

**SHREWSBURY
CONTRIBUTORY RETIREMENT SYSTEM**

Actuarial Valuation Report
January 1, 2014

TABLE OF CONTENTS

	<u>Page</u>
REPORT SUMMARY	
Highlights	1
Introduction	2
Actuarial Experience	3
ACTUARIAL COSTS AND LIABILITIES	
Normal Costs	4
Present Value of Actuarial Accrued Liabilities	5
Present Value of Future Benefits	6
FUNDED STATUS AND APPROPRIATIONS	
Market Value of Plan Assets	7
Actuarial Value of Assets	8
Unfunded Actuarial Accrued Liabilities	9
Appropriations	10
Appropriation Forecast	11
GASB Statements No. 25, No. 27, No. 67 and No. 68	13
PERAC Annual Statement	14
EXHIBITS	
1 Age/Service Distribution with Salary	20
2 Retiree Distribution	21
3 Disabled Retiree Distribution	22
4 Distribution Forecast	23
5 Summary of Plan Provisions	24
6 Actuarial Methods and Assumptions	33
7 Glossary of Terms	38
CERTIFICATION	40
BREAKOUTS	41

Report Summary:

Highlights

January 1, 2012

January 1, 2014

Contributions

Funding Schedule FY 2015	\$5,490,809	\$5,490,809
Funding Schedule FY 2016	5,713,582	5,885,675

Funded Ratios

GAS No. 25	68.4%	72.1%
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Participants

Actives	582	572
Retirees and Beneficiaries	209	219
Inactives	106	121
Disabled	<u>28</u>	<u>30</u>
Total	925	942

Payroll

Payroll of Active Members	\$22,671,647	\$23,896,051
Average Payroll	38,955	41,776

Normal Cost

Employer	767,981	735,948
Employee	1,900,439	2,047,005
Administrative Expenses	<u>120,000</u>	<u>120,000</u>
Total	2,788,420	2,902,953

Actuarial Accrued Liabilities

Actives	52,546,256	54,533,627
Retirees, Beneficiaries, Disabilities and Inactives	<u>52,540,155</u>	<u>59,986,183</u>
Total	105,086,411	114,519,810

Actuarial Value of Assets

<u>71,863,914</u>	<u>82,514,065</u>
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Unfunded Actuarial Accrued Liabilities

\$33,222,497	\$32,005,745
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Introduction

This report presents the findings of an actuarial valuation as of January 1, 2014, of Shrewsbury Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2014.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Shrewsbury Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2014.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last year, the total unfunded actuarial accrued liability decreased by 3.6% to \$32,005,745. The decrease is the result of employer contributions, partially offset by net unfavorable actuarial experience during the preceding years. The sources of actuarial (gains) and losses are as follows:

Assets	251,449
Salary Increases	(22,102)
New Participants	400,197
Active - Retirements	(119,354)
Active - Terminations	441,507
Active - Mortality	(91,415)
Active - Disabilities	363,240
Inactive - Mortality and data adjustments	(37,449)
Other, includes data adjustments, buybacks, interest on ASF	<u>(99,117)</u>
Total Actuarial (Gain) / Loss	1,086,956

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	<u>January 1, 2012</u>	<u>January 1, 2014</u>
Superannuation	\$1,816,428	\$1,905,526
Termination	309,503	337,559
Death	128,931	136,308
Disability	413,558	403,560
Administrative Expenses	<u>120,000</u>	<u>120,000</u>
Total Normal Cost	2,788,420	2,902,953
% of Pay	12.3%	12.1%
Employee Contributions	1,900,439	2,047,005
% of Pay	8.4%	8.6%
Employer Normal Cost	\$887,981	\$855,948
% of Pay	3.9%	3.6%

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits based on the past service of the actives and inactive. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	<u>January 1, 2012</u>	<u>January 1, 2014</u>
Actives		
Superannuations	\$46,989,144	\$48,866,518
Termination	1,180,460	1,200,106
Death	1,511,560	1,585,497
Disability	2,865,092	2,881,506
Retirees and Inactives		
Retirees and Beneficiaries	43,621,385	50,310,217
Terminated (Refund)	884,224	1,022,853
Disabled	<u>8,034,546</u>	<u>8,653,113</u>
Total	<u>\$105,086,411</u>	<u>\$114,519,810</u>

Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	<u>January 1, 2012</u>	<u>January 1, 2014</u>
Actives		
Superannuation	\$61,091,537	\$63,982,685
Termination	2,447,258	2,592,740
Death	2,459,491	2,614,395
Disability	6,625,764	6,491,362
Retirees and Inactives		
Retirees and Beneficiaries	43,621,385	50,310,217
Terminated (Refund)	884,224	1,022,853
Disabled	<u>8,034,546</u>	<u>8,653,113</u>
Total	\$125,164,205	\$135,667,365

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	<u>January 1, 2012</u>	<u>January 1, 2014</u>
Cash equivalents	\$2,887,659	\$1,242,397
Short term investments	0	0
Fixed income securities	7,540,066	9,480,107
Equities	19,118,022	27,908,376
International	2,901,337	4,442,588
Real Estate	1,661,320	2,083,795
Venture Capital	0	0
Other	32,161,047	43,504,233
Accounts receivable	203,240	40,304
Accounts payable	(379,900)	0
Accrued income	<u>4</u>	<u>3</u>
Total Market Value	\$66,092,795	\$88,701,803
Total Actuarial Value	\$71,863,914	\$82,514,065

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 10%. The calculation of the actuarial value of assets as of January 1, 2014 is presented in Table V.

Table V

	<u>January 1, 2014</u>
(1) Market value at January 1, 2013	\$74,562,322
(2) 2013 Contributions	\$7,951,994
(3) 2013 Payments	(\$7,186,822)
(4) Net interest adjustment at 8% on (1), (2), and (3) to December 31, 2013	\$5,995,593
(5) Expected market value on January 1, 2014	\$81,323,087
(1) + (2) + (3) + (4)	
(6) Actual market value on January 1, 2014	\$88,701,803
(7) 2013 (Gain) / Loss	(\$7,378,716)
(8) 80% of 2013 (Gain) / Loss	(\$5,902,973)
(9) 2012 (Gain) / Loss	(\$3,370,132)
(10) 60% of 2012 (Gain) / Loss	(\$2,022,079)
(11) 2011 (Gain) / Loss	\$5,787,670
(12) 40% of 2011 (Gain) / Loss	\$2,315,068
(13) 2010 (Gain) / Loss	(\$2,888,770)
(14) 20% of 2010 (Gain) / Loss	(\$577,754)
(15) Actuarial value on January 1, 2014, (6) + (8) + (10) + (12) + (14) but not less than 90% nor greater than 110% of (6)	\$82,514,065
(16) Ratio of actuarial value to market value	93.02%
(17) Actuarial Value Return for 2012	2.04%
(18) Actuarial Value Return for 2013	11.70%
(19) Market Value Return for 2012	13.11%
(20) Market Value Return for 2013	17.85%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	<u>January 1, 2012</u>	<u>January 1, 2014</u>
Actuarial Accrued Liability	\$105,086,411	\$114,519,810
Actuarial Assets	<u>71,863,914</u>	<u>82,514,065</u>
Unfunded Actuarial Accrued Liability	\$33,222,497	\$32,005,745
Funded Status	68.4%	72.1%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2030, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2022
 \$ 32,005,745 over 8 years with 4.5% increasing payments
- Interest adjustment for payments deposited at the various times in the year

The pension appropriation is shown in Table VII.

Table VII

	<u>January 1, 2012</u>	<u>January 1, 2014</u>
Normal cost	\$887,981	\$855,948
Amortization payment of the prior accrued liability	2,950,138	4,324,860
Amortization payment of current (gains)/losses	<u>885,816</u>	<u>152,041</u>
Total cost	\$4,723,935	\$5,332,849
% of Pay	20.8%	22.3%
Fiscal 2015 cost	\$5,490,809	\$5,490,809
Fiscal 2016 cost	\$5,713,582	\$5,885,675

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.0% per year. The employee contribution rate is expected to increase to 10.5% by 2042 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 7 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 23.7% of payroll, increasing to 23.8% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of about 3% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

Appropriation Forecast

<u>Fiscal Year Ending</u>	<u>Payroll*</u>	<u>Employee Contribution</u>	<u>Employer Normal Cost with Interest</u>	<u>Amortization Payments with Interest</u>	<u>Employer Total Cost with Interest</u>	<u>Employer Total Cost % of Payroll</u>	<u>Funded Ratio %**</u>
2015	\$23,896,051	\$2,047,005	\$903,904	\$4,586,905	\$5,490,809	23.0	71.9
2016	\$24,851,893	\$2,146,684	\$921,265	\$4,964,410	\$5,885,675	23.7	74.7
2017	\$25,845,969	\$2,251,062	\$938,568	\$5,189,210	\$6,127,778	23.7	77.9
2018	\$26,879,808	\$2,360,355	\$955,781	\$5,422,725	\$6,378,506	23.7	81.2
2019	\$27,955,000	\$2,474,791	\$972,869	\$5,666,747	\$6,639,616	23.8	84.6
2020	\$29,073,200	\$2,594,604	\$989,796	\$5,921,751	\$6,911,547	23.8	88.2
2021	\$30,236,128	\$2,720,043	\$1,006,519	\$6,188,230	\$7,194,749	23.8	91.9
2022	\$31,445,573	\$2,851,366	\$1,022,997	\$6,466,700	\$7,489,697	23.8	95.9
2023	\$32,703,396	\$2,988,842	\$1,039,183	\$0	\$1,039,183	3.2	100.0
2024	\$34,011,532	\$3,132,755	\$1,055,027	\$0	\$1,055,027	3.1	100.0
2025	\$35,371,993	\$3,283,398	\$1,070,476	\$0	\$1,070,476	3.0	100.0
2026	\$36,786,873	\$3,441,080	\$1,085,472	\$0	\$1,085,472	3.0	100.0
2027	\$38,258,348	\$3,606,123	\$1,099,956	\$0	\$1,099,956	2.9	100.0
2028	\$39,788,681	\$3,778,865	\$1,113,861	\$0	\$1,113,861	2.8	100.0
2029	\$41,380,229	\$3,959,655	\$1,127,119	\$0	\$1,127,119	2.7	100.0
2030	\$43,035,438	\$4,148,863	\$1,139,656	\$0	\$1,139,656	2.6	100.0
2031	\$44,756,855	\$4,346,872	\$1,151,392	\$0	\$1,151,392	2.6	100.0
2032	\$46,547,130	\$4,554,083	\$1,162,243	\$0	\$1,162,243	2.5	100.0
2033	\$48,409,015	\$4,770,917	\$1,172,120	\$0	\$1,172,120	2.4	100.0
2034	\$50,345,375	\$4,997,810	\$1,180,928	\$0	\$1,180,928	2.3	100.0
2035	\$52,359,190	\$5,235,221	\$1,188,565	\$0	\$1,188,565	2.3	100.0
2036	\$54,453,558	\$5,483,629	\$1,194,924	\$0	\$1,194,924	2.2	100.0
2037	\$56,631,700	\$5,743,534	\$1,199,889	\$0	\$1,199,889	2.1	100.0
2038	\$58,896,968	\$6,015,456	\$1,203,340	\$0	\$1,203,340	2.0	100.0
2039	\$61,252,847	\$6,299,943	\$1,205,147	\$0	\$1,205,147	2.0	100.0
2040	\$63,702,961	\$6,597,564	\$1,205,174	\$0	\$1,205,174	1.9	100.0
2041	\$66,251,079	\$6,908,915	\$1,203,274	\$0	\$1,203,274	1.8	100.0
2042	\$68,901,123	\$7,234,618	\$1,199,294	\$0	\$1,199,294	1.7	100.0
2043	\$71,657,167	\$7,524,003	\$1,247,266	\$0	\$1,247,266	1.7	100.0
2044	\$74,523,454	\$7,824,963	\$1,297,156	\$0	\$1,297,156	1.7	100.0
2045	\$77,504,392	\$8,137,961	\$1,349,043	\$0	\$1,349,043	1.7	100.0
2046	\$80,604,568	\$8,463,480	\$1,403,004	\$0	\$1,403,004	1.7	100.0

* Calendar basis

** Beginning of Fiscal Year

GASB Statements No. 25, No. 27, No. 67 and No. 68

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to \$0. The required disclosure information is shown in Table VIII.

Table VIII

	<u>January 1, 2012</u>	<u>January 1, 2014</u>
(1) Actuarial Accrued Liability	\$105,086,411	\$114,519,810
(2) Actuarial Value of Assets	<u>71,863,914</u>	<u>82,514,065</u>
(3) Unfunded Actuarial Accrued Liability	33,222,497	32,005,745
(4) Funded Ratio (2)/(1)	68.4%	72.1%
(5) Covered Payroll	\$22,671,647	\$23,896,051
(6) UAAL as a percentage of payroll: (3)/(5)	146.5%	133.9%
(7) Annual Required Contribution (ARC)	\$3,987,702	\$5,490,809
(8) Net Pension Obligation	\$0	\$0

**PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS**

The most recent actuarial valuation of the System was prepared by Sherman Actuarial Services as of January 1, 2014.

The normal cost for employees on that date was:	\$2,047,005	8.6% of pay
The normal cost for the employer was:	735,948	3.1% of pay
The actuarial liability for active members was:		\$54,533,627
The actuarial liability for retired and inactive members was:		59,986,183
Total actuarial accrued liability:		114,519,810
System assets as of that date:		82,514,065
Unfunded actuarial accrued liability:		\$32,005,745

The ratio of system's assets to total actuarial liability was 72.1%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.00%
Rate of Salary Increase:	3.50%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/14	\$82,514,065	\$114,519,810	\$32,005,745	72.1%	\$23,896,051	133.9%
01/01/12	71,863,914	105,086,411	33,222,497	68.4%	22,671,647	146.5%
01/01/10	64,467,201	91,059,541	26,592,340	70.8%	22,460,537	118.4%
01/01/08	65,665,411	85,256,692	19,591,281	77.0%	22,402,987	87.4%
01/01/06	54,147,807	75,979,303	21,831,496	71.3%	19,896,839	109.7%
01/01/04	50,857,118	65,276,552	14,419,434	77.9%	17,995,844	80.1%
01/01/02	46,779,157	59,312,723	12,533,566	78.9%	16,773,825	74.7%
01/01/00	48,071,979	49,486,969	1,414,990	97.1%	14,064,649	10.1%
01/01/99	39,201,694	46,718,881	7,517,187	83.9%	13,196,123	57.0%

Attach Copy of Current Approved Funding Schedule

GASB Statements No. 67 and No. 68

Effective for periods beginning after June 15, 2013, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which amend GASB Statements No. 25 and No. 27, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

The statement requires the system to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position. The statement of fiduciary net position presents the following items as of the end of the plan’s reporting period, as applicable:

- Assets
 - Deferred outflows of resources (consumption of net assets by the employers that is applicable to a future reporting period)
- Liabilities
 - Deferred inflows of resources (acquisition of net assets by the employers that is applicable to a future reporting period)
- Fiduciary net position (Assets + Deferred outflows – Liabilities – Deferred inflows)

The system is considered a cost-sharing multiple-employer pension plan since pension obligations exist for employees of more than one employer and plan assets can be used to pay the benefits of the employees of any employer.

This report does not include all items required under GASB Statements No. 67 and No. 68. Rather, it provides all items required that are not readily available from other sources such as the Annual Statement of the Financial Condition prepared by the Board, Chapter 32 of the Massachusetts General Laws and investment reports prepared by the plan’s investment consultant.

Discount Rate

The discount rate, and all other actuarial assumptions, are the as those described in Exhibit 6. The discount rate was selected based on a projection of employer and employee contributions, benefit payments, expenses and the long term expected rate of return on trust assets. Under Chapter 32 of the Massachusetts Laws, employers are required to make the necessary contributions to the trust such that the plan reaches a full funding status by 2040. In addition, Chapter 32 also gives the Retirement Board the right to go directly to the Assessors of the community and add an additional property tax to bills for amounts not paid by employer.

Based on these laws and assumptions, the pensions plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The Board selected 8.00% as the long term expectation of investment returns. The average return for the 29 years ending as of December 31, 2013 was 9.32%. The average return for the past 5 years ending December 31, 2013 was 12.65%.

Assets

The Net Position Restricted for Pensions, shown in page 7, is \$25,818,007. The 2013 Annual Statement of the Financial Condition contains the values for previous years and the changes in Net Position Restricted for Pensions. Investments are reported at fair value.

Net Pension Liability as of December 31, 2013 – GASB Statement No. 67

The following presents the net pension liability of the system calculated using the discount rate of 8.00%, as well as what the system's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.00%) or 1-percentage-point higher (9.00%) than the current rate:

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Total Pension Liability	\$ 126,632,584	\$ 114,519,810	\$ 104,164,881
Plan Fiduciary Net Position	<u>\$ 88,701,803</u>	<u>\$ 88,701,803</u>	<u>\$ 88,701,803</u>
Net Pension Liability	\$ 37,930,781	\$ 25,818,007	\$ 15,463,078

The Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 77.5%.

Net Pension Liability as of June 30, 2014 – GASB Statement No. 68

The following presents the net pension liability of the system calculated using the discount rate of 8.00%, as well as what the system's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.00%) or 1-percentage-point higher (9.00%) than the current rate:

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Total Pension Liability	\$ 128,666,110	\$ 116,358,722	\$ 105,837,518
Plan Fiduciary Net Position*	<u>\$ 92,262,260</u>	<u>\$ 92,262,260</u>	<u>\$ 92,262,260</u>
Net Pension Liability	\$ 36,403,850	\$ 24,096,462	\$ 13,575,258

*Estimated

The Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 79.3%.

Schedules of Required Supplementary Information

	<u>2013</u>
Total Pension Liability – Beginning	n/a
Total Pension Liability – Ending (a)	\$ 114,519,810
Plan Fiduciary Net Position – Beginning	n/a
Plan Fiduciary Net Position – Ending (b)	\$ 88,701,803
Net Pension Liability – Ending (a) – (b)	\$ 25,818,007
Plan Fiduciary Net Positions as a percentage of the Total Pension Liability	77.5%
Covered-employee payroll	\$ 23,896,051
Net Pension Liability as a percentage of Covered-employee Payroll	108.0%

EXHIBITS

Age/Service Distribution with Salary as of January 1, 2014

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
20-24	14	0	0	0	0	0	0	0	0	0	14
	28,383	0	0	0	0	0	0	0	0	0	28,383
25-29	49	5	0	0	0	0	0	0	0	0	54
	36,429	54,807	0	0	0	0	0	0	0	0	38,131
30-34	29	29	4	0	0	0	0	0	0	0	62
	33,065	49,926	48,664	0	0	0	0	0	0	0	41,958
35-39	9	11	10	4	0	0	0	0	0	0	34
	36,488	55,926	58,000	54,562	0	0	0	0	0	0	51,230
40-44	20	18	8	11	4	0	0	0	0	0	61
	32,814	31,014	48,584	56,249	81,701	0	0	0	0	0	41,783
45-49	26	23	11	10	10	7	1	0	0	0	88
	27,381	40,725	40,478	64,516	58,842	87,584	26,992	0	0	0	45,085
50-54	20	29	20	9	3	8	7	0	0	0	96
	38,346	24,775	34,526	51,730	69,742	65,351	74,681	0	0	0	40,586
55-59	9	29	17	13	5	7	3	3	0	0	86
	18,580	24,206	33,157	50,426	53,624	66,607	62,709	99,192	0	0	38,470
60-64	2	9	7	6	6	10	1	4	2	0	47
	21,340	37,626	31,829	44,286	60,817	54,072	48,517	65,689	100,044	0	48,656
65-69	3	6	0	2	3	7	1	1	0	0	23
	26,098	21,292	0	36,700	38,365	43,886	46,369	79,831	0	0	35,997
70+	1	3	0	0	1	0	0	0	2	0	7
	38,765	11,283	0	0	64,320	0	0	0	55,167	0	35,324
Total Employees	182	162	77	55	32	39	13	8	4	0	572
Average Salary	32,592	35,593	40,072	53,498	60,528	62,822	64,059	80,020	77,606	0	41,776

Retiree Distribution as of January 1, 2014

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	0	0	0	0	0	0
50-54	2	1	3	78,843	11,134	89,978
55-59	12	1	13	452,893	6,104	458,997
60-64	23	10	33	1,105,333	145,754	1,251,087
65-69	34	15	49	1,322,288	271,422	1,593,710
70-74	10	18	28	351,942	341,369	693,312
75-79	8	10	18	206,766	163,958	370,724
80-84	13	24	37	248,331	300,949	549,280
85-89	10	12	22	182,232	99,080	281,312
90-94	5	7	12	79,176	44,885	124,061
95+	2	2	4	17,018	6,211	23,229
Total	119	100	219	4,044,822	1,390,866	5,435,688
Average (Age/Payment)	71.42	77.02	73.98	33,990	13,909	24,820
Frequency Percent	54.3	45.7	100.0	74.4	25.6	100.0

Disabled Retiree Distribution as of January 1, 2014

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	1	0	1	53,033	0	53,033
35-39	0	0	0	0	0	0
40-44	1	1	2	38,268	21,300	59,568
45-49	1	0	1	47,033	0	47,033
50-54	2	0	2	56,575	0	56,575
55-59	3	1	4	119,307	10,314	129,621
60-64	5	0	5	151,266	0	151,266
65-69	7	0	7	176,336	0	176,336
70-74	2	0	2	47,004	0	47,004
75-79	3	0	3	105,254	0	105,254
80-84	1	0	1	18,720	0	18,720
85-89	1	0	1	23,929	0	23,929
90-94	1	0	1	23,854	0	23,854
95-99	0	0	0	0	0	0
Total	28	2	30	860,580	31,614	892,194
Average (Age/Payment)	65.5	48.4	64.3	30,735	15,807	29,740
Frequency Percent	93.3	6.7	100.0	96.5	3.5	100.0

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2014	\$8,168,881	\$2,047,005	\$5,490,809	\$6,572,219	\$5,941,152
2015	7,531,595	2,146,684	5,885,675	6,941,615	7,442,379
2016	7,924,053	2,251,062	6,127,778	7,528,692	7,983,479
2017	8,370,040	2,360,355	6,378,506	8,158,702	8,527,523
2018	8,841,984	2,474,791	6,639,616	8,831,641	9,104,064
2019	9,233,591	2,594,604	6,911,547	9,554,296	9,826,856
2020	9,650,410	2,720,043	7,194,749	10,334,250	10,598,631
2021	10,078,020	2,851,366	7,489,697	11,176,007	11,439,050
2022	10,434,339	2,988,842	1,039,183	11,934,897	5,528,583
2023	10,825,792	3,132,755	1,055,027	12,366,605	5,728,595
2024	11,231,930	3,283,398	1,070,476	12,813,983	5,935,926
2025	11,653,305	3,441,080	1,085,472	13,277,608	6,150,855
2026	12,090,488	3,606,123	1,099,956	13,758,077	6,373,667
2027	12,544,073	3,778,865	1,113,861	14,256,011	6,604,665
2028	13,014,674	3,959,655	1,127,119	14,772,055	6,844,155
2029	13,502,930	4,148,863	1,139,656	15,306,877	7,092,466
2030	14,009,503	4,346,872	1,151,392	15,861,172	7,349,933
2031	14,535,081	4,554,083	1,162,243	16,435,662	7,616,907
2032	15,080,376	4,770,917	1,172,120	17,031,095	7,893,756
2033	15,646,129	4,997,810	1,180,928	17,648,250	8,180,859
2034	16,233,106	5,235,221	1,188,565	18,287,936	8,478,616
2035	16,842,104	5,483,629	1,194,924	18,950,992	8,787,441
2036	17,473,950	5,743,534	1,199,889	19,638,292	9,107,766
2037	18,129,499	6,015,456	1,203,340	20,350,742	9,440,039
2038	18,809,642	6,299,943	1,205,147	21,089,286	9,784,734
2039	19,515,301	6,597,564	1,205,174	21,854,903	10,142,340
2040	20,247,433	6,908,915	1,203,274	22,648,614	10,513,370
2041	21,007,032	7,234,618	1,199,294	23,471,477	10,898,357
2042	21,795,128	7,524,003	1,247,266	24,321,721	11,297,862
2043	22,445,766	7,824,963	1,297,156	25,209,690	11,886,043

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2014, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

Chapter 176 of the Acts of 2011 created different plan provisions within these groups for those hired on or after April 2, 2012.

3. **Salary**

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. **Member Contributions**

Member contributions vary depending upon date hired as follows:

<u>Date of Hire</u>	<u>Member Contribution Rate</u>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of \$30,000

For Group 1 employees who become members on or after April 2, 2012, the Contribution Rate shall be 6% after the completion of 30 years of service.

5. **Average Salary**

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.). For employees who become members on or after April 2, 2012, the averaging period shall be five years.

6. **Creditable Service**

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service
- (iv) for a Group 1 employee hired on or after April 2, 2012, attainment of age 60 and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table for those hired prior to April 2, 2012:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

For those hired after April 1, 2012 who retire with less than 30 years of service, the following rates are applied:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
67 or Over	.0250	.0250	.0250
66	.0235	.0250	.0250
65	.0220	.0250	.0250
64	.0205	.0250	.0250
63	.0190	.0250	.0250
62	.0175	.0250	.0250
61	.0160	.0235	.0250
60	.0145	.0220	.0250
59		.0205	.0250
58		.0190	.0250
57		.0175	.0250
56		.0160	.0235
55		.0145	.0220
54			.0205
53			.0190
52			.0175
51			.0160
50			.0145

For those hired after April 1, 2012 who retire with at least 30 years of service, the following rates are applied:

Age at Retirement	Percentage of Average Salary		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
67 or Over	.02500	.02500	.02500
66	.02375	.02500	.02500
65	.02250	.02500	.02500
64	.02125	.02500	.02500
63	.02000	.02500	.02500
62	.01875	.02500	.02500
61	.01750	.02375	.02500
60	.01625	.02250	.02500
59		.02125	.02500
58		.02000	.02500
57		.01875	.02500
56		.01750	.02375
55		.01625	.02250
54			.02125
53			.02000
52			.01875
51			.01750
50			.01625

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus \$450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55 or age 60 if hired on or after April 2, 2012).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55 (age 60 if hired on or after April 2, 2012). If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55 (age 60 if hired on or after April 2, 2012), he

will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$250 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$250 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A – Life annuity
- (ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2014.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.0% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase at a rate of 3.5% per year.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). The actuarial value of assets is

determined using a five-year smoothing of asset returns greater than or less than the assumed rate of return.

8. **Annual Rate of Withdrawal Prior to Retirement**

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. **Annual Rate of Mortality**

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females, adjusted to 2015 with Scale AA. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired prior to April 2, 2012:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired on or after April 2, 2012:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0000	0.0000	0.0100
51	0.0000	0.0000	0.0100
52	0.0000	0.0000	0.0200
53	0.0000	0.0000	0.0200
54	0.0000	0.0000	0.0200
55	0.0000	0.0000	0.0500
56	0.0000	0.0000	0.0750
57	0.0000	0.0000	0.1500
58	0.0000	0.0000	0.1000
59	0.0000	0.0000	0.1000
60	0.0500	0.0650	0.1000
61	0.0650	0.0650	0.1500
62	0.2000	0.1500	0.2000
63	0.2000	0.1300	0.2000
64	0.3000	0.1500	0.3000
65	0.2500	0.1250	1.0000
66	0.2200	0.1800	1.0000
67	0.4000	0.2500	1.0000
68	0.3000	0.2000	1.0000
69	0.3000	0.2000	1.0000
70	1.0000	1.0000	1.0000

12. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

<u>Attained Age</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
20	0.0001	0.0010
30	0.0003	0.0030
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

13. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

14. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2014 is \$120,000 and is anticipated to increase at 4.0% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

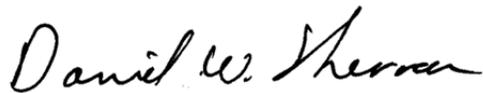
9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the Shrewsbury Retirement System contributing as of January 1, 2014, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Sherman Actuarial Services, LLC



Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 11-4086

June, 2014

BREAKOUTS

Breakouts

	<u>Total</u>	<u>Housing</u>	<u>Light</u>	<u>Cable</u>	<u>Water</u>	<u>Sewer</u>	<u>Custodians</u>	<u>All Others</u>	<u>School Employees</u>	<u>School Lunch</u>
(1) Participants										
(a) Actives	572	10	34	33	13	5	20	167	264	26
(b) Inactives	121	0	3	1	0	0	1	13	97	6
(c) Retirees and Beneficiaries	219	2	24	6	10	1	20	117	21	18
(d) Disabled Retirees	<u>30</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>3</u>	<u>22</u>	<u>1</u>	<u>1</u>
(e) Total	942	12	63	40	24	6	44	319	383	51
(2) Payroll of Active Participants	\$23,896,051	\$516,982	\$2,440,204	\$1,999,926	\$700,569	\$214,411	\$982,197	\$9,447,694	\$7,106,707	\$487,361
(3) Normal Cost										
(a) Total Normal Cost	2,782,953	42,466	343,382	196,327	68,373	21,017	107,818	1,211,912	742,587	49,069
(b) Expected Employee Contributions	2,047,005	38,984	208,806	183,561	58,692	17,603	84,044	815,275	599,805	40,235
(c) Administrative Expenses	<u>120,000</u>	<u>1,831</u>	<u>14,807</u>	<u>8,466</u>	<u>2,948</u>	<u>906</u>	<u>4,649</u>	<u>52,257</u>	<u>32,020</u>	<u>2,116</u>
(d) Net Employer Normal Cost (a) - (b) + (c)	855,948	5,313	149,383	21,232	12,629	4,320	28,423	448,894	174,802	10,950
(4) Actuarial Accrued Liability	114,519,810	1,949,071	17,818,370	5,197,826	3,779,983	663,283	6,839,093	62,177,064	13,678,845	2,416,274
(5) Assets*	<u>82,514,065</u>	<u>1,336,908</u>	<u>14,859,617</u>	<u>3,789,314</u>	<u>2,592,768</u>	<u>454,959</u>	<u>4,691,075</u>	<u>43,749,450</u>	<u>9,382,601</u>	<u>1,657,372</u>
(6) Unfunded Actuarial Accrued Liability (4) - (5)	32,005,745	612,163	2,958,753	1,408,512	1,187,215	208,324	2,148,018	18,427,614	4,296,244	758,902
(7) Amortizations*	4,476,901	85,628	413,865	197,020	166,065	29,140	300,461	2,577,619	600,950	106,154
(8) Total Required Employer Contributions (3d) + (7)	5,332,849	90,941	563,247	218,251	178,695	33,460	328,884	3,026,515	775,752	117,104
(9) Fiscal 2016 Cost	5,885,675	100,369	621,636	240,876	197,219	36,929	362,977	3,340,256	856,170	129,243
(10) Fiscal 2017 Cost	6,127,778	104,498	647,207	250,784	205,331	38,448	377,908	3,477,655	891,388	134,559
(11) Fiscal 2018 Cost	6,378,506	108,774	673,689	261,045	213,732	40,021	393,371	3,619,948	927,861	140,065
(12) Fiscal 2019 Cost	6,639,616	113,227	701,267	271,731	222,481	41,659	409,474	3,768,134	965,844	145,799
(13) Fiscal 2020 Cost	6,911,547	117,864	729,988	282,860	231,593	43,365	426,244	3,922,462	1,005,401	151,770
(14) Fiscal 2021 Cost	7,194,749	122,694	759,899	294,450	241,083	45,142	443,709	4,083,185	1,046,598	157,989
(15) Fiscal 2022 Cost	7,489,697	127,724	791,051	306,521	250,966	46,993	461,899	4,250,574	1,089,503	164,466
(16) Fiscal 2023 Cost	1,039,183	17,721	109,757	42,529	34,821	6,520	64,088	589,761	151,167	22,819
(17) Fiscal 2024 Cost	1,055,027	17,991	111,430	43,177	35,352	6,619	65,065	598,754	153,472	23,167
(18) Percentage of Total Cost	100.0%	1.7%	10.6%	4.1%	3.4%	0.6%	6.2%	56.8%	14.5%	2.2%
(19) Funded Ratio	72.05%	68.59%	83.39%	72.90%	68.59%	68.59%	68.59%	70.36%	68.59%	68.59%

* Allocation is based on the ratio of the Unfunded Actuarial Accrued Liability, adjusted for additional contributions.