



**PLYMOUTH COUNTY
CONTRIBUTORY RETIREMENT SYSTEM**

Actuarial Valuation Report
January 1, 2015

 Sherman
Actuarial
Services

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Report Summary:

Highlights

January 1, 2013

January 1, 2015

Contributions

Funding Schedule FY 2016	\$64,112,548	\$64,112,548
Funding Schedule FY 2017	67,457,348	67,373,217

Funded Ratios

GAS No. 25	50.5%	58.3%
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Participants

Actives	5,729	5,871
Retirees and Beneficiaries	3,228	3,430
Vested	0	0
Inactives	2,108	2,314
Disabled	<u>360</u>	<u>359</u>
Total	11,425	11,974

Payroll

Payroll of Active Members	\$238,655,485	\$246,703,686
Average Payroll	41,657	42,021

Normal Cost

Employer	9,291,250	10,702,586
Employee	20,376,194	21,335,589
Administrative Expenses	<u>1,600,000</u>	<u>1,800,000</u>
Total	31,267,444	33,838,175

Actuarial Accrued Liabilities

Actives	607,797,832	614,471,947
Retirees, Beneficiaries, Disabilities and Inactives	<u>711,967,157</u>	<u>803,018,163</u>
Total	1,319,764,989	1,417,490,110

Actuarial Value of Assets

<u>666,899,774</u>	<u>826,923,777</u>
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Unfunded Actuarial Accrued Liabilities

\$652,865,215	\$590,566,333
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Introduction

The purpose of this report is to present the findings of an actuarial valuation as of January 1, 2015, of the Plymouth County Contributory Retirement System.

The actuarial valuation is based on:

- Provisions of Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2015.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Plymouth County Contributory 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, 2015. The report also includes results under GASB Statements #25 and #27.

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 two years, the total unfunded actuarial accrued liability decreased by 9.5% to \$590,566,333. The decrease is the result of net favorable actuarial experience during the preceding years, plan and actuarial assumption changes. The sources of change are as follows:

Asset gains	(13,607,106)
Salary Increases	(2,795,124)
New Participants	6,829,128
Active - Retirements	(10,881,643)
Active - Terminations	3,064,803
Active - Mortality	567,837
Active - Disabilities	(5,764,175)
Inactive - Mortality and data adjustments	(3,600,920)
Other, including data, contribution interest, purchased service	<u>1,059,746</u>
Total (Gain) / Loss	(25,127,454)

The investment return assumption was changed from 8.25% to 8%, and the salary scale assumption was changed from 4% to 3.75%. These changes increased the accrued liability by \$25,643,925, and the Normal Cost by \$1,018,796.

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, 2013</u>	<u>January 1, 2015</u>
Superannuation	\$20,586,623	\$20,508,053
Termination	2,346,718	3,995,033
Death	1,366,211	1,836,690
Disability	5,367,892	5,698,399
Administrative Expenses	<u>1,600,000</u>	<u>1,800,000</u>
Total Normal Cost	31,267,444	33,838,175
% of Pay	13.1%	13.7%
Employee Contributions	20,376,194	21,335,589
% of Pay	8.5%	8.6%
Employer Normal Cost	\$10,891,250	\$12,502,586
% of Pay	4.6%	5.1%

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents a portion of today's value of all projected benefits attributable to past service for 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, 2013</u>	<u>January 1, 2015</u>
Actives		
Superannuations	\$553,686,261	\$577,090,475
Termination	9,337,538	(10,911,870)
Death	14,629,128	16,408,551
Disability	30,144,905	31,884,791
Retirees and Inactives		
Retirees and Beneficiaries	592,474,988	679,619,246
Vested	0	0
Terminated (Refund)	12,188,951	12,723,183
Disabled	<u>107,303,218</u>	<u>110,675,734</u>
Total	<u>\$1,319,764,989</u>	<u>\$1,417,490,110</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, 2013</u>	<u>January 1, 2015</u>
Actives		
Superannuation	\$711,697,067	\$734,708,449
Termination	18,802,369	20,301,500
Death	24,742,245	29,890,734
Disability	77,429,122	82,615,357
Retirees and Inactives		
Retirees and Beneficiaries	592,474,988	679,619,246
Vested	0	0
Terminated (Refund)	12,188,951	12,723,183
Disabled	<u>107,303,218</u>	<u>110,675,734</u>
Total	\$1,544,637,960	\$1,670,534,203

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, 2013</u>	<u>January 1, 2015</u>
Cash equivalents	\$23,602,317	\$46,169,755
Short term investments	5,637,177	7,789,490
Fixed income securities	150,616,475	147,059,475
Equities	280,735,715	396,703,891
International	76,652,359	55,373,947
Real Estate	98,857,827	118,466,211
Venture Capital	0	0
Other	64,600,894	62,486,277
Accounts receivable	5,351,960	4,631,686
Accounts payable	(4,147,968)	(5,252,264)
Accrued income	<u>910,935</u>	<u>1,153,501</u>
Total Market Value	\$702,817,691	\$834,581,969
Total Actuarial Value	\$666,899,774	\$826,923,777

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 (8.25%) 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 20%. The calculation of the actuarial value of assets as of January 1, 2015 is presented in Table V.

Table V

	<u>January 1, 2015</u>
(1) Market value at January 1, 2014	\$811,013,848
(2) 2014 Contributions	\$84,012,259
(3) 2014 Payments	(\$93,698,781)
(4) Net interest adjustment at 8.25% on (1), (2), and (3) to December 31, 2014	\$67,496,602
(5) Expected market value on January 1, 2015	\$868,823,928
(1) + (2) + (3) + (4)	
(6) Actual market value on January 1, 2015	\$834,581,969
(7) 2014 (Gain) / Loss	\$34,241,959
(8) 80% of 2014 (Gain) / Loss	\$27,393,567
(9) 2013 (Gain) / Loss	(\$56,530,355)
(10) 60% of 2013 (Gain) / Loss	(\$33,918,213)
(11) 2012 (Gain) / Loss	(\$17,348,837)
(12) 40% of 2012 (Gain) / Loss	(\$6,939,535)
(13) 2011 (Gain) / Loss	\$29,029,947
(14) 20% of 2011 (Gain) / Loss	\$5,805,989
(15) Actuarial value on January 1, 2015, (6) + (8) + (10) + (12) + (14) but not less than 80% nor greater than 120% of (6)	\$826,923,777
(16) Ratio of actuarial value to market value	99.08%
(17) Actuarial Value Return for 2013	14.12%
(18) Actuarial Value Return for 2014	11.09%
(19) Market Value Return for 2013	16.20%
(20) Market Value Return for 2014	4.06%

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, 2013</u>	<u>January 1, 2015</u>
Actuarial Accrued Liability	\$1,319,764,989	\$1,417,490,110
Actuarial Assets	<u>666,899,774</u>	<u>826,923,777</u>
Unfunded Actuarial Accrued Liability	\$652,865,215	\$590,566,333
Funded Status	50.5%	58.3%

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, 2028, 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, 2031
\$ 587,104,044 over 16 years with 4.0% increasing payments
- Level amortization of the 2002 Early Retirement Incentive June 30, 2019
\$ 1,965,733 over 4 years
- Level amortization of the 2003 Early Retirement Incentive June 30, 2020
\$ 1,185,835 over 5 years
- Level amortization of the 2013 Early Retirement Incentive June 30, 2028
\$ 310,720 over 13 years
- Interest adjustment for payments deposited semiannually.

The pension appropriation is shown in Table VII.

Table VII

	<u>January 1, 2013</u>	<u>January 1, 2015</u>
Normal cost	\$10,891,250	\$12,502,586
Amortization payment of the accrued liability	44,747,554	47,970,112
Amortization payment of 2002 ERI liability	551,318	549,533
Amortization payment of 2003 ERI liability	276,175	275,000
Amortization payment of 2011 ERI liability	<u>36,818</u>	<u>36,401</u>
Total cost	\$56,503,116	\$61,333,632
% of Pay	20.8%	24.9%
Fiscal 2016 cost	\$64,112,548	\$64,112,548
Fiscal 2017 cost	\$67,457,348	\$67,373,217

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 3.75% per year. The employee contribution rate is expected to increase to 10.5% by 2041 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 16 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents about 26% of payroll, decreasing to 25.6% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 4% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

Appropriation Forecast

<u>Fiscal</u> <u>Year</u> <u>Ending</u>	<u>Employee</u> <u>Contribution</u>	<u>Employer</u> <u>Normal Cost</u> <u>with Interest</u>	<u>Amortization</u> <u>Payments</u> <u>with Interest</u>	<u>Employer</u> <u>Total Cost</u> <u>with Interest</u>	<u>Employer</u> <u>Total Cost</u> <u>% of Payroll</u>	<u>Unfunded</u> <u>Liability</u>	<u>Funded</u> <u>Ratio %**</u>
2016	\$21,335,589	\$13,243,028	\$50,869,520	\$64,112,548	26.0	\$590,566,333	58.3
2017	\$22,325,258	\$13,538,829	\$53,834,388	\$67,373,217	26.3	\$585,995,837	59.8
2018	\$23,359,149	\$13,838,193	\$55,951,286	\$69,789,479	26.3	\$577,980,373	61.7
2019	\$24,439,187	\$14,140,969	\$58,152,861	\$72,293,830	26.2	\$567,165,058	63.6
2020	\$25,567,379	\$14,446,994	\$59,860,420	\$74,307,414	26.0	\$553,239,562	65.7
2021	\$26,745,817	\$14,756,086	\$61,950,357	\$76,706,443	25.9	\$536,458,765	67.8
2022	\$27,976,685	\$15,068,043	\$64,426,829	\$79,494,872	25.8	\$516,204,359	69.9
2023	\$29,262,256	\$15,382,646	\$67,002,360	\$82,385,006	25.8	\$491,804,329	72.2
2024	\$30,604,903	\$15,699,654	\$69,680,912	\$85,380,566	25.8	\$462,826,013	74.6
2025	\$32,007,098	\$16,018,807	\$72,466,606	\$88,485,413	25.8	\$428,798,099	77.2
2026	\$33,471,420	\$16,339,818	\$75,363,728	\$91,703,546	25.7	\$389,207,363	79.9
2027	\$35,000,556	\$16,662,379	\$78,376,735	\$95,039,114	25.7	\$343,495,159	82.8
2028	\$36,597,308	\$16,986,154	\$81,510,262	\$98,496,416	25.7	\$291,053,598	85.8
2029	\$38,264,597	\$17,310,781	\$84,730,574	\$102,041,355	25.6	\$231,221,439	89.0
2030	\$40,005,468	\$17,635,868	\$88,119,797	\$105,755,665	25.6	\$163,318,934	92.5
2031	\$41,823,094	\$17,960,993	\$91,644,589	\$109,605,582	25.6	\$86,528,220	96.1
2032	\$43,720,785	\$18,285,702	\$0	\$18,285,702	4.1	\$0	100.0
2033	\$45,701,988	\$18,609,507	\$0	\$18,609,507	4.0	\$0	100.0
2034	\$47,770,300	\$18,931,882	\$0	\$18,931,882	4.0	\$0	100.0
2035	\$49,929,466	\$19,252,267	\$0	\$19,252,267	3.9	\$0	100.0
2036	\$52,183,393	\$19,570,057	\$0	\$19,570,057	3.8	\$0	100.0
2037	\$54,536,152	\$19,884,608	\$0	\$19,884,608	3.7	\$0	100.0
2038	\$56,991,984	\$20,195,229	\$0	\$20,195,229	3.6	\$0	100.0
2039	\$59,555,312	\$20,501,185	\$0	\$20,501,185	3.6	\$0	100.0
2040	\$62,230,745	\$20,801,688	\$0	\$20,801,688	3.5	\$0	100.0
2041	\$65,023,085	\$21,095,899	\$0	\$21,095,899	3.4	\$0	100.0
2042	\$67,461,451	\$21,886,995	\$0	\$21,886,995	3.4	\$0	100.0
2043	\$69,991,255	\$22,707,757	\$0	\$22,707,757	3.4	\$0	100.0
2044	\$72,615,927	\$23,559,298	\$0	\$23,559,298	3.4	\$0	100.0
2045	\$75,339,025	\$24,442,772	\$0	\$24,442,772	3.4	\$0	100.0

GASB Statements No. 25 and No. 27

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.

A separate report was prepared for GASB Statement 67 and 68 purposes.

Table VIII

	<u>January 1, 2013</u>	<u>January 1, 2015</u>
(1) Actuarial Accrued Liability	\$1,319,764,989	\$1,417,490,110
(2) Actuarial Value of Assets	<u>666,899,774</u>	<u>826,923,777</u>
(3) Unfunded Actuarial Accrued Liability	652,865,215	590,566,333
(4) Funded Ratio (2)/(1)	50.5%	58.3%
(5) Covered Payroll	\$238,655,485	\$246,703,686
(6) UAAL as a percentage of payroll: (3)/(5)	273.6%	239.4%
(7) Annual Required Contribution (ARC)	\$54,966,177	\$64,112,548
(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, 2015.

The normal cost for employees on that date was:	\$21,335,589	8.6% of pay
The normal cost for the employer was:	10,702,586	4.3% of pay
The actuarial liability for active members was:		\$614,471,947
The actuarial liability for retired and inactive members was:		803,018,163
Total actuarial accrued liability:		1,417,490,110
System assets as of that date:		826,923,777
Unfunded actuarial accrued liability:		\$590,566,333

The ratio of system's assets to total actuarial liability was 58.3%

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

Investment Return:	8.00%
Rate of Salary Increase:	3.75%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a percent of Covered Payroll
	(a)	(b)	(b-a)	(a/b)	(c)	(b-a)/c
01/01/15	\$826,923,777	\$1,417,490,110	\$590,566,333	58.3%	\$246,703,686	239.4%
01/01/13	666,899,774	1,319,764,989	652,865,215	50.5%	238,655,485	273.6%
01/01/11	666,730,812	1,181,508,931	514,778,119	56.4%	228,289,638	225.5%
01/01/10	673,709,456	1,132,847,379	459,137,923	59.5%	227,507,647	201.8%
01/01/09	579,877,224	1,159,210,636	579,333,412	50.0%	264,541,078	219.0%
01/01/08	683,819,938	1,056,020,215	372,200,277	64.8%	252,682,832	147.3%
01/01/07	606,629,089	987,840,418	381,211,329	61.4%	244,574,136	155.9%
01/01/06	558,533,863	918,851,707	360,317,844	60.8%	226,262,731	159.2%
01/01/04	520,104,805	802,158,453	282,053,648	64.8%	208,312,002	135.4%
01/01/02	466,325,660	733,198,204	266,872,544	63.6%	205,039,686	130.2%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

P:\Plymouth\Val13\Report\ACT1.XLS\Actives

Age/Service Distribution with Salary as of January 1, 2015

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
<20	13 31,598	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	13 31,598
20-24	158 28,478	4 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	162 28,487
25-29	417 31,603	62 49,954	3 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	482 34,090
30-34	168 37,507	117 56,830	46 57,359	4 0	0 0	0 0	0 0	0 0	0 0	0 0	335 47,478
35-39	156 32,363	76 53,441	83 62,370	53 69,009	0 0	0 0	0 0	0 0	0 0	0 0	368 48,762
40-44	238 25,546	146 38,915	120 55,843	122 64,189	3 0	59 73,800	0 0	0 0	0 0	0 0	688 44,972
45-49	272 25,672	207 31,253	165 43,756	133 60,036	77 77,392	10 74,580	0 0	0 0	0 0	0 0	938 43,743
50-54	192 31,003	241 31,061	235 39,774	189 41,597	99 73,083	38 56,106	0 0	0 0	7 100,543	0 0	1,088 42,732
55-59	138 30,572	141 32,480	246 34,799	196 37,959	102 62,649	53 80,263	20 78,718	6 68,613	0 0	0 0	1,013 41,551
60-64	37 29,834	72 30,439	83 37,594	112 39,351	82 47,890	31 65,592	7 78,981	13 70,320	0 0	0 0	526 42,075
65-69	18 24,253	25 32,315	29 31,364	33 40,787	20 39,504	11 35,936	5 54,001	5 54,001	0 0	0 0	174 35,726
70+	9 13,949	12 0	15 28,950	10 28,698	13 35,393	8 32,884	3 25,334	2 18,642	0 0	0 0	84 29,699
Total Employees	1,816	1,103	1,025	852	396	460	62,530	151	42	26	5,871
Average Salary	29,922	37,193	43,032	47,905	62,530	53,932	62,530	63,418	74,224	62,812	42,021

Retiree Distribution as of January 1, 2015

Attained Age	Number of Employees			Total Payments		
	Female	Male	Total	Female	Male	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	6,000	0	6,000
35-39	0	0	0	0	0	0
40-44	0	3	3	0	113,002	113,002
45-49	4	8	12	51,585	130,193	181,778
50-54	20	32	52	280,286	884,548	1,164,834
55-59	95	122	217	911,724	5,342,189	6,253,913
60-64	289	256	545	4,470,781	9,860,028	14,330,809
65-69	426	325	751	7,136,948	10,721,600	17,858,548
70-74	384	284	668	6,403,072	8,579,968	14,983,040
75-79	283	204	487	4,207,439	4,641,825	8,849,264
80-84	210	125	335	2,837,173	2,496,932	5,334,105
85-89	146	71	217	1,554,438	1,172,067	2,726,505
90-94	73	42	115	602,861	464,217	1,067,077
95+	20	9	29	127,327	106,405	233,732
Total	1951	1481	3432	28,589,634	44,512,973	73,102,607
Average (Age/Payment)	72.84	70.72	71.93	14,654	30,056	21,300
Frequency Percent	56.8	43.2	100	39.1	60.9	100

Disabled Retiree Distribution as of January 1, 2015

Attained Age	Number of Employees			Total Payments		
	Female	Male	Total	Female	Male	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	1	2	3	6,595	92,589	99,184
40-44	1	9	10	16,157	339,704	355,860
45-49	3	16	19	126,384	526,407	652,791
50-54	10	27	37	309,485	1,067,018	1,376,503
55-59	10	38	48	261,669	1,372,467	1,634,137
60-64	11	52	63	180,518	1,555,994	1,736,512
65-69	8	57	65	203,172	1,726,300	1,929,473
70-74	10	46	56	216,769	1,360,517	1,577,286
75-79	1	32	33	6,653	851,583	858,236
80-84	1	15	16	4,954	363,719	368,673
85-89	0	5	5	0	85,976	85,976
90-94	0	4	4	0	77,140	77,140
95-99	0	0	0	0	0	0
Total	56	303	359	1,332,357	9,419,414	10,751,771
Average (Age/Payment)	61.27	65.06	64.47	23,792	31,087	29,949
Frequency Percent	15.6	84.4	100	12.4	87.6	100

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
2015	\$104,911,375	\$21,335,589	\$64,112,548	\$63,007,073	\$43,543,835
2016	97,080,357	22,325,258	67,373,217	66,924,331	59,542,449
2017	102,016,816	23,359,149	69,789,479	71,548,731	54,842,661
2018	106,947,222	24,439,187	72,293,830	76,427,008	57,608,626
2019	112,085,124	25,567,379	74,307,414	81,571,015	60,559,914
2020	117,324,873	26,745,817	76,706,443	86,971,393	63,735,605
2021	122,261,101	27,976,685	79,494,872	92,691,400	66,659,677
2022	127,417,142	29,262,256	82,385,006	98,790,124	70,178,742
2023	132,482,720	30,604,903	85,380,566	105,305,102	74,716,041
2024	137,403,329	32,007,098	88,485,413	112,292,155	79,698,019
2025	142,899,462	33,471,420	91,703,546	119,786,041	85,326,032
2026	148,615,441	35,000,556	95,039,114	127,809,411	91,630,837
2027	154,560,058	36,597,308	98,496,416	136,401,436	98,430,118
2028	160,742,461	38,264,597	102,041,355	145,603,524	105,763,790
2029	167,172,159	40,005,468	105,755,665	155,459,433	113,675,031
2030	173,859,045	41,823,094	109,605,582	166,020,164	122,170,693
2031	180,813,407	43,720,785	18,285,702	175,460,186	131,377,729
2032	188,045,944	45,701,988	18,609,507	179,742,177	141,313,968
2033	195,567,781	47,770,300	18,931,882	183,963,189	152,038,531
2034	203,390,493	49,929,466	19,252,267	188,101,704	163,615,383
2035	211,526,112	52,183,393	19,570,057	192,133,799	176,113,730
2036	219,987,157	54,536,152	19,884,608	196,032,923	79,226,684
2037	228,786,643	56,991,984	20,195,229	199,769,663	80,277,027
2038	237,938,109	59,555,312	20,501,185	203,311,475	81,200,267
2039	247,455,633	62,230,745	20,801,688	206,622,414	81,977,590
2040	257,353,858	65,023,085	21,095,899	209,662,819	82,588,308
2041	267,648,013	67,461,451	21,886,995	212,360,806	83,009,686
2042	278,353,933	69,991,255	22,707,757	214,694,338	83,216,766
2043	289,488,091	72,615,927	23,559,298	216,610,397	83,182,167
2044	301,067,614	75,339,025	24,442,772	218,050,747	82,875,871

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2015, and does not take into account any subsequent changes.

1. Administration

Each of the 104 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:

<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	.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 \$13,000. 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, 2015.

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 8.00% per annum, net of investment expenses. This is a reduction from the previous actuarial valuation. The rationale for the selection of this rate is based on past performance and future expectations. Since 1987 the fund has had an average return of 9.31%. The asset policy continues to have a high concentration in equities and equity like investments. The Board continues to take an aggressive posture in its investment allocations.

5. Salary Scale

It is assumed that salaries including longevity will increase at a rate of 3.75% per year. This is a reduction from the previous actuarial valuation. The rationale for this assumption is based on the history of municipal revenue and Proposition 2-1/2. The member units are limited to how much it can raise in property tax revenue to 2.5% of the previous year's figure, plus new growth. This restriction limits the largest portion of the their revenue to about 3% per year. By extension, payroll increases are limited by the growth in revenue. Over an employee's

career, promotions are expected to add .75% to the increases.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$13,000 per year. Under State law the increase is limited to 3% or CPI. The Board has always granted 3%.

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, with a 20% corridor.

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.

Sample rates are as follows:

<u>Age</u>	<u>Healthy Male</u>	<u>Healthy Female</u>	<u>Disabled Male</u>	<u>Disabled Female</u>
25	0.000376	0.000207	0.000382	0.000223
30	0.000444	0.000264	0.000562	0.000350
35	0.000773	0.000475	0.000904	0.000554
40	0.001079	0.000706	0.001215	0.000852
45	0.001508	0.001124	0.001734	0.001326
50	0.002138	0.001676	0.002667	0.002018
55	0.003624	0.002717	0.004693	0.003478
60	0.006747	0.005055	0.008757	0.006657
65	0.012737	0.009706	0.016075	0.012163
70	0.022206	0.016742	0.027281	0.020665
75	0.037834	0.028106	0.046906	0.034105
80	0.064368	0.045879	0.080486	0.056294
85	0.110757	0.077446	0.136043	0.096337
90	0.183408	0.131682	0.216605	0.157618
95	0.267491	0.194509	0.299852	0.215240
100	0.344556	0.237467	0.371685	0.254498

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 \$1,600,000 and is anticipated to increase at 4% 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 projected 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 projected 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. **Actuarial 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 Plymouth County Retirement System contributing as of January 1, 2015, 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.

The funded status measure is appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations. The funded status measure is appropriate for assessing the need for or the amount of future contributions. The funded status measure would be different if the measure reflected the market value of assets rather than the actuarial value of assets.

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; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); 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 such future measurements.

The report was prepared under the supervision of Daniel Sherman, an Associate of the Society of Actuaries and a Member of the American Academy of Actuaries, who takes responsibility for the overall appropriateness of the analysis, assumptions and results. Daniel Sherman is deemed to meet the General Qualification Standard and the basic education and experience requirement in the pension area. Based on over thirty years of performing valuations of similar complexity, Mr. Sherman is qualified by experience.. Daniel Sherman has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sherman Actuarial Services, LLC

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

July, 2105

BREAKOUTS

County of Plymouth

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	88
Inactives	48
Retirees and Disableds	242
Total	378
Payroll	3,732,558
Average	42,415

Valuation Results

Normal Cost	
Employee	367,795
Employer	125,909
Administrative Expense	92,200
Total	585,904
Actuarial Accrued Liability	
Actives	12,200,180
Inactives	573,583
Retirees and Disableds	59,833,052
Total	72,606,815
Assets	\$42,356,770
Unfunded Actuarial Accrued Liability	\$30,250,045
Estimated FY17 Contribution - semiannual payments	\$2,947,779
Estimated FY17 Contribution - July payment	\$2,892,140
Estimated FY18 Contribution - semiannual payments	\$3,062,660
Estimated FY18 Contribution - July payment	\$3,004,853



Hospital

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	0
Inactives	5
Retirees and Disableds	83
Total	<u>88</u>
Payroll	0
Average	0

Valuation Results

Normal Cost	
Employee	0
Employer	0
Administrative Expense	11,194
Total	<u>11,194</u>

Actuarial Accrued Liability	
Actives	0
Inactives	130,880
Retirees and Disableds	8,684,477
Total	<u>8,815,357</u>

Assets \$5,142,631

Unfunded Actuarial Accrued Liability \$3,672,726

Estimated FY17 Contribution - semiannual payments	\$341,384
Estimated FY17 Contribution - July payment	\$334,940
Estimated FY18 Contribution - semiannual payments	\$355,010
Estimated FY18 Contribution - July payment	\$348,309

Abington

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	218
Inactives	158
Retirees and Disableds	137
Total	513
Payroll	8,961,806
Average	41,109

Valuation Results

Normal Cost	
Employee	782,537
Employer	373,392
Administrative Expense	65,948
Total	1,221,877
Actuarial Accrued Liability	
Actives	19,652,906
Inactives	1,180,930
Retirees and Disableds	31,099,738
Total	51,933,574
Assets	\$30,296,583
Unfunded Actuarial Accrued Liability	\$21,636,991
Estimated FY17 Contribution - semiannual payments	\$2,439,483
Estimated FY17 Contribution - July payment	\$2,393,438
Estimated FY18 Contribution - semiannual payments	\$2,527,615
Estimated FY18 Contribution - July payment	\$2,479,907

Bridgewater

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	156
Inactives	33
Retirees and Disableds	146
Total	335
Payroll	9,900,419
Average	63,464

Valuation Results

Normal Cost	
Employee	879,629
Employer	428,130
Administrative Expense	88,001
Total	1,395,760
Actuarial Accrued Liability	
Actives	29,124,766
Inactives	432,871
Retirees and Disableds	39,742,542
Total	69,300,179
Assets	\$40,427,771
Unfunded Actuarial Accrued Liability	\$28,872,408
Estimated FY17 Contribution - semiannual payments	\$3,248,513
Estimated FY17 Contribution - July payment	\$3,187,198
Estimated FY18 Contribution - semiannual payments	\$3,364,641
Estimated FY18 Contribution - July payment	\$3,301,134

Bridgewater Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	4
Inactives	0
Retirees and Disableds	6
Total	10
Payroll	215,897
Average	53,974

Valuation Results

Normal Cost	
Employee	18,739
Employer	11,375
Administrative Expense	1,610
Total	31,724

Actuarial Accrued Liability	
Actives	372,861
Inactives	0
Retirees and Disableds	894,960
Total	1,267,821

Assets	\$739,611
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Unfunded Actuarial Accrued Liability	\$528,210
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Estimated FY17 Contribution - semiannual payments	\$78,073
Estimated FY17 Contribution - July payment	\$76,599
Estimated FY18 Contribution - semiannual payments	\$80,272
Estimated FY18 Contribution - July payment	\$78,757



Bridgewater/Raynham Regional School

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	172
Inactives	115
Retirees and Disableds	123
Total	<u>410</u>
Payroll	6,178,136
Average	35,919

Valuation Results

Normal Cost	
Employee	505,270
Employer	214,482
Administrative Expense	41,191
Total	<u>760,943</u>
Actuarial Accrued Liability	
Actives	14,681,925
Inactives	471,412
Retirees and Disableds	17,284,688
Total	<u>32,438,025</u>
Assets	\$18,923,430
Unfunded Actuarial Accrued Liability	\$13,514,595
Estimated FY17 Contribution - semiannual payments	\$1,603,188
Estimated FY17 Contribution - July payment	\$1,572,928
Estimated FY18 Contribution - semiannual payments	\$1,657,842
Estimated FY18 Contribution - July payment	\$1,626,551



Carver

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	222
Inactives	99
Retirees and Disableds	95
Total	416
Payroll	6,640,114
Average	29,910

Valuation Results

Normal Cost	
Employee	572,515
Employer	277,898
Administrative Expense	49,146
Total	899,559
Actuarial Accrued Liability	
Actives	17,183,846
Inactives	320,008
Retirees and Disableds	21,198,306
Total	38,702,160
Assets	\$22,577,749
Unfunded Actuarial Accrued Liability	\$16,124,411
Estimated FY17 Contribution - semiannual payments	\$1,961,853
Estimated FY17 Contribution - July payment	\$1,924,823
Estimated FY18 Contribution - semiannual payments	\$2,027,523
Estimated FY18 Contribution - July payment	\$1,989,254



Carver/Marion/Wareham Regional Refuse

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	5
Inactives	0
Retirees and Disableds	2
Total	<u>7</u>
Payroll	160,559
Average	32,112

Valuation Results

Normal Cost	
Employee	9,533
Employer	12,557
Administrative Expense	1,352
Total	<u>23,442</u>
Actuarial Accrued Liability	
Actives	602,657
Inactives	0
Retirees and Disableds	461,952
Total	<u>1,064,609</u>
Assets	\$621,063
Unfunded Actuarial Accrued Liability	\$443,546
Estimated FY17 Contribution - semiannual payments	\$54,792
Estimated FY17 Contribution - July payment	\$53,758
Estimated FY18 Contribution - semiannual payments	\$56,702
Estimated FY18 Contribution - July payment	\$55,632

Duxbury

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	381
Inactives	194
Retirees and Disableds	190
Total	<u>765</u>
Payroll	15,363,907
Average	40,325

Valuation Results

Normal Cost	
Employee	1,319,516
Employer	585,032
Administrative Expense	89,125
Total	<u>1,993,673</u>
Actuarial Accrued Liability	
Actives	39,498,564
Inactives	992,074
Retirees and Disableds	29,694,693
Total	<u>70,185,331</u>
Assets	\$40,944,144
Unfunded Actuarial Accrued Liability	\$29,241,187
Estimated FY17 Contribution - semiannual payments	\$3,349,941
Estimated FY17 Contribution - July payment	\$3,286,712
Estimated FY18 Contribution - semiannual payments	\$3,470,739
Estimated FY18 Contribution - July payment	\$3,405,229

Duxbury Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	2
Inactives	0
Retirees and Disableds	5
Total	<u>7</u>
Payroll	77,632
Average	38,816

Valuation Results

Normal Cost	
Employee	6,804
Employer	4,657
Administrative Expense	655
Total	<u>12,116</u>
Actuarial Accrued Liability	
Actives	101,386
Inactives	0
Retirees and Disableds	414,602
Total	<u>515,988</u>
Assets	\$301,013
Unfunded Actuarial Accrued Liability	\$214,975
Estimated FY17 Contribution - semiannual payments	\$25,013
Estimated FY17 Contribution - July payment	\$24,540
Estimated FY18 Contribution - semiannual payments	\$25,908
Estimated FY18 Contribution - July payment	\$25,419

East Bridgewater

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	254
Inactives	105
Retirees and Disableds	125
Total	<u>484</u>
Payroll	9,566,500
Average	37,663

Valuation Results

Normal Cost	
Employee	843,550
Employer	439,859
Administrative Expense	62,749
Total	<u>1,346,158</u>
Actuarial Accrued Liability	
Actives	22,299,946
Inactives	416,152
Retirees and Disableds	26,698,093
Total	<u>49,414,191</u>
Assets	\$28,826,846
Unfunded Actuarial Accrued Liability	\$20,587,345
Estimated FY17 Contribution - semiannual payments	\$2,388,744
Estimated FY17 Contribution - July payment	\$2,343,657
Estimated FY18 Contribution - semiannual payments	\$2,474,380
Estimated FY18 Contribution - July payment	\$2,427,677

East Bridgewater Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	4
Inactives	3
Retirees and Disableds	3
Total	<u>10</u>
Payroll	185,578
Average	46,395

Valuation Results

Normal Cost	
Employee	16,501
Employer	9,414
Administrative Expense	795
Total	<u>26,710</u>
Actuarial Accrued Liability	
Actives	344,972
Inactives	53,027
Retirees and Disableds	227,686
Total	<u>625,685</u>
Assets	\$365,007
Unfunded Actuarial Accrued Liability	\$260,678
Estimated FY17 Contribution - semiannual payments	\$40,523
Estimated FY17 Contribution - July payment	\$39,758
Estimated FY18 Contribution - semiannual payments	\$41,689
Estimated FY18 Contribution - July payment	\$40,902

Halifax

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	118
Inactives	54
Retirees and Disableds	52
Total	<u>224</u>
Payroll	4,796,309
Average	40,647

Valuation Results

Normal Cost	
Employee	414,772
Employer	199,013
Administrative Expense	29,394
Total	<u>643,179</u>
Actuarial Accrued Liability	
Actives	11,008,469
Inactives	179,269
Retirees and Disableds	11,959,820
Total	<u>23,147,558</u>
Assets	\$13,503,633
Unfunded Actuarial Accrued Liability	\$9,643,925
Estimated FY17 Contribution - semiannual payments	\$1,111,384
Estimated FY17 Contribution - July payment	\$1,090,406
Estimated FY18 Contribution - semiannual payments	\$1,151,351
Estimated FY18 Contribution - July payment	\$1,129,620

Hanover

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	261
Inactives	117
Retirees and Disableds	185
Total	563
Payroll	12,506,349
Average	47,917

Valuation Results

Normal Cost	
Employee	1,118,315
Employer	508,665
Administrative Expense	80,972
Total	1,707,952

Actuarial Accrued Liability	
Actives	25,612,549
Inactives	454,139
Retirees and Disableds	37,698,590
Total	63,765,278

Assets	\$37,198,866
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Unfunded Actuarial Accrued Liability	\$26,566,412
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Estimated FY17 Contribution - semiannual payments	\$3,018,828
Estimated FY17 Contribution - July payment	\$2,961,848
Estimated FY18 Contribution - semiannual payments	\$3,128,095
Estimated FY18 Contribution - July payment	\$3,069,053



Hanson

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	98
Inactives	23
Retirees and Disableds	69
Total	190
Payroll	5,140,752
Average	52,457

Valuation Results

Normal Cost	
Employee	451,409
Employer	245,774
Administrative Expense	38,654
Total	735,837

Actuarial Accrued Liability	
Actives	13,366,571
Inactives	331,042
Retirees and Disableds	16,742,032
Total	30,439,645

Assets \$17,757,631

Unfunded Actuarial Accrued Liability \$12,682,014

Estimated FY17 Contribution - semiannual payments	\$1,444,288
Estimated FY17 Contribution - July payment	\$1,417,027
Estimated FY18 Contribution - semiannual payments	\$1,496,511
Estimated FY18 Contribution - July payment	\$1,468,264



Kingston

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	192
Inactives	67
Retirees and Disableds	92
Total	351
Payroll	8,841,372
Average	46,049

Valuation Results

Normal Cost	
Employee	718,822
Employer	358,635
Administrative Expense	55,269
Total	1,132,726
Actuarial Accrued Liability	
Actives	23,598,371
Inactives	291,071
Retirees and Disableds	19,634,374
Total	43,523,816
Assets	\$25,390,568
Unfunded Actuarial Accrued Liability	\$18,133,248
Estimated FY17 Contribution - semiannual payments	\$2,086,754
Estimated FY17 Contribution - July payment	\$2,047,367
Estimated FY18 Contribution - semiannual payments	\$2,161,577
Estimated FY18 Contribution - July payment	\$2,120,777



Kingston Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	1
Inactives	2
Retirees and Disableds	0
Total	3
Payroll	34,385
Average	34,385

Valuation Results

Normal Cost	
Employee	3,000
Employer	1,068
Administrative Expense	117
Total	4,185
Actuarial Accrued Liability	
Actives	90,027
Inactives	2,160
Retirees and Disableds	0
Total	92,187
Assets	\$53,779
Unfunded Actuarial Accrued Liability	\$38,408
Estimated FY17 Contribution - semiannual payments	\$4,724
Estimated FY17 Contribution - July payment	\$4,635
Estimated FY18 Contribution - semiannual payments	\$4,889
Estimated FY18 Contribution - July payment	\$4,796



Lakeville

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	74
Inactives	35
Retirees and Disableds	62
Total	<u>171</u>
Payroll	3,586,954
Average	48,472

Valuation Results

Normal Cost	
Employee	308,880
Employer	171,237
Administrative Expense	25,705
Total	<u>505,822</u>
Actuarial Accrued Liability	
Actives	9,949,044
Inactives	119,643
Retirees and Disableds	10,173,876
Total	<u>20,242,563</u>
Assets	\$11,808,941
Unfunded Actuarial Accrued Liability	\$8,433,622
Estimated FY17 Contribution - semiannual payments	\$968,881
Estimated FY17 Contribution - July payment	\$950,594
Estimated FY18 Contribution - semiannual payments	\$1,003,774
Estimated FY18 Contribution - July payment	\$984,828

Marion

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	86
Inactives	43
Retirees and Disableds	47
Total	<u>176</u>
Payroll	4,235,484
Average	49,250

Valuation Results

Normal Cost	
Employee	370,872
Employer	166,109
Administrative Expense	25,508
Total	<u>562,489</u>
Actuarial Accrued Liability	
Actives	10,844,621
Inactives	209,843
Retirees and Disableds	9,032,962
Total	<u>20,087,426</u>
Assets	\$11,718,438
Unfunded Actuarial Accrued Liability	\$8,368,988
Estimated FY17 Contribution - semiannual payments	\$957,334
Estimated FY17 Contribution - July payment	\$939,265
Estimated FY18 Contribution - semiannual payments	\$991,879
Estimated FY18 Contribution - July payment	\$973,158

Marshfield

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	535
Inactives	204
Retirees and Disableds	263
Total	1,002
Payroll	20,842,080
Average	38,957

Valuation Results

Normal Cost	
Employee	1,783,866
Employer	1,026,827
Administrative Expense	142,357
Total	2,953,050
Actuarial Accrued Liability	
Actives	53,025,877
Inactives	963,000
Retirees and Disableds	58,116,230
Total	112,105,107
Assets	\$65,398,960
Unfunded Actuarial Accrued Liability	\$46,706,147
Estimated FY17 Contribution - semiannual payments	\$5,450,547
Estimated FY17 Contribution - July payment	\$5,347,669
Estimated FY18 Contribution - semiannual payments	\$5,645,438
Estimated FY18 Contribution - July payment	\$5,538,881



Marshfield Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	4
Inactives	0
Retirees and Disableds	3
Total	<u>7</u>
Payroll	163,994
Average	40,999

Valuation Results

Normal Cost	
Employee	14,354
Employer	6,812
Administrative Expense	859
Total	<u>22,025</u>
Actuarial Accrued Liability	
Actives	313,627
Inactives	0
Retirees and Disableds	362,542
Total	<u>676,169</u>
Assets	\$394,458
Unfunded Actuarial Accrued Liability	\$281,711
Estimated FY17 Contribution - semiannual payments	\$33,544
Estimated FY17 Contribution - July payment	\$32,910
Estimated FY18 Contribution - semiannual payments	\$34,732
Estimated FY18 Contribution - July payment	\$34,076

Mattapoisett

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	104
Inactives	25
Retirees and Disableds	58
Total	<u>187</u>
Payroll	4,499,728
Average	43,267

Valuation Results

Normal Cost	
Employee	379,020
Employer	166,107
Administrative Expense	29,677
Total	<u>574,804</u>
Actuarial Accrued Liability	
Actives	12,824,963
Inactives	72,515
Retirees and Disableds	10,472,634
Total	<u>23,370,112</u>
Assets	\$13,633,465
Unfunded Actuarial Accrued Liability	\$9,736,647
Estimated FY17 Contribution - semiannual payments	\$1,084,458
Estimated FY17 Contribution - July payment	\$1,063,989
Estimated FY18 Contribution - semiannual payments	\$1,124,077
Estimated FY18 Contribution - July payment	\$1,102,860

Middleborough

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	451
Inactives	97
Retirees and Disableds	307
Total	<u>855</u>
Payroll	20,732,092
Average	45,969

Valuation Results

Normal Cost	
Employee	1,820,890
Employer	982,324
Administrative Expense	164,380
Total	<u>2,967,594</u>
Actuarial Accrued Liability	
Actives	49,408,321
Inactives	618,822
Retirees and Disableds	79,420,942
Total	<u>129,448,085</u>
Assets	\$75,516,365
Unfunded Actuarial Accrued Liability	\$53,931,720
Estimated FY17 Contribution - semiannual payments	\$6,091,767
Estimated FY17 Contribution - July payment	\$5,976,786
Estimated FY18 Contribution - semiannual payments	\$6,312,529
Estimated FY18 Contribution - July payment	\$6,193,381

Middleborough Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	7
Inactives	0
Retirees and Disableds	4
Total	11
Payroll	358,745
Average	51,249

Valuation Results

Normal Cost	
Employee	30,321
Employer	15,552
Administrative Expense	2,819
Total	48,692
Actuarial Accrued Liability	
Actives	1,362,150
Inactives	0
Retirees and Disableds	858,069
Total	2,220,219
Assets	\$1,295,213
Unfunded Actuarial Accrued Liability	\$925,006
Estimated FY17 Contribution - semiannual payments	\$104,557
Estimated FY17 Contribution - July payment	\$102,584
Estimated FY18 Contribution - semiannual payments	\$108,316
Estimated FY18 Contribution - July payment	\$106,272

Norwell

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	238
Inactives	96
Retirees and Disableds	145
Total	<u>479</u>
Payroll	9,595,474
Average	40,317

Valuation Results

Normal Cost	
Employee	832,824
Employer	456,766
Administrative Expense	61,895
Total	<u>1,351,485</u>
Actuarial Accrued Liability	
Actives	23,411,558
Inactives	522,150
Retirees and Disableds	24,808,217
Total	<u>48,741,925</u>
Assets	\$28,434,665
Unfunded Actuarial Accrued Liability	\$20,307,260
Estimated FY17 Contribution - semiannual payments	\$2,380,972
Estimated FY17 Contribution - July payment	\$2,336,032
Estimated FY18 Contribution - semiannual payments	\$2,465,925
Estimated FY18 Contribution - July payment	\$2,419,382

Norwell Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	3
Inactives	0
Retirees and Disableds	2
Total	<u>5</u>
Payroll	102,390
Average	34,130

Valuation Results

Normal Cost	
Employee	8,910
Employer	3,901
Administrative Expense	721
Total	<u>13,532</u>
Actuarial Accrued Liability	
Actives	345,331
Inactives	0
Retirees and Disableds	222,242
Total	<u>567,573</u>
Assets	\$331,106
Unfunded Actuarial Accrued Liability	\$236,467
Estimated FY17 Contribution - semiannual payments	\$26,194
Estimated FY17 Contribution - July payment	\$25,699
Estimated FY18 Contribution - semiannual payments	\$27,153
Estimated FY18 Contribution - July payment	\$26,641

Old Rochester Regional School

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	73
Inactives	41
Retirees and Disableds	46
Total	160
Payroll	2,630,269
Average	36,031

Valuation Results

Normal Cost	
Employee	225,698
Employer	105,562
Administrative Expense	15,949
Total	347,209
Actuarial Accrued Liability	
Actives	5,882,905
Inactives	219,588
Retirees and Disableds	6,457,556
Total	12,560,049
Assets	\$7,327,179
Unfunded Actuarial Accrued Liability	\$5,232,870
Estimated FY17 Contribution - semiannual payments	\$600,427
Estimated FY17 Contribution - July payment	\$589,094
Estimated FY18 Contribution - semiannual payments	\$622,063
Estimated FY18 Contribution - July payment	\$610,322

Onset Fire District

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	16
Inactives	6
Retirees and Disableds	14
Total	36
Payroll	818,704
Average	51,169

Valuation Results

Normal Cost	
Employee	72,210
Employer	30,414
Administrative Expense	6,548
Total	109,172
Actuarial Accrued Liability	
Actives	2,245,200
Inactives	28,417
Retirees and Disableds	2,882,867
Total	5,156,484
Assets	\$3,008,147
Unfunded Actuarial Accrued Liability	\$2,148,337
Estimated FY17 Contribution - semiannual payments	\$244,297
Estimated FY17 Contribution - July payment	\$239,686
Estimated FY18 Contribution - semiannual payments	\$252,908
Estimated FY18 Contribution - July payment	\$248,134



Pembroke

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	258
Inactives	97
Retirees and Disableds	128
Total	483
Payroll	11,687,730
Average	45,301

Valuation Results

Normal Cost	
Employee	1,022,050
Employer	502,608
Administrative Expense	78,082
Total	1,602,740
Actuarial Accrued Liability	
Actives	29,726,709
Inactives	389,057
Retirees and Disableds	31,373,759
Total	61,489,525
Assets	\$35,871,256
Unfunded Actuarial Accrued Liability	\$25,618,269
Estimated FY17 Contribution - semiannual payments	\$3,085,146
Estimated FY17 Contribution - July payment	\$3,026,915
Estimated FY18 Contribution - semiannual payments	\$3,195,952
Estimated FY18 Contribution - July payment	\$3,135,629

Plymouth County Mosquito Control

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	13
Inactives	0
Retirees and Disableds	9
Total	22
Payroll	744,916
Average	57,301

Valuation Results

Normal Cost	
Employee	66,180
Employer	17,345
Administrative Expense	5,267
Total	88,792
Actuarial Accrued Liability	
Actives	1,757,168
Inactives	0
Retirees and Disableds	2,390,949
Total	4,148,117
Assets	\$2,419,895
Unfunded Actuarial Accrued Liability	\$1,728,222
Estimated FY17 Contribution - semiannual payments	\$200,909
Estimated FY17 Contribution - July payment	\$197,117
Estimated FY18 Contribution - semiannual payments	\$207,686
Estimated FY18 Contribution - July payment	\$203,766

Plympton

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	44
Inactives	9
Retirees and Disableds	24
Total	77
Payroll	1,709,570
Average	38,854

Valuation Results

Normal Cost	
Employee	150,635
Employer	137,881
Administrative Expense	10,339
Total	298,855
Actuarial Accrued Liability	
Actives	3,620,801
Inactives	67,454
Retirees and Disableds	4,453,629
Total	8,141,884
Assets	\$4,749,746
Unfunded Actuarial Accrued Liability	\$3,392,138
Estimated FY17 Contribution - semiannual payments	\$481,229
Estimated FY17 Contribution - July payment	\$472,146
Estimated FY18 Contribution - semiannual payments	\$496,716
Estimated FY18 Contribution - July payment	\$487,340

Rochester

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	76
Inactives	35
Retirees and Disableds	29
Total	<u>140</u>
Payroll	3,142,014
Average	41,342

Valuation Results

Normal Cost	
Employee	260,740
Employer	128,715
Administrative Expense	16,833
Total	<u>406,288</u>
Actuarial Accrued Liability	
Actives	7,719,149
Inactives	186,798
Retirees and Disableds	5,349,646
Total	<u>13,255,593</u>
Assets	\$7,732,939
Unfunded Actuarial Accrued Liability	\$5,522,654
Estimated FY17 Contribution - semiannual payments	\$681,907
Estimated FY17 Contribution - July payment	\$669,036
Estimated FY18 Contribution - semiannual payments	\$705,105
Estimated FY18 Contribution - July payment	\$691,796

Rockland

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	313
Inactives	116
Retirees and Disableds	198
Total	627
Payroll	12,850,642
Average	41,056

Valuation Results

Normal Cost	
Employee	1,115,764
Employer	522,043
Administrative Expense	99,805
Total	1,737,612
Actuarial Accrued Liability	
Actives	35,081,204
Inactives	331,396
Retirees and Disableds	43,182,920
Total	78,595,520
Assets	\$45,850,411
Unfunded Actuarial Accrued Liability	\$32,745,109
Estimated FY17 Contribution - semiannual payments	\$3,688,723
Estimated FY17 Contribution - July payment	\$3,619,099
Estimated FY18 Contribution - semiannual payments	\$3,821,196
Estimated FY18 Contribution - July payment	\$3,749,072



Scituate

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	398
Inactives	145
Retirees and Disableds	230
Total	<u>773</u>
Payroll	16,533,286
Average	41,541

Valuation Results

Normal Cost	
Employee	1,415,297
Employer	828,773
Administrative Expense	116,819
Total	<u>2,360,889</u>
Actuarial Accrued Liability	
Actives	41,388,632
Inactives	686,083
Retirees and Disableds	49,919,331
Total	<u>91,994,046</u>
Assets	\$53,666,734
Unfunded Actuarial Accrued Liability	\$38,327,312
Estimated FY17 Contribution - semiannual payments	\$4,457,791
Estimated FY17 Contribution - July payment	\$4,373,651
Estimated FY18 Contribution - semiannual payments	\$4,617,428
Estimated FY18 Contribution - July payment	\$4,530,275

Scituate Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	6
Inactives	0
Retirees and Disableds	6
Total	<u>12</u>

Payroll	292,425
Average	48,738

Valuation Results

Normal Cost	
Employee	26,377
Employer	24,039
Administrative Expense	2,109
Total	<u>52,525</u>

Actuarial Accrued Liability	
Actives	433,041
Inactives	0
Retirees and Disableds	1,227,694
Total	<u>1,660,735</u>

Assets	\$968,826
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Unfunded Actuarial Accrued Liability	\$691,909
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Estimated FY17 Contribution - semiannual payments	\$108,060
Estimated FY17 Contribution - July payment	\$106,020
Estimated FY18 Contribution - semiannual payments	\$111,133
Estimated FY18 Contribution - July payment	\$109,035



Silver Lake Regional School

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	115
Inactives	46
Retirees and Disableds	55
Total	216
Payroll	3,509,331
Average	30,516

Valuation Results

Normal Cost	
Employee	291,978
Employer	136,297
Administrative Expense	20,709
Total	448,984
Actuarial Accrued Liability	
Actives	8,227,729
Inactives	226,378
Retirees and Disableds	7,854,146
Total	16,308,253
Assets	\$9,513,775
Unfunded Actuarial Accrued Liability	\$6,794,478
Estimated FY17 Contribution - semiannual payments	\$663,581
Estimated FY17 Contribution - July payment	\$651,056
Estimated FY18 Contribution - semiannual payments	\$686,474
Estimated FY18 Contribution - July payment	\$673,517



South Shore Mosquito Control

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	0
Inactives	0
Retirees and Disableds	0
Total	0
Payroll	0
Average	0

Valuation Results

Normal Cost	
Employee	0
Employer	0
Administrative Expense	0
Total	0
Actuarial Accrued Liability	
Actives	0
Inactives	0
Retirees and Disableds	0
Total	0
Assets	\$0
Unfunded Actuarial Accrued Liability	\$0
Estimated FY17 Contribution - semiannual payments	\$0
Estimated FY17 Contribution - July payment	\$0
Estimated FY18 Contribution - semiannual payments	\$0
Estimated FY18 Contribution - July payment	\$0



South Shore Regional School

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	41
Inactives	10
Retirees and Disableds	24
Total	75
Payroll	1,565,269
Average	38,177

Valuation Results

Normal Cost	
Employee	135,543
Employer	59,750
Administrative Expense	8,913
Total	204,206
Actuarial Accrued Liability	
Actives	2,666,672
Inactives	64,099
Retirees and Disableds	4,287,823
Total	7,018,594
Assets	\$4,094,450
Unfunded Actuarial Accrued Liability	\$2,924,144
Estimated FY17 Contribution - semiannual payments	\$336,343
Estimated FY17 Contribution - July payment	\$329,995
Estimated FY18 Contribution - semiannual payments	\$348,449
Estimated FY18 Contribution - July payment	\$341,872



Wareham

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	321
Inactives	105
Retirees and Disableds	224
Total	<u>650</u>
Payroll	12,225,509
Average	38,086

Valuation Results

Normal Cost	
Employee	1,049,683
Employer	483,887
Administrative Expense	96,375
Total	<u>1,629,945</u>
Actuarial Accrued Liability	
Actives	31,060,983
Inactives	928,810
Retirees and Disableds	43,904,921
Total	<u>75,894,714</u>
Assets	\$44,274,837
Unfunded Actuarial Accrued Liability	\$31,619,877
Estimated FY17 Contribution - semiannual payments	\$3,669,579
Estimated FY17 Contribution - July payment	\$3,600,317
Estimated FY18 Contribution - semiannual payments	\$3,797,074
Estimated FY18 Contribution - July payment	\$3,725,405

Wareham Fire District

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	45
Inactives	4
Retirees and Disableds	25
Total	<u>74</u>
Payroll	2,536,852
Average	56,374

Valuation Results

Normal Cost	
Employee	226,482
Employer	143,988
Administrative Expense	17,505
Total	<u>387,975</u>
Actuarial Accrued Liability	
Actives	8,281,082
Inactives	19,762
Retirees and Disableds	5,484,286
Total	<u>13,785,130</u>
Assets	\$8,041,856
Unfunded Actuarial Accrued Liability	\$5,743,274
Estimated FY17 Contribution - semiannual payments	\$705,082
Estimated FY17 Contribution - July payment	\$691,774
Estimated FY18 Contribution - semiannual payments	\$729,420
Estimated FY18 Contribution - July payment	\$715,653

Wareham Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	1
Inactives	1
Retirees and Disableds	2
Total	4
Payroll	55,033
Average	55,033

Valuation Results

Normal Cost	
Employee	5,042
Employer	2,784
Administrative Expense	680
Total	8,506
Actuarial Accrued Liability	
Actives	49,114
Inactives	26
Retirees and Disableds	485,977
Total	535,117
Assets	\$312,172
Unfunded Actuarial Accrued Liability	\$222,945
Estimated FY17 Contribution - semiannual payments	\$23,730
Estimated FY17 Contribution - July payment	\$23,282
Estimated FY18 Contribution - semiannual payments	\$24,616
Estimated FY18 Contribution - July payment	\$24,151



West Bridgewater

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	151
Inactives	56
Retirees and Disableds	90
Total	297
Payroll	7,208,518
Average	47,739

Valuation Results

Normal Cost	
Employee	637,681
Employer	296,513
Administrative Expense	49,254
Total	983,448
Actuarial Accrued Liability	
Actives	17,907,895
Inactives	357,573
Retirees and Disableds	20,521,505
Total	38,786,973
Assets	\$22,627,227
Unfunded Actuarial Accrued Liability	\$16,159,746
Estimated FY17 Contribution - semiannual payments	\$1,822,354
Estimated FY17 Contribution - July payment	\$1,787,957
Estimated FY18 Contribution - semiannual payments	\$1,888,547
Estimated FY18 Contribution - July payment	\$1,852,901

Whitman

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	120
Inactives	21
Retirees and Disableds	104
Total	<u>245</u>
Payroll	6,378,878
Average	53,157

Valuation Results

Normal Cost	
Employee	579,730
Employer	305,197
Administrative Expense	49,778
Total	<u>934,705</u>
Actuarial Accrued Liability	
Actives	15,122,033
Inactives	206,703
Retirees and Disableds	23,870,940
Total	<u>39,199,676</u>
Assets	\$22,867,986
Unfunded Actuarial Accrued Liability	\$16,331,690
Estimated FY17 Contribution - semiannual payments	\$1,847,717
Estimated FY17 Contribution - July payment	\$1,812,841
Estimated FY18 Contribution - semiannual payments	\$1,914,731
Estimated FY18 Contribution - July payment	\$1,878,591

Whitman/Hanson Regional School

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	173
Inactives	94
Retirees and Disableds	113
Total	380
Payroll	4,180,490
Average	24,165

Valuation Results

Normal Cost	
Employee	349,527
Employer	135,166
Administrative Expense	31,159
Total	515,852
Actuarial Accrued Liability	
Actives	8,216,922
Inactives	456,176
Retirees and Disableds	15,864,335
Total	24,537,433
Assets	\$14,314,447
Unfunded Actuarial Accrued Liability	\$10,222,986
Estimated FY17 Contribution - semiannual payments	\$1,096,241
Estimated FY17 Contribution - July payment	\$1,075,550
Estimated FY18 Contribution - semiannual payments	\$1,137,014
Estimated FY18 Contribution - July payment	\$1,115,553



Whitman Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	6
Inactives	1
Retirees and Disableds	4
Total	<u>11</u>
Payroll	277,723
Average	46,287

Valuation Results

Normal Cost	
Employee	24,390
Employer	1,344
Administrative Expense	1,959
Total	<u>27,693</u>
Actuarial Accrued Liability	
Actives	656,900
Inactives	9,504
Retirees and Disableds	876,427
Total	<u>1,542,831</u>
Assets	\$900,044
Unfunded Actuarial Accrued Liability	\$642,787
Estimated FY17 Contribution - semiannual payments	\$65,348
Estimated FY17 Contribution - July payment	\$64,115
Estimated FY18 Contribution - semiannual payments	\$67,761
Estimated FY18 Contribution - July payment	\$66,482

Abington Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	3
Inactives	0
Retirees and Disableds	3
Total	6
Payroll	135,235
Average	45,078

Valuation Results

Normal Cost	
Employee	10,590
Employer	1,297
Administrative Expense	929
Total	12,816
Actuarial Accrued Liability	
Actives	409,165
Inactives	0
Retirees and Disableds	322,581
Total	731,746
Assets	\$426,880
Unfunded Actuarial Accrued Liability	\$304,866
Estimated FY17 Contribution - semiannual payments	\$34,673
Estimated FY17 Contribution - July payment	\$34,019
Estimated FY18 Contribution - semiannual payments	\$35,832
Estimated FY18 Contribution - July payment	\$35,155

Pembroke Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	5
Inactives	0
Retirees and Disableds	5
Total	10
Payroll	240,416
Average	48,083

Valuation Results

Normal Cost	
Employee	21,637
Employer	6,405
Administrative Expense	2,224
Total	30,266
Actuarial Accrued Liability	
Actives	387,548
Inactives	0
Retirees and Disableds	1,364,108
Total	1,751,656
Assets	\$1,021,867
Unfunded Actuarial Accrued Liability	\$729,789
Estimated FY17 Contribution - semiannual payments	\$74,753
Estimated FY17 Contribution - July payment	\$73,342
Estimated FY18 Contribution - semiannual payments	\$77,596
Estimated FY18 Contribution - July payment	\$76,131

Hanson Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	3
Inactives	1
Retirees and Disableds	2
Total	<u>6</u>
Payroll	150,128
Average	50,043

Valuation Results

Normal Cost	
Employee	12,943
Employer	8,250
Administrative Expense	647
Total	<u>21,840</u>
Actuarial Accrued Liability	
Actives	223,139
Inactives	1,111
Retirees and Disableds	285,354
Total	<u>509,604</u>
Assets	\$297,289
Unfunded Actuarial Accrued Liability	\$212,315
Estimated FY17 Contribution - semiannual payments	\$28,646
Estimated FY17 Contribution - July payment	\$28,106
Estimated FY18 Contribution - semiannual payments	\$29,608
Estimated FY18 Contribution - July payment	\$29,049

Rockland Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	3
Inactives	1
Retirees and Disableds	4
Total	8
Payroll	159,460
Average	53,153

Valuation Results

Normal Cost	
Employee	8,265
Employer	7,284
Administrative Expense	1,326
Total	16,875
Actuarial Accrued Liability	
Actives	363,876
Inactives	1,718
Retirees and Disableds	678,371
Total	1,043,965
Assets	\$609,020
Unfunded Actuarial Accrued Liability	\$434,945
Estimated FY17 Contribution - semiannual payments	\$48,297
Estimated FY17 Contribution - July payment	\$47,385
Estimated FY18 Contribution - semiannual payments	\$50,064
Estimated FY18 Contribution - July payment	\$49,119

Halifax Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	0
Inactives	0
Retirees and Disableds	1
Total	1
Payroll	0
Average	0

Valuation Results

Normal Cost	
Employee	0
Employer	0
Administrative Expense	793
Total	793

Actuarial Accrued Liability	
Actives	0
Inactives	0
Retirees and Disableds	624,225
Total	624,225

Assets	\$364,155
Unfunded Actuarial Accrued Liability	\$260,070

Estimated FY17 Contribution - semiannual payments	\$24,174
Estimated FY17 Contribution - July payment	\$23,717
Estimated FY18 Contribution - semiannual payments	\$25,139
Estimated FY18 Contribution - July payment	\$24,664



Mattapoisett Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	2
Inactives	0
Retirees and Disableds	0
Total	<u>2</u>
Payroll	81,551
Average	40,776

Valuation Results

Normal Cost	
Employee	6,003
Employer	2,478
Administrative Expense	526
Total	<u>9,007</u>
Actuarial Accrued Liability	
Actives	414,542
Inactives	0
Retirees and Disableds	0
Total	<u>414,542</u>
Assets	\$241,832
Unfunded Actuarial Accrued Liability	\$172,710
Estimated FY17 Contribution - semiannual payments	\$18,730
Estimated FY17 Contribution - July payment	\$18,377
Estimated FY18 Contribution - semiannual payments	\$19,423
Estimated FY18 Contribution - July payment	\$19,057

Hanover Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	0
Inactives	0
Retirees and Disableds	0
Total	0
Payroll	0
Average	0

Valuation Results

Normal Cost	
Employee	0
Employer	0
Administrative Expense	0
Total	0
Actuarial Accrued Liability	
Actives	0
Inactives	0
Retirees and Disableds	0
Total	0
Assets	\$0
Unfunded Actuarial Accrued Liability	\$0
Estimated FY17 Contribution - semiannual payments	\$0
Estimated FY17 Contribution - July payment	\$0
Estimated FY18 Contribution - semiannual payments	\$0
Estimated FY18 Contribution - July payment	\$0



Acushnet/Rochester/Marion Health District

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	1
Inactives	0
Retirees and Disableds	0
Total	<u>1</u>
Payroll	67,039
Average	67,039

Valuation Results

Normal Cost	
Employee	5,671
Employer	(234)
Administrative Expense	427
Total	<u>5,864</u>
Actuarial Accrued Liability	
Actives	336,159
Inactives	0
Retirees and Disableds	0
Total	<u>336,159</u>
Assets	\$196,106
Unfunded Actuarial Accrued Liability	\$140,053
Estimated FY17 Contribution - semiannual payments	\$12,765
Estimated FY17 Contribution - July payment	\$12,524
Estimated FY18 Contribution - semiannual payments	\$13,280
Estimated FY18 Contribution - July payment	\$13,029

West Bridgewater Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	1
Inactives	0
Retirees and Disableds	1
Total	2
Payroll	49,122
Average	49,122

Valuation Results

Normal Cost	
Employee	4,413
Employer	1,457
Administrative Expense	292
Total	6,162
Actuarial Accrued Liability	
Actives	11,432
Inactives	0
Retirees and Disableds	218,796
Total	230,228
Assets	\$134,309
Unfunded Actuarial Accrued Liability	\$95,919
Estimated FY17 Contribution - semiannual payments	\$10,490
Estimated FY17 Contribution - July payment	\$10,292
Estimated FY18 Contribution - semiannual payments	\$10,876
Estimated FY18 Contribution - July payment	\$10,671



South Shore Tri Town Development

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	5
Inactives	2
Retirees and Disableds	1
Total	8
Payroll	363,867
Average	72,773

Valuation Results

Normal Cost	
Employee	32,416
Employer	21,831
Administrative Expense	1,882
Total	56,129
Actuarial Accrued Liability	
Actives	1,056,459
Inactives	207,939
Retirees and Disableds	217,519
Total	1,481,917
Assets	\$864,509
Unfunded Actuarial Accrued Liability	\$617,408
Estimated FY17 Contribution - semiannual payments	\$80,970
Estimated FY17 Contribution - July payment	\$79,442
Estimated FY18 Contribution - semiannual payments	\$83,720
Estimated FY18 Contribution - July payment	\$82,140



Carver Housing

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	0
Inactives	0
Retirees and Disableds	1
Total	1
Payroll	0
Average	0

Valuation Results

Normal Cost	
Employee	0
Employer	0
Administrative Expense	582
Total	582

Actuarial Accrued Liability	
Actives	0
Inactives	0
Retirees and Disableds	457,988
Total	457,988

Assets \$267,177

Unfunded Actuarial Accrued Liability \$190,811

Estimated FY17 Contribution - semiannual payments	\$17,736
Estimated FY17 Contribution - July payment	\$17,401
Estimated FY18 Contribution - semiannual payments	\$18,444
Estimated FY18 Contribution - July payment	\$18,096



No Carver Water District

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	0
Inactives	0
Retirees and Disableds	0
Total	0
Payroll	0
Average	0

Valuation Results

Normal Cost	
Employee	0
Employer	0
Administrative Expense	0
Total	0
Actuarial Accrued Liability	
Actives	0
Inactives	0
Retirees and Disableds	0
Total	0
Assets	\$0
Unfunded Actuarial Accrued Liability	\$0
Estimated FY17 Contribution - semiannual payments	\$0
Estimated FY17 Contribution - July payment	\$0
Estimated FY18 Contribution - semiannual payments	\$0
Estimated FY18 Contribution - July payment	\$0



Other (Retirement Staff)

Actuarial Valuation as of January 1, 2015

Participant Information

Participants	
Actives	9
Inactives	0
Retirees and Disableds	1
Total	<u>10</u>
Payroll	690,496
Average	76,722

Valuation Results

Normal Cost	
Employee	54,911
Employer	13,423
Administrative Expense	3,938
Total	<u>72,272</u>
Actuarial Accrued Liability	
Actives	2,400,674
Inactives	0
Retirees and Disableds	700,287
Total	<u>3,100,961</u>
Assets	\$1,809,013
Unfunded Actuarial Accrued Liability	\$1,291,948
Estimated FY17 Contribution - semiannual payments	\$134,587
Estimated FY17 Contribution - July payment	\$132,047
Estimated FY18 Contribution - semiannual payments	\$139,663
Estimated FY18 Contribution - July payment	\$137,027

