January 1, 2013

Actuarial Valuation Report

Melrose Retirement System

Lawrence B. Stone
President

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September 4, 2013

Melrose Retirement Board
City Hall, 562 Main Street
Melrose, MA 02176

Dear Melrose Retirement Board:

Stone Consulting, Inc. has performed a January 1, 2013 actuarial valuation of the Melrose 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 Melrose 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 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 twenty-two years (fully funded by 2036), and the amortization increase is 2.37%. The maximum length of the amortization is until Fiscal 2040 with a maximum annual increase in the amortization of 4%. These limits are contained in Section 22F of Chapter 32 of the Massachusetts General Laws and related statutes.

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The contribution amount for Fiscal Year 2015 is $5,519,258 which is within $1,000 of 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 Melrose Retirement Board conducted their previous actuarial valuation effective January 1, 2012.

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

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Introduction

This report presents the results of the actuarial valuation of the Melrose 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 2015 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, 2012	Change
Contribution Fiscal 2015	$5,519,258	$5,518,639	$619
Funding Schedule Length (at Fiscal 2015)	22 years	21 years	1 years
Amortization Increase	2.37%	1.54%	0.83%
Funding Ratio (Actuarial Value of Assets)	54%	56%	-2%
Discount Rate Assumption	8.00%	8.00%	0.00%
Salary Increase Rate Assumption	Select with 3.75% Ultimate	Select with 3.75% Ultimate	-

- The Fiscal Year 2015 contribution is about the same as the planned 2015 contribution. Stone Consulting, with agreement from the Retirement Board, values assets using a five-year asset smoothing method. In this approach, asset gains and losses are recognized over a five-year period. The purpose of this approach is to avoid wide swings in asset value from one year to the next.
- The System experienced a 12.1% annual return on the market value of assets versus our assumption of an 8.00% return which resulted in a $2.3 million net actuarial gain. The System's asset portfolio, effective December 31, 2012 is approximately 75% equities, alternative investments, real estate and other non-fixed income or cash investments and 25% fixed income, short-term investments and cash. The assets are mainly invested in Pension Reserves Investment Trust (PRIT). The discount rate assumption was maintained at 8.00% to reflect anticipated market performance.

- We have maintained the select and ultimate salary increase assumption. This table is based on an ultimate rate of 3.75% with select periods as shown in the following table:

Group	# of Steps (Initial Years of Service)	Annual Step Increase	2013 Increase*	2014 and after Increase*
Union	8	3.50%	1.25%	3.75%
Group 4	5	3.50%	1.25%	3.75%
Non-Union	8	3.50%	1.25%	3.75%

* Non-union receives the better of the Step or the base increase.

Total compensation changed by 3.2% over the prior valuation; however average annual compensation (compensation divided by number of active members) changed by 2.2%. This assumption is based on expected future experience.

- The funding level of the Melrose Retirement System is 54% compared to 56% for the January 1, 2012 actuarial valuation. The funding level is estimated to be near the median of Massachusetts' Contributory Retirement Systems.

The schedule length is twenty-two (22) years (which is one more year than from the prior valuation). The maximum period permitted under Section 22F of Chapter 32 of the Massachusetts General Laws is 26 years (2040).

- Non-economic assumptions were changed from the January 1, 2012 actuarial valuation. The mortality assumption is based upon the RP2000 Table projected 18 years with Scale AA. The previous assumption used a 17 year projection with Scale AA. The net effect of this change increased the accrued liability by $205,000. In the next valuation, we recommend considering generational mortality to reflect the continuing decrease in mortality, particularly at the ages in which retirement benefits are paid. We estimate this will increase the actuarial accrued liability and gross normal cost by 4% to 5%.

January 1, 2013 Actuarial Valuation Results

	January 1, 2013	January 1, 2012	Percentage Change
Funding			
Contribution for Fiscal 2015	$5,519,258		
Contribution for Fiscal 2015 based on current schedule		$5,518,639	0%
Members*			
▪ Actives			
a. Number	427	423	0.9%
b. Annual Compensation	$17,889,487	$17,338,642	3.2%
c. Average Annual Compensation	$41,896	$40,990	2.2%
d. Average Attained Age	48.5	48.4	0.2%
e. Average Past Service	10.8	10.5	2.9%
▪ Retired, Disabled and Beneficiaries			
a. Number	373	368	1.4%
b. Total Benefits*	$7,941,014	7,648,711	3.8%
c. Average Benefits*	$21,290	$20,785	2.4%
d. Average Age	74.2	74.1	0.1%
▪ Inactives			
a. Number	153	145	5.5%
Normal Cost			
a. Total Normal Cost	$2,283,658	$2,254,810	1.3%
b. Less Expected Members' Contributions	1,594,401	1,538,770	3.6%
c. Normal Cost to be funded by the Municipality	$689,257	$716,040	-3.7%
d. Eighteen month adjustment	47,044	48,872	-3.7%
e. Administrative Expense Assumption	231,000	235,000	-1.7%
f. Adjusted Normal Cost and Expense	$968,472	$1,001,083	-3.3%

*Excluding State reimbursed COLA

January 1, 2013 Actuarial Valuation Results (Continued)

	January 1, 2013	January 1, 2012	Percentage Change
Actuarial Accrued Liability as of January 1, 2013			
a. Active Members	$43,393,906	$40,890,827	6.1%
b. Inactive Members	1,260,318	1,138,627	10.7%
c. Retired Members and Beneficiaries	71,424,257	69,453,581	2.8%
d. Total	$116,078,481	$111,483,035	4.1%
Unfunded Actuarial Accrued Liability			
a. Actuarial Accrued Liability	$116,078,481	$111,483,035	4.1%
b. Less Actuarial Value of Assets	62,208,163	62,117,543	0.1%
c. Unfunded Actuarial Accrued Liability	$53,870,318	$49,365,492	9.1%
d. Eighteen month adjustment	2,148,476	1,729,213	
e. Adjusted Unfunded Actuarial Accrued Liability	$56,094,159	$51,170,070	

- The data was supplied by the Melrose Retirement Board. The data was checked under broad parameters for reasonableness. With the assistance of the staff of the Melrose Retirement Board, we were able to develop a database sufficient for valuation purposes.

- Payroll changed by 3.2% over the course of the past year. Average annual compensation changed by 2.2% 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	427	48.5	10.8	$41,896
2012	423	48.4	10.5	$40,990
2010	412	48.1	10.1	$40,153
2008	433	47.5	9.9	$35,713

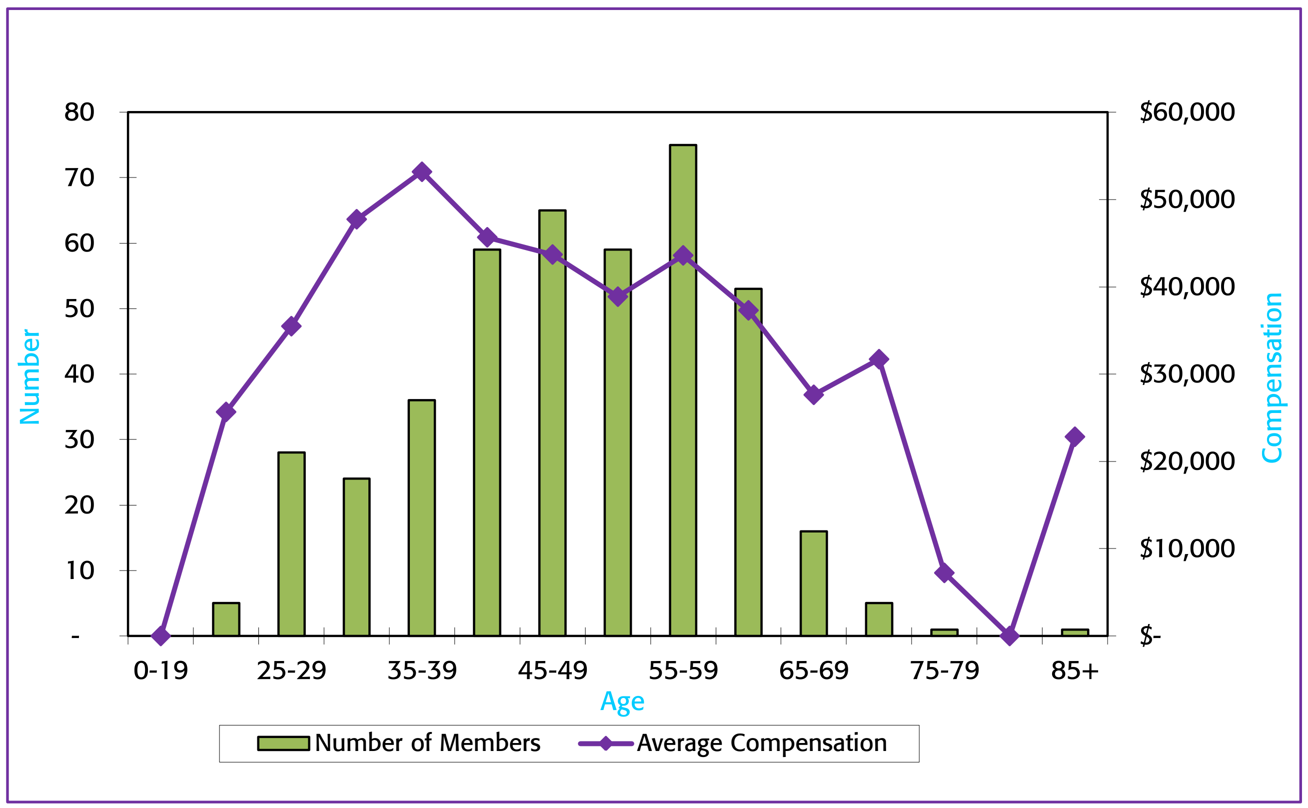
- Employee age has increased by 1.0 years and service has increased by .9 years over the course of the past five years. This is consistent with the general trend in the Commonwealth's public sector towards an aging of the employee population. Average annual compensation has grown by 17.3% (3.2% annually) over the same time period.

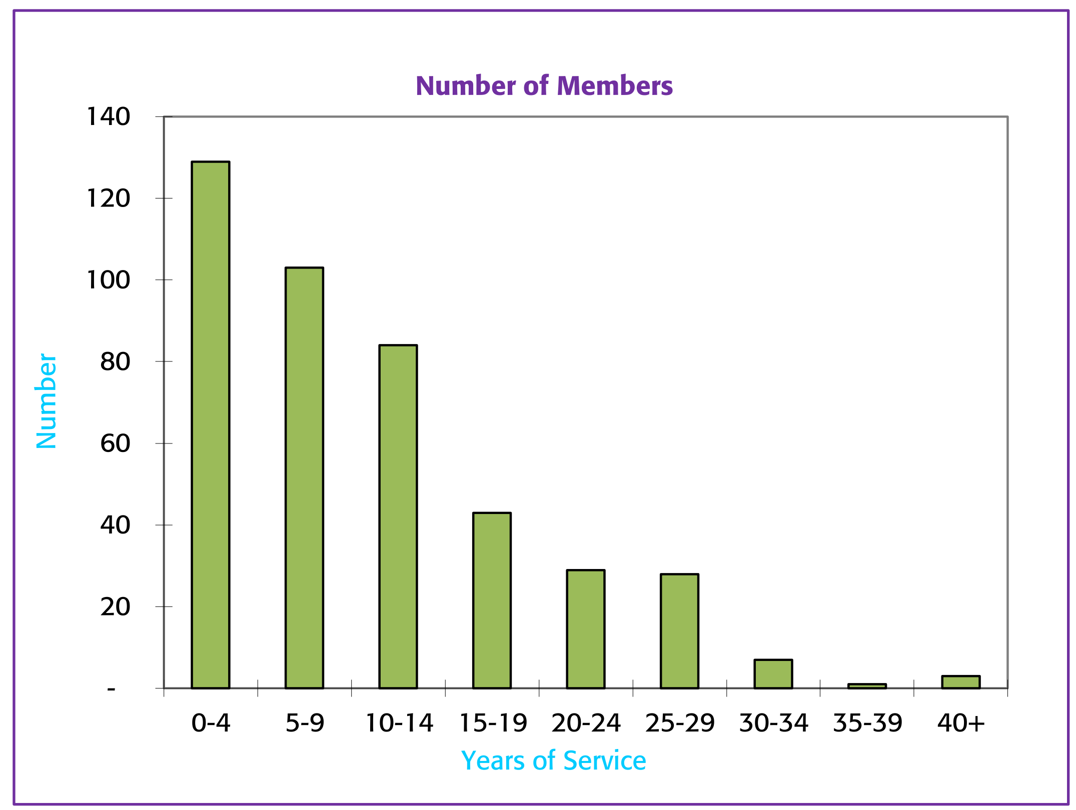
The charts on the following pages summarize demographic information regarding active and retiree members.

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	5	-	-	-	-	-	-	-	-	5	128,325	25,665
25-29	28	-	-	-	-	-	-	-	-	28	993,741	35,491
30-34	14	9	1	-	-	-	-	-	-	24	1,145,740	47,739
35-39	9	16	10	1	-	-	-	-	-	36	1,914,506	53,181
40-44	22	13	12	12	-	-	-	-	-	59	2,694,908	45,676
45-49	20	14	12	8	5	6	-	-	-	65	2,840,638	43,702
50-54	13	17	12	7	4	6	-	-	-	59	2,293,485	38,873
55-59	10	17	19	5	10	11	2	1	-	75	3,270,349	43,605
60-64	6	13	11	5	7	5	3	-	3	53	1,977,145	37,305
65-69	2	3	4	3	2	-	2	-	-	16	442,049	27,628
70-74	-	1	1	2	1	-	-	-	-	5	158,547	31,709
75-79	-	-	1	-	-	-	-	-	-	1	7,229	7,229
80-84	-	-	-	-	-	-	-	-	-	-	-	-
85+	-	-	1	-	-	-	-	-	-	1	22,826	22,826
TOTAL	129	103	84	43	29	28	7	1	3	427	$ 17,889,487	$ 41,896





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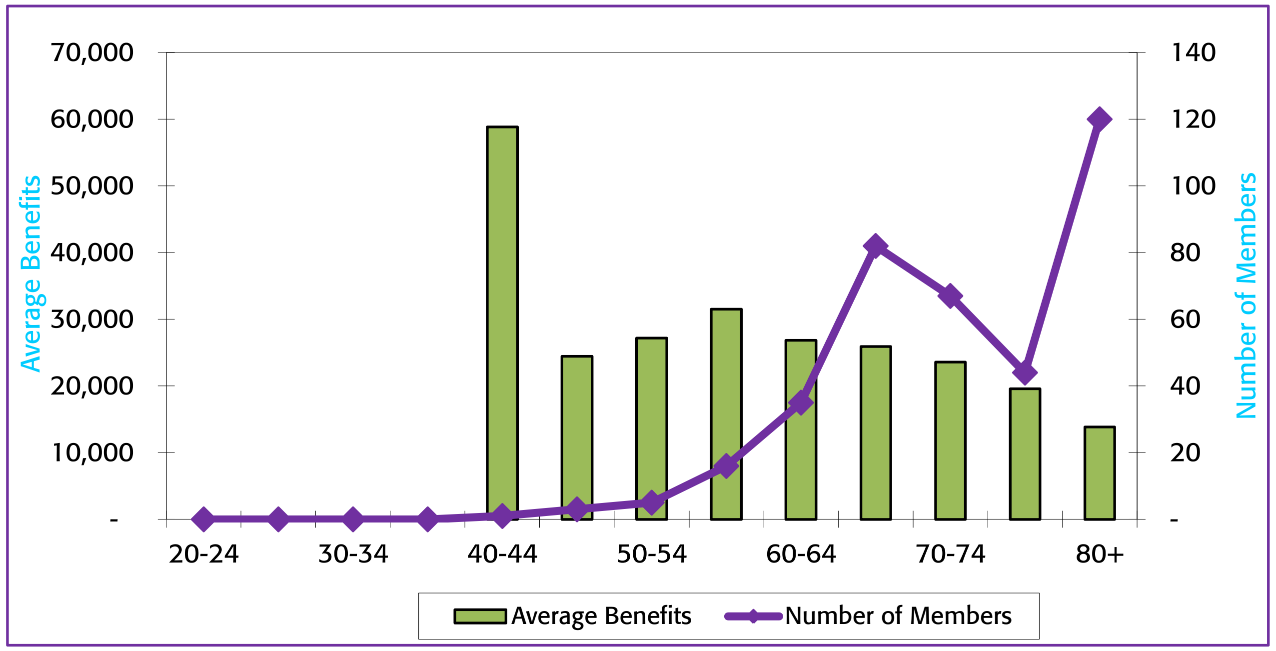
Retired Members and Beneficiaries			
Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	-	-	-
45-49	1	2,945	2,945
50-54	2	28,597	57,194
55-59	12	29,724	356,685
60-64	25	25,002	625,038
65-69	70	24,171	1,691,969
70-74	65	23,095	1,501,180
75-79	42	19,226	807,507
80+	112	13,627	1,526,263
TOTAL	**329**	**$ 19,966**	**$ 6,568,780**

Disabled Members			
Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	1	58,849	58,849
45-49	2	35,158	70,315
50-54	3	26,218	78,655
55-59	4	36,831	147,324
60-64	10	31,431	314,315
65-69	12	36,132	433,586
70-74	2	39,551	79,102
75-79	2	26,300	52,600
80+	8	17,186	137,488
TOTAL	**44**	**$ 31,187**	**$ 1,372,234**

Total			
Age	Number	Average Benefit	Total Benefit
20-24	-	-	-
25-29	-	-	-
30-34	-	-	-
35-39	-	-	-
40-44	1	58,849	58,849
45-49	3	24,420	73,260
50-54	5	27,170	135,849
55-59	16	31,501	504,008
60-64	35	26,839	939,353
65-69	82	25,921	2,125,556
70-74	67	23,586	1,580,282
75-79	44	19,548	860,106
80+	120	13,865	1,663,751
TOTAL	**373**	**$ 21,290**	**$ 7,941,014**



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

Valuation Date	January 1, 2013	% of Payroll*
Gross Normal Cost (GNC)	$2,283,658	12.8%
Employees Contribution	1,594,401	8.9%
Net Normal Cost (NNC)	$689,257	3.9%
Adjusted to Beginning of Fiscal Year 2015	$47,044	
Administrative Expense	231,000	1.3%
Adjusted Net Normal Cost With Admin. Expense	$968,472	

*Payroll paid (regular compensation) in 2012 for employees as of January 1, 2013 is $17,889,487. 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.

Actuarial Accrued Liability and Funded Status

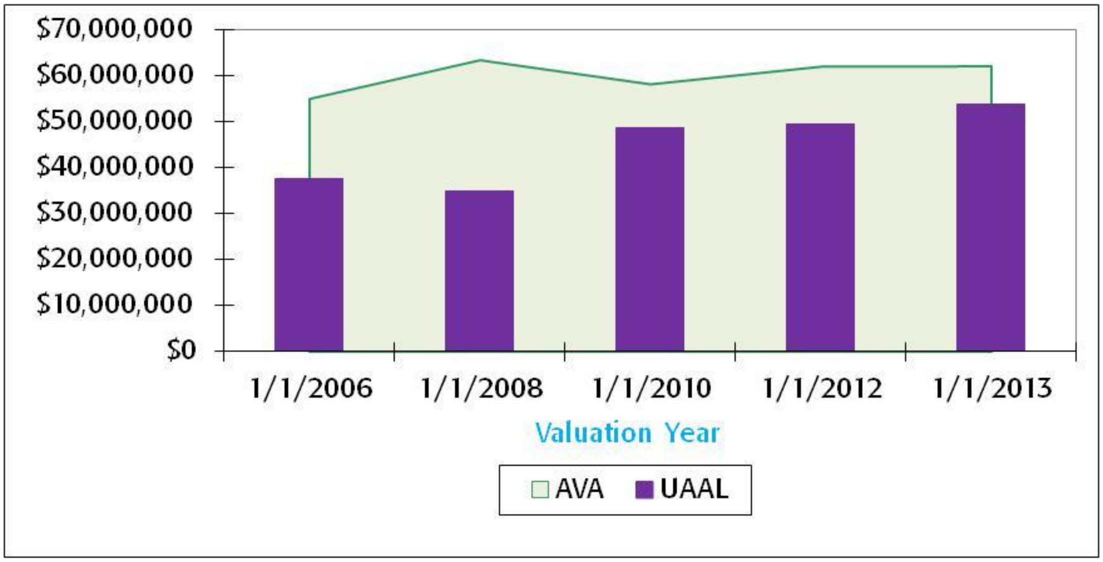
		January 1, 2013	Percentage Change
Active Actuarial Accrued Liability			
Superannuation	$39,228,117		
Death	915,342		
Disability	2,783,444		
Withdrawal	467,003		
Total		$43,393,906	6.1%
Retiree, Inactive, Survivor and Beneficiary Actuarial Accrued Liability			
Retirees and Beneficiaries	$56,858,808		
Disabled	14,565,449		
Inactive	1,260,318		
Total		72,684,575	3.0%
Total Actuarial Accrued Liability (AAL)		$116,078,481	4.1%
Actuarial Value of Assets (AVA)		62,208,163	0.1%
Unfunded Actuarial Accrued Liability (UAAL)		$53,870,318	9.1%
Funded Ratio (AVA / AAL)			
2013 (8.00% discount rate):	54%		
2012 (8.00% discount rate):	56%		

- 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 $116,078,481. This along with an actuarial value of assets of $62,208,163 produces a funded status of 54%. This compares to a funded status of 56% for the 2012 valuation.

  The chart on the following page is a history of the unfunded actuarial accrued liability (UAAL) and the actuarial value of assets (AVA) over the course of the past five 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	$ 968,472
Net 3(8)(c) payments	63,777
Amortization	4,487,009
Total Appropriation required for Fiscal 2015	$5,519,258

- 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 Melrose or other Chapter 32 Systems.

- The contribution amount for Fiscal 2015 is $5,519,258. The funding schedule is presented on page 10. The schedule's length is twenty-two (22) years (for the fresh start base) which is one year more than the January 1, 2012 valuation schedule's length. The maximum funding schedule length allowed by Section 22F of Chapter 32 of the Massachusetts General Laws is twenty-six years to Fiscal 2040.

In developing the funding schedule, we used a fresh start approach in which the unfunded actuarial accrued liability (UAAL), other than the UAAL due to past early retirement incentives, 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 a constant increase in the total contribution. The amortization percentage changed from 1.54% from the January 1, 2012 valuation to 2.37%. The maximum amortization increase allowed under Section 22F of Chapter 32 is 4.00%.

MELROSE CONTRIBUTORY RETIREMENT SYSTEM

FUNDING SCHEDULE

Fiscal Year	Normal Cost	Unfunded Liability	Funding Amortization of UAL	Net 3(8)(c) Payments	Schedule Contribution
2015	968,472	56,094,159	4,487,009	63,777	5,519,258
2016	1,012,053	55,735,722	4,584,666	63,777	5,660,496
2017	1,057,596	55,243,141	4,684,638	63,777	5,806,010
2018	1,105,187	54,603,184	4,786,978	63,777	5,955,943
2019	1,154,921	53,801,502	4,634,751	63,777	5,853,449
2020	1,206,892	53,100,091	4,632,541	63,777	5,903,210
2021	1,261,202	52,344,954	4,742,332	63,777	6,067,311
2022	1,317,957	51,410,832	4,854,725	63,777	6,236,459
2023	1,377,265	50,280,596	4,969,782	63,777	6,410,824
2024	1,439,242	48,935,678	5,087,566	63,777	6,590,585
2025	1,504,007	47,355,961	5,208,141	63,777	6,775,926
2026	1,571,688	45,519,646	5,331,574	63,777	6,967,039
2027	1,642,414	43,403,117	5,457,933	63,777	7,164,123
2028	1,716,322	40,980,799	5,587,286	63,777	7,367,385
2029	1,793,557	38,224,995	5,719,704	63,777	7,577,038
2030	1,874,267	35,105,713	5,855,261	63,777	7,793,305
2031	1,958,609	31,590,488	5,994,031	63,777	8,016,417
2032	2,046,746	27,644,174	6,136,090	63,777	8,246,613
2033	2,138,850	23,228,731	6,281,515	63,777	8,484,142
2034	2,235,098	18,302,994	6,430,387	63,777	8,729,262
2035	2,335,678	12,822,416	6,582,787	63,777	8,982,241
2036	2,440,783	6,738,799	6,738,799	63,777	9,243,359
2037	2,550,618	0	-	63,777	2,614,395

Amortization of Unfunded Liability as of July 1, 2014

Year	Type	Original Amort. Amount	Percentage Increasing	Original # of Years	Current Amort. Amount	Years Remaining
2002	ERI	256,994	0.00%	17	256,994	4
2003	ERI	109,459	0.00%	17	109,459	5
2015	Fresh Start	4,120,555	2.37%	22	4,120,555	22

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.

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	8.00%
Salary Increase	

	Steps First Years of Service	Annual Step Increase	2013 Increase*	2014 and after Increase*
Union	8	3.50%	1.25%	3.75%
Group 4	5	3.50%	1.25%	3.75%
Non-Union	8	3.50%	1.25%	3.75%

*Non-union receives the better of the Step or the base increase

COLA	3% of $12,000
COLA Frequency	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 set forward 2 years. *(Prior valuation used RP2000 projected 17 years with scale AA.)*
Overall Disability	

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

Retirement Rates	Groups 1 and 2: Ages 55 – 70, Group 4: Ages 50 – 65
Administrative Expense	$231,000 budget estimated for FY 2015 provided by Melrose Retirement Board.

Assets

a.	Cash	$	1,674,731.41
b.	Pooled Alternative Investments		1,464,733.29
c.	Pooled Real Estate Funds		2,000,137.00
d.	PRIT Fund		53,957,046.26
e.	PRIT Cash		3,334,667.14
f.	Sub-Total:	$	62,431,315.10
g.	Interest Due and Accrued	$	.00
h.	Accounts Receivable		148,606.68
i.	Accounts Payable		.00
j.	Sub-Total:	$	148,606.68
k.	Market Value of Assets [(f) + (j)]	$	62,579,921.78

- 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 $62,579,921.78.
- The asset allocation is approximately 25% fixed income, cash, receivables and payables and 75% equities, alternative investments, hedge funds, real estate and other non-fixed income assets.
- 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 9.00% for equities and 3.65% to 6.00% for fixed income securities. In light of these projections, as well as historical investment returns, the 8.00% discount rate assumption is within the reasonable assumption range. We encourage close monitoring for changes in investment performance against expectations.

Calculation of Valuation Assets

1. Market value of assets including receivable/payable as of 01/01/2013 — $62,579,922

2. Phase-in of asset gains and losses

	Plan Year (1)	Original Amount (2)	Percent Unrecognized (3)	Amount Unrecognized (2) x (3)
a.	2012	$2,327,047	80%	$1,861,638
b.	2011	($4,323,516)	60%	($2,594,110)
c.	2010	$1,742,581	40%	$697,032
d.	2009	$2,035,993	20%	407,199
e.	Total			$371,759

3. Valuation assets without corridor as of 01/01/2013 — $62,208,163
   (1. - 2.d.)

4. Corridor Check
   a. 90% of Market Value — $56,321,930
   b. 110% of Market Value — $68,837,914

5. Valuation assets with corridor as of 01/01/2013 — $62,208,163
   3. within Corridor

6. Calculation of return on valuation assets
   a. Valuation assets as of 01/01/2012 — $62,117,543
   b. ER contribs + EE contribs - Ben Pymts - Expenses — (706,979)
   c. Actual return on valuation assets — $797,599
      5. - (6.a. + 6.b.)
   d. Weighted value of valuation assets — $61,764,053
   e. Return on valuation assets — 1.3%
      6.c. / 6.d.

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	$62,208	$116,078	$53,870	54%	$17,889	301%
1/1/2012	$62,118	$111,483	$49,365	56%	$17,339	285%
1/1/2010	$58,282	$106,947	$48,665	54%	$16,543	294%
1/1/2008	$63,528	$98,381	$34,853	65%	$15,464	225%
1/1/2006	$55,100	$92,725	$37,625	59%	$13,848	272%

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 period	22 years for the fresh start base
Asset valuation method	Market value adjusted by accounts payable and receivables adjusted to phase in over 5 years investment gains or losses above or below the expected rate of investment return. The actuarial value of assets must be no less than 90% of the adjusted market value nor more than 110% of the adjusted market value. Market value of assets is $62,579,922

ACTUARIAL ASSUMPTIONS

Investment Rate of Return	8.00% per year

Projected Salary Increase

	# of Steps (Initial Years of Service)	Annual Step Increase	2013 Increase*	2014 and after Increase*
Union	8	3.50%	1.25%	3.75%
Group 4	5	3.50%	1.25%	3.75%
Non-Union	8	3.50%	1.25%	3.75%

*Non-union receives the better of the Step or the base increase

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:	$1,594,401	8.9% of payroll
The normal cost for the employer was:	$689,257	3.9% of payroll

The actuarial liability for active members was:	$43,393,906
The actuarial liability for retired members was (includes inactives):	$72,684,575
Total actuarial accrued liability:	$116,078,481
System assets as of that date ($62,579,922 Market Value):	$62,208,163
Unfunded actuarial accrued liability:	$53,870,318

The ratio of system's assets to total actuarial liability was:	54%

As of that date the total covered employee payroll was:	$17,889,487

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

Investment Return:	8.00% per annum
Rate of Salary Increase:	3.75% (ultimate rate, select periods)

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	$62,208	$116,078	$53,870	54%	$17,889	301%
1/1/2012	$62,118	$111,483	$49,365	56%	$17,339	285%
1/1/2010	$58,282	$106,947	$48,665	54%	$16,543	294%
1/1/2008	$63,528	$98,381	$34,853	65%	$15,464	225%
1/1/2006	$55,100	$92,725	$37,625	59%	$13,848	272%

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

8.00% per year net of investment expenses.

Salary Increases

	# of Steps (Initial Years of Service)	Annual Step Increase	2013 Increase*	2014 and after Increase*
Union	8	3.50%	1.25%	3.75%
Group 4	5	3.50%	1.25%	3.75%
Non-Union	8	3.50%	1.25%	3.75%

*Non-union receives the better of the Step or the base increase

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

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.

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:

	Pre-4/2/2012 Hires			Post-4/1/2012 Hires		
Age	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

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

A 3% COLA on the first $12,000 of a member's retirement allowance is assumed to be granted every year.

Administrative Expenses

Estimated budgeted amount of $231,000 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, 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.

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):

Age			Benefit Percentage
Group 1	Group 2	Group 4	
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.

DEFERRED VESTED RETIREMENT

Eligilibility

Completion of 10 years of credited service (for elected and appointed members, 6 years in the event of involuntary termination).

Retirement Allowance

Determined in the same manner as service retirement, 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 who voluntarily terminate with at least ten years of creditable service, or are involuntarily terminated, will receive 100% of the regular interest that has accrued to their Annuity Savings Account. Members who voluntarily terminate with less than ten years of service will receive interest on their Annuity Savings Account at the annual rate of 3%.

ORDINARY DISABILITY RETIREMENT

Eligibility

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

Retirement Allowance

Determined in the same manner as service retirement, 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

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

Accumulated deductions are paid out in a lump sum and a yearly pension equal to 72% of pay. Also, a dependent's allowance per year for each child.

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.