

January 1, 2014

Actuarial Valuation Report

Leominster Retirement Board

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October 21, 2014

Leominster Retirement Board
City Hall, Room 15
25 West Street
Leominster, MA 01453

Dear Leominster Retirement Board:

Stone Consulting, Inc. has performed a January 1, 2014 actuarial valuation of the Leominster Retirement System. This valuation and report was prepared using generally accepted actuarial principles and practices and meets the parameters set by the Governmental Accounting Standards Board Statement (GASB) No. 25. To the best of our knowledge, this report is complete and accurate, and the assumptions used represent our best estimate of anticipated experience of the system.

As part of performing the valuation, Stone Consulting, Inc. was furnished member data by the Leominster Retirement System's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary. In addition, the administrative staff furnished financial statements that were not audited by the actuary or by the plan's auditors.

The funding objective of the plan is to fully fund the system while attempting to maintain a stable contribution amount for the upcoming fiscal year that is consistent with prior funding schedules or if employer finances allow it, to increase the contribution amount. This funding objective is being met.

We anticipate over time the contribution level to decrease as a percentage of payroll. The contribution rate is determined by adding the normal cost plus an amortization of the unfunded actuarial accrued liability. The normal cost is expected to remain at a level percentage of payroll. The number of years of the amortization and/or the rate of increase of the amortization is adjusted to maintain a stable contribution level for the upcoming fiscal year. The length of the funding schedule contained in this actuarial valuation report is eight years and the amortization increase is level. The schedule's length cannot exceed sixteen years (fully funded by 2030) and the amortization increase cannot exceed 4.50% annually. These limits are contained in Chapter 32 of the Massachusetts General Laws. Recent legislation has extended the maximum length of the funding schedule to Fiscal 2040 and reduced the maximum amortization increase to 4%. These limitations are contained in Section 22F of Chapter 32. The Leominster Retirement Board is not relying on this section of Chapter 32.

The contribution amount for Fiscal Year 2015 is \$8,687,572 which is \$635,255 more than the anticipated contribution amount from the prior funding schedule. PERAC and GASB guidelines indicate that actuarial valuations should be conducted at least every other year. The Leominster Retirement Board conducted their previous actuarial valuation effective January 1, 2013.

We are pleased to present the results of this valuation. If the Retirement Board has any questions on the content of this report, we would be glad to respond. Please note that this report is meant to be used in its entirety. Use of excerpts of this report may result in inaccurate or misleading understanding of the results.

The undersigned is a consultant for Stone Consulting, Inc. and a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,
STONE CONSULTING, INC.
Actuaries for the Plan



Lawrence B. Stone
Member, American Academy of Actuaries



stoneconsulting,inc

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Introduction

This report presents the results of the actuarial valuation of the Leominster Retirement System. The valuation was performed at the request of the Retirement Board as of January 1, 2014 for the purpose of determining the contribution requirements for Fiscal Year 2015 and beyond. The contribution requirements are based on:

- The financial condition of the system as of December 31, 2013
- The benefit provisions of M.G.L. Chapter 32 and related statutes;
- The demographics of members in the system (i.e., active and inactive participants, retirees and beneficiaries as of January 1, 2014);
- Economic assumptions regarding salary increases and investment earnings; and
- Other actuarial assumptions (e.g., withdrawals, retirement, death, etc.)

January 1, 2014 Valuation Summary

	January 1, 2014	January 1, 2013	Change
Contribution Fiscal 2015	\$8,687,572	\$8,052,317	\$635,255
Funding Schedule Length (at Fiscal 2015)	8 years	5 years	3 years
Amortization Increase	0.00%	N/A	N/A
Funding Ratio	79%	80%	-1%
Discount Rate Assumption	5.50%	6.75%	-1.25%
Salary Increase Rate Assumption	Select with ultimate rate of Grp 1 & 2 - 3.75% Grp 4 - 4.00%	Select with ultimate rate of Grp 1 & 2 - 3.75% Grp 4 - 4.00%	-
COLA Increases	None Assumed	None Assumed	-

- The Fiscal Year 2015 contribution is \$635,255 more than the planned 2015 contribution. Stone Consulting, with agreement from the Retirement Board, values assets using market value of assets.
- The System, experienced a 21.8% annual return on the market value of assets versus our assumption of a 6.75% return. The System's asset portfolio, effective December 31, 2013 is approximately 88% equities, alternative investments, real estate and other investments and 12% fixed income and short-term investments. The discount rate assumption was changed to 5.50% which is lower than what anticipated market performance would indicate. The change in the discount rate from 6.75% increased the accrued liability by \$23.8 million.
- The mortality assumption was changed to the RP2000 projected with Scale BB and Generational Mortality. This increased the accrued liability by \$6.3 million.

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2014

- We have maintained the same salary increase table as used in the prior valuation. This table is based on an ultimate rate of 3.75% for Groups 1 and 2 and 4.00% for Group 4 with select periods as shown in the following table:

Group	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Group 1 & 2	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
Police	5.00%	5.00%	1.00%	3.00%	-	-	-
Fire	5.00%	5.00%	2.00%	-	-	-	-

The ultimate rate was modified further for all groups to 3.50% in 2014 and 2015.

Total compensation changed by 5.3% over the prior valuation; however average annual compensation (compensation divided by number of active members) changed by 2.6%. This assumption is based on expected future experience.

The schedule length is eight (8) years (which is three more year than from the prior valuation). The maximum period permitted under Section 22(D) of Chapter 32 of the Massachusetts General Laws is 16 years (2030).

- The funding level of the Leominster Retirement System is 79% compared to 80% for the January 1, 2013 actuarial valuation. The funding level is estimated to be in the top quartile of Massachusetts' Contributory Retirement Systems.

One other major assumption was that no COLA adjustments in benefits have been reflected. This differs from the vast majority of Chapter 32 valuations. However, the Leominster Retirement System has not granted COLA adjustments for a significant number of years. The Chair of the Retirement Board has expressed the Board's intent to not make any COLA adjustments in the foreseeable future.

Leominster Retirement Board

Actuarial Valuation as of January 1, 2014

January 1, 2014 Actuarial Valuation Results

	January 1, 2014	January 1, 2013	Percentage Change
Funding			
Contribution for Fiscal 2015	\$8,687,572		
Contribution for Fiscal 2015 based on current schedule		\$8,052,317	7.9%
Members*			
▪ Actives			
a. Number	592	577	2.6%
b. Annual Compensation	\$26,165,270	\$24,845,717	5.3%
c. Average Annual Compensation	\$44,198	\$43,060	2.6%
d. Average Attained Age	46.5	46.9	-0.9%
e. Average Past Service	12.2	12.3	-0.8%
▪ Retired, Disabled and Beneficiaries			
a. Number	374	370	1.1%
b. Total Benefits*	\$7,622,317	7,650,165	-0.4%
c. Average Benefits*	\$20,381	\$20,676	-1.4%
d. Average Age	73.8	73.8	0.0%
▪ Inactives			
a. Number	114	119	-4.2%
Normal Cost			
a. Total Normal Cost	\$4,700,942	\$3,522,666	33.4%
b. Less Expected Members' Contributions	<u>2,348,246</u>	<u>2,177,366</u>	7.8%
c. Normal Cost to be funded by the Municipality	\$2,352,696	\$1,345,300	74.9%
d. Six month adjustment	43,707	24,992	74.9%
e. Administrative Expense Assumption	<u>260,000</u>	<u>178,000</u>	46.1%
f. Adjusted Normal Cost and Expense	\$2,656,403	\$1,548,292	71.6%

*Excluding State reimbursed COLA

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2014

January 1, 2013 Actuarial Valuation Results (Continued)

	January 1, 2014	January 1, 2013	Percentage Change
Actuarial Accrued Liability as of January 1, 2014			
a. Active Members	\$99,144,001	\$73,357,412	35.2%
b. Inactive Members	727,250	1,015,730	-28.4%
c. Retired Members and Beneficiaries	<u>81,697,363</u>	<u>71,663,731</u>	14.0%
d. Total	\$181,568,614	\$146,036,873	24.3%
Unfunded Actuarial Accrued Liability			
a. Actuarial Accrued Liability	\$181,568,614	\$146,036,873	24.3%
b. Less Actuarial Value of Assets	<u>143,848,645</u>	<u>117,109,596</u>	22.8%
c. Unfunded Actuarial Accrued Liability	\$37,719,969	\$28,927,277	30.4%
d. Six month adjustment	<u>2,231,680</u>	<u>1,655,335</u>	
e. Adjusted Unfunded Actuarial Accrued Liability	\$39,951,649	\$30,582,612	

- The data was supplied by the Leominster Retirement Board. The data was checked under broad parameters for reasonableness. With the assistance of the staff of the Leominster Retirement Board, we were able to develop a database sufficient for valuation purposes.
- Payroll changed by 5.3% over the course of the past year. Average annual compensation changed by 2.6% over the same time period.
- The salary increase assumption includes general wage adjustments, step increases, and promotional increases.

History of Active Participants

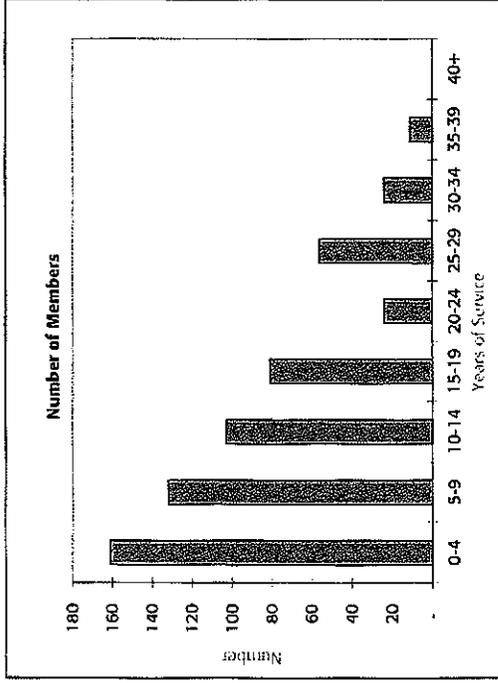
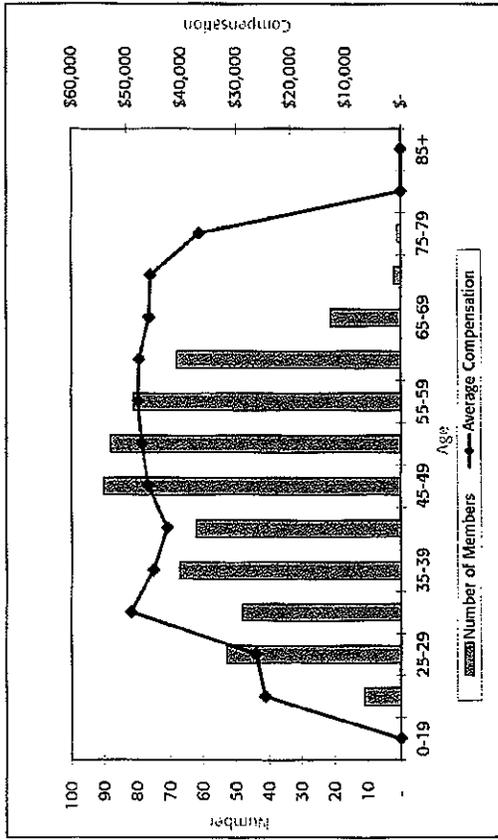
Valuation Year	Number	Average Age	Average Past Service	Average Annual Compensation
2014	592	46.5	12.2	\$44,198
2013	577	46.9	12.3	\$43,060
2011	530	46.9	12.4	\$42,279
2010	581	46.5	11.6	\$42,004
2008	632	45.7	10.6	\$37,231
2007	616	45.7	10.8	\$36,973
2006	660	45.0	10.0	\$33,498
2004	613	45.4	10.2	\$33,700
2001	610	44.3	9.6	\$29,800

- Employee age has increased by 2.2 years and service has increased by 2.6 years over the course of the past thirteen years. This is consistent with the general trend in the Commonwealth's public sector towards an aging of the employee population. The active members average age of 46.5 years is somewhat lower than the average age we have seen in many of our clients. Average annual compensation has grown by 48.3% (3.1% annually) over the same time period.

The charts on the following pages summarize demographic information regarding active and retiree members.

Distribution of Plan Members as of January 1, 2014
Active Members

AGE	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40 + Years	Total	Total Compensation	Average Compensation
0-19	-	-	-	-	-	-	-	-	-	-	-	-
20-24	11	-	-	-	-	-	-	-	-	11	272,440	24,767
25-29	50	3	-	-	-	-	-	-	-	53	1,399,368	26,404
30-34	26	19	3	-	-	-	-	-	-	48	2,358,114	48,127
35-39	14	27	23	3	-	-	-	-	-	67	3,016,617	45,024
40-44	20	16	13	12	1	-	-	-	-	62	2,636,289	42,521
45-49	9	27	18	17	5	14	-	-	-	90	4,143,121	46,035
50-54	17	16	18	11	4	16	6	-	-	88	4,145,317	47,106
55-59	8	11	12	23	6	9	8	4	-	81	3,868,983	47,765
60-64	5	11	13	12	5	6	9	7	-	68	3,236,722	47,599
65-69	1	2	3	3	3	8	1	-	-	21	960,604	45,743
70-74	-	-	-	-	-	2	2	-	-	2	91,066	45,533
75-79	-	-	-	-	-	1	-	-	-	1	36,629	36,629
80-84	-	-	-	-	-	-	-	-	-	-	-	-
85+	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	161	132	103	81	24	56	24	11	-	592	\$ 26,165,270	\$ 44,198

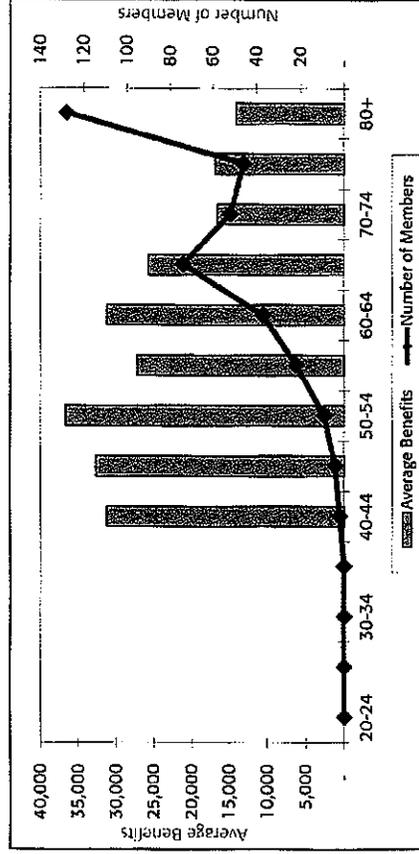


Distribution of Plan Members as of January 1, 2014
Retired Members

Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	1	34,867	34,867
45-49	-	-	-
50-54	4	20,758	83,034
55-59	19	23,641	449,177
60-64	32	30,213	966,827
65-69	67	25,831	1,730,883
70-74	50	16,094	804,694
75-79	42	16,155	678,513
80+	119	13,319	1,584,984
TOTAL	331	\$ 18,954	\$ 6,332,778

Age	Number	Disabled Members Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	1	27,659	27,659
45-49	4	32,668	130,670
50-54	5	49,429	247,143
55-59	3	49,930	149,791
60-64	5	37,851	189,256
65-69	7	24,651	172,555
70-74	2	27,457	54,913
75-79	4	23,884	95,536
80+	9	24,668	222,015
TOTAL	40	\$ 52,238	\$ 1,289,539

Age	Number	Total Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	2	31,263	62,526
45-49	4	32,668	130,670
50-54	9	36,686	330,177
55-59	22	27,226	598,968
60-64	37	31,245	1,156,083
65-69	74	25,719	1,903,239
70-74	52	16,531	859,608
75-79	46	16,827	774,049
80+	128	14,117	1,806,998
TOTAL	371	\$ 20,545	\$ 7,622,317



Benefits shown are net of State reimbursed COLA.



■ Leominster Retirement Board
 Actuarial Valuation as of January 1, 2014

Valuation Methodology

Stone Consulting, Inc. used the Entry Age Normal actuarial funding method in this actuarial valuation. The use of the Entry Age Normal actuarial funding method is consistent with the requirements of Chapter 32 of the Massachusetts General Laws.

NORMAL COST

Valuation Date	January 1, 2014	% of Payroll*
Gross Normal Cost (GNC)	\$4,700,942	18.0%
Employees Contribution	<u>2,348,246</u>	<u>9.0%</u>
Net Normal Cost (NNC)	\$2,352,696	9.0%
Adjusted to Beginning of Fiscal Year 2015	\$43,707	
Administrative Expense	<u>260,000</u>	1.0%
Adjusted Net Normal Cost With Admin. Expense	\$2,656,403	

*Payroll paid (regular compensation) in 2013 for employees as of January 1, 2014 is \$26,165,270. Payroll for new hires in 2013 was annualized.

- The gross normal cost (GNC) is the “price” of benefits accruing in the current year if the assumptions underlying the normal cost were realized.
- An individual normal cost represents that part of the cost of a member’s future benefits that 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 withdrawals) are included in this calculation.
- Anticipated employee contributions to be made during the year are subtracted from the GNC to determine employer normal cost, or net normal cost (NNC).
- Administrative expenses added to the NNC. The administrative expense does not include investment manager and custodial fees. These fees are considered part of the discount rate assumption that is net of fees. The administrative expense was estimated by the Leominster Retirement Board.

■ Leominster Retirement Board
 Actuarial Valuation as of January 1, 2014

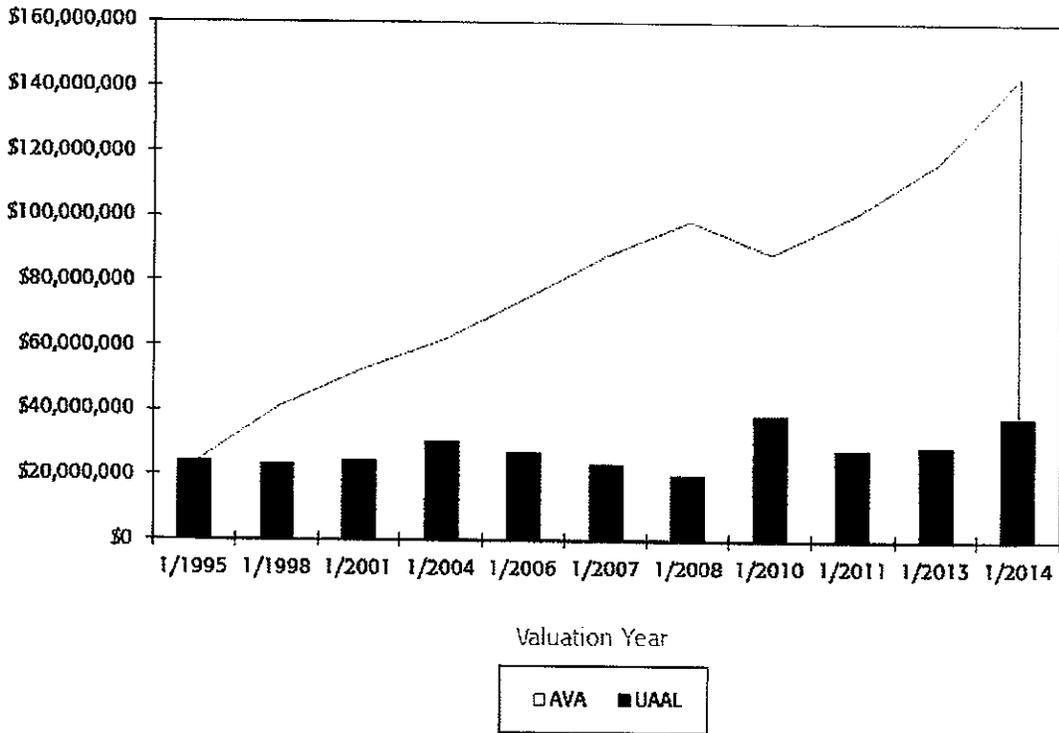
Actuarial Accrued Liability and Funded Status

		January 1, 2014	Percentage Change
Active Actuarial Accrued Liability			
Superannuation	\$90,859,426		
Death	2,046,867		
Disability	5,528,710		
Withdrawal	708,998		
Total		\$99,144,001	35.2%
Retiree, Inactive, Survivor and Beneficiary Actuarial Accrued Liability			
Retirees and Beneficiaries	\$65,643,825		
Disabled	16,053,538		
Inactive	727,250		
Total		<u>82,424,613</u>	13.4%
Total Actuarial Accrued Liability (AAL)		\$181,568,614	24.3%
Actuarial Value of Assets (AVA)		<u>143,848,645</u>	22.8%
Unfunded Actuarial Accrued Liability (UAAL)		\$37,719,969	30.4%
Funded Ratio (AVA / AAL)			
2014 (5.50% discount rate):	79%		
2013 (6.75% discount rate):	80%		

- Actuarial Accrued Liability (AAL) is the “price” of benefits attributable to benefits earned in past years, or in other words, represents today’s value of all benefits earned by active and inactive members.
- The total AAL is \$181,568,614. This along with an actuarial value of assets of \$143,848,645 produces a funded status of 79%. This compares to a funded status of 80% for the 2013 valuation.

The chart on the following page is a history of the unfunded actuarial accrued liability (UAAL) and the valuation assets (AVA) over the course of the past eleven actuarial valuations.

History of Actuarial Value of Assets (AVA) and Unfunded Actuarial Accrued Liability (UAAL)



Development of Funding Schedule

Net Employer Normal Cost for Fiscal 2015	\$ 2,656,403
Net 3(8)(c) payments	53,039
Amortization	<u>5,978,130</u>
Total Appropriation required for Fiscal 2015	\$8,687,572

- The funding schedule is composed of the normal cost, the net 3(8)(c) payments and the amortization of the actuarial accrued unfunded liability and is adjusted by the administrative expense assumption. The contribution is assumed to be made at the beginning of the fiscal year (July 1).
- The 3(8)(c) payments is the net of payments made to or from different Chapter 32 Systems to reflect benefits paid due to service either with Leominster or other Chapter 32 Systems.
- The contribution amount for Fiscal 2015 is \$8,687,572. The funding schedule is presented on page 12. The schedule's length is eight (8) years (for the fresh start base) which is three years more than the January 1, 2013 valuation schedule's length. The maximum funding schedule length allowed by Chapter 32 of the Massachusetts General Laws is sixteen years to Fiscal 2030.

In developing the funding schedule, we used a fresh start approach in which the unfunded actuarial accrued liability (UAAL) is reamortized instead of maintaining the existing amortization amount and separately amortizing the actuarial gain or loss. The use of a fresh-start approach can result in a funding schedule in which the changes in contribution amounts from year to year are more consistent. The amortization is assumed to be level for the next 8 years. The prior schedule had fixed payments. The maximum amortization increase allowed under Chapter 32 is 4.50%.

Alternative Results

We believe the 5.5% discount rate is reasonable for disclosure purposes. For funding purposes a rate that is closer to the expected rate of return on assets would be more reasonable. To provide additional information as well as satisfy our professional responsibility under the actuarial standards of practice, the following are actuarial results using a 6.75% discount rate and a 7.50% discount rate.

Alternative Discount Rate	6.75%	7.50%
Actuarial Accrued Liability	\$157,814,291	\$145,830,878
Unfunded Actuarial Accrued Liability	\$ 13,965,646	\$ 1,982,233
Gross Normal Cost (w/o expenses)	\$ 3,527,393	\$ 2,989,612
Net Normal Cost (w/o expenses)	\$ 1,179,147	\$ 641,366
Fiscal 2016 Appropriation*	\$ 3,850,493	\$ 1,345,527

*Under 8 year schedule with level amortizations

Additional Results

The Leominster Retirement Board has requested that the following actuarial results be included in the valuation report. These results are based on the US Treasury 20 year Bond rate (3.64% Equivalent Discount Rate) and the Citigroup Pension Liability Index Standard rates (4.91% Equivalent Discount Rate). The Equivalent Discount Rates (EDRs) are discount rates that give the same Present Value of Future Benefits as the yield curve. The EDRs were used to determine the portion of the PVFB that has been allocated to the AAL and the Gross Normal Cost. These results are for illustrative purposes.

Discount Rate Equivalency	Treasuries (3.64%)	CPLI (4.91%)
Actuarial Accrued Liability	\$228,512,246	\$194,757,865
Unfunded Actuarial Accrued Liability	\$ 84,663,601	\$ 50,909,220
Gross Normal Cost (w/o expenses)	\$ 7,389,043	\$ 5,409,558
Net Normal Cost (w/o expenses)	\$ 5,040,797	\$ 3,061,312
Fiscal 2016 Appropriation*	\$ 18,015,796	\$ 11,323,879

*Under 8 year schedule with level amortizations. Includes administrative expense and net 3(8)(c) payments.

In these calculations, we used the existing actuarial assumptions and methods other than the discount rate. The following is a list of the spot discount rates that were used:

Year	US Treasury	CPLI Rate	Year	US Treasury	CPLI Rate
0	.100%	.35%	16	3.510%	4.88%
1	.145%	.41%	17	3.562%	4.95%
2	.394%	.62%	18	3.607%	5.02%
3	.796%	1.14%	19	3.649%	5.08%
4	1.267%	1.76%	20	3.686%	5.16%
5	1.715%	2.29%	21	3.721%	5.18%
6	2.083%	2.75%	22	3.753%	5.21%
7	2.375%	3.16%	23	3.783%	5.23%
8	2.610%	3.48%	24	3.811%	5.24%
9	2.800%	3.77%	25	3.838%	5.25%
10	2.955%	4.04%	26	3.863%	5.26%
11	3.086%	4.25%	27	3.887%	5.28%
12	3.195%	4.44%	28	3.910%	5.30%
13	3.309%	4.60%	29	3.933%	5.32%
14	3.386%	4.73%	30+	3.954%	5.34%
15	3.452%	4.82%			

LEOMINSTER CONTRIBUTORY RETIREMENT SYSTEM

FUNDING SCHEDULE

Fiscal Year	Normal Cost	Unfunded Liability	Funding Amortization of UAAL	Net 3(B)(c) Payments	Schedule Contribution
2015	2,656,403	39,951,649	5,978,130	53,039	8,687,572
2016	2,756,018	35,842,062	5,978,130	53,039	8,787,188
2017	2,859,369	31,506,448	5,978,130	53,039	8,890,538
2018	2,966,595	26,932,375	5,978,130	53,039	8,997,765
2019	3,077,842	22,106,728	5,978,130	53,039	9,109,012
2020	3,193,262	17,015,670	5,978,130	53,039	9,224,431
2021	3,313,009	11,644,605	5,978,130	53,039	9,344,178
2022	3,437,247	5,978,130	5,978,130	53,039	9,468,416
2023	3,566,143	-	-	53,039	3,619,182

Amortization of Unfunded Liability as of July 1, 2014

Year	Type	Original Amort. Amount	Percentage Increasing	Original # of Years	Current Amort. Amount	Years Remaining
2015	Fresh Start	5,978,130	0.00%	8	5,978,130	8

Notes on Amortization of Unfunded Liability

Year is the year the amortization base was established.

Type is the reason for the creation of the base. Examples are Gain/(Loss) or Fresh Start.

Original Amortization Amount is the annual amortization amount when the base was established.

Percentage Increasing is the percentage that the Original Amortization Amount increases per year.

Original # of Years is the number of years over which the base is being amortized.

Current Amortization Amount is the amortization payment amount for this year.

Years Remaining is the number of years left to amortize the base.

■ Leominster Retirement Board
Actuarial Valuation as of January 1, 2014

Assumptions and Methodology Summary

The principal actuarial assumptions used in this valuation are the same as the assumptions used in the previous valuation, except where noted, and are summarized in the following table:

- Valuation Date: January 1, 2014 Valuation
- Discount Rate: 5.50% (*Prior valuation 6.75%*)
- Salary Increase:
 - Ultimate rate*: Groups 1 & 2 - 3.75%
 - Group 4 - 4.00%
 - plus steps of

Group	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Group 1 & 2	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
Police	5.00%	5.00%	1.00%	3.00%	-	-	-
Fire	5.00%	5.00%	2.00%	-	-	-	-

*Ultimate rate modified for all groups to 3.50% in 2014 and 2015.
(*Same as prior valuation*)

- COLA Base, Frequency: No future colas assumed (*Same as Prior valuation*).
- Mortality: RP-2000 table (sex distinct, healthy employees for actives and healthy annuitants for retirees) projected with Scale BB and Generational Mortality. For members retired under an Accidental Disability (job-related), 40% of deaths are assumed to be from the same cause as the disability. Disabled mortality is the healthy retiree table ages projected with Scale BB and Generational Mortality and set forward 2 years. (*Prior valuation used RP2000 projected 18 years with scale AA.*)
- Overall Disability:

	Ordinary	Accidental
Groups 1 and 2	45%	55%
Group 4	10%	90%

- Retirement Rates:

	Group 1, 2	Group 4
Pre-April 2, 2012 Hires	Ages 55-70	Ages 50-65
Post-April 1, 2012 Hires	Ages 60-70	Ages 50-65

- Administrative Expense: \$260,000 budget estimated for FY 2015 provided by Leominster Retirement Board.

Leominster Retirement Board
 Actuarial Valuation as of January 1, 2014

Assets

a.	Cash	\$	550,213.97
b.	Pooled Domestic Equity Funds		7,578,118.90
c.	Pooled International Equity Funds		15,921,218.08
d.	Pooled Global Equity Funds		38,453,939.27
e.	PRIT Fund		<u>81,332,978.35</u>
f.	Sub-Total:	\$	143,836,468.57
g.	Interest Due and Accrued	\$.00
h.	Accounts Receivable		21,028.52
i.	Accounts Payable		<u>(8,851.61)</u>
j.	Sub-Total:	\$	12,176.91
k.	Market Value of Assets [(f) + (j)]	\$	143,848,645.48

- We were furnished with the System's annual report by the Board. The market value of assets as of December 31, 2013 (adjusted for payables and receivables) is \$143,848,645.48.
- The asset allocation is approximately 12% cash, receivables, payables and fixed income and 88% equities, alternative investments, real estate and other investments..
- Historically, 10 to 11% has been the expected long-term rate of return for equities, and 6% to 7% has been the expected long-term rate of return for fixed income securities. Many economists and investment professionals are projecting lower returns of 6.25% to 10.50% for various classes of equities and 3.65% to 7.50% for fixed income securities. In light of these projections, as well as historical investment returns, the 5.50% discount rate assumption is below the reasonable assumption range. We encourage close monitoring for changes in investment performance against expectations.

Leominster Retirement Board
 Actuarial Valuation as of January 1, 2014

Disclosure Statement Under GASB Statement 25

SCHEDULES OF FUNDING PROGRESS (Dollars In Thousands)

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 % of Covered Payroll (B-A)/C
1/1/2014	\$143,849	\$181,569	\$37,720	79%	\$26,165	144%
1/1/2013	\$117,110	\$146,037	\$28,927	80%	\$24,846	116%
1/1/2011	\$101,218	\$128,738	\$27,521	79%	\$22,408	123%
1/1/2010	\$88,936	\$127,047	\$38,112	70%	\$24,404	156%
1/1/2008	\$99,005	\$118,516	\$19,511	84%	\$23,530	83%

Notes to Schedules

Additional information as of the latest actuarial valuation follows:

- Valuation Date: 1/1/2014
- Actuarial Cost Method: Entry Age Normal
- Amortization Method: Approximate level percent of payroll (Closed)
- Remaining Amortization Method: 8 years for the fresh start base

Actuarial Assumptions

- Investment Rate of Return: 5.50% per year (Prior valuation 6.75%)
- Projected Salary Increase:

Ultimate rate*: Groups 1 & 2 - 3.75%
 Group 4 - 4.00%
 plus steps of

Group	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Group 1 & 2	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
Police	5.00%	5.00%	1.00%	3.00%	-	-	-
Fire	5.00%	5.00%	2.00%	-	-	-	-

* Ultimate rate modified for all groups to 3.50% in 2014 and 2015.
 (Same as Prior valuation)

Leominster Retirement Board

Actuarial Valuation as of January 1, 2014

PERAC Information Disclosure

The most recent actuarial valuation of the System was prepared by Stone Consulting, Inc. as of January 1, 2014

The normal cost for employees on that date was:	\$2,348,246	9.0% of payroll
The normal cost for the employer was:	\$2,352,696	9.0% of payroll

The actuarial liability for active members was:	\$99,144,001
The actuarial liability for retired members was (includes inactive):	\$82,424,613
Total actuarial accrued liability:	\$181,568,614
System assets as of that date:	\$143,848,645
Unfunded actuarial accrued liability:	\$37,719,969

The ratio of system's assets to total actuarial liability was: 79%

As of that date the total covered employee payroll was: \$26,165,270

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

Investment Return:	5.50% per annum
Rate of Salary Increase:	Select and Ultimate

SCHEDULE OF FUNDING PROGRESS (Dollars in \$1,000's)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAAL as a % of Covered Payroll ((b-a)/c)
1/1/2014	\$143,849	\$181,569	\$37,720	79%	\$26,165	144%
1/1/2013	\$117,110	\$146,037	\$28,927	80%	\$24,846	116%
1/1/2011	\$101,218	\$128,738	\$27,521	79%	\$22,408	123%
1/1/2010	\$88,936	\$127,047	\$38,112	70%	\$24,404	156%
1/1/2008	\$99,005	\$118,516	\$19,511	84%	\$23,530	83%

■ Leominster Retirement Board
 Actuarial Valuation as of January 1, 2014

Actuarial Methods and Assumptions

ACTUARIAL METHODS

Actuarial Cost Method

The Entry Age Normal Actuarial Cost Method has been used in this valuation. Under this method, the normal cost is the amount calculated as the level percentage of compensation necessary to fully fund the prospective benefits from each member's entry age to retirement age.

The actuarial accrued liability represents the theoretical accumulation of all prior years' normal costs for the plan members as if the program had always been in effect. The unfunded actuarial accrued liability is the excess of the actuarial accrued liability over plan assets.

Asset Valuation Method

Market value of assets (adjusted by payables and receivables)

Fiscal Year Adjustment

The actuarial results are adjusted by the valuation discount rate and salary scale to the beginning of Fiscal Year 2015. The unfunded actuarial accrued liability is rolled forward with normal cost and further adjusted by anticipated contributions and interest.

ACTUARIAL ASSUMPTIONS

Investment Return

5.50% per year net of investment expenses. *(Prior valuation 6.75%)*

Salary Assumption

Ultimate rate*: Groups 1 & 2 - 3.75%

Group 4 - 4.00%

plus steps of

Group	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Group 1 & 2	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
Police	5.00%	5.00%	1.00%	3.00%	-	-	-
Fire	5.00%	5.00%	2.00%	-	-	-	-

* Ultimate rate modified for all groups to 3.50% in 2014 and 2015.
(Same as Prior valuation)

Leominster Retirement Board

Actuarial Valuation as of January 1, 2014

Withdrawal Prior to Retirement

The rates shown at the following sample ages illustrate the withdrawal assumption. Withdrawal rates are set to zero if the retirement rate at that age is nonzero.

Rate of Withdrawal		
Service	Group 1 and 2	Group 4
0	15%	1.5%
1	12%	1.5%
2	10%	1.5%
3	9%	1.5%
4	8%	1.5%
5	7.6%	1.5%
10	5.4%	1.5%
15	3.3%	0.0%
20	2.0%	0.0%

Disability Prior to Retirement

Rate of Disability		
Age	Group 1 and 2	Group 4
20	0.01%	0.10%
25	0.02%	0.20%
30	0.03%	0.30%
35	0.06%	0.30%
40	0.10%	0.30%
45	0.15%	1.00%
50	0.19%	1.25%
55	0.24%	1.20%
60	0.28%	0.85%

The rates shown at the following sample ages illustrate the assumption regarding the incidence of disability:

Disability is assumed to be 45% ordinary and 55% accidental for Group 1 and 2 and 10% ordinary and 90% accidental for Group 4.

Leominster Retirement Board

Actuarial Valuation as of January 1, 2014

Rates of Retirement

The rates shown at the following ages illustrate the assumption regarding the incidence of retirement, once the member has achieved 10 years of service or 20 years of service for group 1 and 2 prior to age 55:

Rates of Retirement

Age	Pre-4/2/2012 Hires			Post-4/1/2012 Hires		
	Group 1 & 2	Group 1 & 2	Group 4	Group 1 & 2	Group 1 & 2	Group 4
	Male	Female		Male	Female	
50	1%	1.5%	2%	0%	0%	1.5%
51	1%	1.5%	2%	0%	0%	1.5%
52	1%	2.0%	2%	0%	0%	1.5%
53	1%	2.5%	2%	0%	0%	1.5%
54	2%	2.5%	7.5%	0%	0%	5%
55	2%	5.5%	15%	0%	0%	10%
56	2.5%	6.5%	10%	0%	0%	7%
57	2.5%	6.5%	10%	0%	0%	20%
58	5%	6.5%	10%	0%	0%	10%
59	6.5%	6.5%	15%	0%	0%	15%
60	12%	5%	20%	25%	30%	20%
61	20%	13%	20%	20%	13%	20%
62	30%	15%	25%	30%	15%	25%
63	25%	12.5%	25%	25%	12.5%	25%
64	22%	18%	30%	22%	18%	30%
65	40%	15%	100%	40%	15%	100%
66	25%	20%	N/A	25%	20%	N/A
67	25%	20%	N/A	25%	20%	N/A
68	30%	25%	N/A	30%	25%	N/A
69	30%	20%	N/A	30%	20%	N/A
70	100%	100%	N/A	100%	100%	N/A

Mortality

The RP-2000 mortality table (sex-distinct) projected with scale BB and Generational Mortality. (Prior valuation used RP-2000 mortality table projected 18 years with scale AA.) During employment the healthy employee mortality table is used. Post-employment the healthy annuitant mortality table is used with the same projection.

Disabled Life Mortality

The RP-2000 mortality table for healthy annuitants (sex-distinct) projected with scale BB and Generational Mortality set-forward by 2 years. Death is assumed to be due to the same cause as the disability 40% of the time. (Prior valuation used RP-2000 mortality table projected 18 years with scale AA).

■ Leominster Retirement Board
Actuarial Valuation as of January 1, 2014

Regular Interest Rate Credited to Annuity Savings Account

2% per year.

Family Composition

Members assumed married with 2 dependent children – one male and one female both age 15; age difference between member and spouse assumed to be 3 years (the male being the older).

Cost-of-Living Increases

No future Colas assumed

Administrative Expenses

Estimated budgeted amount of \$260,000 for the Fiscal Year 2015 excluding investment management fees and custodial fee is added to the Normal Cost.

Step Increases

Step increases are assumed to be part of the salary increase assumption.

Credited Service

All service is assumed to be due to employment with the municipality.

3(8)(c)

Net 3(8)(c) payments are added to the contribution amount, they have not been included in the Actuarial Accrued Liability. They are assumed to remain constant.

Contribution Timing

Contributions are assumed to be made July 1.

Valuation Date

January 1, 2014.

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2014

Summary of Principal Provisions

1. PARTICIPANT

Participation is mandatory for all full-time employees whose employment commences before age 65. There are three classes of members in the retirement system:

- Group 1: general employees
- Group 2: employees in specified hazardous occupations (e.g., electricians)
- Group 4: police and firefighters

2. MEMBER CONTRIBUTIONS

Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5% of Pay
1975 – 1983	7% of Pay
1984 – June 30, 1996	8% of Pay
After June 30, 1996	9% of Pay

Members hired after 1978 contribute an additional 2% of pay over \$30,000.

3. PAY

a. Pay

Gross regular compensation excluding bonuses, overtime, severance pay, unused sick pay, and other similar compensation.

b. Average Pay

The average of pay during the three consecutive years that produce the highest average or, if greater, during the last three years (whether or not consecutive) preceding retirement. For members hired after April 1, 2012, five-year averages will be used.

4. CREDITED SERVICE

Period during which an employee contributes to the retirement system plus certain periods of military service and "purchased" service.

5. SERVICE RETIREMENT

a. Eligibility

1) For Group 1, 2 and 4 and hired pre-April 1, 2012: Completion of 20 years of credited service or attainment of age 55 and completion of 10 years of credited service. If a member of group 4, age 55 with no service requirement is also eligible for service retirement.

2) Hired after April 1, 2012: (Group 1 – Age 60, Group 2 – Age 55, Group 4 – Age 50) and completion of 10 years of service

■ Leominster Retirement Board
Actuarial Valuation as of January 1, 2014

b. Retirement Allowance

Determined as the product of the member's benefit percentage, average pay and credited service, where the benefit percentage is shown below (maximum allowance of 80% of average pay):

Benefit Percentage	Group 1	Group 2	Group 4
2.5%	65+	60+	55+
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	N/A	49
1.8	58	N/A	48
1.7	57	N/A	47
1.6	56	N/A	46
1.5	55	N/A	45
Hired after April 1, 2012*			
2.5%	67+	62+	57+
2.35	66	61	56
2.20	65	60	55
2.05	64	59	54
1.90	63	58	53
1.75	62	57	52
1.60	61	56	51
1.45	60	55	50

*Reduction is .125% for each year early instead of .15% per year for employees with over 30 years of service.

In addition, veterans receive an additional \$15 per year for each year of credited service up to 20 years

6. DEFERRED VESTED RETIREMENT

a. Eligibility

Completion of 10 years of credited service.

b. Retirement Allowance

Determined in the same manner as "Service Retirement" section above with the member eligible to start collecting a benefit at age 55, (or age 57 for post-April 1, 2012 hires) or defer until later at his or her discretion. If a member chooses, his or her contributions with interest may be withdrawn. The amount of interest he or she will receive depends on length of service and whether or not the termination of employment was voluntary.

Summary of Principal Provisions
(Continued)

7. ORDINARY DISABILITY RETIREMENT

a. Eligibility

Non-job related disability after completion of 10 years of credited service.

b. Retirement Allowance

Determined in the same manner as "Service Retirement" section and calculated as if the member had attained age 55 (or age 57 for those hired after April 1, 2012), if younger. Veterans receive 50% of pay (during final year) plus an annuity based on accumulated member contributions with interest.

8. ACCIDENTAL DISABILITY RETIREMENT

a. Eligibility

Disabled as a result of an accident in the performance of duties. No age or service requirement.

b. Retirement Allowance

72% of pay plus an annuity based on accumulated member contributions with interest. Also, a dependent's allowance per year for each child. Total allowance not to exceed 100% of pay (75% for members hired after 1987).

9. NON-OCCUPATIONAL DEATH

a. Eligibility

Dies while in active service, but not due to occupational injury.

b. Retirement Allowance

Benefit as if Option C had been elected (see below) and member had attained age 55 (or age 57 for those hired after April 1, 2012) if younger. Minimum monthly benefits provided as follows: spouse - \$500, first child - \$120, each additional child - \$90

10. OCCUPATIONAL DEATH

a. Eligibility

Dies as a result of an occupational injury.

Summary of Principal Provisions
(Continued)

b. Benefit Amount

72% of pay plus refund of annuity savings fund balance. In the case of an accidental disability retiree who dies of the same cause, the beneficiary receives 72% of the last 12 months salary or the current pension amount, whichever is greater.

11. COST-OF-LIVING INCREASES

An increase of up to 3% applied to the first \$12,000 of annual benefit. Funded by the Municipality from Fiscal Year 1999. Percentage increase is voted on each year by the Retirement Board. Cost-of-living increases granted during Fiscal Year 1982 through Fiscal 1998 are reimbursed by the Commonwealth.

12. OPTIONAL FORMS OF PAYMENT

▪ Option A

Allowance payable monthly for the life of the member.

▪ Option B

Allowance payable monthly for the life of the member with a guarantee of remaining member contributions with interest.

▪ Option C

Allowance payable monthly for the life of the member with 66-2/3% continuing to the member's beneficiary upon the member's death. If the beneficiary predeceases the member, the allowance amount "pops up" to the non-reduced amount.

Glossary of Terms

▪ Present Value of Benefits

Represents the dollar value today of all benefits expected to be earned by current members if all actuarial assumptions are exactly realized.

▪ Actuarial Cost Method

The procedure that is used to allocate the present value of benefits between the liability that is attributable to past service (Actuarial Accrued Liability) and that attributable to future service.

Glossary (continued)

• Actuarial Assumptions

Estimates are made as to the occurrence of certain events that determine the level of benefits to be paid and how long they will be provided. The more important actuarial assumptions include the investment return on assets, salary increases and the rates of turnover, disability, retirement and mortality.

• Actuarial Accrued Liability

The portion of the Present Value of Benefits that is attributable to past service.

• Normal Cost

The portion of the Present Value of Benefits that is attributable to benefits to be earned in the coming year.

• Actuarial Assets

Market value of assets (adjusted by payables and receivables) adjusted to phase in investment gains or losses above or below the expected rate of investment return over a five-year rolling period. The phase-in is 20% for year one, 40% for year two, 60% for year three, 80% for year four and 100% for year five. The actuarial value of assets may be no less than 90%, or more than 110% of the market value of assets plus payables and receivables.

• Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability not covered by System Assets.

• PERAC

Public Employee Retirement Administration Commission, a division of the State government which has regulatory authority over the administration of the retirement system.

• PRIT

Pension Reserves Investment Trust Fund is the state controlled and administered fund for the investment of assets for members of the retirement system.

• GASB

Government Accounting Standards Board (issues guidance for disclosure of retirement system liabilities).