-	-
26,501 – 27,000	116	3,103,815	-	-	-	-
27,001 – 27,500	111	3,025,310	-	-	5	135,954
27,501 – 28,000	125	3,466,836	-	-	-	-
28,001 – 28,500	112	3,165,109	2	56,241	4	113,106
28,501 – 29,000	123	3,535,301	-	-	-	-
29,001 – 29,500	102	2,983,154	-	-	1	29,327
29,501 – 30,000	101	3,006,081	-	-	2	59,786
30,001 – 30,500	83	2,507,817	1	30,374	-	-
30,501 – 31,000	93	2,860,299	1	30,856	1	30,966
31,001 – 31,500	87	2,719,493	-	-	1	31,095
31,501 – 32,000	77	2,444,857	-	-	2	63,913
32,001 – 32,500	83	2,678,924	-	-	-	-
32,501 – 33,000	67	2,195,500	1	32,937	-	-
33,001 – 33,500	69	2,295,479	-	-	-	-
33,501 – 34,000	72	2,428,955	1	33,507	1	33,591
34,001 – 34,500	66	2,260,630	-	-	2	68,925
34,501 – 35,000	56	1,945,595	-	-	1	34,623
35,001 – 35,500	52	1,834,715	-	-	2	70,400
35,501 – 36,000	46	1,645,699	1	35,804	2	71,850
36,001 – 36,500	46	1,665,146	-	-	1	36,338
36,501 – 37,000	50	1,835,813	-	-	-	-
37,001 – 37,500	35	1,302,615	-	-	-	-
37,501 – 38,000	42	1,585,130	-	-	-	-
38,001 – 38,500	34	1,299,021	-	-	-	-
38,501 – 39,000	32	1,238,301	-	-	-	-
39,001 – 39,500	26	1,020,339	-	-	-	-
39,501 – 40,000	13	516,581	-	-	-	-
Over 40,000	298	13,748,316	-	-	3	145,482
Total	7,853	\$ 152,800,132	153	\$ 2,292,155	478	\$ 5,755,649

## Schedule D: Summary Tables of Member Data (continued)

Table 5: Age/Service Distribution with Average Allowance

### Service Pensioners

Age	0 - 4		5 - 9		10 - 14		15 - 19		20 - 24	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
≤ 45	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
45-49	0	0	0	0	0	0	0	0	0	0
50-54	8	32,030	0	0	0	0	0	0	0	0
55-59	44	33,637	3	2,929	19	5,533	16	13,634	18	11,213
60-64	234	28,019	108	5,287	199	6,802	189	12,409	172	18,381
65-69	138	27,016	155	5,445	397	7,667	305	12,880	344	18,872
70-74	33	10,596	84	5,985	262	7,156	215	11,413	238	16,810
75-79	22	4,125	29	5,815	129	6,979	123	10,659	146	14,422
80-84	15	2,194	22	5,351	70	6,287	64	10,322	70	13,689
85-89	7	3,521	14	3,774	53	5,584	52	8,316	50	11,124
90-94	10	3,211	9	4,119	18	5,006	28	7,304	18	10,233
95 ≥	2	2,259	6	4,666	9	6,763	6	9,216	4	9,221
Total	513	24,475	430	5,420	1,156	7,063	998	11,633	1,060	16,696

Age	25 - 29		30 - 34		35 - 39		40 & Up		Total	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
≤ 45	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
45-49	0	0	0	0	0	0	0	0	0	0
50-54	0	0	16	30,910	0	0	0	0	24	31,283
55-59	1	12,685	144	31,126	1	45,820	0	0	246	26,645
60-64	65	27,350	541	30,112	114	35,480	9	34,305	1,631	22,324
65-69	226	25,360	773	28,130	200	33,429	34	31,941	2,572	20,778
70-74	139	21,395	479	25,209	136	31,712	28	35,419	1,614	18,239
75-79	91	19,480	164	24,309	75	29,292	15	30,344	794	16,453
80-84	68	15,729	112	21,410	64	24,404	12	23,989	497	15,298
85-89	29	14,171	58	19,875	32	21,284	10	21,237	305	12,612
90-94	16	13,269	24	17,803	2	12,901	4	22,854	129	10,064
95 ≥	7	12,260	5	14,746	2	24,275	0	0	41	9,601
Total	642	21,880	2,316	27,256	626	31,315	112	32,738	7,853	19,458

## Schedule D: Summary Tables of Member Data (continued)

Table 6: Age/Service Distribution with Average Allowance (continued)

### Disability Pensioners

Age	0 - 4		5 - 9		10 - 14		15 - 19		20 - 24	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
≤ 45	0	\$ 0	1	\$ 10,955	0	\$ 0	0	\$ 0	0	\$ 0
45-49	0	0	0	0	0	0	0	0	1	12,554
50-54	0	0	2	10,608	2	11,969	1	16,413	2	14,790
55-59	0	0	1	11,329	6	13,992	3	12,246	3	23,450
60-64	0	0	5	10,151	14	11,855	11	13,747	7	24,419
65-69	0	0	5	12,725	5	11,056	5	16,812	11	16,804
70-74	0	0	1	18,842	9	12,697	4	12,364	9	15,433
75-79	0	0	0	0	2	9,437	4	11,056	3	10,625
80-84	1	11,317	0	0	0	0	2	15,213	2	8,158
85-89	0	0	0	0	0	0	2	14,258	0	0
90-94	0	0	0	0	2	8,638	1	7,890	0	0
95 ≥	0	0	0	0	0	0	0	0	0	0
Total	1	11,317	15	11,781	40	11,989	33	13,604	38	17,246

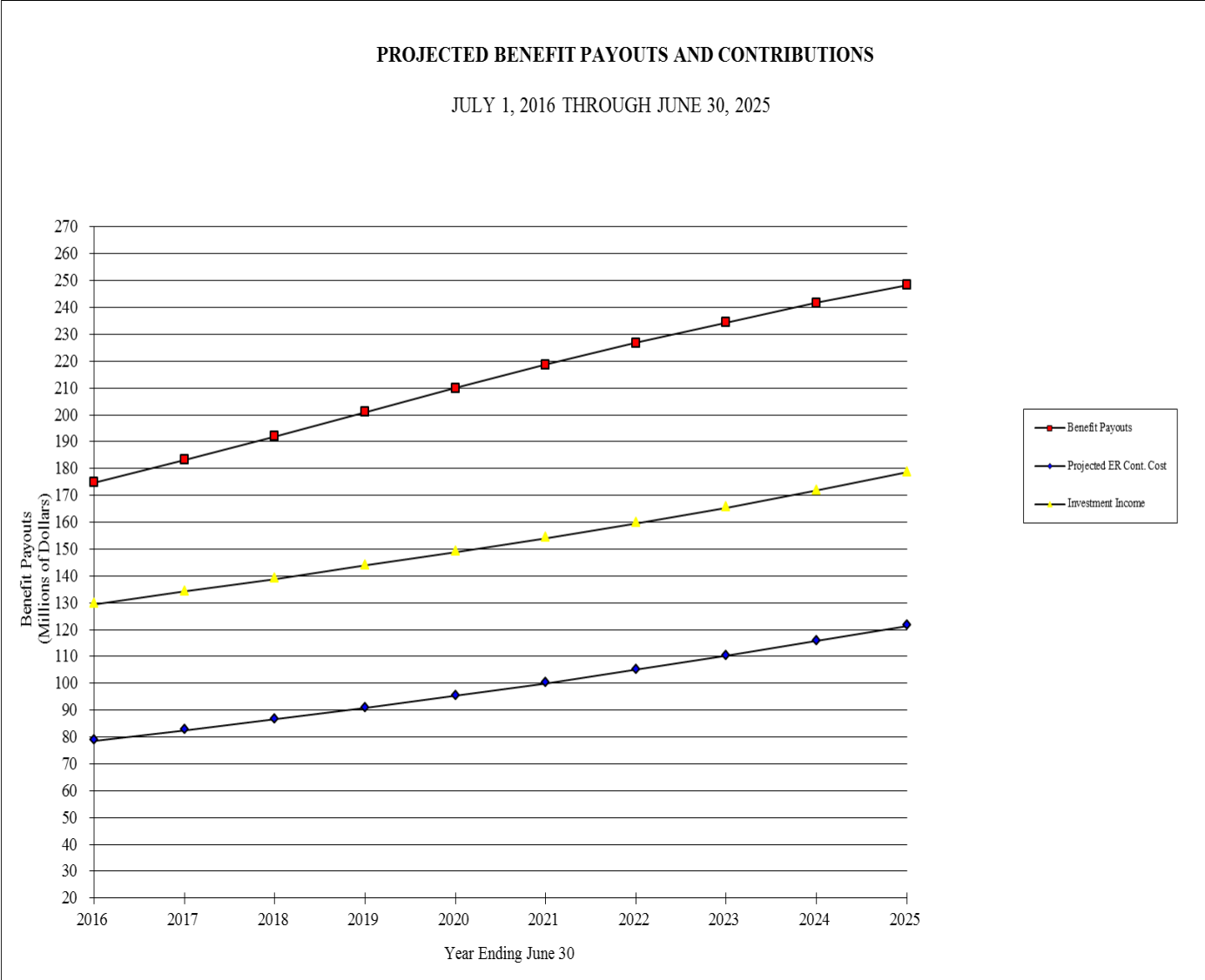
Age	25 - 29		30 - 34		35 - 39		40 & Up		Total	
	No.	Salary	No.	Salary	No.	Salary	No.	Salary	No.	Salary
≤ 45	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
45-49	0	0	0	0	0	0	0	0	1	12,554
50-54	0	0	0	0	0	0	0	0	7	13,021
55-59	3	23,472	0	0	0	0	0	0	16	17,049
60-64	1	18,450	0	0	0	0	0	0	38	14,666
65-69	7	21,807	0	0	0	0	0	0	33	16,378
70-74	5	20,867	1	30,374	0	0	0	0	29	15,730
75-79	3	18,848	1	16,341	0	0	0	0	13	12,912
80-84	2	15,392	0	0	0	0	0	0	7	12,692
85-89	1	15,457	2	12,458	0	0	0	0	5	13,778
90-94	0	0	0	0	0	0	0	0	3	8,389
95 ≥	0	0	0	0	0	0	0	0	0	0
Total	22	20,393	4	17,908	0	0	0	0	153	14,981

## Schedule E: Amortization Schedule for the Unfunded Actuarial Accrued Liability

Date	Balance	Contribution (Year Following)
6/30/2015	1,175,029,030	70,792,693
6/30/2016	1,194,890,946	74,332,327
6/30/2017	1,212,654,239	78,048,944
6/30/2018	1,227,968,187	81,951,391
6/30/2019	1,240,444,991	86,048,960
6/30/2020	1,249,656,368	90,351,408
6/30/2021	1,255,129,849	94,868,979
6/30/2022	1,256,344,762	99,612,428
6/30/2023	1,252,727,864	104,593,049
6/30/2024	1,243,648,609	109,822,702
6/30/2025	1,228,413,996	115,313,837
6/30/2026	1,206,262,998	121,079,529
6/30/2027	1,176,360,499	127,133,505
6/30/2028	1,137,790,732	133,490,180
6/30/2029	1,089,550,147	140,164,689
6/30/2030	1,030,539,689	147,172,924
6/30/2031	959,556,413	154,531,570
6/30/2032	875,284,409	162,258,148
6/30/2033	776,284,943	170,371,056
6/30/2034	660,985,791	178,889,609
6/30/2035	527,669,666	187,834,089
6/30/2036	374,461,684	197,225,793
6/30/2037	199,315,782	207,087,083
6/30/2038	0	0



# Schedule F: Projected Benefit Payouts and Contributions for the Period July 1, 2016 through June 30, 2025



## Schedule G: Projection of Contributions for Following Two Fiscal Years

On the basis of the June 30, 2015, actuarial valuation, the recommended contribution for the fiscal year ending June 30, 2016, is \$78,574,008, based on the following:

Payroll	\$557,708,310
Normal rate	1.39%
Accrued liability contribution	\$70,792,693

On this basis, the projected contributions for the following two fiscal years are as follows:

Fiscal Year	Projected Payroll	Normal Rate	Contributions		
			Normal	Accrued Liability	Total
2017	\$ 574,439,559	1.39%	\$ 8,327,249	\$ 74,332,327	\$ 82,659,576
2018	591,672,746	1.39%	8,577,066	78,048,944	86,626,010

In these projections, we assumed that total payroll would increase by 3.0% each year.