

January 1, 2013

Actuarial Valuation Report

Leominster Retirement System



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January 27, 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, 2013 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.

The Fiscal 2014, 2015 and 2016 contributions are set equal to what they were on the existing schedule. The contribution amounts for Fiscal 2017 and 2018 are determined by increasing the prior contribution by 2.50% with a smaller payment in FY 2019. We anticipate over time the contribution level to decrease as a percentage of payroll. The length of the funding schedule contained in this actuarial valuation report is six years (fully funded by 2019). The maximum length is seventeen years (fully funded by 2030). These limits are contained in Section 22D of Chapter 32 of the Massachusetts General Laws. Under Section 22F of Chapter 32 the limits are 4.00% amortization increase and twenty-seven years (fully funded by 2040).

The contribution amount for Fiscal Year 2014 is \$7,814,809 which is the same as 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, 2011.

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, 2013 for the purpose of determining the contribution requirements for Fiscal Year 2014 and beyond. The contribution requirements are based on:

- The financial condition of the system as of December 31, 2012
- 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, 2013);
- Economic assumptions regarding salary increases and investment earnings; and
- Other actuarial assumptions (e.g., withdrawals, retirement, death, etc.)

January 1, 2013 Valuation Summary

	January 1, 2013	January 1, 2011	Change
Contribution Fiscal 2014	\$7,814,809	\$7,814,809	\$0
Funding Schedule Length (at Fiscal 2014)	6 years	3 years	3 years
Amortization Increase	N/A	2.77%	N/A
Funding Ratio	80%	79%	2%
Discount Rate Assumption	6.75%	8.00%	-1.25%
Salary Increase Rate Assumption	Select with ultimate rate of Grp 1 & 2 - 3.75% Grp 4 - 4.00%	4.75% Ultimate	-

- The Fiscal Year 2014 contribution is the same as the planned 2014 contribution. Stone Consulting, with agreement from the Retirement Board, values assets using market value of assets.
- The System, experienced a 5.8% average annual return on the market value of assets versus our assumption of an 8.00% return. The System's asset portfolio, effective December 31, 2012 is approximately 88% equities, alternative investments, real estate and other investments and 12% fixed income and short-term investments.
- There were numerous significant changes to the actuarial assumptions. The following were the major changes and their effect on the actuarial accrued liability:

Leominster Retirement Board
Actuarial Valuation as of January 1, 2013

Assumption Change	Change in AAL
Interest Rate	\$17.0M
Salary Scale	(\$3.9M)
Withdrawal, Disability, Retirement	\$2.6M
Mortality	\$1.7M
COLA	(\$9.3M)
Total	\$8.1M

- The discount rate assumption was changed to 6.75% to reflect anticipated market performance. This increased the actuarial accrued liability by \$17.0 million.
- This valuation reflects a change to the assumptions regarding future cost of living increases. No future increases are recognized. Prior valuations assumed that 3% cost of living adjustments would be given in future years. This decreased the actuarial accrued liability by \$9.3 million.
- We have changed the salary increase assumption from a level 4.75% assumption to a select and ultimate salary increase assumption. 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 1.50% in 2013 and to 3.50% in 2014 and 2015.

This change decreased the actuarial accrued liability by \$3.9 million.

- Non-economic assumptions were changed from the January 1, 2011 actuarial valuation. The mortality assumption is based upon the RP2000 Table projected 18 years with Scale AA. The previous assumption used an 11 year projection with Scale AA. The net effect of this change increased the actuarial accrued liability by \$1.7 million. Changes were made to the retirement, disability and withdrawal assumptions. These changes increased the actuarial accrued liability by \$2.6 million.

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2013

This valuation reflects the effect of net 3(8)(c) payments. Prior valuations did not make any assumption regarding 3(8)(c) payments. This added \$53,000 to the annual contribution.

The schedule length is six (6) years (which is three more year than from the prior valuation). The maximum period permitted under Section 22D of Chapter 32 of the Massachusetts General Laws is 17 years (2030). The maximum length of a funding schedule was changed to Fiscal 2040 by Section 22F of Chapter 32. This change includes other requirements for funding schedules based on Section 22F.

Total compensation changed by 10.9% over the prior valuation; however average annual compensation (compensation divided by number of active members) changed by 1.8%. This assumption is based on expected future experience.

- The funding level of the Leominster Retirement System is 80% compared to 79% for the January 1, 2011 actuarial valuation. The funding level is estimated to be in the top quartile of Massachusetts' Contributory Retirement Systems.

Leominster Retirement Board
 Actuarial Valuation as of January 1, 2013

January 1, 2013 Actuarial Valuation Results

	January 1, 2013	January 1, 2011	Percentage Change
Funding			
Contribution for Fiscal 2014	\$7,814,809		
Contribution for Fiscal 2014 based on current schedule		\$7,814,809	0.0%
Members*			
▪ Actives			
a. Number	577	530	8.9%
b. Annual Compensation	\$24,845,717	\$22,407,674	10.9%
c. Average Annual Compensation	\$43,060	\$42,279	1.8%
d. Average Attained Age	46.9	46.9	0.0%
e. Average Past Service	12.3	12.4	-0.8%
▪ Retired, Disabled and Beneficiaries			
a. Number	370	384	-3.6%
b. Total Benefits*	\$7,650,165	7,298,992	4.8%
c. Average Benefits*	\$20,676	\$19,008	8.8%
d. Average Age	73.8	73.3	0.7%
▪ Inactives			
a. Number	119	121	-1.7%
Normal Cost			
a. Total Normal Cost	\$3,522,666	\$2,810,030	25.4%
b. Less Expected Members' Contributions	<u>2,177,366</u>	<u>2,009,473</u>	8.4%
c. Normal Cost to be funded by the Municipality	\$1,345,300	\$800,557	68.0%
d. Eighteen month adjustment	24,992	18,793	33.0%
e. Administrative Expense Assumption	<u>178,000</u>	<u>149,000</u>	19.5%
f. Adjusted Normal Cost and Expense	\$1,548,292	\$968,350	59.9%

*Excluding State reimbursed COLA

■ Leominster Retirement Board
Actuarial Valuation as of January 1, 2013

January 1, 2013 Actuarial Valuation Results (Continued)

	January 1, 2013	January 1, 2011	Percentage Change
Actuarial Accrued Liability as of January 1, 2013			
a. Active Members	\$73,357,412	\$60,024,206	22.2%
b. Inactive Members	1,015,730	1,130,311	-10.1%
c. Retired Members and Beneficiaries	<u>71,663,731</u>	<u>67,583,697</u>	6.0%
d. Total	\$146,036,873	\$128,738,214	13.4%
Unfunded Actuarial Accrued Liability			
a. Actuarial Accrued Liability	\$146,036,873	\$128,738,214	13.4%
b. Less Actuarial Value of Assets	<u>117,109,596</u>	<u>101,217,515</u>	15.7%
c. Unfunded Actuarial Accrued Liability	\$28,927,277	\$27,520,699	5.1%
d. Eighteen month adjustment	<u>1,655,335</u>	<u>1,495,632</u>	
e. Adjusted Unfunded Actuarial Accrued Liability	\$30,582,612	\$29,016,331	

- 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 10.9% over the course of the past year. Average annual compensation changed by 1.8% 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
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

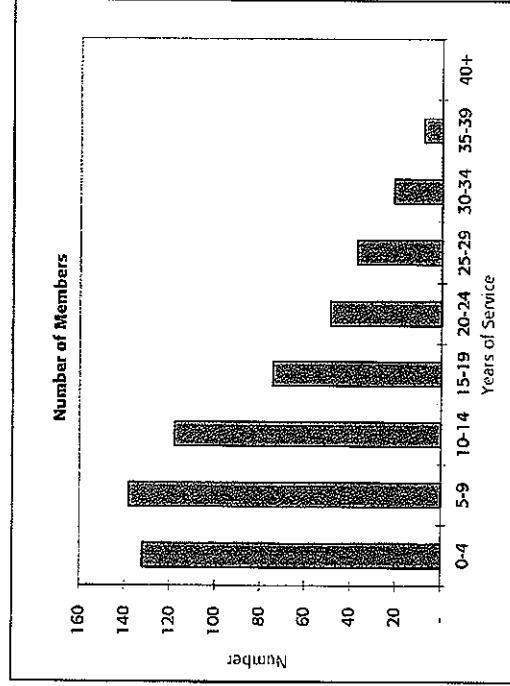
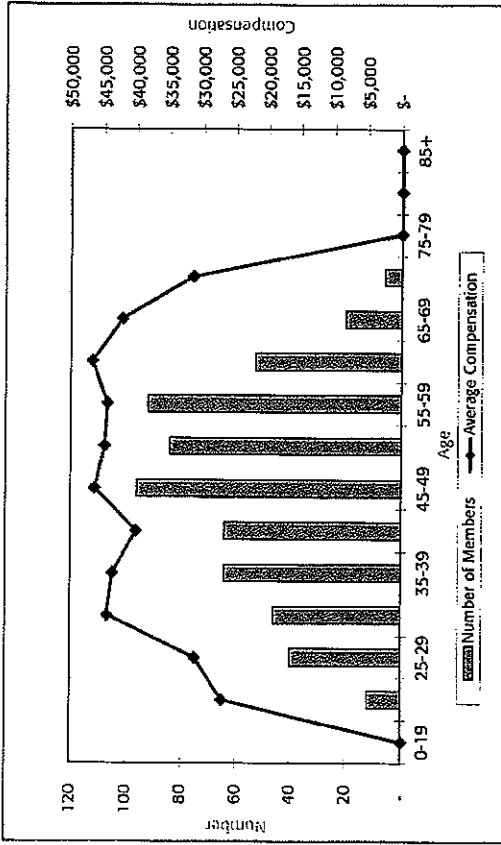
- Employee age has increased by 2.6 years and service has increased by 2.7 years over the course of the past twelve years. This is consistent with the general trend in the Commonwealth's public sector towards an aging of the employee population. The active members' average age of 46.9 years is somewhat lower than the average age we have seen in many of our clients. Average annual compensation has grown by 44.5% (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, 2013

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	12	-	-	-	-	-	-	-	-	12	326,122	27,177
25-29	33	7	-	-	-	-	-	-	-	40	1,251,233	31,281
30-34	22	19	5	-	-	-	-	-	-	46	2,050,033	44,566
35-39	11	27	23	3	-	-	-	-	-	64	2,800,374	43,756
40-44	19	18	15	11	1	-	-	-	-	64	2,571,132	40,174
45-49	13	28	17	17	14	7	-	-	-	96	4,459,467	46,433
50-54	8	18	23	10	8	12	5	-	-	84	3,775,710	44,949
55-59	8	15	19	22	5	10	8	5	-	92	4,096,481	44,527
60-64	4	5	5	9	11	5	7	3	-	53	2,480,592	46,804
65-69	2	1	5	2	7	2	1	-	-	20	845,325	42,266
70-74	-	-	-	-	-	3	1	-	-	6	189,249	31,542
75-79	-	-	-	-	-	-	-	-	-	-	-	-
80-84	-	-	-	-	-	-	-	-	-	-	-	-
85+	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	132	138	118	74	49	37	21	8	-	577	24,845,717	43,060

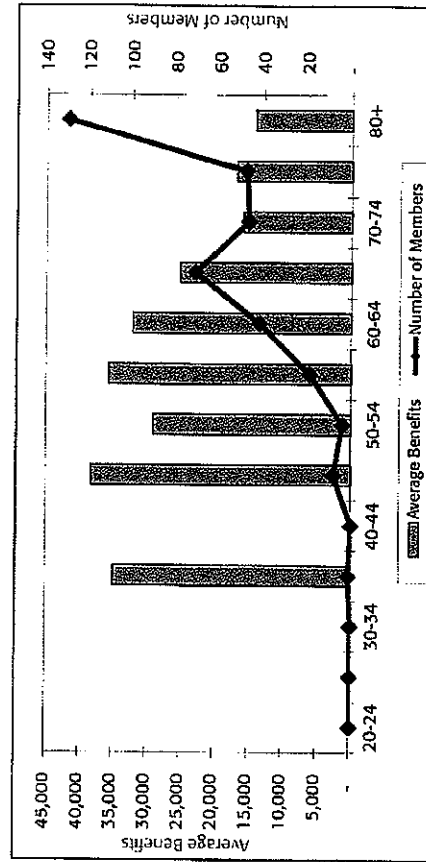


Distribution of Plan Members as of January 1, 2013
Retired Members

Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	1	34,867	34,867
40-44	-	-	-
45-49	1	18,210	18,210
50-54	2	15,325	30,650
55-59	16	33,012	528,196
60-64	36	32,205	1,159,375
65-69	64	25,293	1,618,726
70-74	46	15,652	719,992
75-79	42	15,339	644,243
80+	122	13,663	1,666,866
TOTAL	330	\$ 19,458	\$ 6,421,124

Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	-	-	-
45-49	7	41,100	287,700
50-54	2	42,812	85,623
55-59	3	49,930	149,791
60-64	6	31,570	189,422
65-69	7	23,136	161,954
70-74	1	24,258	24,258
75-79	6	26,875	161,248
80+	8	21,131	169,044
TOTAL	40	\$ 30,726	\$ 1,229,041

Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	1	34,867	34,867
40-44	-	-	-
45-49	8	38,239	305,910
50-54	4	29,068	116,274
55-59	19	35,683	677,986
60-64	42	32,114	1,348,798
65-69	71	25,080	1,780,679
70-74	47	15,835	744,250
75-79	48	16,781	805,491
80+	130	14,122	1,835,910
TOTAL	370	\$ 20,676	\$ 7,650,165



Benefits shown are net of State reimbursed COLA.

■ Leominster Retirement Board
Actuarial Valuation as of January 1, 2013

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, 2013	% of Payroll*
Gross Normal Cost (GNC)	\$3,522,666	14.2%
Employees Contribution	<u>2,177,366</u>	<u>8.8%</u>
Net Normal Cost (NNC)	\$1,345,300	5.4%
Adjusted to Beginning of Fiscal Year 2014	\$24,992	
Administrative Expense	<u>178,000</u>	0.7%
Adjusted Net Normal Cost With Admin. Expense	\$1,548,292	

*Payroll paid (regular compensation) in 2012 for employees as of January 1, 2013 is \$24,845,717. Payroll for new hires in 2012 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, 2013

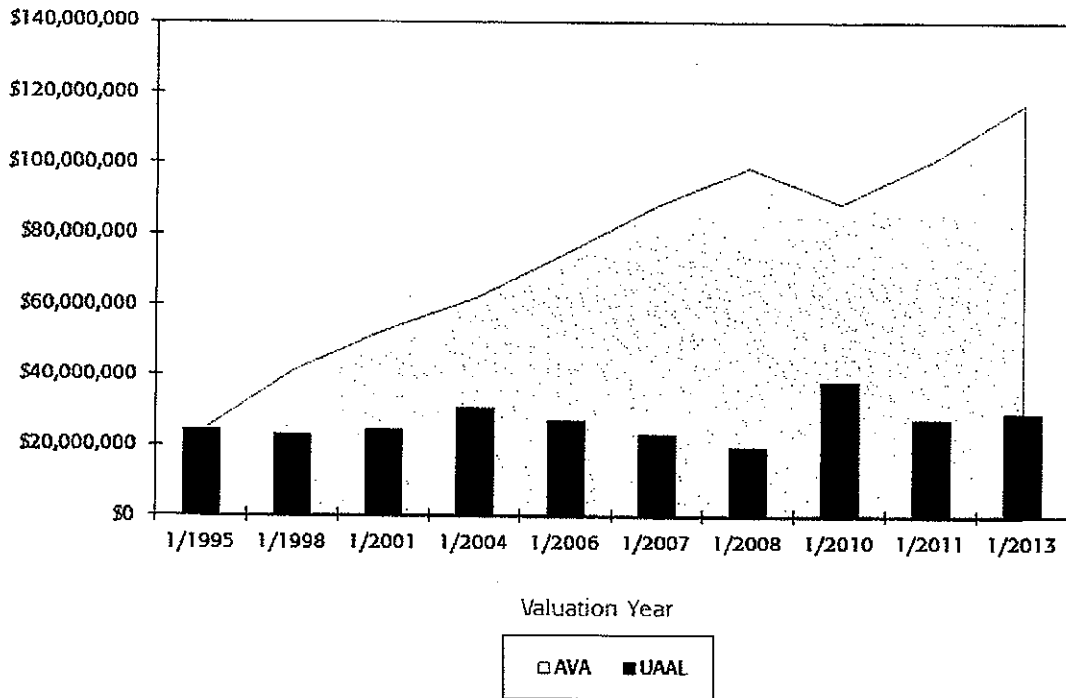
Actuarial Accrued Liability and Funded Status

		January 1, 2013	Percentage Change
Active Actuarial Accrued Liability			
Superannuation	\$66,739,174		
Death	1,468,933		
Disability	4,363,354		
Withdrawal	785,951		
Total		\$73,357,412	22.2%
Retiree, Inactive, Survivor and Beneficiary Actuarial Accrued Liability			
Retirees and Beneficiaries	\$58,639,677		
Disabled	13,024,054		
Inactive	1,015,730		
Total		<u>72,679,461</u>	5.8%
Total Actuarial Accrued Liability (AAL)		\$146,036,873	13.4%
Actuarial Value of Assets (AVA)		<u>117,109,596</u>	15.7%
Unfunded Actuarial Accrued Liability (UAAL)		<u>\$28,927,277</u>	5.1%
Funded Ratio (AVA / AAL)			
2013 (6.75% discount rate):	80%		
2011 (8.00% discount rate):	79%		

- 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 \$146,036,873. This along with an actuarial value of assets of \$117,109,596 produces a funded status of 80%. This compares to a funded status of 79% for the 2011 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 ten 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 2014	\$ 1,548,292
Net 3(8)(c) payments	53,039
Amortization	6,213,478
Total Appropriation required for Fiscal 2014	\$7,814,809

- 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 2014 is \$7,814,809. The funding schedule is presented on page 12. The schedule's length is six (6) years (for the fresh start base) which is three years more than the January 1, 2011 valuation schedule's length. The maximum funding schedule length allowed by Chapter 32 of the Massachusetts General Laws is seventeen years to Fiscal 2030.

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2013

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 adjusted each year to maintain the same contributions under the existing schedule for FY 2014, 2015 and 2016 with 2.5% increases in FY 2017 and 2018. A smaller contribution is expected in FY 2019 when the AAL is fully funded. The amortization percentage was 2.77% in the January 1, 2011. The maximum amortization increase allowed under Chapter 32 is 4.50%.

LEOMINSTER CONTRIBUTORY RETIREMENT SYSTEM

FUNDING SCHEDULE

Fiscal Year	Normal Cost	Unfunded Liability	Funding Amortization of UAL	Net 3(8)(c) Payments	Schedule Contribution
2014	1,548,292	30,582,612	6,213,478	53,039	7,814,809
2015	1,606,353	26,014,051	6,392,925	53,039	8,052,317
2016	1,666,591	20,945,551	6,577,774	53,039	8,297,404
2017	1,729,088	15,337,603	6,722,712	53,039	8,504,839
2018	1,793,929	9,196,396	6,870,492	53,039	8,717,460
2019	1,861,202	2,482,903	2,482,903	53,039	4,397,143
2020	1,930,997	-	-	53,039	1,984,036

Amortization of Unfunded Liability as of July 1, 2013

Year	Type	Original Amort. Amount	Percentage Increasing	Original # of Years	Current Amort. Amount	Years Remaining
2014	Fresh Start*	6,213,478	N/A	6	6,213,478	6

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.

*The Schedule contribution is set so that FY2014, 2015 and 2016 contributions are the same as from the existing schedule. The Fiscal 2017 and 2018 contributions are increased by 2.50% with a smaller payment in FY 2019 when the system is projected to be fully funded.



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, 2013 Valuation
- Discount Rate: 6.75% (*Prior valuation 8.00%*)
- 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 1.50% in 2013 and 3.50% in 2014 and 2015.
 (*Prior valuation assumed 4.75% for all years*)

- COLA Base, Frequency: No future colas assumed (*Prior valuation - 3% of \$12,000, granted every year*).
- Mortality: RP-2000 table (sex distinct, healthy employees for actives and healthy annuitants for retirees) projected 18 years with Scale AA. 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 18 years with Scale AA and set forward 2 years. (*Prior valuation used RP2000 projected 11 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: \$178,000 budget estimated for FY 2014 provided by Leominster Retirement Board.

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2013

Assets

a.	Cash	\$	594,841.58
b.	Pooled Domestic Equity Funds		5,792,648.56
c.	Pooled International Equity Funds		13,322,361.06
d.	Pooled Global Equity Funds		28,297,000.04
e.	Pooled Alternative Investments		3,609,344.81
f.	PRIT Fund		<u>65,493,399.46</u>
g.	Sub-Total:	\$	117,109,595.51
h.	Interest Due and Accrued	\$.00
i.	Accounts Receivable		.00
j.	Accounts Payable		<u>.00</u>
k.	Sub-Total:	\$.00
l.	Market Value of Assets [(g) + (k)]	\$	117,109,595.51

- We were furnished with the System's annual report by the Board. The market value of assets as of December 31, 2012 (adjusted for payables and receivables) is \$117,109,595.51.
- 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 6.75% discount rate assumption is within the reasonable assumption range. We encourage close monitoring for changes in investment performance against expectations.

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2013

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
1/1/2013	\$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%
1/1/2007	\$88,606	\$111,752	\$23,146	79%	\$22,775	102%

Notes to Schedules

Additional information as of the latest actuarial valuation follows:

- Valuation Date: 1/1/2013
- Actuarial Cost Method: Entry Age Normal
- Amortization Method: Approximate level percent of payroll (Closed)
- Remaining Amortization Method: 6 years for the fresh start base

Actuarial Assumptions

- Investment Rate of Return: 6.75% per year (Prior valuation 8.00%)
- 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 1.50% in 2013 and 3.50% in 2014 and 2015.
(Prior valuation assumed 4.75% for all years)

Leominster Retirement Board

Actuarial Valuation as of January 1, 2013.

PERAC Information Disclosure

The most recent actuarial valuation of the System was prepared by Stone Consulting, Inc. as of January 1, 2013

The normal cost for employees on that date was:	\$2,177,366	8.8% of payroll
The normal cost for the employer was:	\$1,345,300	5.4% of payroll

The actuarial liability for active members was:	\$73,357,412
The actuarial liability for retired members was (includes inactive):	\$72,679,461
Total actuarial accrued liability:	\$146,036,873
System assets as of that date:	\$117,109,596
Unfunded actuarial accrued liability:	\$28,927,277

The ratio of system's assets to total actuarial liability was: 80%

As of that date the total covered employee payroll was: \$24,845,717

The principal actuarial assumptions used in the valuation are as follows:
 Investment Return: 6.75% 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 (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
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%
1/1/2007	\$88,606	\$111,752	\$23,146	79%	\$22,775	102%

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2013

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 2014. The unfunded actuarial accrued liability is rolled forward with normal cost and further adjusted by anticipated contributions and interest.

ACTUARIAL ASSUMPTIONS

Investment Return

6.75% per year net of investment expenses. *(Prior valuation 8.00%)*

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 1.50% in 2013 and 3.50% in 2014 and 2015.

(Prior valuation assumed 4.75% for all years)

Withdrawal Prior to Retirement

The rates shown at the following sample ages illustrate the withdrawal assumption. Withdrawal rates

Service	Rate of Withdrawal	
	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%

are set to zero if the retirement rate at that age is nonzero.

Disability Prior to Retirement

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

Age	Rate of Disability	
	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%

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, 2013

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:

Age	Rates of Retirement					
	Pre-4/2/2012 Hires			Post-4/1/2012 Hires		
	Group 1 & 2 Male	Group 1 & 2 Female	Group 4	Group 1 & 2 Male	Group 1 & 2 Female	Group 4
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 18 years with scale AA. (Prior valuation used RP-2000 mortality table projected 11 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

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2013

The RP-2000 mortality table for healthy annuitants (sex-distinct) projected 18 years with scale AA 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 11 years with scale AA).*

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 *(Prior valuation assumed that a 3% COLA on the first \$12,000 of a member's retirement allowance would be granted every year).*

Administrative Expenses

Estimated budgeted amount of \$178,000 for the Fiscal Year 2014 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, 2013.

■ Leominster Retirement Board
Actuarial Valuation as of January 1, 2013

Summary of Principal Provisions

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

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.

PAY

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

Average Pay

The average of pay during the 3 consecutive years that produce the highest average or, if greater, during the last three years (whether or not consecutive) preceding retirement. 5 year average salary for post April 1, 2012 hires.

CREDITED SERVICE

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

■ Leominster Retirement Board

Actuarial Valuation as of January 1, 2013

SERVICE RETIREMENT

Eligibility

- 1) Completion of 20 years of credited service or attainment of age 55 and completion of 10 years of credited service. If hired prior to 1978 or a member of group 4, attainment of age 55.
- 2) Hired after April 1, 2012 and (Group 1 – Age 57, Group 2 – Age 52, Group 4 – Age 50) and completion of 10 years of service.

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):

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

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

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

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Actuarial Valuation as of January 1, 2013

DEFERRED VESTED RETIREMENT

Retirement Allowance

Determined in the same manner as 5b. with the benefit payable at age 55, unless deferred until later at the member's option.

Member contributions with interest may be withdrawn after separation from service. If contributions are withdrawn, eligibility for retirement benefits is forfeited. Members hired before 1984 receive full interest on contributions that are withdrawn; otherwise, one half the credited interest is provided for members who withdraw after 5 but before 10 years of credited service and no interest is provided for withdrawals before 5 years of credited service.

ORDINARY DISABILITY RETIREMENT

Eligibility

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

Retirement Allowance

Determined in the same manner as 5b. with the benefit payable immediately. Veterans receive 50% of pay (during final year) plus an annuity based on accumulated member contributions with interest.

ACCIDENTAL DISABILITY RETIREMENT

Eligibility

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

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).

NON-OCCUPATIONAL DEATH

Eligibility

Dies while in active service, but not due to occupational injury. 2 years of service.

Benefit Amount

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Actuarial Valuation as of January 1, 2013

Benefit as if Option C had been elected (see below). Minimum monthly benefits provided as follows:
spouse - \$250, first child - \$120, each additional child - \$90.

OCCUPATIONAL DEATH

Eligibility

Dies as a result of an occupational injury.

Benefit Amount

Same benefit as with accidental disability.

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.

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.
- **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)
- **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).
- **3(8)(c) Payment:** Payment made by a retirement system to another retirement system. The purpose is to reimburse the portion of a retirement allowance due to service with a previous retirement system.