

Newton Contributory Retirement System

Actuarial Valuation and Review as of
January 1, 2015





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May 1, 2015

*Retirement Board
Newton Contributory Retirement System
1000 Commonwealth Ave
Newton Centre, MA 02459-1449*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2015. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2016 and later years and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Retirement System. The census information and financial information on which our calculations were based was prepared by the staff of the Newton Contributory Retirement System. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. 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 the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

An actuarial valuation is a measurement at a specific date – it is not a prediction of a plan's future financial condition. We have not been retained to perform an analysis of the potential range of financial measurements, except where otherwise noted.

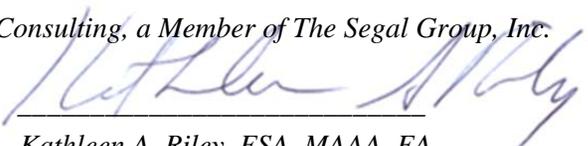
The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

A handwritten signature in blue ink, appearing to read "Kathleen A. Riley", is written over a horizontal line.

*Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary*

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SECTION 1: Valuation Summary for the Newton Contributory Retirement System

Purpose

This report has been prepared by Segal Consulting to present a valuation of the Newton Contributory Retirement System as of January 1, 2015. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of Massachusetts General Law Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2015;
- The assets of the Plan as of December 31, 2014;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

1. The actuarial valuation report as of January 1, 2015 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected.
2. The actuarial value of assets as of December 31, 2014 was \$293.8 million, or 100.0% of the market value of assets of \$293.9 million (as reported in the Annual Statement). As of December 31, 2013, the actuarial value of assets was 99.8% of market value. During the plan year ended December 31, 2014, the market value rate of return was 7.50%. Because the actuarial value of assets gradually recognizes market value fluctuations, the actuarial rate of return for the plan year ended December 31, 2014 was 7.66%.
3. As indicated in Section 2, Subsection B of this report, the total unrecognized investment gain as of December 31, 2014 was \$80,413. This investment gain will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment losses derived from future experience. This implies that earning the assumed rate of investment return on a market value basis will result in investment gains on the actuarial value of assets in the next few years.

SECTION 1: Valuation Summary for the Newton Contributory Retirement System

4. This valuation reflects the following changes in actuarial assumptions:
 - The pre-retirement mortality assumption was changed from the RP-2000 Employee Mortality Table projected generationally from 2000 using Scale AA to the RP-2000 Employee Mortality Table projected generationally from 2005 using Scale BB.
 - The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table projected generationally from 2000 using Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally from 2005 using Scale BB.
 - The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2000 using Scale AA to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2005 using Scale BB.

The changes in assumptions increased the unfunded liability by \$8.5 million and increased the normal cost by \$172,000.

5. The unfunded liability was expected to increase from \$271.3 million as of January 1, 2014 to \$273.5 million as of January 1, 2015. The actual unfunded liability as of January 1, 2015 was \$284.3 million. The greater than expected increase was due to the changes in actuarial assumptions noted above and a net experience loss discussed in Subsection C of Section 2 of the report.
6. The contribution for fiscal 2016 is equal to the previously budgeted amount of \$21,670,552. The results of this valuation will first be reflected in the fiscal 2017 appropriation.

The prior funding schedule fully funded the Retirement System by June 30, 2029 with the appropriation increasing 8.50% per year. Due to the change in the mortality assumption, the funding schedule will need to be revised. Either the rate of the increase in the appropriation can be increased or the funding schedule can be extended a year.

The Board has approved the schedule shown in Chart 16 which maintains the full funding date of June 30, 2029 with the appropriation increasing 8.75% per year.

Because the total appropriation will increase faster than projected payroll, the appropriation as a percent of payroll is projected to increase.

SECTION 1: Valuation Summary for the Newton Contributory Retirement System

7. On a market value basis, the funded ratio has decreased from 50.87% as of January 1, 2014 to 50.84% as of January 1, 2015. On an actuarial basis, the funded ratio has increased from 50.78% as of January 1, 2014 to 50.82% as of January 1, 2015.
8. Section 5 shows the disclosure information required by GASB Statements No. 67 and 68 for the fiscal year ended June 30, 2015. For disclosure purposes, a discount rate of 7.35% was used.

SECTION 1: Valuation Summary for the Newton Contributory Retirement System

Summary of Key Valuation Results

	2015	2014
Contributions for fiscal year beginning July 1:		
Recommended for fiscal 2016 and 2015	\$21,670,552	\$19,972,859
Recommended for fiscal 2017 and 2016	23,566,725	21,670,552
Funding elements for plan year beginning January 1:		
Total normal cost	\$11,218,981	\$10,445,973
Market value of assets (MVA)	293,924,337	280,345,810
Actuarial value of assets (AVA)	293,843,924	279,852,911
Actuarial accrued liability	578,157,905	551,136,472
Unfunded actuarial accrued liability	284,313,981	271,283,561
Funded ratio based on market value of assets	50.84%	50.87%
Funded ratio based on actuarial value of assets	50.82%	50.78%
Demographic data for plan year beginning January 1:		
Number of retired participants and beneficiaries	1,317	1,327
Number of inactive participants entitled to a return of their employee contributions	573	514
Number of inactive participants with a vested right to a deferred or immediate benefit	31	28
Number of active participants	1,723	1,666
Total payroll	\$89,260,679	\$84,488,457
Average payroll	51,823	50,713

Notes: The City appropriates an amount for administrative expenses, in addition to the recommended contributions shown above. Therefore, no expense assumption has been included.

The recommended contribution for fiscal 2017 is based on the funding schedule shown in Chart 16 of Section 2. Alternative funding schedules are shown in Charts 17 and 18.

SECTION 2: Valuation Results for the Newton Contributory Retirement System

A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, inactive participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

A historical perspective of how the participant population has changed over the past five valuations can be seen in this chart.

CHART 1
Participant Population: 2013 – 2014

Year Ended December 31	Active Participants	Inactive Participants	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
2010	1,669	574	1,312	1.13
2011	1,610	561	1,319	1.17
2012	1,616	547	1,318	1.15
2013	1,666	542	1,327	1.12
2014	1,723	604	1,317	1.11

SECTION 2: Valuation Results for the Newton Contributory Retirement System

Active Participants

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 1,723 active participants with an average age of 44.9, average years of service of 11.2 years and average payroll of \$51,823. The 1,666 active participants in the prior valuation had an average age of 45.3, average service of 11.6 years and average payroll of \$50,173.

Among the active participants, there were none with unknown age and/or service information.

Inactive Participants

In this year's valuation, there were 31 participants with a vested right to a deferred or immediate vested benefit and 573 participants entitled to a return of their employee contributions.

These graphs show a distribution of active participants by age and by years of service.

CHART 2
Distribution of Active Participants by Age as of December 31, 2014

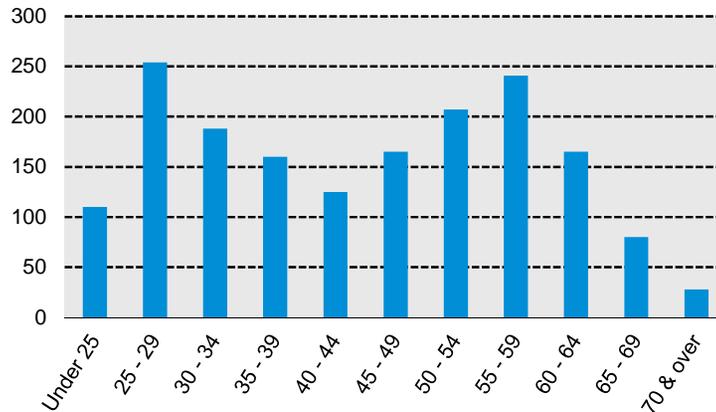
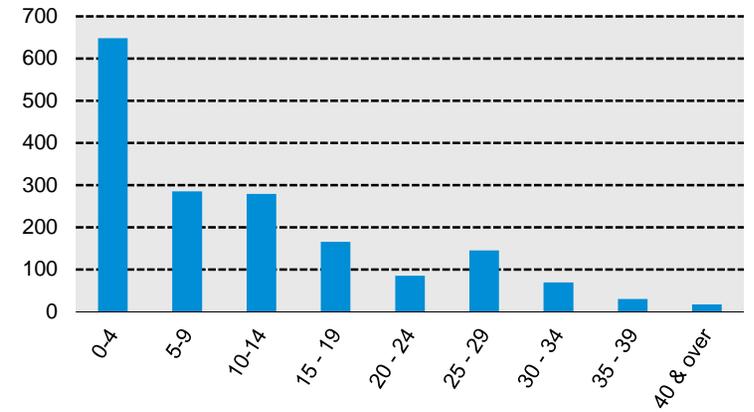


CHART 3
Distribution of Active Participants by Years of Service as of December 31, 2014



SECTION 2: Valuation Results for the Newton Contributory Retirement System

Retired Participants and Beneficiaries

As of December 31, 2014, 1,073 retired participants and 244 beneficiaries were receiving total monthly benefits of \$2,840,701, excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 1,069 retired participants and 258 beneficiaries receiving monthly benefits of \$2,850,833, excluding COLAs reimbursed by the Commonwealth.

These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.

- Beneficiaries
- Ordinary Disability
- Accidental Disability
- Superannuation

CHART 4

Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2014

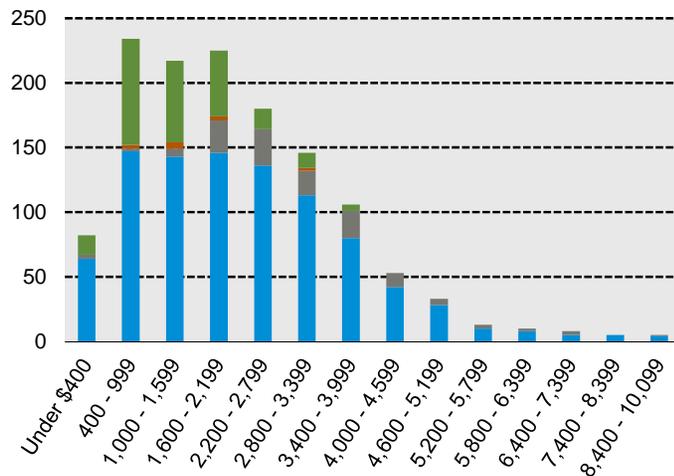
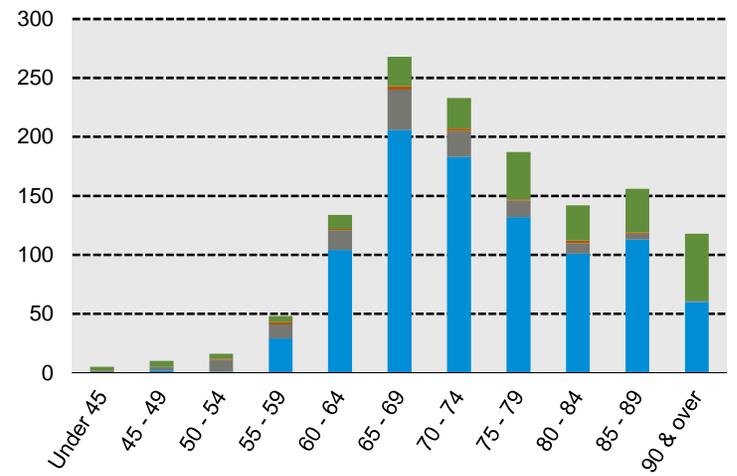


CHART 5

Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2014



SECTION 2: Valuation Results for the Newton Contributory Retirement System

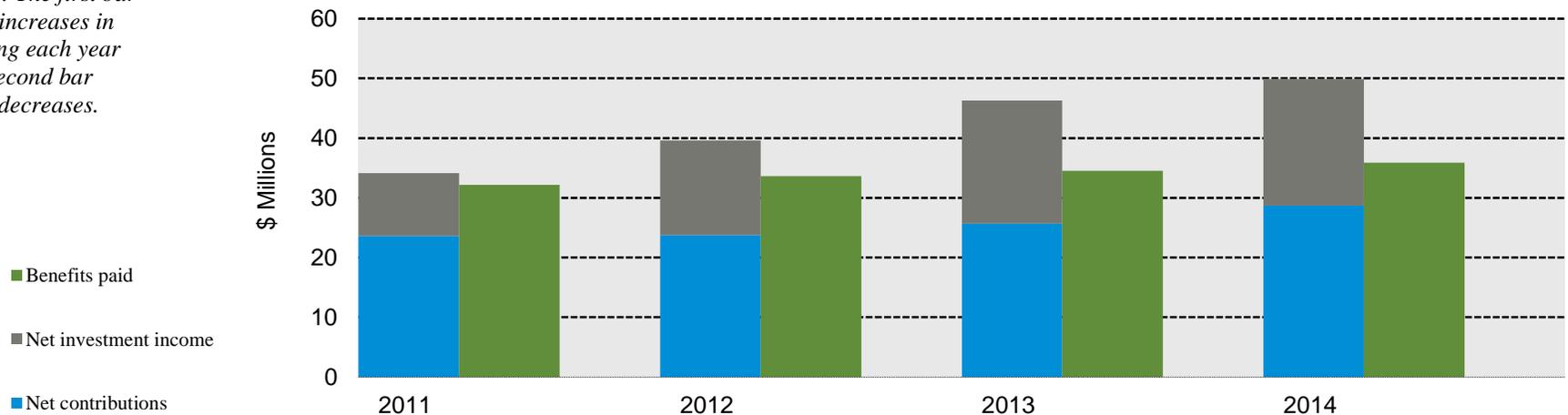
B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

The chart depicts the components of changes in the actuarial value of assets over the last four years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6
Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 2011 – 2014



SECTION 2: Valuation Results for the Newton Contributory Retirement System

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7

Determination of Actuarial Value of Assets for Year Ended December 31, 2014

1. Actuarial value of assets as of December 31, 2013	\$279,852,911
2. Contributions, less benefit payments	-7,170,275
3. Expected investment income on (1) and (2)	<u>21,134,484</u>
4. Preliminary actuarial value of assets: (1) + (2) + (3)	\$293,817,120
5. Market value of assets, December 31, 2014	293,924,337
6. Adjustment toward market value: 25% of [(5) - (4)]	26,804
7. Adjustment to be within 20% corridor	0
8. Final actuarial value of assets as of December 31, 2014: (4) + (6) + (7)	<u>\$293,843,924</u>
9. Actuarial value as a percentage of market value: (8) ÷ (5)	100.0%
10. Amount deferred for future recognition: (5) - (8)	\$80,413

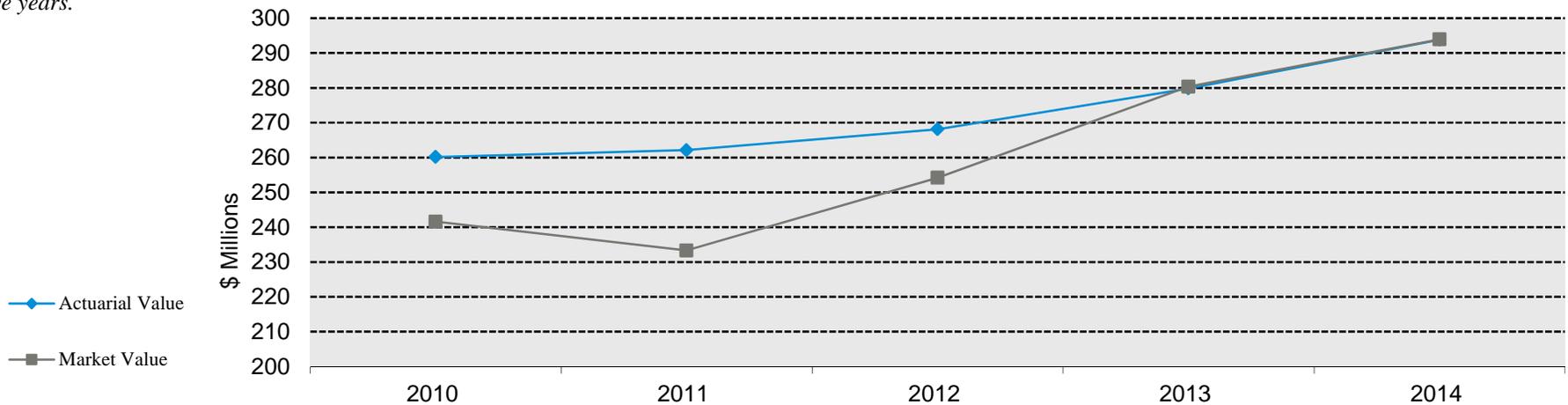
SECTION 2: Valuation Results for the Newton Contributory Retirement System

Both the actuarial value and market value of assets are representations of the Newton Contributory Retirement System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Newton Contributory Retirement System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past five years.

CHART 8

Actuarial Value of Assets vs. Market Value of Assets as of December 31, 2011 – 2014



SECTION 2: Valuation Results for the Newton Contributory Retirement System

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The net experience loss is \$2,281,361. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9 Actuarial Experience for Year Ended December 31, 2014

1. Net gain from investments*	\$26,804
2. Net loss from other experience**	<u>-2,308,165</u>
3. Net experience loss: (1) + (2)	<u>-\$2,281,361</u>

* Details in Chart 10

** Details in Chart 13

SECTION 2: Valuation Results for the Newton Contributory Retirement System

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Newton Contributory Retirement System’s investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.65%. The actual rate of return on an actuarial basis for the 2014 plan year was 7.66%.

Since the actual return for the year was greater than the assumed return, the Newton Contributory Retirement System experienced an actuarial gain during the year ended December 31, 2014 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10
Actuarial Value Investment Experience for Year Ended December 31, 2014

1. Actual return	\$21,161,288
2. Average value of assets	276,267,773
3. Actual rate of return: (1) ÷ (2)	7.66%
4. Assumed rate of return	7.65%
5. Expected return: (2) x (4)	\$21,134,484
6. Actuarial loss: (1) – (5)	<u>\$26,804</u>

SECTION 2: Valuation Results for the Newton Contributory Retirement System

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last four years.

Based upon this experience and future expectations, we have maintained the assumed rate of return of 7.65%.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 2011 - 2014

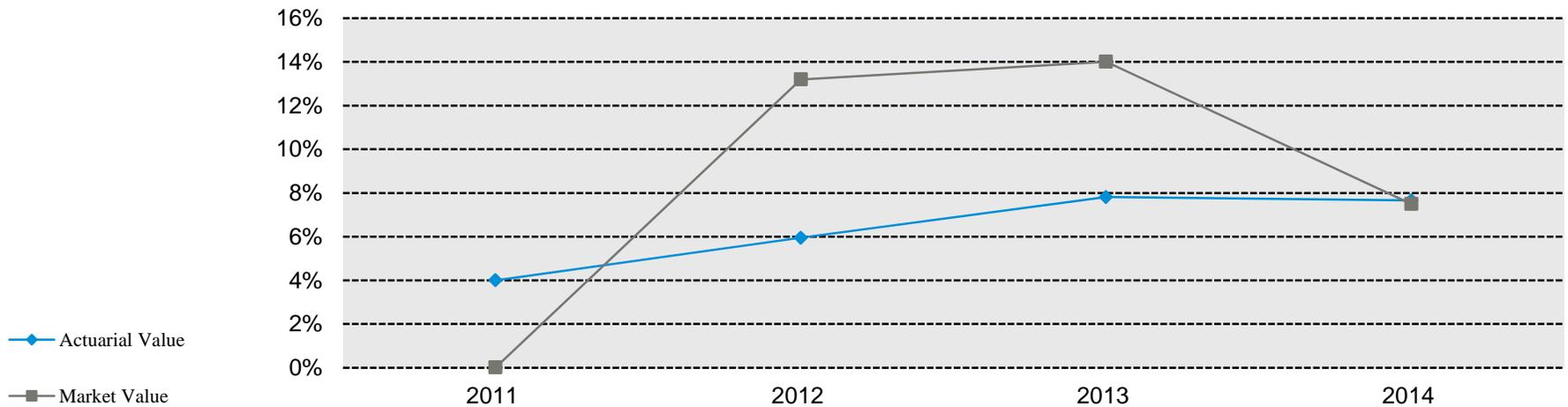
Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
2011	N/A	4.00%	N/A	0.01%
2012	N/A	5.95%	N/A	13.20%
2013	\$20,598,786	7.81%	\$34,996,825	14.01%
2014	<u>21,161,288</u>	7.66%	<u>20,748,803</u>	7.50%
Total	\$68,062,974		\$96,909,324	

SECTION 2: Valuation Results for the Newton Contributory Retirement System

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the years 2011 - 2014.

CHART 12
Market and Actuarial Rates of Return for Years Ended December 31, 2011 - 2014



SECTION 2: Valuation Results for the Newton Contributory Retirement System

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the year ended December 31, 2014 amounted to \$2,308,165, which is 0.4% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Newton Contributory Retirement System for the year ended December 31, 2014 is shown in the chart below. Please note the following:

- The salary loss is primarily due to an additional pay period in 2014.

- The miscellaneous experience gain is primarily due to favorable retirement and disability experience.
- The prior valuation included 16 beneficiaries who died in 2013. These beneficiaries account for approximately \$1.6 million of the miscellaneous gain.

This valuation reflects the following changes in actuarial assumptions:

- The pre-retirement mortality assumption was changed from the RP-2000 Employee Mortality Table projected generationally from 2000 using Scale AA to the RP-2000 Employee Mortality Table projected generationally from 2005 using Scale BB.
- The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table projected generationally from 2000 using Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally from 2005 using Scale BB.

The chart shows elements of the experience gain/(loss) for the most recent year.

CHART 13

Experience Due to Changes in Demographics for Year Ended December 31, 2014

1. Fewer deaths than expected amongst retired members and beneficiaries	-\$2,258,526
2. Salary increases more than expected for continuing actives	-5,173,294
3. Miscellaneous experience gain	<u>5,123,655</u>
4. Total	-\$2,308,165

SECTION 2: Valuation Results for the Newton Contributory Retirement System

- The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2000 using Scale AA to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2005 using Scale BB.

The changes in assumptions increased the unfunded liability by \$8.5 million and increased the normal cost by \$172,000.

We will continue to monitor the assumptions and may make revisions in a future valuation.

SECTION 2: Valuation Results for the Newton Contributory Retirement System

The unfunded liability was expected to increase from \$271.3 million as of January 1, 2014 to \$273.5 million as of January 1, 2015. The actuarial unfunded liability as of January 1, 2015 of \$284.3 million is \$10.8 million higher than expected as detailed in Chart 14 below.

CHART 14

Development of Unfunded Actuarial Accrued Liability and (Gain)/Loss

1. Unfunded actuarial accrued liability at beginning of year		\$271,283,561
2. Normal cost at beginning of year		10,445,973
3. Total contributions		-28,702,170
4. Interest		
(a) For whole year on (1) + (2)	\$21,552,309	
(b) For half year on (3)	<u>-1,055,653</u>	
(c) Total interest		<u>20,496,656</u>
5. Expected unfunded actuarial accrued liability		\$273,524,020
6. Changes due to:		
(a) Net experience loss	\$2,281,361	
(b) Assumption changes	<u>8,508,579</u>	
(c) Total changes		<u>10,789,960</u>
7. Unfunded actuarial accrued liability at end of year		<u>\$284,313,981</u>

SECTION 2: Valuation Results for the Newton Contributory Retirement System

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

The contribution for fiscal 2016 is equal to the previously budgeted amount of \$21,670,552. The results of this valuation will first be reflected in the fiscal 2017 appropriation.

The prior funding schedule fully funded the Retirement System by June 30, 2029 with the appropriation increasing 8.50% per year. Due to the change in the mortality assumption, the funding schedule will need to be revised. Either the rate of the increase in the appropriation can be increased or the funding schedule can be extended a year.

The Board has approved the schedule shown in Chart 16 which maintains the full funding date of June 30, 2029 with the appropriation increasing 8.75% per year.

Because the total appropriation will increase faster than projected payroll, the appropriation as a percent of payroll is projected to increase.

The chart compares this valuation's recommended contribution with the prior valuation.

**CHART 15
Recommended Contribution**

	Year Beginning January 1			
	2015	% of Payroll	2014	% of Payroll
1. Total normal cost	\$11,218,981	12.18%	\$10,445,973	12.03%
2. Expected employee contributions	<u>-8,753,281</u>	<u>-9.50%</u>	<u>-8,178,103</u>	<u>-9.42%</u>
3. Employer normal cost: (1) + (2)	\$2,465,700	2.68%	\$2,267,870	2.61%
4. Actuarial accrued liability	578,157,905		551,136,472	
5. Actuarial value of assets	<u>293,843,924</u>		<u>279,852,911</u>	
6. Unfunded actuarial accrued liability: (4) - (5)	\$284,313,981		\$271,283,561	
7. Employer normal cost projected to July 1, 2015 and 2014, adjusted for timing	2,511,713	2.69%	2,304,550	2.63%
8. Projected unfunded actuarial accrued liability	294,988,600		281,468,951	
9. Payment on projected unfunded actuarial accrued liability, adjusted for timing	19,158,839	20.54%	17,668,309	20.15%
10. Recommended contribution: (7) + (9)	<u>\$21,670,552</u>	<u>23.23%</u>	<u>\$19,972,859</u>	<u>22.78%</u>
11. Projected payroll	\$93,281,468		\$87,671,327	

Notes: Recommended contributions are assumed to be paid August 1.

Recommended contributions are set equal to the budgeted amounts determined with the prior valuation.

The City appropriates an amount for administrative expenses, in addition to the recommended contributions shown above. Therefore, no expense assumption has been included.

SECTION 2: Valuation Results for the Newton Contributory Retirement System

CHART 16

Funding Schedule – Fully funded by June 30, 2029 with the appropriation increasing 8.75% per year

(1) Fiscal Year Ended June 30	(2) Normal Cost	(3) Amortization of Unfunded Actuarial Accrued Liability	(4) Total Appropriation: (2) + (3)	(5) Unfunded Actuarial Accrued Liability at Beginning of Fiscal Year	(6) % Increase Over Prior Year's Appropriation
2016	\$2,511,713	\$19,158,839	\$21,670,552	\$294,988,600	--
2017	2,592,077	20,974,648	23,566,725	297,057,044	8.75%
2018	2,674,916	22,953,898	25,628,814	297,340,976	8.75%
2019	2,760,305	25,111,030	27,871,335	295,529,015	8.75%
2020	2,848,320	27,461,756	30,310,077	291,270,507	8.75%
2021	2,939,040	30,023,168	32,962,209	284,171,164	8.75%
2022	3,032,545	32,813,857	35,846,402	273,788,248	8.75%
2023	3,128,921	35,854,041	38,982,962	259,625,261	8.75%
2024	3,228,250	39,165,721	42,393,971	241,126,089	8.75%
2025	3,330,623	42,772,821	46,103,444	217,668,540	8.75%
2026	3,436,131	46,701,364	50,137,495	188,557,225	8.75%
2027	3,544,866	50,979,660	54,524,526	153,015,717	8.75%
2028	3,656,925	55,638,496	59,295,422	110,177,903	8.75%
2029	3,772,409	59,442,504	63,214,913	59,078,473	6.61%
2030	3,891,417	--	3,891,417	--	-93.84%
2031	4,014,057	--	4,014,057	--	3.15%

*Notes Recommended contributions are assumed to be paid August 1.
Assumes item (2) increases at 2.5% per year, plus an additional increase for the impact of generational mortality.
Assumes contribution of budgeted amount for fiscal 2016.*

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT A

Table of Plan Coverage

Category	Year Ended December 31		Change From Prior Year
	2014	2013	
Active participants in valuation:			
Number	1,723	1,666	3.4%
Average age	44.9	45.3	N/A
Average years of service	11.2	11.6	N/A
Total payroll	\$89,260,679	\$84,488,457	9.1%
Average payroll	51,823	50,713	5.4%
Member contributions	81,640,928	78,129,294	4.5%
Inactive participants entitled to a return of their employee contributions	573	514	11.5%
Inactive participants with a vested right to a deferred or immediate benefit	31	28	10.7%
Retired participants:			
Number in pay status	931	923	0.9%
Average age	74.2	74.0	N/A
Average monthly benefit	\$2,350	\$2,285	2.8%
Disabled participants:			
Number in pay status	142	146	-2.7%
Average age	67.5	67.1	N/A
Average monthly benefit	\$3,039	\$2,878	5.6%
Beneficiaries in pay status:			
Number in pay status	244	258	-5.4%
Average age	78.7	78.8	N/A
Average monthly benefit	\$1,366	\$1,346	9.6%

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT B

**Participants in Active Service as of December 31, 2014
By Age, Years of Service, and Average Payroll**

Age	Years of Service									
	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	110	110	--	--	--	--	--	--	--	--
	\$26,767	\$26,767	--	--	--	--	--	--	--	--
25 - 29	254	234	20	--	--	--	--	--	--	--
	\$34,177	\$32,971	\$48,277	--	--	--	--	--	--	--
30 - 34	188	91	79	18	--	--	--	--	--	--
	\$50,400	\$44,619	\$54,032	\$63,679	--	--	--	--	--	--
35 - 39	160	57	38	58	7	--	--	--	--	--
	\$53,742	\$36,167	\$58,070	\$66,136	\$70,657	--	--	--	--	--
40 - 44	125	29	17	45	32	2	--	--	--	--
	\$59,767	\$40,650	\$51,912	\$62,262	\$77,233	\$68,129	--	--	--	--
45 - 49	165	42	24	35	32	18	12	2	--	--
	\$57,126	\$38,742	\$44,613	\$65,181	\$68,947	\$73,254	\$67,715	\$54,550	--	--
50 - 54	207	41	37	28	27	15	47	12	--	--
	\$59,248	\$43,108	\$52,262	\$53,429	\$60,821	\$80,253	\$69,032	\$81,391	--	--
55 - 59	241	35	37	42	23	16	44	34	9	1
	\$60,727	\$47,383	\$45,578	\$46,282	\$56,082	\$67,078	\$73,820	\$86,802	\$80,095	\$63,279
60 - 64	165	7	25	37	26	12	24	13	15	6
	\$59,272	\$56,575	\$48,227	\$50,116	\$60,912	\$51,014	\$59,689	\$91,207	\$74,186	\$66,173
65 - 69	80	2	6	14	14	19	10	2	5	8
	\$57,569	\$43,113	\$49,904	\$57,471	\$56,306	\$54,426	\$61,738	\$57,367	\$57,340	\$71,761
70 & over	28	--	2	2	4	3	8	6	1	2
	\$50,358	--	\$32,153	\$28,769	\$61,083	\$43,831	\$56,811	\$41,235	\$101,120	\$54,677
Total	1,723	648	285	279	165	85	145	69	30	17
	\$51,823	\$36,259	\$51,170	\$58,142	\$64,974	\$64,819	\$67,652	\$80,940	\$74,049	\$67,280

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT C

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended December 31, 2014	Year Ended December 31, 2013
Net assets at actuarial value at the beginning of the year	\$279,852,911	\$268,087,455
Contribution income:		
Employer contributions	\$19,693,552	\$17,975,932
Employee contributions	8,661,238	7,421,492
Other contributions	<u>347,380</u>	<u>319,511</u>
Net contribution income	28,702,170	25,716,935
Net investment income:	<u>21,161,288</u>	<u>20,598,786</u>
Total income available for benefits	\$49,863,458	\$46,315,721
Less benefit payments:		
Pensions	-\$34,703,826	-\$33,837,596
Net 3(8)(c) reimbursements	25,512	13,982
Refunds, annuities, & Option B refunds	-1,208,637	-726,651
Workers Compensation Settlements	<u>14,505</u>	<u>0</u>
Net benefit payments	-\$35,872,446	-\$34,550,265
Change in reserve for future benefits	\$13,991,013	\$11,765,456
Net assets at actuarial value at the end of the year	\$293,843,924	\$279,852,911

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT D

Development of the Fund Through December 31, 2014

Year Ended December 31	Employer Contributions	Employee Contributions	Other Contributions	Net Investment Return*	Benefit Payments	Actuarial Value of Assets at End of Year
2011	\$16,056,552	\$7,273,727	\$303,331	\$10,503,211	\$32,184,128	\$262,109,152
2012	16,508,453	6,951,141	313,189	15,799,687	33,594,167	268,087,455
2013	17,975,932	7,421,492	319,511	20,598,786	34,550,265	279,852,911
2014	19,693,552	8,661,238	347,380	21,161,288	35,872,446	293,843,924

* *Net of investment fees.*

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT E

Department Breakouts

Department Code	Category	Active participants in valuation	Total projected payroll	Fiscal Year Ending 2017		
				Normal Cost	Amortization of Actuarial Accrued Liability	Total Appropriation
001	M.I.S.	10	\$748,092	\$(2,003)	\$95,628	\$93,625
002	Personnel	6	360,051	4,783	110,600	115,383
003	Human Services	3	231,757	3,691	119,979	123,670
004	Financial Information Systems	3	297,697	6,975	52,158	59,133
005	Jackson Homestead	3	179,882	4,530	24,698	29,228
006	Executive	9	769,325	17,676	118,930	136,606
007	Comptrollers	5	411,472	(4,935)	148,961	144,026
008	Retirement	2	205,664	(3,652)	46,250	42,598
009	Assessing	12	1,023,110	475	252,056	252,531
010	Purchasing	5	339,752	16,463	86,593	103,056
011	Treasury	12	710,981	18,463	99,033	117,496
012	Law	12	1,100,563	13,135	221,901	235,036
013	City Clerk	6	384,885	1,158	55,735	56,893
014	Clerk of the Board	4	283,084	6,142	65,614	71,756
015	Board of Aldermen	21	200,705	17,535	49,252	66,787
016	Building	32	1,995,623	53,431	456,954	510,385
017	Elections	2	114,828	(28)	118,558	118,530
018	Planning	13	818,265	16,816	138,821	155,637
018F	Planning - Federally Funded	7	394,549	2,225	141,873	144,098
018P	Community Preservation Planning	1	92,072	7,150	5,252	12,402
019	Fire (Group 2 & 4)	180	13,964,908	863,274	4,428,936	5,292,210
019A	Fire (Civilian Personnel)	5	341,740	1,662	89,063	90,725
019S	Fire (Retired under Starck)	0	0	0	233,207	233,207
020	Police (Group 2 & 4)	144	11,977,273	682,974	4,074,324	4,757,298
020A	Police (Civilian Personnel)	32	1,936,210	(16,277)	250,468	234,191

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

Department Code	Category	Active participants in valuation	Total projected payroll	Fiscal Year Ending 2017		
				Normal Cost	Amortization of Actuarial Accrued Liability	Total Appropriation
021	Police School Traffic Sup.	12	436,056	19,514	180,149	199,663
022	Sealer Weights & Measures	1	76,044	3,342	8,794	12,136
023	Inspectional Services	13	965,395	34,545	228,645	263,190
025	Health	43	2,534,085	60,813	419,383	480,196
026	Veterans	0	0	0	50,341	50,341
027	Library	58	3,146,995	53,589	752,992	806,581
028	School Custodian	85	4,584,793	75,586	1,144,017	1,219,603
029	School Cafeteria	1	48,945	97	183,345	183,442
030	School Teacher Aides	615	19,292,655	297,349	1,330,496	1,627,845
031	School Clerical	110	7,182,680	140,064	1,492,266	1,632,330
031A	School Committee	0	0	0	3,183	3,183
031B	School Budget Revolving	2	110,399	4,860	18,163	23,023
031C	School - Community Schools	8	438,596	22,229	28,826	51,055
031E	School Ed Ctr Preschool	9	198,823	2,351	5,898	8,249
031N	School NSHS Preschool	3	88,198	(805)	792	(13)
031S	Summer School Revolving	1	58,322	2,307	12,611	14,918
032	Recreation	29	2,008,173	14,705	629,743	644,448
032A	Recreation - Arts in the Parks	2	115,118	4,049	1,916	5,965
033	Engineering	11	882,855	16,446	259,403	275,849
034	DPW	107	6,325,022	108,792	1,769,655	1,878,447
034A	DPW-Storm Water Management	5	288,624	7,415	55,767	63,182
034B	DPW 6 Man Hwy Crew	6	228,983	1,072	481	1,553
035	Water-Sewer (General Personnel)	11	732,420	2,754	137,162	139,916
035S	Sewer Personnel	21	1,087,705	6,609	251,479	258,088
035W	Water Personnel	23	1,226,490	2,480	287,431	289,911
036	Newton Housing Authority	18	1,197,003	251	236,866	237,117
	TOTAL	1,723	\$92,136,867	\$2,592,077	\$20,974,648	\$23,566,725

Note: Department allocations are determined on an actuarial basis with assets allocated in proportion to the actuarial accrued liability.

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

EXHIBIT F

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or actuarial assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Withdrawal rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial accrued liability for actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial accrued liability for pensioners:

The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded actuarial accrued liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There are many approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

SECTION 3: Supplemental Information for the Newton Contributory Retirement System

Amortization of the unfunded actuarial accrued liability:

Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 244 beneficiaries in pay status)	1,317
2. Participants active during the year ended December 31, 2014 with total accumulated contributions of \$81,640,928 and projected 2015 payroll of \$92,136,867	1,723
3. Inactive participants with a right to a return of their employee contributions as of December 31, 2014	31
4. Inactive participants with a vested right to a deferred or immediate benefit as of December 31, 2014	573

The actuarial factors as of the valuation date are as follows:

1. Total normal cost		\$11,218,981
2. Expected employee contributions		<u>-8,753,281</u>
3. Employer normal cost: (1) + (2)		\$2,465,700
4. Actuarial accrued liability		578,157,905
Retired participants and beneficiaries	\$327,958,410	
Active participants	243,733,882	
Inactive participants with vested rights	6,465,613	
5. Actuarial value of assets (\$293,924,337 at market value as reported in the Annual Statement)		293,843,924
6. Unfunded actuarial accrued liability: (4) – (5)		284,313,981

The actuarial factors projected to July 1, 2015 are as follows:

1. Employer normal cost, projected to July 1, 2015, adjusted for timing	\$2,511,713
2. Projected unfunded actuarial accrued liability	294,988,600
3. Payment on projected unfunded actuarial accrued liability, adjusted for timing	19,158,839
4. Recommended contribution: (1) + (3)	<u>\$21,670,552</u>
5. Projected payroll	\$93,281,468
6. Total budgeted contribution as a percentage of payroll: (4) ÷ (5)	23.23%

Notes: Recommended contributions are assumed to be paid August 1.

Recommended contributions are set equal to the budgeted amounts determined with the prior valuation.

The City appropriates an amount for administrative expenses, in addition to the recommended contributions shown above. Therefore, no expense assumption has been included.

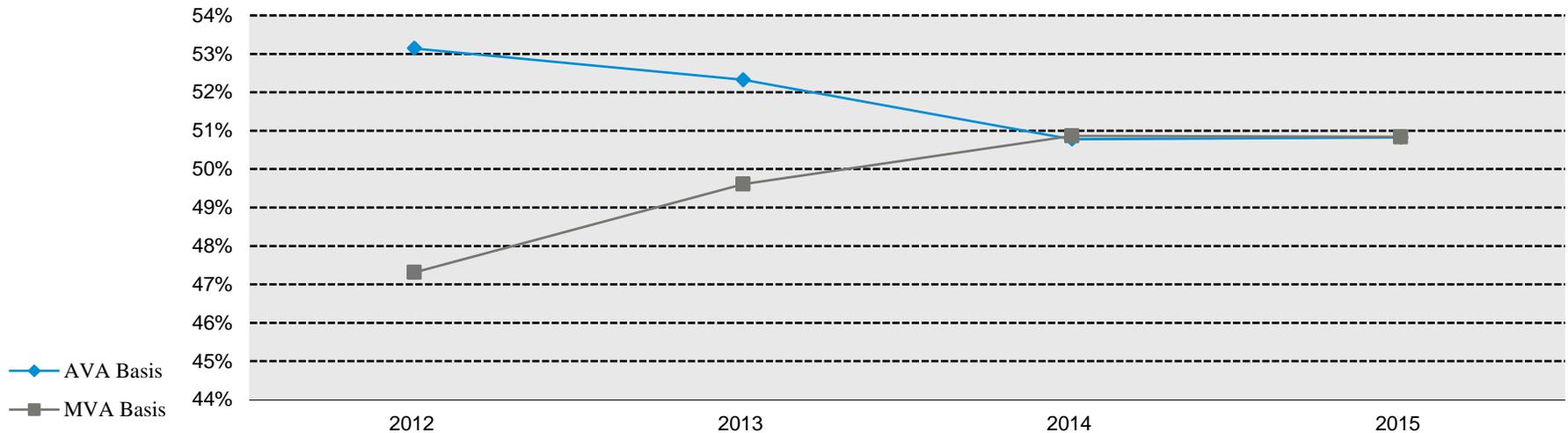
SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT II Funded Ratio

A critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

These measurements are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligation or the need for or the amount of future contributions.

The chart below depicts a history of the funded ratios for this plan. On a market value basis, the funded ratio has decreased from 50.87% as of January 1, 2014 to 50.84% as of January 1, 2015. On an actuarial basis, the funded ratio has increased from 50.78% as of January 1, 2014 to 50.82% as of January 1, 2015.



SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT III

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

<i>Pre-Retirement:</i>	RP-2000 Employee Mortality Table projected generationally from 2005 with Scale BB (Previously, RP-2000 Employee Mortality Table projected generationally from 2000 with Scale AA)
<i>Healthy Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected generationally from 2005 with Scale BB (Previously, RP-2000 Healthy Annuitant Mortality Table projected generationally from 2000 with Scale AA)
<i>Disabled Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2005 with Scale BB (Previously, RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2000 with Scale AA)

The mortality tables reasonably reflect the projected mortality experience of the Plan as of the measurement date based on historical and current demographic data. As part of the analysis, a comparison was made between the actual number of retiree deaths and the projected number based on the prior year's assumptions. The mortality tables were then adjusted to future years using generational projection under Scale BB to reflect future mortality improvement.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Termination Rates before Retirement:

Groups 1 and 2 - Rate (%)

Mortality

Age	Male	Female	Disability
20	0.03	0.02	0.01
25	0.04	0.02	0.02
30	0.04	0.03	0.03
35	0.08	0.05	0.06
40	0.11	0.07	0.10
45	0.15	0.11	0.15
50	0.21	0.17	0.19
55	0.30	0.25	0.24
60	0.49	0.39	0.28

*Notes: Mortality rates do not reflect generational projection.
 70% of the disability rates shown represent accidental disability.
 20% of the accidental disabilities will die from the same cause as the disability.
 70% of the death rates shown represent accidental death.*

Group 4 - Rate (%)

Mortality

Age	Male	Female	Disability
20	0.03	0.02	0.10
25	0.04	0.02	0.20
30	0.04	0.03	0.30
35	0.08	0.05	0.30
40	0.11	0.07	0.30
45	0.15	0.11	1.00
50	0.21	0.17	1.25
55	0.30	0.25	1.20
60	0.49	0.39	0.85

*Notes: Mortality rates do not reflect generational projection.
 90% of the disability rates shown represent accidental disability.
 60% of the accidental disabilities will die from the same cause as the disability.
 90% of the death rates shown represent accidental death.*

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Withdrawal Rates:	Rate per year (%)			
	Years of Service	Groups 1 and 2	Years of Service	Group 4
	0	15.0	0 – 10	1.5
	1	12.0	11+	0.0
	2	10.0		
	3	9.0		
	4	8.0		
	5	7.6		
	6	7.5		
	7	6.7		
	8	6.3		
	9	5.9		
	10	5.4		
	11	5.0		
	12	4.6		
	13	4.1		
	14	3.7		
	15	3.3		
	16 – 20	2.0		
	21 – 29	1.0		
	30+	0.0		

The termination rates and disability rates were based on historical and current demographic data, adjusted to reflect economic conditions of the area and estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of terminations and disability retirements and the projected number based on the prior year’s assumptions.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Retirement Rates:	Age	Rate per year (%)		Group 4
		Groups 1 and 2		
		Male	Female	
	45 – 49	--	--	1.0
	50 – 51	1.0	1.5	2.0
	52	1.0	2.0	2.0
	53	1.0	2.5	5.0
	54	2.0	2.5	7.5
	55	2.0	5.5	15.0
	56 – 57	2.5	6.5	10.0
	58	5.0	6.5	10.0
	59	6.5	6.5	15.0
	60	12.0	5.0	20.0
	61	20.0	13.0	20.0
	62	30.0	15.0	25.0
	63	25.0	12.5	25.0
	64	22.0	18.0	30.0
	65	40.0	15.0	100.0
	66 – 67	25.0	20.0	--
	68	30.0	25.0	--
	69	30.0	20.0	--
	70	100.0	100.0	--

The retirement rates were based on historical and current demographic data, adjusted to reflect economic conditions of the area and estimated future experience and professional judgment. As part of the analysis, a comparison was made between the actual number of retirements by age and the projected number based on the prior year's assumptions.

Retirement Age for Inactive Vested Participants:

55 for participants hired prior to April 2, 2012. For participants hired April 2, 2012 or later, 60 for Group 1, 55 for Group 2, and 50 for Group 4.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

The retirement age for inactive vested participants was based on historical and current demographic data, adjusted to reflect economic conditions of the area and estimated future experience and professional judgment.

Unknown Data for Participants:	Same as those exhibited by participants with similar known characteristics.
Family Composition:	80% of participants are assumed to be married. None are assumed to have dependent children. Females are assumed to be three years younger than their spouses.
Benefit Election:	All participants are assumed to elect Option A. The benefit election reflects the fact that all benefit options are actuarially equivalent.
<hr/>	
Net Investment Return:	
Funding:	7.65%
GASB 67/68:	7.35% as set by the City of Newton and its auditors.
	The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes, as well as the Plan's target asset allocation.
Salary Scale:	3.5% for 2015 and later years.
	The salary scale assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment.
Interest on Employee Contributions:	3.5%
Administrative Expenses:	This valuation does not include an administrative expense assumption because the City appropriates a specific amount for administrative expenses in addition to the recommended contribution.
<hr/>	
Total Service:	Total creditable service reported in the data.
2014 Salary:	2014 salaries are equal to salaries provided in the data, annualized for new hires.
Net 3(8)(c) Liability:	No liability is valued for benefits paid to or received from other municipal retirement systems because the net impact is deemed to be immaterial.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Actuarial Value of Assets:	A preliminary actuarial value is first determined by taking the actuarial value of assets at the beginning of the year and adding assumed investment earnings (at the assumed actuarial rate of return) and the net new money during the year (contributions less benefit payments). Twenty-five percent of the difference between the market value of assets as reported in the System's Annual Statement and the preliminary actuarial value of assets is added to the preliminary actuarial value. In order that the actuarial value not differ too significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of assets.
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the attained age of the participant minus total creditable service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary. Normal Cost is determined using the plan of benefits applicable to each participant.
Changes in Assumptions:	<p>Based on past experience and future expectations, the following actuarial assumptions were changed as of January 1, 2015:</p> <ul style="list-style-type: none">➤ The pre-retirement mortality assumption was changed from the RP-2000 Employee Mortality Table projected generationally from 2000 using Scale AA to the RP-2000 Employee Mortality Table projected generationally from 2005 using Scale BB.➤ The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table projected generationally from 2000 using Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally from 2005 using Scale BB.➤ The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2000 using Scale AA to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2005 using Scale BB.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

EXHIBIT IV

Summary of Plan Provisions

This exhibit summarizes the major provisions of Chapter 32 of the Laws of Massachusetts.

Plan Year: January 1 through December 31

Retirement Benefits

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government. It is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3.)

For employees hired prior to April 2, 2012, the annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table based on the age of the member at retirement:

Percent	Age Last Birthday at Date of Retirement		
	Group 1	Group 2	Group 4
2.5	65 or over	60 or over	55 or over
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	--	49
1.8	58	--	48
1.7	57	--	47
1.6	56	--	46
1.5	55	--	45

SECTION 4: Reporting Information for the Newton Contributory Retirement System

A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement.

For employees hired on April 2, 2012 or later, the annual amount of the retirement allowance is based on the member's final five-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following tables based on the age and years of creditable service of the member at retirement:

For members with less than 30 years of creditable service:

Age Last Birthday at Date of Retirement

Percent	Group 1	Group 2	Group 4
2.50	67 or over	62 or over	57 or over
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

For members with 30 years of creditable service or greater:

Age Last Birthday at Date of Retirement

Percent	Group 1	Group 2	Group 4
2.500	67 or over	62 or over	57 or over
2.375	66	61	56
2.250	65	60	55
2.125	64	59	54
2.000	63	58	53
1.875	62	57	52
1.750	61	56	51
1.625	60	55	50

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A member’s final five-year average salary is defined as the greater of the highest consecutive five-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last five years of creditable service prior to retirement.

For employees who became members after January 1, 2011, regular compensation is limited to 64% of the federal limit found in 26 U.S.C. 401(a)(17). In addition, regular compensation for members who retire after April 2, 2012 will be limited to prohibit “spiking” of a member’s salary to increase the retirement benefit.

For all employees, the maximum annual amount of the retirement allowance is 80 percent of the member’s final average salary. Any member who is a veteran also receives an additional yearly retirement allowance of \$15 per year of creditable service, not exceeding \$300. The veteran allowance is paid in addition to the 80 percent maximum.

Employee Contributions

<u>Date of Hire</u>	<u>Contribution Rate</u>
Prior to January 1, 1975	5%
January 1, 1975 – December 31, 1983	7%
January 1, 1984 – June 30, 1996	8%
July 1, 1996 onward	9%

In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who voluntarily withdraw their contributions with less than 10 ten years of credited service receive 3% interest on their contributions.

Employees in Group 1 hired on or after April 2, 2012 with 30 years of creditable service or greater will pay a base contribution rate of 6%.

Retirement Benefits (Superannuation)

Members of Group 1, 2 or 4 hired prior to April 2, 2012 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

SECTION 4: Reporting Information for the Newton Contributory Retirement System

Members hired prior to April 2, 2012 who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System).

Members of Group 1 hired April 2, 2012 or later may retire upon the attainment of age 60. Members of Group 2 or 4 hired April 2, 2012 or later may retire upon the attainment of age 55. Members of Group 4 may retire upon attainment of age 50 with ten years of creditable service.

Members hired April 2, 2012 or later who terminate before age 55 (60 for members of Group 1) with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (60 for members of Group 1) provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the System.

Ordinary Disability Benefits

A member who is unable to perform his or her job due to a non-occupational disability will receive a retirement allowance if he or she has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be determined as if the member retired for superannuation at age 55 (age 60 for Group 1 members hired on or after April 2, 2012), based on the amount of creditable service at the date of disability. For veterans, there is a minimum benefit of 50 percent of the member's most recent year's pay plus an annuity based on his or her own contributions.

Accidental Disability Benefit

For a job-connected disability, the benefit is 72 percent of the member's most recent annual pay plus an annuity based on his or her own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become members after January 1, 1988.

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Death Benefits

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were eligible to retire on the date of death, a spouse's benefit will be paid equal to the amount the employee would have received under Option C. The surviving spouse of a member who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. There is also a minimum widow's pension of \$250 per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the member's most recent annual pay, in addition to a refund of the member's accumulated deductions, plus additional amounts for surviving children. However, in accordance with Section 100 of Chapter 32, the surviving spouse of a police officer, firefighter or corrections officer is killed in the line of duty will be eligible to receive an annual benefit equal to the maximum salary held by the member at the time of death.

Upon the death of a job-connected disability retiree who retired prior to November 7, 1996 and could not elect an Option C benefit, a surviving spouse will receive an allowance of \$9,000 if the member dies for a reason unrelated to cause of disability.

"Heart And Lung Law" And Cancer Presumption

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman, permanent member of a police department, or certain employees of a county correctional facility is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in total disability or death to a uniformed fireman is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. There is an additional presumption for uniformed firemen that certain types of cancer are job-related if onset occurs while actively employed or within five years of retirement.

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Options

Members may elect to receive a full retirement allowance payable for life under Option A. Under Option B a member may elect to receive a lower monthly allowance in exchange for a guarantee that at the time of death any contributions not expended for annuity payments will be refunded to the beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing a survivor with two-thirds of the lesser amount. Option C pensioners will have benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.

Post-Retirement Benefits

The Board has adopted the provisions of Section 51 of Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$12,000 of a retirement allowance. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and not reflected in this report.

Changes in Plan Provisions

None.

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 1

Net Pension Liability

The components of the net pension liability of the Newton Contributory Retirement System at December 31, 2014 were as follows:

Total pension liability	\$595,592,789
Plan fiduciary net position	293,924,337
System's net pension liability	301,668,452
Plan fiduciary net position as a percentage of the total pension liability	49.35%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of December 31, 2014, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.5% for 2015 and later years
Salary increases	3.5% for 2015 and later years
Investment rate of return	7.35% (7.65% as of December 31, 2013), net of pension plan investment expense, including inflation
Cost of Living Adjustment	3% of first \$12,000
Pre-Retirement:	RP-2000 Employee Mortality Table projected generationally from 2005 with Scale BB
Healthy Retiree:	RP-2000 Healthy Annuitant Mortality Table projected generationally from 2005 with Scale BB
Disabled Retiree:	RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2005 with Scale BB

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2014 are summarized in the following table:

SECTION 5: GASB Information for the Newton Contributory Retirement System

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	6.40%
International developed markets equity	7.07%
International emerging markets equity	9.26%
Core fixed income	1.53%
High-yield fixed income	4.25%
Real estate	4.30%
Commodities	3.77%
Hedge fund, GTAA, Risk parity	3.44%
Private equity	11.26%
Cash	0.96%

Discount rate sensitivity

Discount rate: The discount rate used to measure the total pension liability was 7.35%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.35%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.35%) or 1-percentage-point higher (8.35%) than the current rate:

	1% Decrease (6.35%)	Current Discount (7.35%)	1% Increase (8.35%)
Newton Contributory Retirement System's net pension liability as of December 31, 2014	\$366,724,246	\$301,668,452	\$246,758,663

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 2

Schedule of Changes in the Net Pension Liability – Last Ten Years

	Year End December 31,									
	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Total pension liability										
Service cost	\$10,445,973									
Interest	41,588,936									
Differences between expected and actual experience	2,350,371									
Changes of assumptions	25,943,483									
Changes of benefit terms	0									(Historical information prior to implementation of GASB 67/68 is not required)
Benefit payments, including refunds of employee contributions	<u>-35,872,446</u>									
Net change in total pension liability	\$44,456,317									
Total pension liability - beginning	\$551,136,472									
Total pension liability - ending (a)	<u>\$595,592,789</u>									
Plan fiduciary net position										
Contributions - employer	\$20,040,932									
Contributions - employee	8,661,238									
Net investment income	20,748,803									
Benefit payments, including refunds of employee contributions	<u>-35,872,446</u>									(Historical information prior to implementation of GASB 67/68 is not required)
Other	0									
Net change in fiduciary net position	\$13,578,527									
Plan fiduciary net position - beginning	\$280,345,810									
Plan fiduciary net position - ending (b)	\$293,924,337									
Net pension liability – ending: (a)-(b)	<u>\$301,668,452</u>									
Plan's fiduciary net position as a percentage of the total pension liability	49.35%									(Historical information prior to implementation of GASB 67/68 is not required)
Covered-employee payroll	\$86,807,549*									
Net pension liability as a percentage of covered-employee payroll	347.51%									

* Covered-employee payroll as reported in the January 1, 2014 funding valuation report.

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EXHIBIT 3

Schedule of Contributions – Last Ten Years

	Year End December 31,									
	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Actuarially determined contribution*	\$19,972,859*									
Contributions in relation to the actuarially determined contribution	20,040,932									
Contribution deficiency (excess)	(68,073)									
Covered-employee payroll	\$86,807,549									
Contributions as a percentage of covered-employee payroll	23.09%									(Historical information prior to implementation of GASB 67/68 is not required)

* Based on the results of the January 1, 2013 actuarial valuation (including assumptions and methods) which determined budgeted appropriation for fiscal 2015.

Note: Contributions exclude appropriation for expenses.

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 4

Pension Expense and Deferred Outflows/Inflows of Resources Related to Pensions

A. Pension expense for the year ended December 31, 2014

	Total	City of Newton	Newton Housing Authority
Service cost	\$10,445,973		
Interest on total pension liability	41,588,936		
Contributions – employee	-8,661,238		
Projected earnings on pension plan investments	-21,172,191		
Recognized portion of current period plan between expected and actual experience	470,074		
Recognized portion of current period plan between projected and actual earnings on pension plan investments	84,678		
Recognized portion of current year period assumption change	5,188,697		
Recognized portion of current year period plan change	0		
Recognition of deferred outflows of resources	0		
Recognition of deferred inflows of resources	0		
Pension expense for fiscal year ended June 30, 2015	<u>\$27,944,929</u>	<u>\$27,672,819</u>	<u>\$272,110</u>
Fiscal Year 2015 allocation percentage	100.0%	99.026264%	0.973736%

B. Deferred outflows/inflows of resources related to pensions

	City of Newton		Newton Housing Authority		Total	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$1,861,988	\$0	\$18,309	\$0	\$1,880,297	\$0
Changes of assumptions	20,552,689	0	202,097	0	20,754,786	0
Changes of benefit terms	0	0	0	0	0	0
Net difference between projected and actual earnings on pension plan investments	<u>335,412</u>	<u>0</u>	<u>3,298</u>	<u>0</u>	<u>338,710</u>	<u>0</u>
Total	\$22,750,089	0	\$223,704	0	\$22,973,793	0

SECTION 5: GASB Information for the Newton Contributory Retirement System

C. Projected recognition of deferred outflows/(inflows)

Employer Name	Deferred Inflows/(Outflows) Recognized In Future Pension Expense (Year Ended June 30):				
	2016	2017	2018	2019	Thereafter
City of Newton	\$5,687,523	\$5,687,523	\$5,687,523	\$5,687,523	\$0
Newton Housing Authority	<u>55,926</u>	<u>55,926</u>	<u>55,926</u>	<u>55,926</u>	<u>0</u>
Grand Totals:	\$5,743,449	\$5,743,449	\$5,743,449	\$5,743,449	\$0

Note: Entry Age Normal liabilities calculated using ages and service amounts as of January 1, 2014 are used to measure the pension expense for fiscal year ended June 30, 2015.

D. Discount rate sensitivity

Discount rate: The discount rate used to measure the total pension liability was 7.35%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that contributions will be made at rates equal to the actuarially determined contribution rates. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.35%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.35%) or 1-percentage-point higher (8.35%) than the current rate:

	1% Decrease (6.35%)	Current Discount (7.35%)	1% Increase (8.35%)
City of Newton's net pension liability as of December 31, 2014	\$363,153,320	\$298,730,998	\$244,355,885
Newton Housing Authority's net pension liability as of December 31, 2014	3,570,926	2,937,454	2,402,778
Newton Contributory Retirement System's net pension liability as of December 31, 2014	\$366,724,246	\$301,668,452	\$246,758,663

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 5

Schedule of Pension Amounts by Employer as of December 31, 2014

Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources					Pension Expense			
	Net Pension Liability	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Proportionate Share of Contributions	Total Employer Pension Expense
City of Newton	\$298,730,998	\$1,861,988	\$335,412	\$20,552,689	\$ -	\$22,750,089	\$ -	\$ -	\$ -	\$ -	\$ -	\$27,672,819	\$ -	\$27,672,819
Newton Housing Authority	<u>2,937,454</u>	<u>18,309</u>	<u>3,298</u>	<u>202,097</u>	--	<u>223,704</u>	--	--	--	--	--	<u>272,110</u>	--	<u>272,110</u>
Grand Totals:	\$301,668,452	\$1,880,297	\$338,710	\$20,754,786	\$ -	\$22,973,793	\$ -	\$ -	\$ -	\$ -	\$ -	\$27,944,929	\$ -	\$27,944,929

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 6

Schedule of Contributions – Last Ten Years – Department Breakdown

	Year End December 31,									
	2014*	2013	2012	2011	2010	2009	2008	2007	2006	2005
City of Newton										
Actuarially determined contribution	\$19,778,376									
Contributions in relation to the actuarially determined contribution	19,846,449									
Contribution deficiency (excess)	(68,073)									
Covered-employee payroll	\$85,643,310									
Contributions as a percentage of covered-employee payroll	23.17%									(Historical information prior to implementation of GASB 67/68 is not required)
Newton Housing Authority										
Actuarially determined contribution	\$194,483									
Contributions in relation to the actuarially determined contribution	194,483									
Contribution deficiency (excess)	0									
Covered-employee payroll	\$1,164,239									
Contributions as a percentage of covered-employee payroll	16.70%									(Historical information prior to implementation of GASB 67/68 is not required)
Grand Total										
Actuarially determined contribution	\$19,972,859									
Contributions in relation to the actuarially determined contribution	20,040,932									
Contribution deficiency (excess)	(68,073)									
Covered-employee payroll	\$86,807,549									
Contributions as a percentage of covered-employee payroll	23.09%									(Historical information prior to implementation of GASB 67/68 is not required)

* Based on the results of the January 1, 2013 actuarial valuation (including assumptions and methods) which determined budgeted appropriation for fiscal 2015.

Note: Contributions exclude appropriation for expenses.

SECTION 5: GASB Information for the Newton Contributory Retirement System

EXHIBIT 7

Notes to Required Supplementary Information

Valuation date	Actuarial determined contributions are calculated as of January 1 two years prior to the end of the employer's fiscal year in which contributions are reported.
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Total payments increase at 8.75% per year
Remaining amortization period	14 years from July 1, 2015
Asset valuation method	Sum of actuarial value at beginning of the year, contributions and investment earnings based on the actuarial interest assumption less benefit payments plus 25% of the market value at the end of the year in excess of that sum, plus additional adjustment toward market value as necessary so that final actuarial value is within 20% of market value.

Actuarial assumptions:

Investment rate of return	7.35% (previously, 7.65%)
Discount rate	7.35% (previously, 7.65%)
Inflation rate	2.5% for 2015 and later years
Projected salary increases	3.5% for 2015 and later years.
Cost of living adjustments	3% of first \$12,000

Plan membership:

Retired participants and beneficiaries receiving benefits	1,317
Inactive participants entitled to a return of their employee contributions	573
Inactive participants with a vested right to a deferred or immediate benefit	31
Active participants	<u>1,723</u>
Total	3,644

SECTION 5: GASB Information for the Newton Contributory Retirement System

Changes in Assumptions:

Effective January 1, 2014:

- The investment return assumption was decreased from 7.75% to 7.65%.
- The pre-retirement mortality assumption was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Employee Mortality Table projected generationally using Scale AA.
- The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Mortality Table projected 23 years with Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally using Scale AA.
- The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward three years to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally using Scale AA.
- The assumed percentage of deaths that are accidental was increased from 20% for all participants to 70% for Groups 1 and 2 and 90% for Group 4.
- The assumed percentage of disabilities that are accidental was increased from 60% to 70% for Groups 1 and 2.
- In the prior valuation, loads of 2% and 11.7% were added to the accidental disability liability for Group 1 and Group 4, respectively, to account for benefits payable to dependent children upon the member's disability. For this valuation, participants are assumed to have no dependent children.
- The percentage of accidental disability retirees who are assumed to die from the same cause as their disability is 20% for Group 1 and 2 employees and 60% for Group 4 employees.
- The liability for inactive vested participants is the greater of the employee's annuity savings fund or the present value of a deferred annuity.

Effective January 1, 2015

- The investment return assumption was decreased from 7.65% to 7.35%.
- The pre-retirement mortality assumption was changed from the RP-2000 Employee Mortality Table projected generationally from 2000 using Scale AA to the RP-2000 Employee Mortality Table projected generationally from 2005 using Scale BB.
- The post-retirement mortality assumption for non-disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table projected generationally from 2000 using Scale AA to the RP-2000 Healthy Annuitant Mortality Table projected generationally from 2005 using Scale BB.
- The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2000 using Scale AA to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected generationally from 2005 using Scale BB.

Changes in Plan Provisions:

None