January 1, 2015

Actuarial Valuation Report

Leominster Retirement System

stone

stoneconsulting,inc

August 18, 2016

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, 2015 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 and PERAC. 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 length of the funding schedule contained in this actuarial valuation report is 5 years (fully funded by 2021). The amortization of the unfunded liability is set to produce a contribution equal to the planned contribution for Fiscal Year 2017. The following amortizations remain level until the final year, when it decreases.

The contribution amount for Fiscal Year 2017 is $8,890,538 which is equal to the anticipated contribution amount from the prior funding schedule. PERAC and GASB guidelines indicate that actuarial valuations should be conducted every other year. The Leominster Retirement Board conducted their previous actuarial valuation effective January 1, 2014.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of natural operation of the methodology used for these measurements such as additional contribution requirements based on the plan's funded status, and changes in plan provisions or applicable law. As part of the valuation, we have not performed an analysis of the potential range of future measurements.

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.

I, Lawrence Stone, am a consultant for Stone Consulting, Inc. I am a member of the American Academy of Actuaries and meet 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
Lawrence B. Stone
Member, American Academy of Actuaries

TABLE OF CONTENTS

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, 2015 for the purpose of determining the contribution requirements for Fiscal Year 2017 and beyond. The contribution requirements are based on:

- The financial condition of the system as of December 31,
- 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, 2015);
- Economic assumptions regarding salary increases and investment earnings; and
- Other actuarial assumptions (e.g., withdrawals, retirement, death, etc.)

January 1, 2015 Valuation Summary

	January 1, 2015	January 1, 2014	Change
Contribution Fiscal 2017	$8,890,538	$8,890,538	same
Funding Schedule Length (as of Fiscal 2017)	5 years	7 years	-2 years
Amortization Increase	0.00% (except in last year)	0.00%	0.00%
Funding Ratio	83%	79%	4%
Interest Rate Assumption	5.50%	5.50%	0.00%
	Select and Ultimate: 4.00% ultimate rate for group 4, 3.75% for others (reduced to 3.50% for 2015)		
Salary Increase Rate Assumption	Fire: 2 years of 5.00% steps, 2.00% in year 3 Police: 2 years of 5.00% steps, 1.00% in year 3, 3.00% in year 4 Others: 7 years of 3.75% steps	Same	N/A
Cost-Of-Living Increases (COLA)	We have assumed no COLAs granted	Same	N/A

- The Fiscal Year 2017 contribution is equal to the planned 2017 contribution. Stone Consulting, with agreement from the Retirement Board, values assets using market value of assets.

- The System, over the one-year period from January 1 to December 31, 2014, experienced a 6.4% annual return on the market value of assets versus our assumption of 5.50%. There was a $1,323,194 net actuarial asset gain in calendar year 2014. The System's asset portfolio, effective December 31, 2014 is approximately 87% equities, real estate, alternative investments, hedge funds and other asset classes and 13% fixed income and short-term investments. The interest rate assumption was maintained at 5.50%.

- The investment return assumption is a long term assumption and is based on capital market expectations by asset class, historical returns, and professional judgement.

- The salary increase assumption is based on a select and ultimate table, which was maintained from the prior valuation. There is a 4.00% ultimate rate for group 4 and 3.75% for others, with the exception of the 2015 calendar year, when it is lowered to 3.50%. Fire members receive 5.00% step increases in their first two years, and a 3.00% increase in their third year. Police receive 5.00% steps for two years, followed by a 1.00% step in year three and a 3.00% step in year 4. Group 1 and 2 members receive 7 years of 3.75% steps. Total compensation changed by 4.7% over the prior valuation; however average annual compensation (compensation divided by number of active members) only changed by 0.2%. The salary increase assumption reflects prior experience, current contracts, current expectations, and professional judgement.

- The salary increase assumption reflects prior experience including PERAC's 2002 local experience study, current expectations, and professional judgement.

- The funding level of the Leominster Retirement System is 83% compared to 79% for the January 1, 2014 actuarial valuation. The funding level is estimated to be above the median for Massachusetts' Contributory Retirement Systems. However, it is difficult to compare to other Retirement Systems due to a much lower interest rate and an assumption of no COLAs being granted.

The schedule length is five (5) years, a two-year reduction from the 7 years remaining from the 8 year schedule from the prior valuation. The maximum period permitted under Section 22D of Chapter 32 of the Massachusetts General Laws is fourteen years (Fiscal 2040). The amortization in the first year is set so that the total contribution amount for Fiscal Year 2017 will be equal to the planned contribution from the prior valuation. The amortization remains level for the following three years, and decreases in the final year.

- The mortality assumption is based upon the RP-2000 table projected from the year 2000 with Generational mortality, Scale BB. This is consistent with the prior valuation.

January 1, 2015 Actuarial Valuation Results

	January 1, 2015	January 1, 2014	Percentage Change
Funding			
Contribution for Fiscal 2017	$8,890,538		0.0%
Contribution for Fiscal 2017 based on current schedule		$8,890,538	
Members			
Actives			
a. Number	619	592	4.6%
b. Annual Compensation	$27,401,323	$26,165,270	4.7%
c. Average Annual Compensation	$44,267	$44,198	0.2%
d. Average Attained Age	45.8	46.5	-1.5%
e. Average Past Service	11.6	12.2	-4.9%
Retired, Disabled and Beneficiaries			
a. Number	388	374	3.7%
b. Total Benefits*	$8,305,240	$7,622,317	9.0%
c. Average Benefits*	$21,405	$20,381	5.0%
d. Average Age	73.9	73.8	0.1%
Inactives			
a. Number	127	114	11.4%
Normal Cost			
a. Total Normal Cost as of January 1, 2015	$4,564,989	$4,700,942	-2.9%
b. Less Expected Members' Contributions	2,487,755	2,348,246	5.9%
c. Normal Cost to be funded by the Municipality	$2,077,234	$2,352,696	-11.7%
d. Adjustment to July 1, 2016	117,933	43,707	169.8%
e. Administrative Expense Assumption	200,000	260,000	-23.1%
f. Normal Cost Adjusted to July 1, 2016	$2,406,522	$2,656,403	-9.4%
Actuarial Accrued Liability as of January 1, 2015			
a. Active Members	$97,053,737	$99,144,001	-2.1%
b. Inactive Members	750,629	727,250	3.2%
c. Retired Members and Beneficiaries	89,337,147	81,697,363	9.4%
d. Total	$187,141,513	$181,568,614	3.1%
Unfunded Actuarial Accrued Liability			
a. Actuarial Accrued Liability as of January 1, 2015	$187,141,513	$181,568,614	3.1%
b. Less Actuarial Value of Assets as of January 1, 2015	155,808,105	143,848,645	8.3%
c. Unfunded Actuarial Accrued Liability as of January 1, 2015	$31,333,408	$37,719,969	-16.9%
d. Adjustment to July 1, 2016	$(3,018,288)	$2,231,680	
e. Unfunded Actuarial Accrued Liability as of July 1, 2016	$28,315,120	$39,951,649	

*Excluding State reimbursed COLA

Demographic Information

	January 1, 2015	Percentage Change
Members		
▪ Actives		
a. Number	619	4.6%
b. Annual Compensation	$27,401,323	4.7%
c. Average Annual Compensation	$44,267	0.2%
d. Average Attained Age	45.8	-1.5%
e. Average Past Service	11.6	-4.9%
▪ Retired, Disabled and Beneficiaries		
a. Number	388	3.7%
b. Total Annual Retirement Allowance excluding State-reimbursed COLA	$8,305,240	9.0%
▪ Inactives		
a. Number	127	11.4%

- 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.

History of Active Participants

Valuation Year	Number	Average Age	Average Past Service	Average Ann'l Compensation
2015	619	45.8	11.6	$44,267
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

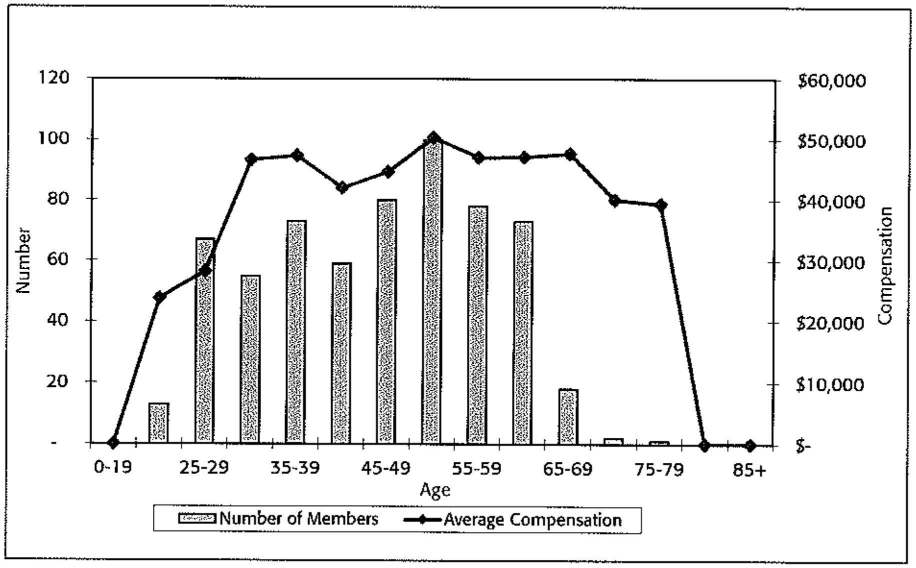
- Employee age has increased by 1.5 years and service has increased by 2.0 years over the course of the past fourteen years. This is consistent with the trend in the Commonwealth towards an aging of the employee population. Average annual compensation has grown by 48.5% (2.9% annually) over the same time period. Note that there was a significant decrease in average age and service in 2015. This is consistent with what we have observed from a few of our other clients. We believe this is related to hiring in the school department.

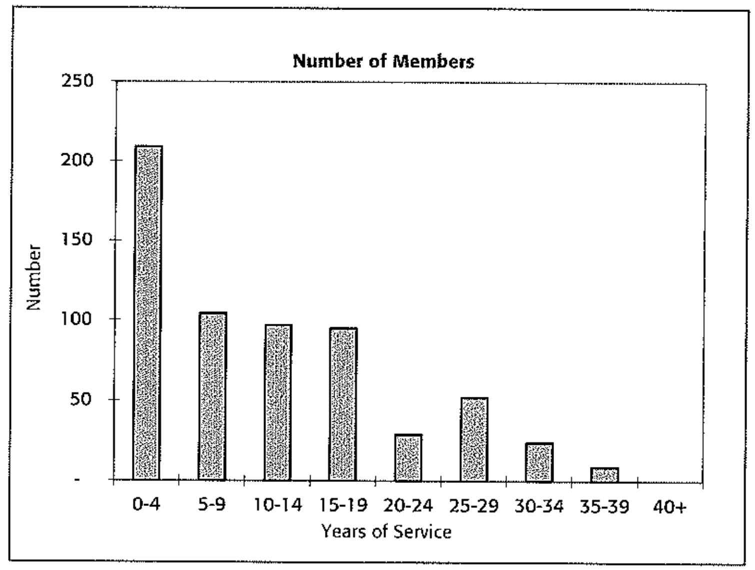
The charts on the following pages summarize demographic information regarding active and retiree members.

Distribution of Plan Members as of January 1, 2015

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	13	-	-	-	-	-	-	-	-	13	$ 308,553	$ 23,735
25-29	64	3	-	-	-	-	-	-	-	67	$ 1,893,081	$ 28,255
30-34	38	16	1	-	-	-	-	-	-	55	$ 2,566,194	$ 46,658
35-39	21	19	28	5	-	-	-	-	-	73	$ 3,457,018	$ 47,356
40-44	21	12	13	13	-	-	-	-	-	59	$ 2,479,405	$ 42,024
45-49	15	20	14	17	5	9	-	-	-	80	$ 3,576,517	$ 44,706
50-54	19	13	21	15	4	23	5	-	-	100	$ 5,034,807	$ 50,348
55-59	8	9	8	27	8	8	8	2	-	78	$ 3,669,304	$ 47,042
60-64	9	9	9	16	8	6	9	7	-	73	$ 3,438,859	$ 47,108
65-69	1	3	3	2	4	4	1	-	-	18	$ 858,179	$ 47,677
70-74	-	-	-	-	-	1	1	-	-	2	$ 80,041	$ 40,021
75-79	-	-	-	-	-	1	-	-	-	1	$ 39,365	$ 39,365
80-84	-	-	-	-	-	-	-	-	-	-	$ -	$ -
85+	-	-	-	-	-	-	-	-	-	-	$ -	$ -
TOTAL	209	104	97	95	29	52	24	9	-	619	$ 27,401,323	$ 44,267





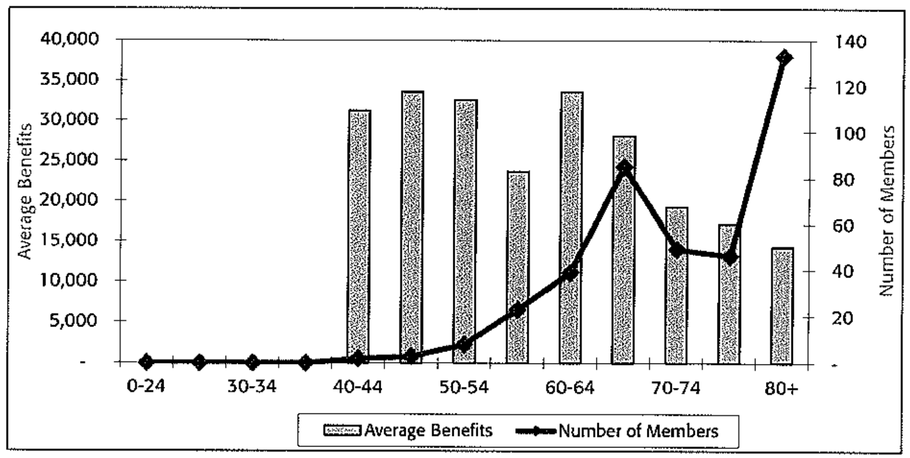
Distribution of Plan Members as of January 1, 2015

RETIRED MEMBERS

Retired Members and Beneficiaries			
Age	Number	Average Benefit	Total Benefit
0-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	1	34,867	34,867
45-49	-	-	-
50-54	4	17,051	68,205
55-59	18	16,456	296,209
60-64	35	32,711	1,144,872
65-69	78	28,066	2,189,148
70-74	45	18,937	852,165
75-79	42	16,540	694,698
80+	125	13,495	1,686,829
TOTAL	348	$ 20,020	$ 6,966,993

Disabled Members			
Age	Number	Average Benefit	Total Benefit
0-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	1	27,659	27,659
45-49	3	33,604	100,813
50-54	4	48,264	193,055
55-59	5	49,765	248,827
60-64	4	41,438	165,752
65-69	7	28,970	202,789
70-74	4	23,715	94,860
75-79	4	23,884	95,536
80+	8	26,120	208,956
TOTAL	40	$ 33,456	$ 1,338,247

Total			
Age	Number	Average Benefit	Total Benefit
0-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	2	31,263	62,526
45-49	3	33,604	100,813
50-54	8	32,658	261,260
55-59	23	23,697	545,036
60-64	39	33,606	1,310,624
65-69	85	28,140	2,391,937
70-74	49	19,327	947,025
75-79	46	17,179	790,234
80+	133	14,254	1,895,785
TOTAL	388	$ 21,405	$ 8,305,240



Benefits shown are net of State reimbursed COLA.

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

	January 1, 2015	% of Payroll*
Gross Normal Cost (GNC)	$4,564,989	16.7%
Employees Contribution	$2,487,755	9.1%
Net Normal Cost (NNC)	$2,077,234	7.6%
Adjusted to Beginning of Fiscal Year 2017	$117,933	
Administrative Expense	$200,000	0.8%
Adjusted Net Normal Cost With Admin. Expense	$2,406,522	

* Payroll paid in 2014 for employees as of January 1, 2015 is $27,401,323. Payroll for new hires in 2014 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 interest rate assumption that is net of fees.

Actuarial Accrued Liability and Funded Status

				January 1, 2015	Percentage Change
Active Actuarial Accrued Liability			$	97,053,737	-2.1%
Superannuation	$	88,915,721			
Death	$	1,995,088			
Disability	$	5,471,904			
Withdrawal	$	671,024			
Retiree, Inactive, Survivor and Beneficiary Actuarial Accrued Liability			$	90,087,776	9.3%
Retirees and Beneficiaries	$	72,682,721			
Disabled	$	16,654,426			
Inactive	$	750,629			
Total Actuarial Accrued Liability (AAL)			$	187,141,513	3.1%
Actuarial Value of Assets (AVA)			$	155,808,105	8.3%
Unfunded Actuarial Accrued Liability			$	31,333,408	-16.9%
Funded Ratio (AVA / AAL)					
2015 (5.50% interest rate):		83%			
2014 (5.50% interest rate):		79%			

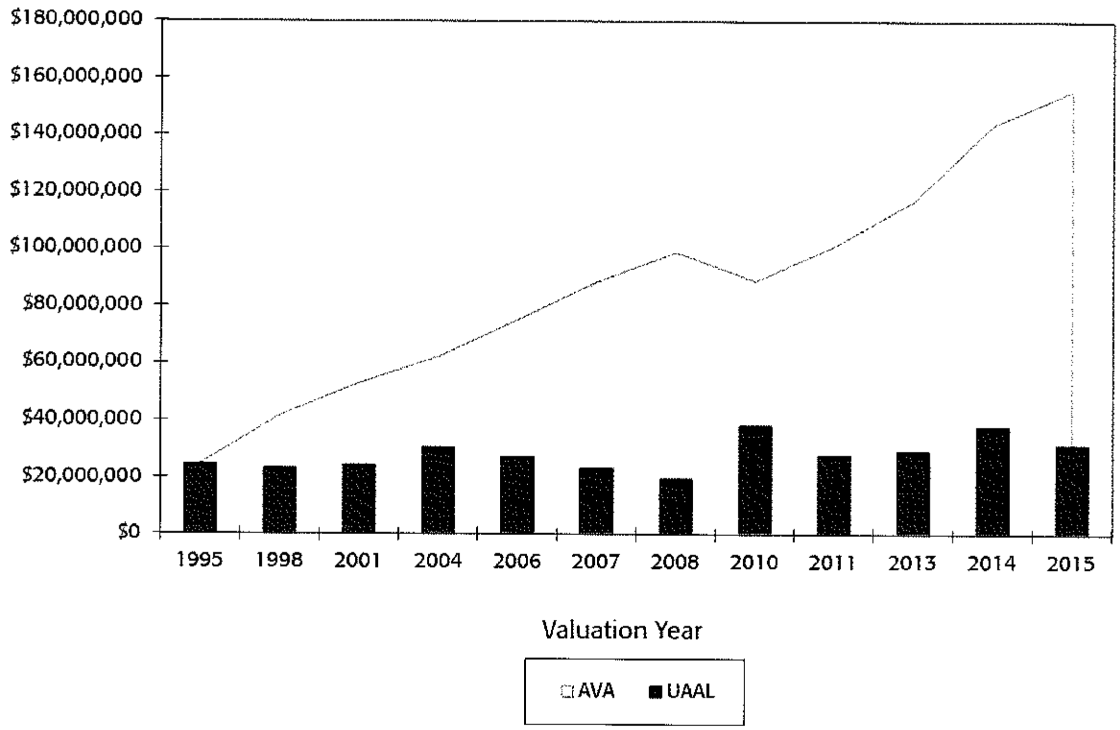
- Actuarial Accrued Liability (AAL) is the "price" of benefits attributable to benefits earned in past years, or in other words, represents today's value of all benefits earned by active and inactive members.

The total AAL is $187,141,513. This along with an actuarial value of assets of $155,808,105 produces a funded status of 83%. Note that since the asset valuation method is the market value, funding status using market value is also 83%. This compares to a funded status of 79% for the 2014 valuation.

The UAAL and funded ratio are measures of the plan's funded status. These measure reflect the plan's position as of January 1, 2016. We believe these measures, by themselves, are not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations or assessing the need for or the amount of future contributions. However, we believe these measures, in conjunction with the plan's funding schedule, are appropriate for assessing the amount of future contributions.

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

Charts of Selected Actuarial and Demographic Statistics



Development of Funding Schedule

Net Employer Normal Cost for Fiscal 2017 (including admin. expenses)	2,406,522
Net 3(8)(c) Payments	66,546
Amortization	6,417,470
Total Appropriation required for Fiscal 2017	8,890,538

- 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. The 3(8)(c) payments are the amount that the Leominster Retirement System pays to or receives from other retirement boards for service that a retiree had with a different retirement system. The net 3(8)(c) payments is the difference between what the Leominster Retirement System paid out minus what was received by the System.

- The contribution amount for Fiscal 2017 is $8,890,538. The funding schedule is presented on page 12. The schedule's length is five (5) years (for the fresh start base) which is two years shorter than the remainder of the 8 year schedule from the January 1, 2014 valuation. The maximum funding schedule length allowed by Section 22D of Chapter 32 of the Massachusetts General Laws is fourteen 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 set to produce a total contribution for Fiscal Year 2017 which is equal to the planned contribution from the prior funding schedule, and remains level until the final year, when it decreases.

Alternative Results

We believe a 5.50% discount rate is appropriate 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.

Discount Rate	6.75%	7.50%
Actuarial Accrued Liability	$ 162,992,197	$ 150,795,909
Unfunded Actuarial Accrued Liability	$ 7,184,092	$ (5,012,196)
Gross Normal Cost (w/o expenses)	$ 3,431,621	$ 2,912,537
Net Normal Cost (w/o expenses)	$ 943,866	$ 424,782
Fiscal 2018 Appropriation*	$ 1,358,791	$ -

* Under a 5 year, level amortization schedule.

Additional Results

The Leominster Retirement Board has requested that the following actuarial results be included in the valuation report. The results are based on the US Treasury 20 year Bond rate, (2.58% Equivalent Discount Rate) and the Citigroup Pension Liability Index Standard rates (3.91% Equivalent Discount Rate). The Equivalent Discount Rates are discount rates that give the same Present Value of Future Benefits as the yield curve, and are used to determine the portion of the PVFB that has been allocated to the AAL and the Gross Normal Cost. These results on the following page are for illustrative purposes.

Discount Rate Equivalency	Treasuries (2.58%)	CPLI (3.91%)
Actuarial Accrued Liability	$ 270,499,175	$ 226,831,075
Unfunded Actuarial Accrued Liability	$ 114,691,070	$ 71,022,970
Gross Normal Cost (w/o expenses)	$ 9,384,208	$ 6,699,767
Net Normal Cost (w/o expenses)	$ 6,896,453	$ 4,212,012
Fiscal 2018 Appropriation*	$ 33,056,116	$ 20,482,223

* Under a 5 year, level amortization schedule.

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	0.064%	0.46%		16	2.383%	3.81%
1	0.278%	0.85%		17	2.413%	3.88%
2	0.696%	1.30%		18	2.442%	3.96%
3	1.110%	1.79%		19	2.471%	4.04%
4	1.429%	2.11%		20	2.499%	4.08%
5	1.662%	2.38%		21	2.528%	4.09%
6	1.830%	2.63%		22	2.556%	4.11%
7	1.952%	2.78%		23	2.584%	4.14%
8	2.041%	2.93%		24	2.612%	4.18%
9	2.109%	3.09%		25	2.639%	4.21%
10	2.163%	3.23%		26	2.666%	4.23%
11	2.209%	3.36%		27	2.693%	4.23%
12	2.250%	3.47%		28	2.720%	4.21%
13	2.287%	3.56%		29	2.746%	4.18%
14	2.321%	3.65%		30+	2.768%	4.17%
15	2.353%	3.73%				

LEOMINSTER CONTRIBUTORY RETIREMENT SYSTEM

FUNDING SCHEDULE

Fiscal Year	Normal Cost	Unfunded Liability	Funding Amortization of UAAL	Net 3(8)(c) Payments	Schedule Contribution*	% Change
2017	2,406,522	28,315,120	6,417,470	66,546	8,890,538	1.18%
2018	2,496,767	23,102,021	6,417,470	66,546	8,980,783	1.02%
2019	2,590,395	17,602,201	6,417,470	66,546	9,074,412	1.04%
2020	2,687,535	11,799,891	6,417,470	66,546	9,171,551	1.07%
2021	2,788,318	5,678,454	5,678,454	66,546	8,533,318	-6.96%
2022	2,892,880	-	-	66,546	2,959,426	-65.32%

Amortization of Unfunded Liability as of July 1, 2017

Year	Type	Original Amort. Amount	Percentage Increasing	Original # of Years	Current Amort. Amount	Years Remaining
2017	Fresh Start	N/A	N/A	5	N/A	5

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. **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.

* Contribution for Fiscal 2017 is set equal to the planned Fiscal 2017 contribution from the prior year schedule. Future contributions incorporate increases in the normal cost.

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, 2015 Valuation
Interest Rate	5.50% (same as prior valuation).
Salary Increase	4.00% Ultimate rate for group 4, 3.75% for others (reduced to 3.50% for the 2015 calendar year), with the following select increases: • Fire: 5.00% for the first 2 years of service, 2.00% in year 3 • Police: 5.00% for the first 2 years, 1.00% in year 3 and 3.00% in year 4 • Other: 3.75% for the first 7 years of service
COLA	No COLA increases granted
Administrative Expense	$200,000 budget estimated for FY 2017 provided by Leominster Retirement Board.
Mortality	RP-2000 table projected from the year 2000 with Generational mortality, Scale BB. 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 RP-2000 table projected from the year 2000 with Generational mortality, Scale BB, ages set forward 2 years. (Same as prior assumption.)
Overall Disability	Groups 1 and 2 45% ordinary disability 55% accidental disability Group 4 10% ordinary disability 90% accidental disability
Retirement Rates	Groups 1 and 2 Ages 55 – 70 Group 4 Ages 50 – 65

Assets

	Cash	$	1,823,714.50
	Pooled Domestic Equity Funds		7,884,912.42
	Pooled International Equity Funds		14,842,350.90
	Pooled Global Equity Funds		42,427,178.37
	PRIT FUND		88,808,925.89
A	Sub-Total:	$	155,787,082.08
	Accounts Receivable		30,978.11
	Accounts Payable		(9,955.54)
B	Sub-Total:	$	21,022.57
	Market Value of Assets [(A) + (B)]	$	155,808,104.65

- We were furnished with the System's annual report by the Board. The market value of assets as of December 31, 2014 (adjusted for payables and receivables) is $155,808,104.65.

- The asset allocation is approximately 13% fixed income, cash, receivables and payables and 87% equities, alternative investments, hedge funds and similar types of investments. Historically, 9 to 10% has been the expected long-term rate of return for equities, and 5% to 6% 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 9.00% for equities and 3.50 to 4.00% for fixed income securities. In light of these projections, as well as historical investment returns, the 5.50% interest rate assumption is below the reasonable assumption range. We encourage close monitoring for changes in investment performance against expectations. See pages 10 and 11 for alternative results.

- Actuarial value of assets (AVA) of $155,808,105 is equal to the Market Value of Assets.

Disclosure Information

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
1/1/2015	$155,808	$187,142	$31,334	83%	$27,401	114%
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%

NOTES TO SCHEDULES

Additional information as of the latest actuarial valuation follows:

Valuation Date	1/1/2015
Actuarial cost method	Entry Age Normal
Amortization method	Level amortization
Remaining amortization period	5 years for the fresh start base
Asset valuation method	Market value of assets ($155,808,104.65)
Actuarial assumptions:	
Investment Rate of Return	5.50% per year
Projected Salary Increases	Fire: 5.00% first 2 years of service, 2.00% in year 3 Police: 5.00% in first 2 years, 1.00% in year 3 and 3.00% in year 4 Others: 3.75% first 7 years of service Ultimate Rate: 4.00% for group 4, 3.75% for others (reduced to 3.50% for 2015)

PERAC Information Disclosure

The most recent actuarial valuation of the System was prepared by Stone Consulting, Inc. as of January 1, 2015

The normal cost for employees on that date was:	$2,487,755	9.1% of payroll
The normal cost for the employer was:	$2,077,234	7.6% of payroll

The actuarial liability for active members was:	$97,053,737
The actuarial liability for retired members was (includes inactives):	$90,087,776
Total actuarial accrued liability:	$187,141,513
System assets as of that date ($155,808,104.65 Market Value):	$155,808,105
Unfunded actuarial accrued liability:	$31,333,408

The ratio of system's assets to total actuarial liability was:	83%

As of that date the total covered employee payroll was:	$27,401,323

The principal actuarial assumptions used in the valuation are as follows:	
Investment Return:	5.50% per annum
Rate of Salary Increase:	Select and ultimate rate (4.00% ultimate rate for group 4, 3.75% for others, reduced to 3.50% for 2015)

SCHEDULE OF FUNDING PROGRESS (Dollars in $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)
1/1/2015	$155,808	$187,142	$31,334	83%	$27,401	114%
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%

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 interest rate and salary scale to the beginning of Fiscal Year 2017. 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.

Regular Interest Rate Credited to Annuity Savings Account

2% per year.

Salary Increases

Select and Ultimate assumption – Fire members receive two years of 5.00% steps followed by a 2.00% step in year 3; Police members receive two years of 5.00% steps followed by a 1.00% step in year 3 and a 3.00% step in year 4; all others receive 7 years of 3.75% steps. Ultimate of 4.00% for group 4 and 3.75% for others, reduced to 3.50% for 2015.

Actuarial Methods and Assumptions
(Continued)

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%
25	1.0%	0.0%
30+	0.0%	0.0%

Disability Prior to Retirement

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

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%

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

Actuarial Methods and Assumptions
(Continued)

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:

Age	Group 1& 2 Male	Group 1 & 2 Female	Group 4	Hired after 4/1/2012 Group 1& 2 Male	Hired after 4/1/2012 Group 1 & 2 Female	Hired after 4/1/2012 Group 4
50	1%	1.5%	2%	0%	0%	0%
51	1%	1.5%	2%	0%	0%	0%
52	1%	2.0%	2%	0%	0%	0%
53	1%	2.5%	2%	0%	0%	0%
54	2%	2.5%	7.5%	0%	0%	0%
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

RP-2000 table projected from the year 2000 with Generational mortality, Scale BB (sex-distinct). (Same as prior assumption). During employment the healthy employee mortality table is used. Post-employment the healthy annuitant table is used. In-service death is assumed to be 55% accidental for group 1 and 2 and 90% accidental for group 4.

Disabled Life Mortality

RP-2000 table projected from the year 2000 with Generational mortality, Scale BB for healthy annuitants, set-forward by 2 years (sex-distinct). Death is assumed to be due to the same cause as the disability 40% of the time. (Same as prior assumption).

Actuarial Methods and Assumptions
(Continued)

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 $200,000 for the Fiscal Year 2017 excluding investment management fees and custodial fee is added to the Normal Cost.

Net 3(8)(c)

Net 3(8)(c) payments are assumed to be the same level as the past calendar year for all future years.

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.

Contribution Timing

Contributions are assumed to be made at the beginning of the fiscal year.

Total Payroll Increase

The total payroll is assumed to increase at 3.75% per year.

Valuation Date

January 1, 2015.

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) Attainment of age 55 and completion of ten years of credited service or at any age with completion of 20 years of service. If hired prior to 1978 or a member of Group 4, the completion of ten years of service is not required.

2) Hired after April 1, 2012 and Group 1 – Age 60 and Completion of 10 years of credited service. Group 2 – Age 55 and completion of 10 years of service. Group 4 – Age 55.

Summary of Principal Provisions (Continued)

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 (for elected and appointed members, 6 years in the event of involuntary termination).

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. 2 years of service.

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.

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.

Summary of Principal Provisions
(Continued)

11. 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

- Actuarial Accrued Liability

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

- Actuarial Assets

  Market value of assets (adjusted by payables and receivables).

- 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 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.

- GASB

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

- Normal Cost

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

- PERAC

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

- 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.

- PRIT

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

- Unfunded Actuarial Accrued Liability

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