

**ACTUARIAL VALUATION
OF THE
WORCESTER REGIONAL CONTRIBUTORY
RETIREMENT SYSTEM**

January 1, 2010

**Reported Submitted
January 19, 2011**



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January 19, 2011

Worcester Regional Retirement Board
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Dear Board Members:

We are pleased to present the enclosed report summarizing the results of our actuarial valuation of the Worcester Regional Contributory Retirement System as of January 1, 2010.

Our valuation was performed in accordance with the provisions contained in Chapter 32 of the Massachusetts General Laws, "M.G.L.", as of January 1, 2010 and GASB Statement No. 25, Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans (GASB 25) and GASB Statement No. 27, Accounting for Pensions by State and Local Governmental Employers (GASB 27).

The principal results of our valuation are summarized in Section I. The summary of Plan provisions and actuarial methods and assumptions are shown in Sections VII and VIII, respectively. Section IX summarizes the demographic profile of active members and retired plan participants. Asset information and actuarial liabilities are presented in Sections II and III, respectively. The development of the required appropriations pursuant to Chapter 32 of the M.G.L. is shown in Section IV. The required disclosures under GASB 25 and GASB 27 are presented in Section V.

We also provide a 30-year forecast of the required appropriations and cash flows in Exhibits G and H of Section IV. Information provided here reflects 6% annual appropriation increases from the 2011 appropriation of \$31.2 million for 2012 and 2013 and 7% increases for 2014 and 2015. We have also incorporated the 20% actuarial asset value corridor and increased the COLA base to \$14,000.

Our actuarial valuation is based on a discount rate of 8.00%, compounded annually. Our calculations were based on participant census data and other information provided by the Worcester Regional Contributory Retirement System and the benefit provisions of Chapter 32 of the M.G.L. as of January 1, 2010.

Our valuation follows generally accepted actuarial methods and we perform such tests as we consider necessary to assure the accuracy of the results. The amounts presented in this report have been appropriately determined according to the actuarial assumptions and methods stated herein.

Worcester Regional Retirement Board

January 19, 2011

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We appreciate this opportunity to be of service to the Worcester Regional Retirement Board. We are available to answer any questions with respect to our valuation.

Respectfully submitted,



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Executive Summary

Background

We have completed the Actuarial Valuation of the Worcester Regional Contributory Retirement System as of January 1, 2010. This valuation is based upon census data provided by the Retirement Board and asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Worcester Regional Retirement Board. Information for the prior valuation completed as of January 1, 2007 was obtained from the valuation report prepared by Buck Consultants.

Massachusetts General Laws

The valuation was prepared in accordance with Chapter 32 of the Massachusetts General Laws ("M.G.L.") as amended by Section 18 of Chapter 21 of the Acts of 2009 and the Municipal Relief Act of 2010.

The valuation does not take into consideration:

- Changes in the law after the valuation date (except as noted above),
- Transfers between retirement systems pursuant to Section 3(8)(c) of Chapter 32,
- State-mandated benefits and
- Cost-of-living increases granted to members in pay status between 1982 and 1997.

GASB Statement Numbers 25 and 27

The Governmental Accounting Standards Board (**GASB**) is responsible for establishing accounting standards for governmental entities. Calculations developed in accordance with GASB standards are required when providing financial statements.

GASB Statement Number 25 (**GASB 25**) establishes financial reporting standards for defined benefit pension plans of state and local governmental entities. The Statement establishes a framework that distinguishes between two categories of information: current financial information about plan assets and financial activities and actuarially determined information about the funded status of the plan and the progress being made in accumulating sufficient assets to pay benefits when due.

GASB Statement Number 27 establishes standards for the measurement, recognition, and display of pension expense and related liabilities, assets, note disclosures, and, if applicable, required supplementary information in the financial reports of state and local governmental employers. Employers are required to measure and disclose an amount for annual pension cost on the accrual basis of accounting, regardless of the amount recognized as pension expense on the accrual basis. Annual pension cost should be equal to the employer's Annual Required Contribution (ARC) to the plan.

The required disclosures under the GASB Statements are presented in Section V.

Executive Summary

Actuarial Valuation

The results of the current valuation show that over a three-year period, the System experienced an actuarial loss of \$155,862,449 comprising of an asset loss of \$106,059,178 and a liability loss of \$49,803,271. Most of the actuarial loss is attributable to the change in methodology from the prior actuary for recognizing valuation salary. For the 2007 valuation, salary data as of 2006 was used to determine benefit accruals for the 2007 plan year. For the 2010 valuation, we apply the salary scale to the 2009 salaries provided and use the result to develop benefits accrued during 2010. The details of the gain/loss calculations are presented in Exhibit D, Section III.

Appropriations

The funding appropriation for each year is computed as the sum of the Normal Cost and an amortization payment to pay off the Unfunded Actuarial Liability, adjusted for semi-annual payments of the appropriation made during the fiscal year. The appropriation as of January 1, 2010 is \$33,201,003. In Exhibit E, Section IV, we show how this calendar year funding appropriation is developed. We have incorporated the provisions of Section 18 of Chapter 21 of the Acts of 2009 and the Municipal Relief Act of 2010, which requires a funding schedule reflect appropriations that reduce the unfunded actuarial liability to zero by 2040. Previously, Section 22D required the unfunded actuarial liability be reduced to zero by 2028.

For fiscal year 2011, we show the actual appropriation developed under the previous funding schedule and reported on the PERAC "Required Fiscal Year 2011 Appropriation" letter dated December 4, 2009 of \$31,200,000 and adjusted the subsequent entries of the current funding schedule accordingly. The current funding schedule is shown in Exhibit G, Section IV.

Actuarial Certification

This report presents the results of the Actuarial Valuation of the Worcester Regional Contributory Retirement System as of January 1, 2010. The report presents the funding schedule contribution amounts for the fiscal years beginning 2011 and accounting and financial reporting information in accordance with Statement Numbers 25 and Number 27 of the Governmental Accounting Standards Board.

This valuation is based upon member data provided by the Retirement Board and asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Worcester Regional Contributory Retirement System. Although we did not audit the data used in the valuation, we believe that the information is complete and reliable.

Executive Summary

This report was completed in accordance with generally accepted actuarial standards and procedures, and conforms to the Code of Professional Conduct of the American Academy of Actuaries. The actuarial assumptions used in the determination of costs are reasonably related to the experience of the System and to reasonable expectations, and represent our best estimate of anticipated long-term experience under the System.

This report is intended for the sole use of the Worcester Regional Contributory Retirement System and is intended to provide information to comply with the stated purpose of the report. It may not be appropriate for other purposes.

The undersigned credentialed actuaries are Members of the American Academy of Actuaries and together meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. They are available to answer any questions with regard to this report.

Respectfully submitted,



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Worcester Regional Contributory Retirement System
Actuarial Valuation as of January 1, 2010

Section I - Summary of Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Changes in actuarial methods and assumptions and Plan provisions are discussed below, as well as changes in census data and asset information.

<u>Valuation Date</u>	<u>January 1, 2010</u>	<u>January 1, 2007</u>	<u>Increase / (Decrease)</u>
Summary of Member Data			
Active Members	6,236	6,610	(5.7%)
Average Age	47.1		
Average Service	9.6		
Salary (Prior Year)	\$220,750,318	\$211,518,755	4.4%
Average Salary	\$35,399	\$32,000	10.6%
Valuation Salary	\$241,992,607	\$211,518,755	14.4%
Retired Members and Beneficiaries	2,686	2,686	0.0%
Average Age	74.3	74.3	0.0%
Total Annual Pension	\$37,900,202	\$32,907,741	15.2%
Average Annual Pension	\$14,110	\$12,252	15.2%
Disabled Members	215	201	7.0%
Average Age	63.0	62.9	0.2%
Total Annual Pension	\$5,583,375	\$4,581,921	21.9%
Average Annual Pension	\$25,969	\$22,796	13.9%
Inactive Members	2,324	2,155	7.8%
Annuity Savings Fund	12,337,781	\$8,987,460	37.3%
Actuarial Accrued Liability (AAL)	\$863,002,067	\$692,768,325	24.6%
Assets			
Market Value of Assets	\$344,980,654	\$397,171,164	(13.1%)
Actuarial Value of Assets	413,976,785	389,758,785	6.2%
Unfunded Accrued Liability (Surplus)	\$449,025,282	\$303,009,540	48.2%
Funded Status	48.0%	56.3%	(14.7%)
Normal Cost			
Employer	\$8,379,107	\$7,234,638	15.8%
Employee	20,001,488	17,463,691	14.5%
Administrative Expenses	0	0	
Total Normal Cost	<u>\$28,380,595</u>	<u>\$24,698,329</u>	<u>14.9%</u>
Appropriations			
Fiscal Year 2011	\$31,200,000	\$31,200,000	0.0%
Fiscal Year 2012	\$33,072,000	\$33,600,000	(1.6%)
Fiscal Year 2013	\$35,056,320	\$36,000,000	(2.6%)

Section I - Summary of Principal Valuation Results

Actuarial Valuation

All Actuarial Methods and Assumptions used in this valuation are the same as those used in the prior valuation, except for an interest rate of 8.00% (previously 8.50%), change to the annual increases in salaries and the amortization period and the annual payment increase in computing the amortization payments. The Actuarial Methods and Assumptions utilized in this valuation are detailed in Section VIII, Actuarial Methods and Assumptions. In addition, the 2010 valuation salary is the 2009 calendar year salary information provided by the Retirement Board updated to 2010 using the current year salary scale.

Plan Provisions

All Plan provisions used in this valuation are the same as those used in the prior valuation, except the maximum amount of pension benefit subject to cost-of-living-allowances (COLA) is \$14,000 (previously, \$12,000). The Plan provisions utilized in this valuation are detailed in Section VII, Summary of Plan Provisions.

Census Data

As of January 1, 2010, there are 6,236 active members who may be eligible for benefits in the future, 2,686 retirees and beneficiaries, 2,324 inactives and 215 disabled retirees. Summaries of the active, retired and disabled employees are included in Section IX, Demographic Information.

Assets

This valuation is based upon asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Worcester Regional Retirement Board. The market value of assets decreased during the period January 1, 2007 through January 1, 2010, from \$397,171,164 as of January 1, 2007 to \$344,980,654 as of January 1, 2010. In Section II, we show how the actuarial asset value is developed.

Section II - Asset Information

Asset information is reported annually to the Public Employee Retirement Administration Commission by the Worcester Regional Contributory Retirement System. The Market Value of Assets for the three most recent calendar years are as follows:

<u>Calendar Year</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>
Trust Fund Composition at Year-End			
Cash	\$5,622,803	\$4,273,006	\$21,798,682
Short-Term Investments	0	0	3,812,405
Fixed Income Securities	0	0	0
Pooled Short Term Funds	0	0	0
Equities	0	0	27
Pooled Domestic Equity Funds	0	0	0
Pooled International Equity Funds	0	0	0
Pooled Global Equity Funds	0	0	0
Pooled Domestic Fixed Income Funds	0	0	0
Pooled International Fixed Income Funds	0	0	0
Pooled Global Fixed Income Funds	0	0	0
Pooled Alternative Investments	10,180,480	8,673,894	26,047,617
Pooled Real Estate Funds	14,707,181	21,643,205	39,021,683
Pooled Domestic Balanced Funds	0	0	0
Pooled International Balanced Funds	0	0	0
Hedge Funds	0	0	0
PRIT Cash	0	0	0
PRIT Fund	312,978,284	261,882,606	331,868,950
Prepaid Expenses	0	0	0
Accounts Receivable	1,491,906	1,755,015	1,670,428
Interest Due & Accrued	0	0	10,007
Accounts Payable	0	0	(329,833)
Total Market Value of Assets	\$344,980,654	\$298,227,726	\$423,899,966

Worcester Regional Contributory Retirement System
Actuarial Valuation as of January 1, 2010

Section II - Asset Information

<u>Calendar Year</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>
Funds			
Annuity Savings Fund	\$185,725,164	\$172,365,147	\$160,011,888
Annuity Reserve Fund	43,222,369	42,428,455	41,201,874
Special Military Service Cr Fund	75,460	52,119	53,957
Pension Fund	171,029	90,667	(26,969)
Expense Fund	0	0	0
Pension Reserve Fund	115,786,632	83,291,338	222,659,216
Total Market Value of Assets	<u>\$344,980,654</u>	<u>\$298,227,726</u>	<u>\$423,899,966</u>
Asset Activity			
Market value as of Beginning of Year	\$298,227,726	\$423,899,966	\$397,171,164
Contributions and Receipts	55,129,451	54,788,985	43,468,576
Benefit Payments and Expenses	(48,737,944)	(62,005,404)	(46,967,923)
Investment Return	40,361,421	(118,455,821)	30,228,149
Market Value as of End of Year	<u>\$344,980,654</u>	<u>\$298,227,726</u>	<u>\$423,899,966</u>
Rate of Return	13.38%	-28.20%	7.65%

Returns and annualized past returns are shown below. Information is obtained from the Investment Report published by PERAC for the years shown.

<u>Year</u>	<u>1-Year</u> <u>Return</u>	<u>5-Year</u> <u>Return</u>	<u>10-Year</u> <u>Return</u>	<u>Return</u> <u>(Since 1985)</u>
2009	13.15%	1.47%	1.53%	8.08%
2008	-26.65%	0.83%	2.60%	7.87%

Section II - Asset Information

The **Actuarial Value of Assets** is the market value of assets as of the valuation date reduced by the sum of:

- a) 80% of gains and losses of the prior year,
- b) 60% of gains and losses of the second prior year,
- c) 40% of gains and losses of the third prior year and
- d) 20% of gains and losses of the fourth prior year.

Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 80% or more than 120% of market value.

<u>Valuation Date</u>	<u>January 1, 2010</u>	<u>January 1, 2009</u>	<u>January 1, 2008</u>	<u>January 1, 2007</u>
1. Market Value of Assets as of prior January 1	\$298,227,726	\$423,899,966	\$397,171,164	\$354,370,413
a. Prior Year Contributions and Receipts	55,129,451	54,788,985	43,468,576	43,466,577
b. Prior Year Benefit Payments and Expenses	(48,737,944)	(62,005,404)	(46,967,923)	(43,465,568)
c. Expected Investment Return at 8.50%	25,643,632	35,699,241	33,598,433	30,121,528
d. Expected Market Value of Assets as of Valuation Date	\$330,262,865	\$452,382,788	\$427,270,250	\$384,492,950
2. Prior Year Gain / (Loss)				
a. Market Value of Assets as of January 1	\$344,980,654	\$298,227,726	\$423,899,966	\$397,171,164
b. Expected Market Value of Assets	330,262,865	452,382,788	427,270,250	384,492,950
c. Prior Year Gain / (Loss)	14,717,789	(154,155,062)	(3,370,284)	12,678,214

Section II - Asset Information

3. Phase-In of Asset Gains and Losses

	<u>Plan Year</u>	<u>Gain / (Loss)</u>	<u>Unrecognized Gain / (Loss)</u>	<u>Unrecognized Gain / (Loss)</u>	<u>Unrecognized Gain / (Loss)</u>	<u>Unrecognized Gain / (Loss)</u>
a.	2009	\$14,717,789	\$11,774,231	-	-	-
b.	2008	(154,155,062)	(92,493,037)	(123,324,050)	-	-
c.	2007	(3,370,284)	(1,348,114)	(2,022,170)	(2,696,227)	-
d.	2006	12,678,214	2,535,643	5,071,286	7,606,928	10,142,571
e.	2005	(12,473,953)	-	(2,494,791)	(4,989,581)	(7,484,372)
f.	2004	1,605,408	-	-	321,082	642,163
g.	2003	20,560,083	-	-	-	4,112,017
h.	Total		(79,531,277)	(122,769,725)	242,202	7,412,379

<u>Valuation Date</u>	<u>January 1, 2010</u>	<u>January 1, 2009</u>	<u>January 1, 2008</u>	<u>January 1, 2007</u>
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4. Actuarial Value of Assets

a. Market Value of Assets Less Unrecognized Gain / (Loss)	\$424,511,931	\$420,997,451	\$423,657,764	\$389,758,785
b. 80% of Market Value of Assets	275,984,523	238,582,181	339,119,973	317,736,931
c. 120% of Market Value of Assets	413,976,785	357,873,271	508,679,959	476,605,397
d. Actuarial Value of Assets, a., but not less than b. and not greater than c.	\$413,976,785	\$357,873,271	\$423,657,764	\$389,758,785
e. Ratio of Actuarial Value of Assets to Market Value of Assets	120.00%	120.00%	99.94%	98.13%

**5. Rate of Return on Actuarial Value of Assets
for Prior Calendar Year**

	13.76%	-13.95%
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Section III - Actuarial Costs and Liabilities

The **Actuarial Present Value of Future Benefits** is the present value of the cost to finance all benefits payable in the future, discounted to reflect the probability of payment and the time value of money. Below is the Actuarial Present Value of Future Benefits from the current valuation and the prior valuation:

Exhibit A - Actuarial Present Value of Future Benefits

<u>Valuation Date</u>	<u>January 1, 2010</u>	<u>January 1, 2010</u>	<u>January 1, 2010</u>	<u>January 1, 2007</u>
Actives				
Superannuation	\$534,720,587	\$528,934,379	\$547,581,468	\$461,423,866
Termination	30,386,995	30,386,995	30,077,520	26,141,168
Death	34,665,023	34,334,188	34,790,585	25,463,041
Disability	53,072,297	52,532,591	53,317,404	51,875,322
Total Active	\$652,844,902	\$646,188,153	\$665,766,977	\$564,903,397
 Retired Members and Inactives				
Retired Members and Beneficiaries	\$345,279,655	\$341,283,863	\$329,608,345	\$283,162,346
Disabled Members	58,146,968	57,346,193	55,044,543	47,226,955
Inactive Members	12,337,781	12,337,781	12,337,781	8,987,460
Total Retired Members and Inactives	\$415,764,404	\$410,967,837	\$396,990,669	\$339,376,761
 Total Present Value of Future Benefits	 \$1,068,609,306	 \$1,057,155,990	 \$1,062,757,646	 \$904,280,158

COLA Base

Assumption change

Baseline

Section III - Actuarial Costs and Liabilities

The **Actuarial Accrued Liability** is the portion of the Actuarial Present Value of Future Benefits which is allocated to all periods prior to a valuation year and therefore is not provided for by future Normal Costs. Below is the Actuarial Accrued Liability from the current valuation and the prior valuation:

Exhibit B - Actuarial Accrued Liability

<u>Valuation Date</u>	<u>January 1, 2010</u>	<u>January 1, 2010</u>	<u>January 1, 2010</u>	<u>January 1, 2007</u>
Actives				
Superannuation	\$391,016,715	\$386,771,327	\$393,533,357	\$324,164,448
Termination	14,678,631	14,678,631	14,560,997	(6,631,428)
Death	16,795,347	16,672,428	16,881,745	13,372,989
Disability	24,746,970	24,548,703	24,703,673	22,485,555
Total Active	<u>\$447,237,663</u>	<u>\$442,671,089</u>	<u>\$449,679,772</u>	<u>\$353,391,564</u>
 Retired Members and Inactives				
Retired Members and Beneficiaries	\$345,279,655	\$341,283,863	\$329,608,345	\$283,162,346
Disabled Members	58,146,968	57,346,193	55,044,543	47,226,955
Inactive Members	12,337,781	12,337,781	12,337,781	8,987,460
Total Retired Members and Inactives	<u>\$415,764,404</u>	<u>\$410,967,837</u>	<u>\$396,990,669</u>	<u>\$339,376,761</u>
 Total Actuarial Accrued Liability	 \$863,002,067	 \$853,638,926	 \$846,670,441	 \$692,768,325

COLA Base

Assumption change

Baseline

Section III - Actuarial Costs and Liabilities

The **Normal Cost** is the portion of the Actuarial Present Value of Future Benefits which is allocated to a valuation year. Only active employees who have not reached Normal Retirement Age incur a Normal Cost. Below is the Normal Cost from the current valuation and the prior valuation:

Exhibit C - Normal Cost

<u>Valuation Date</u>	<u>January 1, 2010</u>	<u>January 1, 2010</u>	<u>January 1, 2010</u>	<u>January 1, 2007</u>
Actives				
Superannuation	\$18,754,851	\$18,539,843	\$18,778,253	\$16,364,316
Termination	4,057,338	4,057,338	3,983,782	3,858,610
Death	2,395,321	2,366,621	2,287,961	1,490,812
Disability	3,173,085	3,133,306	3,012,973	2,984,591
Total Active	\$28,380,595	\$28,097,108	\$28,062,969	\$24,698,329
 Administrative Expenses	 \$0	 \$0	 \$0	 \$0
 Total Normal Cost				
Normal Cost	\$28,380,595	\$28,097,108	\$28,062,969	\$24,698,329
As a Percentage of Salary	11.7%	11.6%	11.6%	11.7%
 Employee Normal Cost				
Employee Contributions	\$20,001,488	\$20,001,488	\$19,956,221	\$17,463,691
As a Percentage of Salary	8.3%	8.3%	8.2%	8.3%
 Employer Normal Cost				
Employer Normal Cost	\$8,379,107	\$8,095,620	\$8,106,748	\$7,234,638
As a Percentage of Salary	3.5%	3.3%	3.3%	3.4%

COLA Base

Assumption change

Baseline

Section III - Actuarial Costs and Liabilities

In performing the actuarial valuation, various assumptions are made regarding mortality, retirement, disability and withdrawal rates as well as salary increases and investment returns. A comparison of the results of the current valuation and the prior valuation is made to determine how closely actual experience relates to expected. During the two years since the last valuation, the total unfunded actuarial accrued liability of the System increased by \$29,493,300. Below is the development of the Actuarial Gain or Loss for the current 2-year period:

<u>Valuation Date</u>	<u>January 1, 2010</u>	<u>January 1, 2007</u>
Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$846,670,441	\$692,768,325
b. Actuarial Value of Assets	379,478,719	389,758,785
c. Unfunded Actuarial Accrued Liability	\$467,191,722	\$303,009,540
Expected Actuarial Accrued Liability		
a. Prior Actuarial Accrued Liability	\$692,768,325	
b. Normal Cost, Year 1	24,698,329	
c. Benefit Payments, Year 1	(46,967,923)	
d. Interest on a., b. and c.	58,822,184	
e. Expected Actuarial Accrued Liability, Year 1	\$729,320,915	
f. Normal Cost, Year 2	25,809,754	
g. Benefit Payments, Year 2	(62,005,404)	
h. Interest on e., f. and g.	61,331,275	
i. Expected Actuarial Accrued Liability, Year 2	\$754,456,540	
j. Normal Cost, Year 3	26,971,193	
k. Benefit Payments, Year 3	(48,737,944)	
l. Interest on i., j. and k.	64,177,381	
m. Expected Actuarial Accrued Liability, Year 3	\$796,867,170	
n. Actual Actuarial Accrued Liability	\$846,670,441	
o. Liability (Gain) / Loss	\$49,803,271	

Section III - Actuarial Costs and Liabilities

Exhibit D - Actuarial Experience, continued

<u>Valuation Date</u>	<u>January 1, 2010</u>	<u>January 1, 2007</u>
Expected Actuarial Asset Value		
a. Actuarial Value of Assets, Prior Valuation Date	389,758,785	
b. Normal Cost and Amortization Payments, Year 1	45,268,101	
c. Benefit Payments, Year 1	(46,967,923)	
d. Expected Investment Return	34,814,804	
e. Expected Actuarial Value of Assets	422,873,767	
f. Normal Cost and Amortization Payments, Year 2	47,197,422	
g. Benefit Payments, Year 2	(62,005,404)	
h. Expected Investment Return	37,101,219	
i. Expected Actuarial Value of Assets	445,167,004	
j. Normal Cost and Amortization Payments, Year 3	49,321,307	
k. Benefit Payments, Year 3	(48,737,944)	
l. Expected Investment Return	39,787,530	
m. Expected Actuarial Value of Assets	485,537,897	
n. Actual Actuarial Value of Assets	\$379,478,719	
o. Asset (Gain) / Loss	\$106,059,178	
Expected Unfunded Actuarial Accrued Liability	\$311,329,273	
Total Actuarial (Gain) / Loss		
a. Asset (Gain) / Loss	\$106,059,178	\$49,500,000
b. Liability (Gain) / Loss	49,803,271	39,100,000
c. Total (Gain) / Loss	\$155,862,449	\$88,600,000

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The **Annual Appropriation** is determined in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws ("M.G.L.") as amended by Section 18 of Chapter 21 of the Acts of 2009. The appropriation is comprised of the annual employer normal cost and amortization payments to pay the unfunded actuarial accrued liability. Below are the details of the annual appropriation for the current valuation and the prior valuation. The annual appropriation for the following valuation is recomputed based on the actual appropriation made for the current fiscal year:

Exhibit E - Annual Appropriations

<u>Valuation Date</u>	<u>January 1, 2011</u>	<u>January 1, 2010</u>	<u>January 1, 2007</u>
Employer Normal Cost	\$8,442,218	\$8,379,107	\$7,234,638
Amortization Payments			
a. Prior Unfunded Actuarial Accrued Liability	\$442,294,388	\$295,511,814	\$198,893,426
Amortization Period (in years)	29	30	21
Interest Rate	8.00%	8.00%	8.50%
Payment Increase Rate	4.00%	4.00%	4.50%
Amortization Payment as of January 1	\$24,623,020	\$16,150,521	\$13,438,756
b. Early Retirement Incentive (1992)	\$0	\$0	\$103,104
Amortization Period (in years)			1
Interest Rate			8.50%
Payment Increase Rate			4.50%
Amortization Payment	\$0	\$0	\$103,104
c. Early Retirement Incentive (2002)	\$13,247,856	\$13,224,606	\$12,866,823
Amortization Period (in years)	17	18	21
Interest Rate	8.00%	8.00%	8.50%
Payment Increase Rate	4.50%	4.50%	4.50%
Amortization Payment as of January 1	\$1,001,187	\$958,073	\$869,381
d. Early Retirement Incentive (2003)	\$2,597,412	\$2,592,853	\$2,522,704
Amortization Period (in years)	17	18	21
Interest Rate	8.00%	8.00%	8.50%
Payment Increase Rate	4.50%	4.50%	4.50%
Amortization Payment	\$196,295	\$187,842	\$170,453
e. Current Gain or Loss*	\$4,045,088	\$155,862,449	\$88,623,483
Amortization Period (in years)	29	30	21
Interest Rate	8.00%	8.00%	8.50%
Payment Increase Rate	4.00%	4.00%	4.50%
Amortization Payment	\$225,195	\$8,518,305	\$5,988,078
f. Assumption Change	\$0	(\$27,529,581)	\$0
Amortization Period (in years)	29	30	21
Interest Rate	8.00%	8.00%	8.50%
Payment Increase Rate	4.00%	4.00%	4.50%
Amortization Payment	\$0	(\$1,504,566)	\$0

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Exhibit E - Annual Appropriations, continued

<u>Valuation Date</u>	<u>January 1, 2011</u>	<u>January 1, 2010</u>	<u>January 1, 2007</u>
g. Plan Change	\$0	\$9,363,140	\$0
Amortization Period (in years)	29	30	21
Interest Rate	8.00%	8.00%	8.50%
Payment Increase Rate	4.00%	4.00%	4.50%
Amortization Payment	\$0	\$511,721	\$0
h. Total Amortization Payments	\$26,045,697	\$24,821,896	\$20,569,772
Employer Normal Cost	\$8,442,218	\$8,379,107	\$7,234,638
Total Amortization Payments	\$26,045,697	\$24,821,896	\$20,569,772
Total Cost as of January 1	\$34,487,915	\$33,201,003	\$27,804,410
Salary	\$252,882,274	\$241,992,607	\$211,518,755
Total Cost as a Percent of Salary	13.6%	13.7%	13.1%
* Current Gain or Loss			
a. Fiscal Year Appropriation	31,200,000		
b. Discounted to current valuation date	29,455,551		
c. Appropriation based on current valuation	33,201,003		
d. Shortfall as of current valuation	3,745,452		
e. Shortfall as of next valuation = d. x (1.08).	4,045,088		

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In **Exhibit F**, we present **Total Employer Cost Forecast as of January 1**, a thirty-year funding forecast as of the calendar years based on the calculations for the current valuation in this report and from assumptions noted below:

- Payroll and Total Normal Cost are both expected to increase 4.50% per year.
- The Employee Contribution rate is shown to increase linearly from the 2010 percentage to 10.50% by 2028 as members contributing at the lower rates are replaced by new members contributing over 9%.
- Employer Normal Cost is the difference between Total Normal Cost and Employee Contributions.
- The Unfunded Actuarial Accrued Liability ("UAL") is computed as of January 1 of each year assuming no future gains or losses.
- The Amortization Payment of UAL is an increasing amortization of the UAL, excluding the UAL attributable to the Early Retirement Incentive ("ERI") program, over 30 years through 2040 with payments increasing 4.00% per year, which reflects the recent law changes. Previously, the UAL was amortized through 2028 with payments increasing by 4.50% per year.
- The Amortization Payment of ERI is an increasing amortization of the UAL attributable to the ERI program over 18 years with payments increasing by 4.50% per year, consistent with the method used in the past.
- Total Employer Cost is the sum of the Employer Normal Cost, the Amortization of the UAL and the Amortization of the ERI, all computed as of January 1 of each year.
- Total Employer Cost for Fiscal Year 2011 is consistent with the previously approved appropriation and the amortization of the UAL for 2010 is adjusted to reflect this.

In **Exhibit G**, we present **30-Year Forecast of Annual Appropriation**, a Section 22D funding forecast as of the fiscal years. The calculations shown in a year are based upon the calculations shown in Exhibit F for the prior January 1 with the cost adjusted for equal employer contributions for the fiscal year assumed to be made July 1 and January 1 of that fiscal year.

In **Exhibit H**, we present **30-Year Forecast of Cash Flow**, a forecast as of the calendar years based on the information on contributions shown in Exhibit F and the assumptions noted below.

- Benefit payments exclude cost-of-living increases granted to members in pay status between 1982 and 1997. In addition, benefit payments are as expected for the first ten years of the forecast, then increase by the greater of 4.50% per year thereafter or the expected future payments for the current population projected by our computer model.
- Total Expected Actuarial Value of Assets assumes no asset gains or losses in any years following the valuation date.
- The Funded Ratio % is the ratio of the Expected Actuarial Value of Assets over the sum of the Unfunded Actuarial Accrued Liability and the Expected Actuarial Value of Assets.

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**Exhibit F - Total Employer Cost Forecast as of January 1
Calendar Year Projections**

Calendar Year	Total Normal Payroll	Employee Contributions	Employer Normal Cost	Amortization Payment of UAL	UAL of ERI (2002)	Amortization Payment of ERI (2002)	UAL of ERI(2003)	Amortization Payment of ERI(2003)	Total Employer Cost	Employer Cost as a Percent of Payroll
2010	\$241,992,607	\$28,380,595	\$20,001,488	\$8,379,107	\$433,207,822	\$19,930,529	\$13,224,606	\$958,073	\$29,455,551	12.2%
2011	252,882,274	29,657,722	21,215,504	8,442,218	446,339,476	21,583,185	13,247,856	1,001,187	31,222,885	12.3%
2012	264,261,976	30,992,319	22,498,279	8,494,040	458,736,795	23,350,849	13,226,403	1,046,240	33,096,258	12.5%
2013	276,153,765	32,386,973	23,853,541	8,533,432	470,216,822	25,571,882	13,154,576	1,093,321	35,412,995	12.8%
2014	288,580,684	33,844,387	25,285,219	8,559,168	480,216,535	27,966,211	13,026,155	1,142,520	37,891,905	13.1%
2015	301,566,815	35,367,384	26,797,444	8,569,940	488,430,350	29,619,819	12,834,326	1,193,933	39,617,778	13.1%
2016	315,137,322	36,958,916	28,394,566	8,564,350	495,515,373	30,804,611	12,571,624	1,247,660	40,861,241	13.0%
2017	329,318,501	38,622,067	30,081,165	8,540,902	501,887,623	32,036,796	12,229,881	1,303,805	42,137,131	12.8%
2018	344,137,834	40,360,060	31,862,059	8,498,001	507,438,893	33,318,268	11,800,162	1,362,477	43,445,877	12.6%
2019	359,624,037	42,176,263	33,742,319	8,433,944	512,050,275	34,650,998	11,272,700	1,423,788	44,787,882	12.5%
2020	375,807,119	44,074,195	35,727,282	8,346,913	515,591,219	36,037,038	10,636,825	1,487,858	46,163,522	12.3%
2021	392,718,439	46,057,534	37,822,563	8,234,971	517,918,515	37,478,520	9,880,884	1,554,812	47,573,144	12.1%
2022	410,390,769	48,130,123	40,034,071	8,096,052	518,875,195	38,977,661	8,992,158	1,624,779	49,017,051	11.9%
2023	428,858,354	50,295,979	42,368,025	7,927,954	518,289,337	40,536,767	7,956,769	1,697,893	50,495,507	11.8%
2024	448,156,980	52,559,298	44,830,965	7,728,333	515,972,776	42,158,238	6,759,586	1,774,299	52,008,744	11.6%
2025	468,324,044	54,924,466	47,429,775	7,494,691	511,719,701	43,844,567	5,384,110	1,854,142	53,556,928	11.4%
2026	489,398,626	57,396,067	50,171,695	7,224,372	505,305,145	45,598,350	3,812,365	1,937,578	55,140,187	11.3%
2027	511,421,564	59,978,890	53,064,343	6,914,547	496,483,339	47,422,284	2,024,770	2,024,770	56,758,583	11.1%
2028	534,435,534	62,677,940	56,115,731	6,562,209	484,985,939	49,319,176	-	-	55,881,385	10.5%
2029	558,485,133	65,498,447	58,640,939	6,857,508	470,520,104	51,291,943	-	-	58,149,451	10.4%
2030	583,616,964	68,445,877	61,279,781	7,166,096	452,766,414	53,343,620	-	-	60,509,716	10.4%
2031	609,879,727	71,525,941	64,037,371	7,488,570	431,376,618	55,477,365	-	-	62,965,935	10.3%
2032	637,324,315	74,744,608	66,919,053	7,825,555	405,971,193	57,696,460	-	-	65,522,015	10.3%
2033	666,003,909	78,108,115	69,930,410	8,177,705	376,136,712	60,004,318	-	-	68,182,023	10.2%
2034	695,974,085	81,622,980	73,077,279	8,545,701	341,422,986	62,404,491	-	-	70,950,192	10.2%
2035	727,292,919	85,296,014	76,365,756	8,930,258	301,339,975	64,900,671	-	-	73,830,929	10.2%
2036	760,021,100	89,134,335	79,802,216	9,332,119	255,354,448	67,496,698	-	-	76,828,817	10.1%
2037	794,222,050	93,145,380	83,393,315	9,752,065	202,886,370	70,196,566	-	-	79,948,631	10.1%
2038	829,962,042	97,336,922	87,146,014	10,190,908	143,304,988	73,004,428	-	-	83,195,336	10.0%
2039	867,310,334	101,717,083	91,067,585	10,649,498	75,924,605	75,924,605	-	-	86,574,103	10.0%

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Below we present an Appropriations Forecast over the next thirty years under the adopted funding schedule. The cost components of the Total Employer Cost Forecast presented in Exhibit F have been adjusted to account for semi-annual payments of the appropriation payable during the fiscal year.

Exhibit G - 30-Year Forecast of Annual Appropriations

Fiscal Year Ending	Total Normal Cost	Employee Contributions	Employer Normal Cost	Amortization Payment of UAL	Amortization Payment of ERI 2002	Amortization Payment of ERI 2003	Total Employer Cost
2011	\$30,061,381	\$21,186,038	\$8,875,343	\$21,110,877	\$1,014,813	\$198,967	\$31,200,000
2012	31,414,145	22,471,952	8,942,193	22,861,407	1,060,480	207,920	33,072,000
2013	32,827,779	23,830,696	8,997,083	24,733,758	1,108,202	217,277	35,056,320
2014	34,305,029	25,266,221	9,038,808	27,086,328	1,158,071	227,055	37,510,262
2015	35,848,756	26,782,688	9,066,068	29,622,456	1,210,184	237,272	40,135,980
2016	37,461,950	28,384,471	9,077,479	31,373,996	1,264,641	247,949	41,964,065
2017	39,147,737	30,076,180	9,071,557	32,628,955	1,321,550	259,107	43,281,169
2018	40,909,385	31,862,664	9,046,721	33,934,114	1,381,020	270,767	44,632,622
2019	42,750,307	33,749,028	9,001,279	35,291,479	1,443,167	282,951	46,018,876
2020	44,674,071	35,740,643	8,933,428	36,703,137	1,508,109	295,684	47,440,358
2021	46,684,405	37,843,162	8,841,243	38,171,262	1,575,974	308,989	48,897,468
2022	48,785,203	40,062,532	8,722,671	39,698,113	1,646,893	322,895	50,390,572
2023	50,980,537	42,405,012	8,575,525	41,286,038	1,721,003	337,425	51,919,991
2024	53,274,662	44,877,190	8,397,472	42,937,479	1,798,447	352,608	53,486,006
2025	55,672,022	47,485,993	8,186,029	44,654,979	1,879,378	368,476	55,088,862
2026	58,177,262	50,238,712	7,938,550	46,441,177	1,963,950	385,057	56,728,734
2027	60,795,239	53,143,017	7,652,222	48,298,825	2,052,327	402,385	58,405,759
2028	63,531,025	56,206,977	7,324,048	50,230,778	2,144,683	420,492	60,120,001
2029	66,389,921	59,439,078	6,950,843	52,240,010	-	-	59,190,853
2030	69,377,467	62,113,836	7,263,631	54,329,610	-	-	61,593,241
2031	72,499,453	64,908,959	7,590,494	56,502,794	-	-	64,093,288
2032	75,761,928	67,829,862	7,932,066	58,762,906	-	-	66,694,972
2033	79,171,214	70,882,206	8,289,008	61,113,422	-	-	69,402,430
2034	82,733,918	74,071,904	8,662,014	63,557,959	-	-	72,219,973
2035	86,456,944	77,405,141	9,051,803	66,100,277	-	-	75,152,080
2036	90,347,507	80,888,371	9,459,136	68,744,289	-	-	78,203,425
2037	94,413,145	84,528,349	9,884,796	71,494,061	-	-	81,378,857
2038	98,661,737	88,332,124	10,329,613	74,353,823	-	-	84,683,436
2039	103,101,515	92,307,070	10,794,445	77,327,975	-	-	88,122,420
2040	107,741,082	96,460,888	11,280,194	80,421,094	-	-	91,701,288

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Below we present a thirty-year forecast of **Cash Flow**.

Exhibit H - 30-Year Forecast of Cash Flow

Calendar Year	Assets as of Beginning of Fiscal Year	Benefit Payments	Employee Contributions	Employer Contributions	Investment Return	Assets as of End of Fiscal Year	Expected Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio
2010	\$344,980,654	\$62,152,618	\$20,001,488	\$29,455,551	\$28,861,735	\$361,146,810	\$413,976,785	\$449,025,281	48.0%
2011	361,146,810	52,360,217	21,215,504	31,222,885	30,817,873	392,042,855	414,652,219	462,184,744	47.3%
2012	392,042,855	55,279,730	22,498,279	33,096,258	33,415,536	425,773,198	416,986,752	474,556,404	46.8%
2013	425,773,198	58,257,228	23,853,541	35,412,995	36,278,699	463,061,205	422,829,640	485,950,521	46.5%
2014	463,061,205	61,474,697	25,285,219	37,891,905	39,435,163	504,198,794	463,061,205	495,796,634	48.3%
2015	504,198,794	64,764,163	26,797,444	39,617,778	42,842,674	548,692,527	504,198,794	503,781,009	50.0%
2016	548,692,527	68,309,351	28,394,566	40,861,241	46,475,795	596,114,778	548,692,527	510,551,824	51.8%
2017	596,114,778	72,140,628	30,081,165	42,137,131	50,340,552	646,532,998	596,114,778	516,515,328	53.6%
2018	646,532,998	76,181,691	31,862,059	43,445,877	54,446,068	700,105,311	646,532,998	521,552,627	55.3%
2019	700,105,311	80,270,235	33,742,319	44,787,882	58,812,464	757,177,741	700,105,311	525,533,131	57.1%
2020	757,177,741	84,738,551	35,727,282	46,163,522	63,453,480	817,783,474	757,177,741	528,313,528	58.9%
2021	817,783,474	89,242,836	37,822,563	47,573,144	68,387,145	882,323,490	817,783,474	529,736,672	60.7%
2022	882,323,490	93,665,564	40,034,071	49,017,051	73,651,128	951,360,176	882,323,490	529,630,380	62.5%
2023	951,360,176	98,139,858	42,368,025	50,495,507	79,285,169	1,025,369,019	951,360,176	527,806,131	64.3%
2024	1,025,369,019	102,556,152	44,830,965	52,008,744	85,332,598	1,104,985,174	1,025,369,019	524,057,665	66.2%
2025	1,104,985,174	107,171,179	47,429,775	53,556,928	91,833,666	1,190,634,364	1,104,985,174	518,159,434	68.1%
2026	1,190,634,364	111,993,882	50,171,695	55,140,187	98,822,631	1,282,774,995	1,190,634,364	509,864,973	70.0%
2027	1,282,774,995	117,033,607	53,064,343	56,758,583	106,336,377	1,381,900,691	1,282,774,995	498,905,091	72.0%
2028	1,381,900,691	122,300,119	56,115,731	55,881,385	114,212,153	1,485,809,841	1,381,900,691	484,985,939	74.0%
2029	1,485,809,841	127,803,624	58,640,939	58,149,451	122,669,861	1,597,466,468	1,485,809,841	470,520,104	75.9%
2030	1,597,466,468	133,554,787	61,279,781	60,509,716	131,753,103	1,717,454,281	1,597,466,468	452,766,414	77.9%
2031	1,717,454,281	139,564,752	64,037,371	62,965,935	141,508,801	1,846,401,636	1,717,454,281	431,376,618	79.9%
2032	1,846,401,636	145,845,166	66,919,053	65,522,015	151,987,459	1,984,984,997	1,846,401,636	405,971,193	82.0%
2033	1,984,984,997	152,408,198	69,930,410	68,182,023	163,243,439	2,133,932,671	1,984,984,997	376,136,712	84.1%
2034	2,133,932,671	159,266,567	73,077,279	70,950,192	175,335,260	2,294,028,835	2,133,932,671	341,422,986	86.2%
2035	2,294,028,835	166,433,563	76,365,756	73,830,929	188,325,921	2,466,117,878	2,294,028,835	301,339,975	88.4%
2036	2,466,117,878	173,923,073	79,802,216	76,828,817	202,283,246	2,651,109,084	2,466,117,878	255,354,448	90.6%
2037	2,651,109,084	181,749,611	83,393,315	79,948,631	217,280,266	2,849,981,685	2,651,109,084	202,886,370	92.9%
2038	2,849,981,685	189,928,343	87,146,014	83,195,336	233,395,615	3,063,790,307	2,849,981,685	143,304,988	95.2%
2039	3,063,790,307	198,475,118	91,067,585	86,574,103	250,713,971	3,293,670,848	3,063,790,307	75,924,605	97.6%

Section V - GASB Statement Numbers 25 and 27

The Governmental Accounting Standards Board (GASB) requires certain disclosures of pension liabilities for public employer financial statements in accordance with Statement Numbers 25 and 27. Footnote disclosures required by GASB Statement Numbers 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. The Annual Required Contribution (ARC) shown is for the fiscal year beginning the following July 1.

Below is the required disclosure information:

<u>Valuation Date</u>	<u>January 1, 2010</u>	<u>January 1, 2007</u>
1. Actuarial Accrued Liability	\$863,002,067	\$692,768,325
2. Actuarial Value of Assets	413,976,785	389,758,785
3. Unfunded Actuarial Accrued Liability (UAAL)	\$449,025,282	\$303,009,540
4. Funded Ratio = 2. ÷ 1.	48.0%	56.3%
5. Covered Payroll	\$241,992,607	\$211,518,755
6. UAAL as a Percentage of Covered Payroll = 3. ÷ 5.	185.6%	143.3%
7. Annual Required Contribution (ARC)	\$31,200,000	\$22,920,884
8. Net Pension Obligation	\$0	\$0

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) / c)
1/1/2010	413,976,785	863,002,067	449,025,282	48.0%	241,992,607	185.6%
1/1/2007	389,758,785	692,768,325	303,009,540	56.3%	211,518,755	143.3%
1/1/2004	350,879,900	552,773,549	201,893,649	63.5%	170,669,442	118.0%
1/1/2001	316,389,108	426,280,953	109,891,845	74.2%	145,000,347	76.0%
1/1/1999	248,967,040	374,455,997	125,488,957	66.5%	119,857,640	105.0%
1/1/1998	240,982,371	394,330,873	153,348,502	61.1%	134,803,954	114.0%
1/1/1997	174,065,213	291,956,757	117,891,544	59.6%	111,270,545	106.0%

Section VI - PERAC Disclosure Information

The most recent actuarial valuation of the System was prepared by Ricci Consultants, Incorporated as of January 1, 2010.

The normal cost for employees on that date was:	\$20,001,488	8.3% of payroll
The normal cost for the employer was:	\$8,379,107	3.5% of payroll

The actuarial liability for active members was:	\$447,237,663
The actuarial liability for retired and inactive members was:	415,764,404
Total actuarial liability:	\$863,002,067
System assets as of that date:	\$413,976,785
Unfunded actuarial accrued liability:	\$449,025,282

The ratio of System assets to total actuarial accrued liability was: 48.0%

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

Investment Return:	8.00%
Rate of Salary Increase:	3.00% (all years)

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b a) / c)
1/1/2010	413,976,785	863,002,067	449,025,282	48.0%	241,992,607	185.6%
1/1/2007	389,758,785	692,768,325	303,009,540	56.3%	211,518,755	143.3%
1/1/2004	350,879,900	552,773,549	201,893,649	63.5%	170,669,442	118.0%
1/1/2001	316,389,108	426,280,953	109,891,845	74.2%	145,000,347	76.0%
1/1/1999	248,967,040	374,455,997	125,488,957	66.5%	119,857,640	105.0%
1/1/1998	240,982,371	394,330,873	153,348,502	61.1%	134,803,954	114.0%
1/1/1997	174,065,213	291,956,757	117,891,544	59.6%	111,270,545	106.0%

Section VII - Summary of Plan Provisions

Administration There are 107 contributory retirement systems for public employees in Massachusetts. Each system is governed by a retirement board and all boards, although operating independently, are governed by Chapter 32 of the Massachusetts General Laws and other applicable statutes. This law in general provides uniform benefits, uniform contribution requirements and a uniform accounting and funds structure for all systems.

Participation Participation is mandatory for all full-time employees. Eligibility with respect to part-time, provisional, temporary, seasonal or intermittent employment is governed by regulations promulgated by the local retirement board, and approved by PERAC. Membership is optional for certain elected officials.

There are four classes of membership in the retirement system:

Group 1: General employees, including clerical, administrative, technical and all other employees not otherwise classified.

Group 2: Certain specified hazardous duty positions.

Group 3: State police officers and inspectors.

Group 4: Local police officers, firefighters and other specified hazardous positions.

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

Member Contributions Member contributions vary depending on the most recent date of membership:

Prior to 1975:	5% of Salary
1975 – 1983:	7% of Salary
1984 – June 30, 1996:	8% of Salary
July 1, 1996 – present:	9% of Salary
1979 – present:	An additional 2% of Salary in excess of \$30,000.

Rate of Interest Interest on regular deductions made after January 1, 1984 is a rate established by PERAC in consultation with the Commissioner of Banks. The rate is obtained from the average rates paid on individual savings accounts by a representative sample of at least ten financial institutions.

Retirement Age The mandatory retirement age for some Group 2 and Group 4 members is age 65. Most Group 2 and Group 4 members may remain in service after reaching age 65. Group 4 members who are employed in certain public safety positions are required to retire at age 65. There is no mandatory retirement age for members in Group 1.

Salary Gross regular compensation. This does not include bonuses, overtime, severance pay, unused sick leave credit or other similar compensation.

Section VII - Summary of Plan Provisions

Average Salary Average annual rate of regular compensation received during the three consecutive years that produce the highest average, or, if greater, during the last three years (whether or not consecutive) preceding retirement.

Creditable Service The period during which a member contributes to the retirement system plus certain periods of military service and “purchased” service.

Benefit Rate Varies with the member’s retirement age, but the highest rate of 2.5% applies to Group 1 members who retire at or after age 65, Group 2 members who retire at or after age 60 and to Group 4 members who retire at or after age 55.

A .1% reduction is applied to each year of age under the maximum age for the member’s group.

The benefit rate for Group 1 is used for Group 2 members who terminate from service prior to age 55.

Rate	Group 1	Age Group 2	Group 4
2.50%	65+	60+	55+
2.40%	64	59	54
2.30%	63	58	53
2.20%	62	57	52
2.10%	61	56	51
2.00%	60	55	50
1.90%	59	--	49
1.80%	58	--	48
1.70%	57	--	47
1.60%	56	--	46
1.50%	55	--	45

Superannuation Retirement Eligibility

- completion of 20 years of Creditable Service, or
- attainment of age 55 if hired prior to 1978, or if classified in Group 4, or
- attainment of age 55 with 10 years of Creditable Service, if hired after 1978, and if classified in Group 1 or 2

Benefit Amount Product of the member’s Benefit Rate, Average Salary and Creditable Service.

Maximum Benefit 80% of the member’s Average Salary.

Veteran’s Benefit Additional benefit of \$15 per year of Creditable Service, up to a maximum of \$300.

Section VII - Summary of Plan Provisions

Deferred Vested	Eligibility	<ul style="list-style-type: none"> • completion of ten or more years of Creditable Service. • elected officials hired prior to 1978, completion of six years of Creditable Service.
	Benefit Amount	Accrued benefit payable commencing at age 55, or the completion of 20 years of Creditable Service, or may be deferred until later at the participant's option.
Withdrawal of Contributions		<p>Contributions may be withdrawn upon termination of employment.</p> <ul style="list-style-type: none"> • Members hired prior to 1984 receive contributions plus 100% of interest credited. • Members hired after 1983 with less than five years of Creditable Service receive contributions only. • Members hired after 1983 with more than five years of Creditable Service but less than ten years receive contributions plus 50% of interest credited. • Members hired after 1983 with more than ten years of Creditable Service receive contributions plus 100% of interest credited.
Ordinary Disability Retirement	Eligibility	Non-job related disability after completion of ten years of Creditable Service.
	Benefit Amount	Superannuation benefit determined if the member is age 55, up to a maximum of 80% of Average Salary over three years. If the member is a veteran, 50% of final rate of salary (final year) plus an annuity based on the accumulated member contributions plus credited interest, up to a maximum of 80% of Average Salary over five years.
Accidental Disability Retirement	Eligibility	Disabled as a result of an accident in the performance of duties. There is no minimum age or service requirement.
	Benefit Amount	72% of Salary plus an annuity based on accumulated member contributions plus credited interest.
	Maximum Benefit	100% of Salary if hired before January 1, 1988, otherwise 75% of Salary.
	Veteran's Benefit	Additional allowance of \$15 per year of Creditable Service, up to a maximum of \$300.
	Supplemental Dependent Allowance	Additional allowance of \$415 per year for each child.

Section VII - Summary of Plan Provisions

Non-Occupational Death	Eligibility	For members with at least two years of creditable service who die while in active service, but not due to occupational injury.
	Benefit Amount	Benefit as if Option C had been elected. Minimum benefit of
Accidental Death	Eligibility	For members who die as a result of an occupational injury.
	Benefit Amount	72% of Salary plus an annuity based on accumulated member contributions plus credited interest.
	Maximum Benefit	100% of Salary if hired before January 1, 1988, otherwise 75% of Salary.
	Veteran's Benefit	Additional allowance of \$15 per year of creditable service, up to a maximum of \$300.
	Supplemental Dependent Allowance	Additional allowance of \$415 per year for each child.
Cost-of-Living Adjustment (COLA)	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 benefit 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 \$14,000 (previously, \$12,000). All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the Commonwealth of Massachusetts and are not the liability of the Retirement System.	
Optional Forms of Payment	A member may elect to receive his or her retirement allowance in one of three forms of payment:	
	<ul style="list-style-type: none"> • Option A – Life annuity. • Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member. • Option C – Life annuity with 66$\frac{2}{3}$% of benefit continued to designated joint annuitant upon death of member. 	

Section VIII - Actuarial Methods and Assumptions

Valuation Date: January 1, 2010

Investment Return: 8.00% per year (previously, 8.50%)

Annuity Savings Fund Interest Rate: 3.00% per year

Amortization Method: *Prior Unfunded Actuarial Accrued Liability:*
Increasing dollar amount at 4.00% to reduce the Unfunded Actuarial Liability, excluding any Early Retirement Incentive program (ERI) and excluding the current year gain or loss, to zero on or before June 30, 2040. Previously, increasing dollar amount at 4.50% and fully funded on or before June 30, 2028.

Early Retirement Incentive Program:
Increasing dollar amount at 4.50% to reduce the Unfunded Actuarial Liability attributable to the Early Retirement Incentive Program (ERI) to zero on or before June 30, 2028. No change from prior valuation.

Current Year Gain or Loss:
Increasing dollar amount at 4.00% to reduce the Unfunded Actuarial Liability attributable to the Current Year Gain or Loss to zero on or before June 30, 2040. Previously, increasing dollar amount at 4.50% and fully funded on or before June 30, 2028.

Salary Scale: The assumed annual rates for salary increases including longevity are illustrated by the following rates:

<u>Year</u>	<u>General Employees</u>	<u>Police and Fire</u>
All years	3.00%	3.00%

Cost-of-Living Allowance: Cost-of-Living Allowances (COLA) are assumed to be 3% of the pension amount, capped at \$420 (previously, \$360) per year.

Mortality Table: RP-2000 Mortality Table. RP-2000 Mortality Table set forward two years for disabled members.

General Employees: 55% of deaths are job-related.

Police and Fire: 90% of deaths are job-related.

Section VIII - Actuarial Methods and Assumptions

Turnover Rates: Illustrative turnover rates are shown below:

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

Disability Rates: Illustrative disability rates are shown below:

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

General Employees: 55% of disabilities are accidental and 45% are ordinary.

Police and Fire: 90% of disabilities are accidental and 10% are ordinary.

Retirement Rates: Illustrative retirement rates are shown below:

<u>Age</u>	<u>General Employees</u>		<u>Police and Fire</u>
	<u>Male</u>	<u>Female</u>	<u>Male & Female</u>
50	0.0100	0.0150	0.0200
51	0.0100	0.0150	0.0200
52	0.0100	0.0200	0.0200
53	0.0100	0.0250	0.0500
54	0.0200	0.0250	0.0750
55	0.0200	0.0550	0.1500
56	0.0250	0.0650	0.1000
57	0.0250	0.0650	0.1000
58	0.0500	0.0650	0.1000
59	0.0650	0.0650	0.1500
60	0.1200	0.0500	0.2000
61	0.2000	0.1300	0.2000
62	0.3000	0.1500	0.2500
63	0.2500	0.1250	0.2500
64	0.2200	0.1800	0.3000
65	0.4000	0.1500	1.0000
66	0.2500	0.2000	1.0000
67	0.2500	0.2000	1.0000
68	0.3000	0.2500	1.0000
69	0.3000	0.2000	1.0000
70	1.0000	1.0000	1.0000

Section VIII - Actuarial Methods and Assumptions

- Actuarial Cost Method:** Individual Entry Age Normal.
- Actuarial Asset Method:** The Actuarial Value of Assets is the market value of assets as of the valuation date reduced by the sum of:
- a) 80% of gains and losses of the prior year,
 - b) 60% of gains and losses of the second prior year,
 - c) 40% of gains and losses of the third prior year and
 - d) 20% of gains and losses of the fourth prior year.
- Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 80% or more than 120% of market value.
- Census Data:** Census data as of the valuation date were submitted by the Retirement Board.
- Asset Data:** Asset information is reported annually to the Public Employee Retirement Administration Commission by the Worcester Regional Contributory Retirement System.
- Dependents:** 80% of all members will be survived by a spouse. Age assumption for spouses is that males are assumed to be three years older than females.
- Administrative Expenses:** The anticipated administrative expenses for the fiscal year. For Fiscal Year 2011, the administrative expenses were assumed to be \$0.

Section IX - Demographic Information

Active Members by Age and Years of Service as of January 1, 2010

Age	Years of Service									Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 20	7 29,084	- -	- -	- -	- -	- -	- -	- -	- -	7 29,084
20-24	190 22,040	7 27,823	- -	- -	- -	- -	- -	- -	- -	197 22,246
25 to 29	267 28,618	83 43,634	2 71,872	- -	- -	- -	- -	- -	- -	352 32,404
30 to 34	176 30,360	134 47,355	39 53,157	1 58,194	- -	- -	- -	- -	- -	350 39,487
35 to 39	224 28,646	162 43,854	133 50,129	26 57,948	- -	- -	- -	- -	- -	545 39,807
40 to 44	436 23,438	238 34,813	120 46,709	104 62,078	61 61,491	5 48,046	- -	- -	- -	964 35,847
45 to 49	368 22,303	338 32,089	212 38,836	78 48,061	73 58,337	38 63,391	7 53,555	- -	- -	1,114 34,181
50 to 54	282 25,471	319 30,458	277 33,568	107 40,412	93 48,461	65 59,939	46 66,541	2 95,633	- -	1,191 35,413
55 to 59	144 27,878	216 31,996	164 35,225	144 36,949	124 43,137	52 51,816	38 58,993	14 65,501	7 63,986	903 37,290
60 to 64	63 25,493	94 30,341	72 32,348	70 36,066	81 45,209	30 44,941	14 53,146	14 61,939	6 36,553	444 36,379
65 to 69	29 20,125	31 28,019	19 24,752	24 32,638	14 32,106	8 38,758	8 30,155	4 23,770	- -	137 27,750
70 & up	3 16,141	4 25,488	6 25,061	3 24,428	4 25,345	2 15,181	3 46,688	5 18,932	2 31,923	32 25,136
Total	2,189	1,626	1,044	557	450	200	116	39	15	6,236
Average Salary	25,424	34,962	39,030	44,516	49,063	54,641	58,645	55,517	48,738	35,399

Average Salary is based on prior calendar year salaries.

Average Age:

47.1

Average Service:

9.6

Section IX - Demographic Information

Retired Plan Participants and Beneficiaries Annual Pensions as of January 1, 2010

Attained Age	Male		Female		Total	
	Count	Total Payments	Count	Total Payments	Count	Total Payments
<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	1	17,115	1	17,115
35-39	0	0	2	17,108	2	17,108
40-44	0	0	3	48,020	3	48,020
45-49	6	130,081	6	85,095	12	215,175
50-54	12	179,066	11	220,201	23	399,267
55-59	65	1,980,288	95	1,180,239	160	3,160,527
60-64	139	4,388,247	177	2,164,272	316	6,552,518
65-69	181	4,007,838	293	4,047,476	474	8,055,314
70-74	154	3,135,051	281	3,408,109	435	6,543,160
75-79	140	2,195,054	253	2,807,529	393	5,002,582
80-84	138	2,214,074	265	2,264,080	403	4,478,154
85-89	78	801,847	246	1,671,254	324	2,473,102
90-94	22	205,143	90	561,597	112	766,739
95+	6	44,789	22	126,633	28	171,422
Total	941	19,281,477	1,745	18,618,725	2,686	37,900,202
Average Age	72.6		75.3		74.3	
Average Payment		20,490		10,670		14,110
	35.0%	50.9%	65.0%	49.1%	100.0%	100.0%

Section IX - Demographic Information

Disabled Retired Plan Participants Annual Pensions as of January 1, 2010

Attained Age	Male		Female		Total	
	Count	Total Payments	Count	Total Payments	Count	Total Payments
<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	36,353	0	0	1	36,353
35-39	4	138,372	0	0	4	138,372
40-44	8	234,505	0	0	8	234,505
45-49	9	285,428	4	120,834	13	406,261
50-54	21	670,007	6	134,965	27	804,972
55-59	30	892,044	6	74,487	36	966,530
60-64	35	1,066,387	2	29,243	37	1,095,631
65-69	25	632,674	4	98,524	29	731,198
70-74	22	471,306	2	21,224	24	492,530
75-79	11	228,155	5	111,158	16	339,313
80-84	11	208,029	3	35,172	14	243,200
85-89	5	78,001	0	0	5	78,001
90-94	1	16,508	0	0	1	16,508
95+	0	0	0	0	0	0
Total	183	4,957,768	32	625,607	215	5,583,375
Average Age	63.0		62.9		63.0	
Average Payment		27,092		19,550		25,969
	85.1%	88.8%	14.9%	11.2%	100.0%	100.0%

Section X - Glossary of Terms

Actuarial Accrued Liability – That portion of the Actuarial Present Value of pension plan benefits which is not provided by future Normal Costs or employee contributions. It is the portion of the Actuarial Present Value attributable to service rendered as of the Valuation Date.

Actuarial Assumptions – Assumptions, based upon past experience or standard tables, used to predict the occurrence of future events affecting the commencement, amount and duration of pension benefits, such as: changes in compensation, mortality, withdrawal, disablement and retirement; rates of investment earnings and asset appreciation or depreciation; and any other relevant items.

Actuarial Cost Method (or Funding Method) – A procedure for allocating the Actuarial Present Value of all past and future pension plan benefits to the current year (Normal Cost) and the past (Actuarial Accrued Liability).

Actuarial Gain or Loss (or Experience Gain or Loss) – A measure of the difference between actual experience and that expected based upon the set of Actuarial Assumptions, during the period between the valuation date and the most recent immediately preceding valuation date.

Note: The effect on the Accrued Liability and/or the Normal Cost resulting from changes in the Actuarial Assumptions, the Actuarial Cost Method or Plan provisions would be described as such, not as an Actuarial Gain (Loss).

Actuarial Present Value – The dollar value on the valuation date of all benefits expected to be paid to current members based upon the Actuarial Assumptions and the terms of the Plan.

Amortization Payment – That portion of the pension plan appropriation which represents payments made to pay interest on and the reduction of the Unfunded Accrued Liability.

Annual Required Contribution (ARC) – The employer's periodic required contributions to a defined benefit pension plan, calculated in accordance with the rules required by the Governmental Accounting Standards Board (GASB).

Annual Statement – The statement submitted by the local retirement board to PERAC each year that describes the asset holdings and Fund balances as of December 31 and the transactions during the calendar year that affected the financial condition of the retirement system.

Annuity Reserve Fund – The fund into which total accumulated Member Contributions, including interest, is transferred at the time a member retires, and from which annuity payments are made.

Annuity Savings Fund – The fund in which Member Contributions plus interest credited are held for active members and for former members who have not withdrawn their contributions and are not yet receiving a benefit (inactive members).

Assets – The total value of the investments held by the Plan trust that are for the payment of promised benefits.

Section X - Glossary of Terms

Cost of Benefits – The estimated payment from the pension system for benefits for the fiscal year.

Expense Fund – The fund into which the appropriation for administrative expenses is paid and from which all such expenses are paid.

Funded Ratio – The Actuarial Value of Assets expressed as a percentage of the Actuarial Accrued Liability.

Funding Schedule – The schedule based upon the most recently approved actuarial valuation which sets forth the amount which would be appropriated to the pension system in accordance with Section 22D of M.G.L. Chapter 32.

GASB – Governmental Accounting Standards Board.

Normal Cost – Total Normal Cost is that portion of the Actuarial Present Value of pension plan benefits which is expected to accrue in the current fiscal year. The Employee Normal Cost is the amount of the expected Member Contributions for the current fiscal year. The Employer Normal Cost is the difference between the Total Normal Cost and the Employee Normal Cost.

Pension Benefit Obligation – The portion of the Actuarial Present Value attributable to past service in accordance with the Projected Unit Credit cost method as stipulated by GASB Statement Number 5 (GASB 5). GASB 5 has been superseded by GASB Statements Number 25 and 27.

Pension Fund – The fund into which appropriation amounts as determined by PERAC are paid and from which pension benefits are paid.

Pension Reserve Fund – The fund which shall be credited with all amounts set aside by a system for the purpose of establishing a reserve to meet future pension liabilities. These amounts would include excess interest earnings.

Present Value of Future Benefits – The actuarial present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value of money and the probabilities of payment.

Special Fund for Military Service Credit – The fund which is credited with amounts paid by the retirement board equal to the amount which would have been contributed by a member during a military leave of absence as if the member had remained in active service of the retirement board. In the event of retirement or a non-job related death, such amount is transferred to the Annuity Reserve Fund. In the event of termination prior to retirement or death, such amount shall be transferred to the Pension Fund.

Unfunded Actuarial Accrued Liability – The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

Worcester Regional Contributory Retirement System
Actuarial Valuation as of January 1, 2010

Section XI - Unit Allocations

Unit Name	FYE 2011 Appropriation			FYE 2012 Appropriation						Increase over FYE 2011
	2002 ERI	2003 ERI	Total	2010 Salary	Normal Cost	UAL	2002 ERI	2003 ERI	Total 2012	
Ashburnham	23,807	-	413,259	2,862,346.00	113,302	289,665	22,875	-	425,842	3.04%
Ashburnham-Westminster Regional	-	-	386,284	2,816,187.51	111,475	284,994	-	-	396,469	2.64%
Auburn	131,134	20,356	1,637,055	11,149,364.24	441,332	1,128,298	125,998	19,549	1,715,177	4.77%
Auburn Housing Authority	-	-	17,865	206,596.00	8,178	20,907	-	-	29,085	62.80%
Auburn Water District	3,903	-	72,175	452,497.76	17,911	45,792	3,750	-	67,453	-6.54%
Barre	4,293	1,718	229,729	1,552,478.00	61,453	157,108	4,125	1,650	224,336	-2.35%
Barre Housing Authority	-	-	10,748	81,087.00	3,210	8,206	-	-	11,416	6.22%
Berlin	-	-	215,638	1,741,787.00	68,946	176,266	-	-	245,212	13.71%
Berlin-Boylston Regional	-	-	82,219	575,572.00	22,783	58,247	-	-	81,030	-1.45%
Blackstone	-	-	387,033	2,587,247.31	102,412	261,825	-	-	364,237	-5.89%
Blackstone Housing Authority	-	-	7,818	58,416.80	2,312	5,912	-	-	8,224	5.19%
Blackstone-Millville Regional	-	-	262,710	2,085,677.99	82,559	211,067	-	-	293,626	11.77%
Bolton	12,880	-	285,852	2,133,624.00	84,456	215,919	12,376	-	312,751	9.41%
Boylston	9,757	-	342,956	2,720,507.50	107,687	275,311	9,375	-	392,373	14.41%
Boylston Water District	-	-	-	98,682.00	3,906	9,986	-	-	13,892	0.00%
Brookfield	6,505	-	141,903	1,036,792.00	41,040	104,922	6,250	-	152,212	7.26%
Charlton	33,304	-	615,015	4,375,771.00	173,209	442,821	32,000	-	648,030	5.37%
Cherry Valley-Rochdale Water	-	-	29,743	277,331.22	10,978	28,065	-	-	39,043	31.27%
Cherry Valley Sewer District	-	-	7,932	36,432.34	1,442	3,687	-	-	5,129	-35.34%
Douglas	9,366	8,988	657,459	5,105,481.99	202,093	516,667	8,999	8,632	736,391	12.01%
Dudley	99,522	5,948	477,282	2,759,948.00	109,249	279,302	95,624	5,712	489,887	2.64%
Dudley Housing Authority	-	-	10,631	82,618.64	3,270	8,361	-	-	11,631	9.41%
Dudley-Charlton Regional	30,571	13,350	658,198	4,562,291.00	180,592	461,697	29,374	12,821	684,484	3.99%
East Brookfield	-	-	78,192	561,035.00	22,208	56,776	-	-	78,984	1.01%
Grafton	30,051	12,954	1,073,815	7,345,343.41	290,755	743,337	28,874	12,440	1,075,406	0.15%
Grafton Housing Authority	-	-	22,473	151,041.00	5,979	15,285	-	-	21,264	-5.38%
Hardwick	9,887	-	89,989	684,997.19	27,115	69,321	9,500	-	105,936	17.72%
Harvard	-	-	554,437	4,042,825.47	160,029	409,128	-	-	569,157	2.65%
Hillcrest Water District	-	-	3,858	31,771.14	1,258	3,215	-	-	4,473	15.94%
Holden	49,305	-	942,109	7,401,962.90	292,996	749,067	47,374	-	1,089,437	15.64%
Holden Housing Authority	-	-	11,419	100,202.00	3,966	10,140	-	-	14,106	23.53%
Hopedale	-	-	597,263	3,758,533.83	148,776	380,358	-	-	529,134	-11.41%
Hubbardston	7,805	3,304	154,046	1,027,350.00	40,666	103,966	7,499	3,173	155,304	0.82%
Lancaster	-	-	293,192	2,187,829.00	86,602	221,405	-	-	308,007	5.05%
Lancaster Housing Authority	-	-	9,607	76,852.88	3,042	7,777	-	-	10,819	12.62%
Leicester	39,158	1,586	723,537	4,876,604.00	193,033	493,505	37,624	1,523	725,685	0.30%

Worcester Regional Contributory Retirement System
Actuarial Valuation as of January 1, 2010

Section XI - Unit Allocations

Unit Name	FYE 2011 Appropriation			FYE 2012 Appropriation						Increase over FYE 2011
	2002 ERI	2003 ERI	Total	2010 Salary	Normal Cost	UAL	2002 ERI	2003 ERI	Total 2012	
Leicester Housing Authority	-	-	19,307	155,421.00	6,152	15,728	-	-	21,880	13.33%
Leicester Water District	-	-	31,697	251,655.56	9,961	25,467	-	-	35,428	11.77%
Lunenburg	-	-	595,713	4,327,766.46	171,308	437,963	-	-	609,271	2.28%
Lunenburg Housing Authority	-	-	5,030	34,024.00	1,347	3,443	-	-	4,790	-4.77%
Lunenburg Water District	-	-	35,357	307,143.09	12,158	31,082	-	-	43,240	22.30%
Mendon	6,245	16,787	313,882	2,260,288.46	89,470	228,738	6,000	16,121	340,329	8.43%
Mendon-Upton Regional	5,204	5,815	548,879	3,725,365.00	147,463	377,001	5,000	5,584	535,048	-2.52%
Millbury	106,286	-	893,227	6,096,038.52	241,303	616,910	102,123	-	960,336	7.51%
Millbury Housing Authority	-	4,759	49,355	303,151.17	12,000	30,678	-	4,570	47,248	-4.27%
Millville	-	-	84,111	465,098.24	18,410	47,067	-	-	65,477	-22.15%
Narragansett Regional	18,343	-	259,028	1,832,526.00	72,538	185,449	17,625	-	275,612	6.40%
Nashoba Regional	-	-	676,227	5,394,093.04	213,518	545,874	-	-	759,392	12.30%
New Braintree	-	-	29,089	224,524.80	8,887	22,722	-	-	31,609	8.66%
Northboro	-	-	1,077,718	8,496,247.03	336,312	859,807	-	-	1,196,119	10.99%
Northboro Housing Authority	-	-	43,032	320,709.00	12,695	32,455	-	-	45,150	4.92%
Northboro-Southboro Regional	-	-	260,704	2,001,883.80	79,242	202,588	-	-	281,830	8.10%
North Brookfield	-	10,706	250,279	1,784,862.00	70,651	180,625	-	10,282	261,558	4.51%
North Brookfield Housing Authority	-	-	9,148	73,219.90	2,898	7,410	-	-	10,308	12.68%
Oakham	-	-	45,300	287,653.69	11,386	29,110	-	-	40,496	-10.60%
Oxford	101,602	11,499	1,085,522	6,805,550.00	269,388	688,711	97,623	11,043	1,066,765	-1.73%
Oxford Housing Authority	-	-	28,419	275,165.26	10,892	27,846	-	-	38,738	36.31%
Oxford-Rochdale Sewer District	-	-	15,710	121,600.00	4,813	12,306	-	-	17,119	8.97%
Paxton	-	-	223,573	1,746,858.84	69,147	176,779	-	-	245,926	10.00%
Petersham	-	1,718	78,736	506,168.01	20,036	51,223	-	1,650	72,909	-7.40%
Phillipston	-	-	46,963	341,692.30	13,525	34,579	-	-	48,104	2.43%
Princeton	6,245	-	202,827	1,727,081.00	68,364	174,778	6,000	-	249,142	22.83%
Quabbin Regional	39,548	5,815	614,033	4,310,238.07	170,615	436,190	37,999	5,584	650,388	5.92%
Quaboag Regional	22,896	-	218,830	1,556,520.00	61,613	157,517	21,999	-	241,129	10.19%
Royalston	-	-	27,698	175,651.20	6,953	17,776	-	-	24,729	-10.72%
Rutland	4,684	-	266,196	2,051,358.00	81,200	207,594	4,501	-	293,295	10.18%
Southboro	-	-	1,016,881	8,838,081.45	349,843	894,401	-	-	1,244,244	22.36%
Southboro Housing	8,196	-	13,926	48,309.00	1,912	4,889	7,875	-	14,676	5.39%
Spencer	-	-	429,062	3,492,271.00	138,237	353,413	-	-	491,650	14.59%
Spencer Housing Authority	-	-	27,757	233,780.16	9,254	23,658	-	-	32,912	18.57%
Spencer-East Brookfield Regional	17,693	3,040	297,382	2,340,312.00	92,638	236,836	17,000	2,919	349,393	17.49%
Sterling	-	10,442	475,363	3,979,899.00	157,539	402,760	-	10,028	570,327	19.98%

Worcester Regional Contributory Retirement System
Actuarial Valuation as of January 1, 2010

Section XI - Unit Allocations

Unit Name	FYE 2011 Appropriation			FYE 2012 Appropriation					Increase over FYE 2011	
	2002 ERI	2003 ERI	Total	2010 Salary	Normal Cost	UAL	2002 ERI	2003 ERI		Total 2012
Sterling Housing Authority	-	-	4,435	33,930.00	1,343	3,434	-	-	4,777	7.71%
Sturbridge	-	47,584	700,101	4,987,994.02	197,443	504,777	-	45,698	747,918	6.83%
Sutton	-	-	661,085	5,213,402.24	206,365	527,588	-	-	733,953	11.02%
Sutton Housing Authority	-	-	2,038	-	-	-	-	-	-	-100.00%
Tantasqua Regional	-	-	448,029	3,277,118.91	129,720	331,639	-	-	461,359	2.98%
Templeton	16,001	-	437,861	3,309,109.84	130,986	334,877	15,374	-	481,237	9.91%
Templeton Housing Authority	15,871	-	25,027	30,105.00	1,192	3,047	15,249	-	19,488	-22.13%
Upton	-	-	369,026	2,799,317.42	110,807	283,287	-	-	394,094	6.79%
Upton Housing Authority	-	-	6,011	-	-	-	-	-	-	-100.00%
Uxbridge	55,159	-	1,089,513	7,319,649.00	289,738	740,737	52,999	-	1,083,474	-0.55%
Uxbridge Housing Authority	-	-	20,884	167,995.00	6,650	17,001	-	-	23,651	13.25%
Wachusett Regional	42,281	-	1,125,928	8,621,064.78	341,252	872,439	40,625	-	1,254,316	11.40%
Warren	39,288	-	217,549	1,283,761.00	50,816	129,915	37,749	-	218,480	0.43%
Warren Water District	-	-	8,628	72,384.00	2,865	7,325	-	-	10,190	18.10%
Westboro	-	26,435	2,156,951	15,570,105.00	616,321	1,575,671	-	25,387	2,217,379	2.80%
Westboro Housing Authority	3,772	-	18,542	89,640.20	3,548	9,071	3,624	-	16,243	-12.40%
West Boylston	44,752	-	699,400	4,578,882.98	181,249	463,376	42,999	-	687,624	-1.68%
West Boylston Housing Authority	-	-	9,514	74,899.00	2,965	7,580	-	-	10,545	10.84%
West Boylston Water District	-	-	35,574	275,870.00	10,920	27,918	-	-	38,838	9.18%
West Brookfield	-	-	138,880	1,085,864.00	42,982	109,888	-	-	152,870	10.07%
Westminster	-	3,701	420,052	3,283,273.63	129,964	332,262	-	3,554	465,780	10.89%
Winchendon	44,882	-	746,118	4,886,409.81	193,421	494,497	43,125	-	731,043	-2.02%
Winchendon Housing Authority	3,512	-	59,451	448,624.02	17,758	45,400	3,374	-	66,532	11.91%
Retirement System	-	-	-	-	-	-	-	-	-	-
	1,103,708	216,505	31,199,999	225,906,691.02	8,942,193	22,861,407	1,060,480	207,920	33,072,000	6.00%