

Belmont Contributory Retirement System

Actuarial Valuation and Review as of
January 1, 2014



✦ Segal Consulting



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December 8, 2014

*Belmont Contributory Retirement System
455 Concord Avenue
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Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2014. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2015 and later years and analyzes the preceding two years' 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 Belmont 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.

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

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SECTION 1: Valuation Summary for the Belmont Contributory Retirement System

Purpose

This report has been prepared by Segal Consulting to present a valuation of the Belmont Contributory Retirement System as of January 1, 2014. 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 M.G.L. Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2014;
- The assets of the Plan as of December 31, 2013;
- 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, 2014 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected.
2. The actuarial value of assets as of December 31, 2013 was \$77.2 million, or 93.8% of the market value of assets of \$82.3 million (as reported in the Annual Statement). As of December 31, 2011, the actuarial value of assets was 103.6% of market value. During the plan years ended December 31, 2012 and December 31, 2013, the market value rates of return were 11.91% and 15.81%, respectively. Because the actuarial value of assets gradually recognizes market value fluctuations, the actuarial rates of return for the plan years ended December 31, 2012 and December 31, 2013 were 4.49% and 12.35%, respectively.
3. The total unrecognized investment gain as of December 31, 2013 was \$5,092,663. 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 (net of expenses) on a market value basis will result in investment gains on the actuarial value of assets in the next few years. The unrecognized investment gains are not reflected in the attached funding schedules.

SECTION 1: Valuation Summary for the Belmont Contributory Retirement System

4. The following actuarial assumptions were changed with this valuation:
 - The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward two years to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected 19 years with Scale AA.
 - The liability for vested members in inactive status was changed from the employee's annuity savings fund to the greater of the employee's annuity savings fund or the present value of a deferred annuity.
 - The percentage of accidental disability retirees that are assumed to die from the same cause of the disability was changed from 0% for all participants to 20% for Groups 1 and 2 and 60% for Group 4.
 - The percentage of disabilities assumed to be accidental was changed from 60% to 90% for Groups 1 and 2.
 - The percentage of deaths assumed to be accidental was changed from 20% for all participants to 55% for Groups 1 and 2 and 90% for Group 4.
 - The administrative expense assumption was increased from \$100,000 for 2012, increasing 3% annually, to \$175,000 for 2014, increasing 4% annually.
 - The assumed net 3(8)(c) disbursements were increased from \$75,000 to \$200,000, increasing 4% annually.

The changes in assumptions and methods increased the unfunded liability by \$2,204,450 and the normal cost by \$404,962.
5. Members hired on or after April 2, 2012 are covered by the provisions of Chapter 32 as amended by Chapter 176 of the Acts of 2011 and Chapter 139 of the Acts of 2012.
6. The unfunded liability has increased from \$67.4 million as of January 1, 2012 to \$73.7 million as of January 1, 2014. The unfunded liability was expected to decrease to \$66.0 million. The increase of \$7.7 million from the expected unfunded liability is primarily due to the assumption changes described above, data changes and other miscellaneous experience, including salaries increasing more than expected, net 3(8)(c) reimbursements and administrative expenses greater than expected, partially offset by an investment gain on an actuarial basis.

SECTION 1: Valuation Summary for the Belmont Contributory Retirement System

7. Because the fiscal 2015 appropriation has already been budgeted at \$7,364,523, the results of this valuation will first be reflected in the fiscal 2016 appropriation. The funding schedule in Chart 14 fully funds the System by June 30, 2027 with appropriation payments increasing 6.97% per year. This will result in a total fiscal 2016 appropriation of \$7,877,958 and a total fiscal 2017 appropriation of \$8,427,189. These amounts reflect payment of the appropriation in two equal amounts on July 1 and December 31. If the appropriation is made in one payment on July 1, the amount will be lower.
8. On a market value basis, the funded ratio has increased from 48.17% as of January 1, 2012 to 54.54% as of January 1, 2014. On an actuarial basis, the funded ratio has increased from 49.91% as of January 1, 2012 to 51.16% as of January 1, 2014.
9. Section 4 includes the disclosure information required by Governmental Accounting Standards Board (GASB) Statements No. 25 and 27. Section 5 shows the format of the disclosure information required by GASB Statements No. 67 and 68. The exhibits in Section 5 will be completed at the end of the year when December 31, 2014 financial information is available. At that time, the liabilities will be projected to the end of the year and the allocations to each employer will be determined.

SECTION 1: Valuation Summary for the Belmont Contributory Retirement System

Summary of Key Valuation Results

	2014	2012
Contributions for fiscal year beginning July 1:		
Recommended for fiscal 2015 and 2013	\$7,364,523	\$6,466,198
Recommended for fiscal 2016 and 2014	7,877,958	6,899,433
Recommended for fiscal 2017 and 2015	8,427,189	7,364,523
Funding elements for plan year beginning January 1:		
Normal cost, including administrative expenses and net 3(8)c reimbursements	\$3,665,948	\$3,194,016
Market value of assets, as reported on the Annual Statement	82,305,953	64,804,450
Actuarial value of assets	77,213,290	67,144,549
Actuarial accrued liability	150,911,920	134,522,071
Unfunded actuarial accrued liability	73,698,630	67,377,522
Funded ratio based on market value of assets	54.54%	48.17%
Funded ratio based on actuarial value of assets	51.16%	49.91%
Demographic data for plan year beginning January 1:		
Number of retired participants and beneficiaries	346	341
Number of inactive participants entitled to a return of their employee contributions	155	141
Number of inactive participants with a vested right to a deferred or immediate benefit	9	- *
Number of active participants	458	432
Total payroll	\$24,186,238	\$20,823,251
Average payroll	52,808	48,202

Note: 2012 results are based on the January 1, 2012 valuation report prepared by Buck Consultants, LLC.

** Included with inactive participants entitled to a return of their employee contributions.*

SECTION 2: Valuation Results for the Belmont 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 three valuations can be seen in this chart.

CHART 1

Participant Population: 2009 – 2013

Year Ended December 31	Active Participants	Inactive Participants	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
2009	425	142	343	1.14
2011	432	141	341	1.12
2013	458	164	346	1.11

SECTION 2: Valuation Results for the Belmont 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 458 active participants with an average age of 46.1, average years of service of 11.6 years and average payroll of \$52,808. The 432 active participants in the prior valuation had an average age of 46.7, average service of 10.3 years and average payroll of \$48,202.

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

Inactive Participants

In this year's valuation, there were 9 participants with a vested right to a deferred or immediate vested benefit and 155 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, 2013

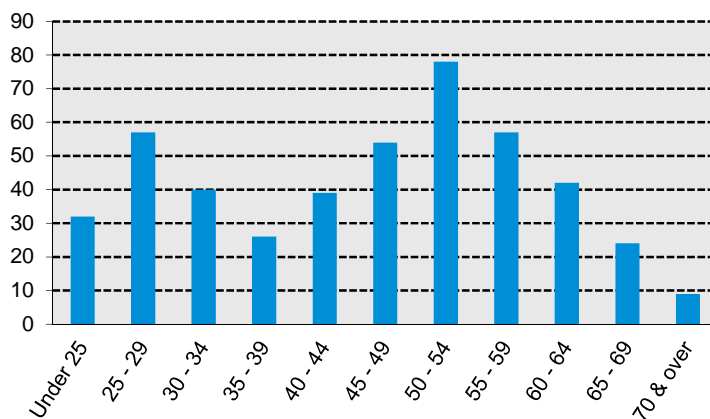
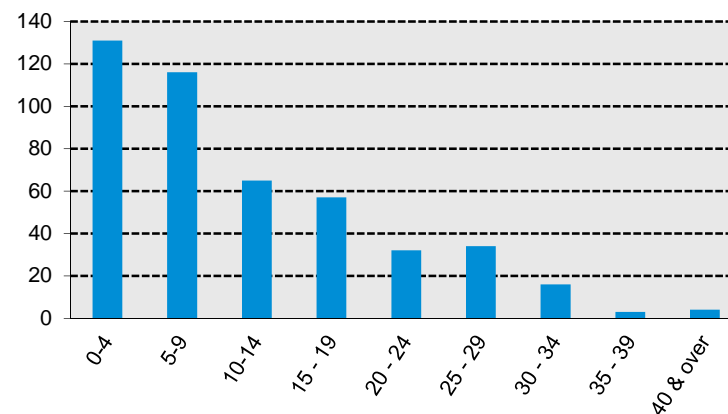


CHART 3

Distribution of Active Participants by Years of Service as of December 31, 2013



SECTION 2: Valuation Results for the Belmont Contributory Retirement System

Retired Participants and Beneficiaries

As of December 31, 2013, 299 retired participants and 47 beneficiaries were receiving total monthly benefits of \$779,173, excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 294 retired participants and 47 beneficiaries receiving monthly benefits of \$758,762, 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.

CHART 4

Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2013

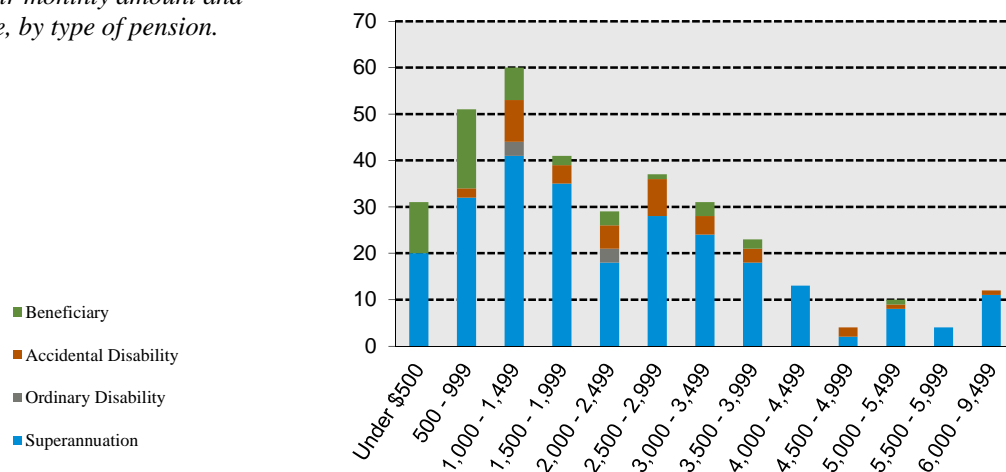
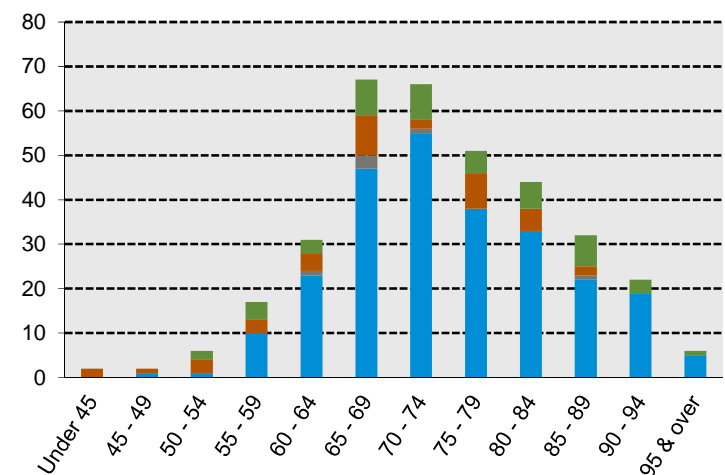


CHART 5

Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2013



SECTION 2: Valuation Results for the Belmont Contributory Retirement System

B. FINANCIAL INFORMATION

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

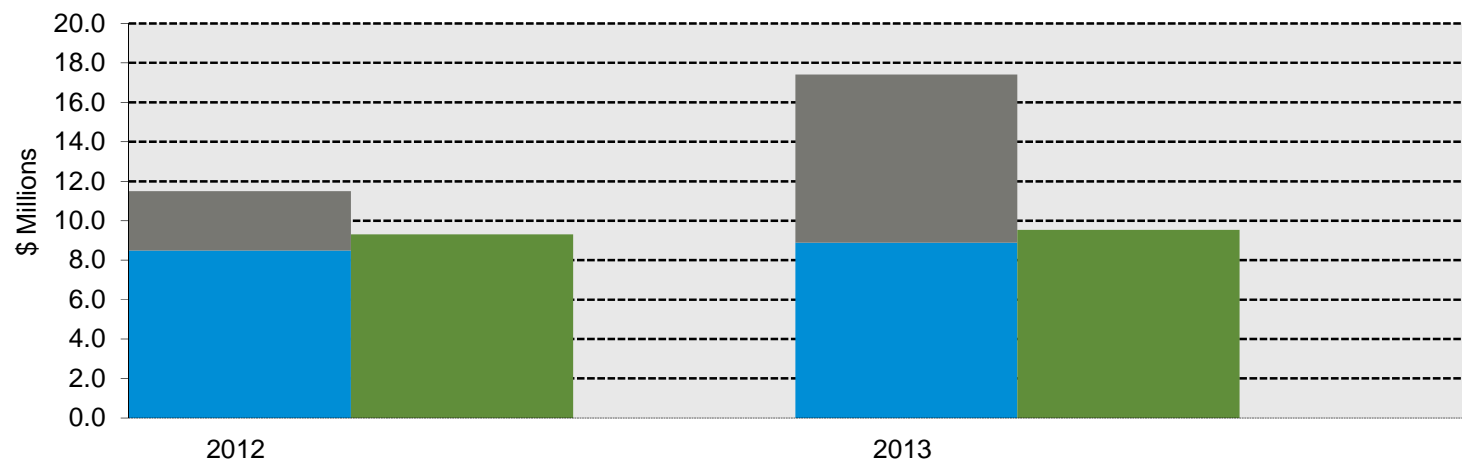
Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

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

- Benefits paid
- Net investment income
- Net contributions

CHART 6

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 2012 – 2013



SECTION 2: Valuation Results for the Belmont 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

	Year Ended	
	December 31, 2013	December 31, 2012
1. Market value of assets at the end of the year	\$82,305,953	\$71,659,922
2. Calculation of unrecognized return*	Original <u>Amount</u>	Unrecognized <u>Return</u>
(a) Year ended December 31, 2013	\$5,751,229	N/A
(b) Year ended December 31, 2012	2,679,853	\$2,143,882
(c) Year ended December 31, 2011	-4,123,559	-2,474,136
(d) Year ended December 31, 2010	2,665,959	1,066,384
(e) Year ended December 31, 2009	7,994,349	<u>1,598,870</u>
(f) Total unrecognized return	5,092,663	2,335,000
3. Preliminary actuarial value: (1) - (2f)	77,213,290	69,324,922
4. Adjustment to be within 20% corridor	0	0
5. Final actuarial value of assets at the end of the year: (3) + (4)	<u>\$77,213,290</u>	<u>\$69,324,922</u>
6. Actuarial value as a percentage of market value: (5) ÷ (1)	93.8%	96.7%
7. Amount deferred for future recognition: (1) - (5)	5,092,663	\$2,335,000

*Unrecognized return is the difference between the total return and the expected return on a market value basis and is recognized over a five-year period.

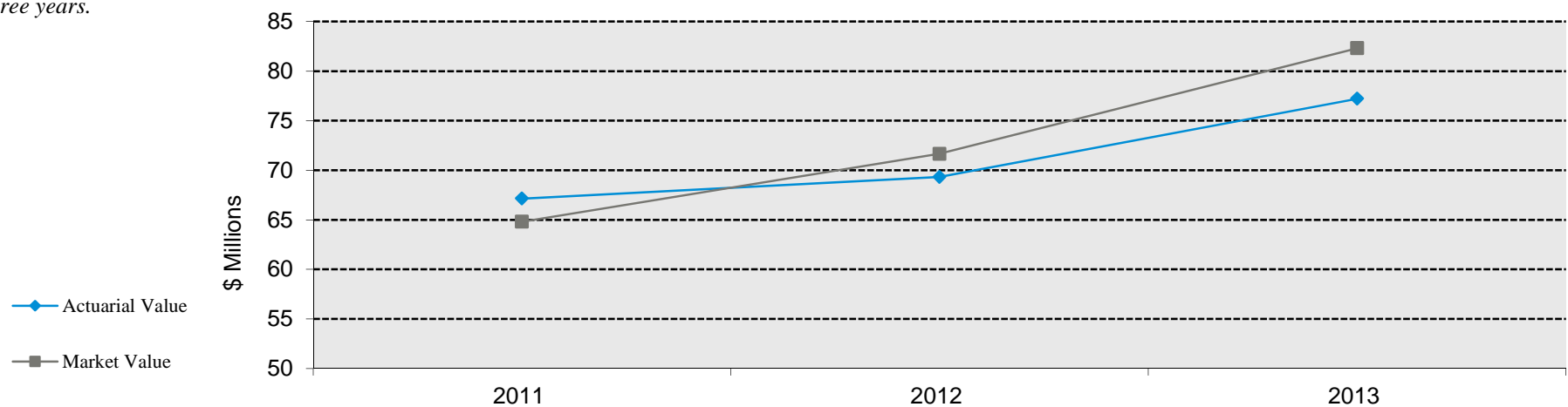
SECTION 2: Valuation Results for the Belmont Contributory Retirement System

Both the actuarial value and market value of assets are representations of the Belmont 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 Belmont 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 three years.

CHART 8

Actuarial Value of Assets vs. Market Value of Assets as of December 31, 2011 – 2013



SECTION 2: Valuation Results for the Belmont 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 total loss for the two-year period ending December 31, 2013 is \$5,471,521 as shown in Chart 9. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience over the past two years.

CHART 9

Actuarial Experience for Two-Year Period Ended December 31, 2013

1. Net gain from investments*	\$829,238
2. Net loss from net 3(8)(c) reimbursements out of System and administrative expenses	-468,428
3. Net loss from other experience	<u>-5,832,331</u>
4. Net experience loss: (1) + (2) + (3)	<u>-\$5,471,521</u>

* Details in Chart 10

SECTION 2: Valuation Results for the Belmont 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 Belmont Contributory Retirement System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.75% for 2013 and 2012. The actual rate of return on an actuarial basis for the 2013 and 2012 plan years were 12.35% and 4.49%, respectively.

Since the actual return for the two-year period was greater than the assumed return, the Belmont Contributory Retirement System experienced an actuarial gain of \$829,238 (including an adjustment for interest) during the two-year period ending December 31, 2013 with regard to its investments.

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

CHART 10 Actuarial Value Investment Experience

	Year Ended	
	December 31, 2013	December 31, 2012
1. Actual return	\$8,522,632	\$2,995,512
2. Average value of assets	69,007,790	66,736,980
3. Actual rate of return: (1) ÷ (2)	12.35%	4.49%
4. Assumed rate of return	7.75%	7.75%
5. Expected return: (2) x (4)	\$5,348,104	\$5,172,116
6. Actuarial gain/(loss): (1) – (5)	<u>\$3,174,528</u>	<u>-\$2,176,604</u>

SECTION 2: Valuation Results for the Belmont 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 two years.

We have maintained the assumed rate of return of 7.75%.

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.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 2012 - 2013

Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
2012	\$2,995,512	4.49%	\$7,670,611	11.91%
2013	<u>8,522,632</u>	12.35	<u>11,280,295</u>	15.81
Total	\$11,518,144		\$18,950,906	

SECTION 2: Valuation Results for the Belmont Contributory Retirement System

Administrative Expenses

Administrative expenses for the years ended December 31, 2012 and 2013 were \$177,678 and \$179,468, respectively, compared to the assumption of \$100,000 for calendar year 2012 and \$103,000 for calendar year 2013. This resulted in a loss of \$166,092 over the two-year period, including an adjustment for interest. We have increased the administrative expense assumption to \$175,000 for calendar year 2014.

Net 3(8)(c) Reimbursements

Net 3(8)(c) reimbursements for the years ended December 31, 2012 and 2013 were \$217,040 and \$235,296, respectively, compared with the assumption of \$75,000 for calendar years 2012 and 2013. This resulted in a loss of \$325,767 over the two-year period, including an adjustment for interest. We have increased the net 3(8)(c) reimbursement assumption to \$200,000 for calendar year 2014.

SECTION 2: Valuation Results for the Belmont 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 two-year period ending December 31, 2013 amounted to \$5,832,331 which is 3.9% of the actuarial accrued liability. This loss is primarily due to data changes and other miscellaneous experience, including salaries increasing more than expected.

This valuation reflects the following changes in actuarial assumptions:

- The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward two years to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected 19 years with Scale AA.
- The liability for vested members in inactive status was changed from the employee's annuity savings fund to the greater of the employee's annuity savings fund or the present value of a deferred annuity.

- The percentage of accidental disability retirees that are assumed to die from the same cause of the disability was changed from 0% for all participants to 20% for Groups 1 and 2 and 60% for Group 4.
- The percentage of disabilities assumed to be accidental was changed from 60% to 90% for Groups 1 and 2.
- The percentage of deaths assumed to be accidental was changed from 20% for all participants to 55% for Groups 1 and 2 and 90% for Group 4.
- The administrative expense assumption was increased from \$100,000 for 2012, increasing 3% annually, to \$175,000 for 2014, increasing 4% annually.
- The assumed net 3(8)(c) disbursements were increased from \$75,000 to \$200,000, increasing 4% annually.

The changes in assumptions and methods increased the unfunded liability by \$2,204,450 and the normal cost by \$404,962.

The following plan change is included in this valuation:

- Members hired on or after April 2, 2012 are covered by the provisions of Chapter 32 as amended by Chapter 176 of the Acts of 2011 and Chapter 139 of the Acts of 2012.

SECTION 2: Valuation Results for the Belmont Contributory Retirement System

The unfunded liability was expected to decrease from \$67.4 million as of January 1, 2012 to \$66.0 million as of January 1, 2014. The actuarial unfunded liability as of January 1, 2014 of \$73.7 million is \$7.7 million higher than expected as detailed in Chart 12 below.

CHART 12

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

	Year Ended	
	December 31, 2013	December 31, 2012
1. Unfunded actuarial accrued liability at beginning of year	\$66,855,559	\$67,377,522
2. Normal cost at beginning of year	3,154,872	3,019,016
3. Total contributions	-9,073,384	-8,671,979
4. Interest		
(a) For whole year on (1) + (2)	\$5,425,808	\$5,455,732
(b) For half year on (3)	<u>-340,196</u>	<u>-324,732</u>
(c) Total interest	<u>5,085,612</u>	<u>5,131,000</u>
5. Expected unfunded actuarial accrued liability	\$66,022,659	\$66,855,559
6. Changes due to:		
(a) Experience loss	\$5,471,521	--
(b) Assumption changes	<u>2,204,450</u>	--
(c) Total changes	<u>7,675,971</u>	--
7. Unfunded actuarial accrued liability at end of year	<u>\$73,698,630</u>	--

SECTION 2: Valuation Results for the Belmont 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 recommended contribution for fiscal 2015 is set to the previously budgeted amount of \$7,364,523. The results of this valuation will first be reflected in the fiscal 2016 appropriation. The funding schedule in Chart 14 fully funds the System by fiscal 2027, the same as the prior funding schedule. The appropriation is calculated to

increase 6.97% per year through fiscal 2027. This will result in a total fiscal 2016 appropriation of \$7,877,958 and a total fiscal 2017 appropriation of \$8,427,189. These amounts reflect payment of the appropriation in two equal amounts on July 1 and December 31. If the appropriation is made in one payment on July 1, the amount will be lower.

CHART 13

Recommended Contribution

	Year Beginning January 1			
	2014		2012	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$3,290,948	13.09%	\$3,019,106	14.50%
2. Administrative expenses and allowance for net 3(8)(c) payments	375,000	1.49%	175,000	0.84%
3. Expected employee contributions	<u>-2,417,389</u>	<u>-9.61%</u>	<u>-1,805,339</u>	<u>-8.67%</u>
4. Employer normal cost: (1) + (2) + (3)	\$1,248,559	4.97%	\$1,388,677	6.67%
5. Actuarial accrued liability	150,911,920		134,522,071	
6. Actuarial value of assets	<u>77,213,290</u>		<u>67,144,549</u>	
7. Unfunded actuarial accrued liability: (5) - (6)	\$73,698,630		\$67,377,522	
8. Employer normal cost projected to July 1, 2014 and 2012, respectively, adjusted for timing	1,297,269	5.06%	1,253,480	5.90%
9. Projected unfunded actuarial accrued liability	76,501,166		69,939,686	
10. Payment on projected unfunded actuarial accrued liability, adjusted for timing	6,067,254	23.66%	5,212,718	24.55%
11. Total recommended contribution: (8) + (10)	<u>\$7,364,523</u>	<u>28.72%</u>	<u>\$6,466,198</u>	<u>30.45%</u>
12. Projected payroll	\$25,640,813		\$21,235,633	

Notes: Recommended contributions are assumed to be paid in two equal installments on July 1 and December 31.

Projected employer normal cost as of July 1, 2012 is based on 2010 valuation.

SECTION 2: Valuation Results for the Belmont Contributory Retirement System

Chart 14

Funding Schedule – Uniform increases in the appropriation through 2027

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of 2002 ERI Liability	(4) Amortization of 2003 ERI Liability	(5) Amortization of Remaining Unfunded Liability	(6) Total Plan Cost: (2) + (3) + (4) + (5)	(7) Total Unfunded Actuarial Accrued Liability at Beginning of Fiscal Year	(8) Percent Increase in Total Cost
2015	\$1,297,269	\$23,098	\$70,989	\$5,973,167	\$7,364,523	\$76,501,166	--
2016	1,349,160	23,098	74,183	6,431,517	7,877,958	76,013,403	6.97%
2017	1,403,126	23,098	77,522	6,923,443	8,427,189	74,999,719	6.97%
2018	1,459,251	23,098	81,011	7,451,351	9,014,711	73,383,694	6.97%
2019	1,517,621	--	84,656	8,040,916	9,643,193	71,080,433	6.97%
2020	1,578,326	--	88,466	8,648,699	10,315,491	67,995,730	6.97%
2021	1,641,459	--	92,446	9,300,755	11,034,660	64,025,154	6.97%
2022	1,707,118	--	96,607	10,000,243	11,803,968	59,053,048	6.97%
2023	1,775,402	--	100,954	10,750,554	12,626,910	52,951,438	6.97%
2024	1,846,418	--	105,497	11,555,310	13,507,225	45,578,845	6.97%
2025	1,920,275	--	110,244	12,418,395	14,448,914	36,778,977	6.97%
2026	1,997,086	--	--	13,459,168	15,456,254	26,379,319	6.97%
2027	2,076,970	--	--	14,456,854	16,533,824	14,189,578	6.97%
2028	2,160,048	--	--	--	2,160,048	--	-86.94%

Notes: Recommended contributions are assumed to be paid in two equal installments on July 1 and December 31.

Item (2) increases at 4.00% and Item (4) increases at 4.50%.

Assumes contribution of budgeted amount for fiscal year 2015.

SECTION 3: Supplemental Information for the Belmont Contributory Retirement System

EXHIBIT A

Table of Plan Coverage

Category	Year Ended December 31		Change From Prior Year
	2013	2011	
Number	458	432	6.0%
Average age	46.1	46.7	N/A
Average years of service	11.6	10.3	N/A
Total payroll	\$24,186,238	\$20,823,251	16.2%
Average payroll	52,808	48,202	9.6%
Member contributions	22,005,538	19,282,753	14.1%
Inactive participants entitled to a return of their employee contributions	155	141	N/A
Inactive participants with a vested right to a deferred or immediate benefit	9	- -*	N/A
Retired participants:			
Number in pay status	254	249	2.0%
Average age	74.7	N/A	N/A
Average monthly benefit	\$2,400	\$2,336	2.7%
Disabled participants:			
Number in pay status	45	45	0.0%
Average age	68.3	N/A	N/A
Average monthly benefit	\$2,428	\$2,421	0.3%
Beneficiaries in pay status:			
Number in pay status	47	47	0.0%
Average age	74.2	N/A	N/A
Average monthly benefit	\$1,283	\$1,449	-11.5%

* Included with inactive participants entitled to a return of their employee contributions.

Note: Year end 2011 results are based on the January 1, 2012 valuation report prepared by Buck Consultants, LLC.

SECTION 3: Supplemental Information for the Belmont Contributory Retirement System

EXHIBIT B

Participants in Active Service as of December 31, 2013 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	32	32	--	--	--	--	--	--	--	--
	\$27,505	\$27,505	--	--	--	--	--	--	--	--
25 - 29	57	43	13	1	--	--	--	--	--	--
	\$37,837	\$36,739	\$42,142	\$29,062	--	--	--	--	--	--
30 - 34	40	11	25	4	--	--	--	--	--	--
	\$56,426	\$40,384	\$61,883	\$66,438	--	--	--	--	--	--
35 - 39	26	6	12	6	2	--	--	--	--	--
	\$57,366	\$46,086	\$53,528	\$68,768	\$80,032	--	--	--	--	--
40 - 44	39	6	11	8	8	5	1	--	--	--
	\$59,608	\$44,893	\$54,925	\$58,744	\$75,816	\$57,972	\$84,854	--	--	--
45 - 49	54	11	9	8	15	6	5	--	--	--
	\$63,454	\$32,677	\$44,699	\$59,308	\$79,818	\$90,667	\$89,804	--	--	--
50 - 54	78	12	19	15	5	8	14	5	--	--
	\$61,234	\$45,150	\$46,796	\$51,244	\$51,258	\$86,277	\$78,908	\$105,092	--	--
55 - 59	57	5	13	9	11	5	8	4	2	--
	\$57,320	\$70,376	\$31,651	\$64,590	\$44,108	\$62,713	\$73,572	\$68,232	\$131,153	--
60 - 64	42	3	8	8	11	3	4	3	--	2
	\$51,021	\$29,090	\$37,861	\$47,926	\$47,499	\$37,983	\$66,166	\$105,987	--	\$75,124
65 - 69	24	2	6	4	3	3	1	3	1	1
	\$43,849	\$22,447	\$55,238	\$31,213	\$20,560	\$51,670	\$64,234	\$34,947	\$67,580	\$97,853
70 & over	9	--	--	2	2	2	1	1	--	1
	\$45,650	--	--	\$19,504	\$67,095	\$18,029	\$39,514	\$90,340	--	\$71,739
Total	458	131	116	65	57	32	34	16	3	4
	\$52,808	\$36,911	\$48,954	\$54,601	\$60,065	\$66,958	\$76,340	\$81,971	\$109,962	\$79,960

SECTION 3: Supplemental Information for the Belmont Contributory Retirement System

EXHIBIT C

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended December 31, 2013	Year Ended December 31, 2012
Net assets at actuarial value at the beginning of the year	\$69,324,922	\$67,144,549
Contribution income:		
Employer contributions	\$6,899,432	\$6,466,198
Employee contributions	2,173,952	2,205,781
Less administrative expenses	<u>-179,468</u>	<u>-177,678</u>
Net contribution income	8,893,916	8,494,301
Net investment income	<u>8,522,632</u>	<u>2,995,512</u>
Total income available for benefits	\$17,416,548	\$11,489,813
Less benefit payments:		
Pensions	-\$9,232,548	-\$8,976,309
Net 3(8)(c) reimbursements	-235,296	-217,040
Refunds, annuities, & Option B refunds	-60,336	-131,024
Workers Compensation Settlements	<u>0</u>	<u>14,933</u>
Net benefit payments	-\$9,528,180	-\$9,309,440
Change in reserve for future benefits	\$7,888,368	\$2,180,373
Net assets at actuarial value at the end of the year	\$77,213,290	\$69,324,922

SECTION 3: Supplemental Information for the Belmont Contributory Retirement System

EXHIBIT D

Development of the Fund Through December 31, 2013

Year Ended December 31	Employer Contributions	Employee Contributions	Other Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2011	\$6,183,034	\$2,042,979	\$734	N/A	\$170,279	\$9,407,715	\$67,144,549
2012	6,466,198	2,205,781	--	\$2,995,512	177,678	9,309,440	69,324,922
2013	6,899,432	2,173,952	--	8,522,632	179,468	9,528,180	77,213,290

** Net of investment fees*

SECTION 3: Supplemental Information for the Belmont Contributory Retirement System

EXHIBIT E

Table of Amortization Bases as of July 1, 2014

Type	Annual Payment	Years Remaining	Outstanding Balance as of July 1, 2014
2002 ERI	\$23,098	4.00	\$81,361
2003 ERI	70,989	11.00	660,711
Remaining unfunded liability	<u>5,973,167</u>	13.00	<u>75,759,094</u>
Total	\$6,067,254		\$76,501,166

Notes: Recommended contributions are assumed to be paid in two equal installments on July 1 and December 31.

The 2002 ERI liability is amortized in level payments.

The 2003 ERI payments increase 4.50% per year.

Payment on remaining unfunded liability reflects adjustment to set fiscal 2015 appropriation to budgeted amount.

SECTION 3: Supplemental Information for the Belmont Contributory Retirement System

EXHIBIT F

Department Results

	Town of Belmont	Housing Authority	Light Department	Water	School	Police and Fire	Total
Active members:							
Number	146	7	26	10	159	110	458
Total payroll	\$8,031,195	\$343,560	\$2,101,547	\$644,327	\$5,093,495	\$7,972,114	\$24,186,238
Average age	49.0	53.8	47.2	52.3	44.5	43.4	46.1
Average service	12.4	15.8	14.2	19.2	7.9	14.4	11.6
Average annual payroll	\$55,008	\$49,080	\$80,829	\$64,433	\$32,035	\$72,474	\$52,808
Accumulated contributions	7,379,134	402,494	1,862,829	799,549	3,402,900	8,158,632	22,005,538
Pensioners and beneficiaries:							
Number	100	4	27	15	69	131	346
Annual benefit payments	\$2,262,081	\$80,673	\$757,630	\$462,334	\$999,786	\$4,940,309	\$9,502,813
State funded COLA	35,604	0	10,620	11,940	21,403	73,178	152,745
Net payments (funded by Town)	2,226,477	80,673	747,010	450,394	978,383	4,867,131	9,350,068
Average benefit	22,265	20,168	27,667	30,026	14,179	37,154	27,023
Inactive members:							
Number	20	0	4	1	136	3	164
Accumulated contributions	\$369,306	\$0	\$171,315	\$16,213	\$429,024	\$141,670	\$1,127,528
Appropriations by department:							
Total 2015 appropriation	\$2,443,208	\$142,253	\$653,599	\$213,568	\$1,441,090	\$2,470,805	\$7,364,523
Payroll allocation of 2016 appropriation excluding ERI payments	2,583,623	110,523	676,065	207,279	1,638,570	2,564,617	7,780,677
ERI payments	<u>70,501</u>	<u>26,780</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>97,281</u>
Total 2016 appropriation	\$2,654,124	\$137,303	\$676,065	\$207,279	\$1,638,570	\$2,564,617	\$7,877,958
Payroll allocation of 2017 appropriation excluding ERI payments	\$2,764,890	\$118,277	\$723,497	\$221,822	\$1,753,532	\$2,744,551	\$8,326,569
ERI payments	<u>73,675</u>	<u>26,945</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>100,620</u>
Total 2017 appropriation	\$2,838,565	\$145,222	\$723,497	\$221,822	\$1,753,532	\$2,744,551	\$8,427,189

Note: Fiscal 2015 appropriations are equal to the previously budgeted amounts as detailed in the January 1, 2012 valuation.

SECTION 3: Supplemental Information for the Belmont Contributory Retirement System

EXHIBIT G

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 value of all projected benefit payments for current members less the portion that will be paid by future normal costs.

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 Belmont 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 Belmont 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 47 beneficiaries in pay status)	346
2. Participants active during the year ended December 31, 2013 with total accumulated contributions of \$22,005,538 and projected 2014 payroll of \$25,142,886	458
3. Inactive participants with a right to a return of their contributions	155
4. Inactive participants with a vested right to a deferred or immediate benefit as of December 31, 2013	9

The actuarial factors as of January 1, 2014 are as follows:

1. Total normal cost	\$3,290,948
2. Administrative expenses and allowance for net 3(8)(c) reimbursements	375,000
3. Expected employee contributions	<u>-2,417,389</u>
4. Employer normal cost: (1) + (2) + (3)	\$1,248,559
5. Actuarial accrued liability	150,911,920
Retired participants and beneficiaries	\$84,186,110
Active participants	65,169,037
Inactive participants	1,556,773
6. Actuarial value of assets (\$82,305,953 at market value as reported in the Annual Statement)	77,213,290
7. Unfunded actuarial accrued liability: (5) – (6)	73,698,630

The actuarial factors projected to July 1, 2014 are as follows:

1. Employer normal cost projected to July 1, 2014, adjusted for timing	\$1,297,269
2. Projected unfunded actuarial accrued liability	76,501,166
3. Payment on projected unfunded actuarial accrued liability, adjusted for timing	6,067,254
4. Recommended contribution: (1) + (3)	<u>\$7,364,523</u>
5. Projected payroll	\$25,640,813

Note: Recommended contributions are assumed to be paid in two equal installments on July 1 and December 31.

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

EXHIBIT II

Supplemental Information Required By GASB - History of Employer Contributions

Plan Year Ended December 31	Annual Required Contribution (ARC)	Actual Contributions	Percentage Contributed
2011	\$6,183,034	\$6,183,034	100.0%
2012	6,466,198	6,466,198	100.0%
2013	6,899,432	6,899,432	100.0%

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

EXHIBIT III

Supplemental Information Required by GASB - Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
01/01/2002	\$52,838,407	\$87,176,074	\$34,337,667	60.61%	- -*	- -*
01/01/2004	53,364,538	94,947,822	41,583,284	56.20%	- -*	- -*
01/01/2006	53,736,253	101,659,952	47,923,699	52.86%	- -*	- -*
01/01/2008	61,969,418	112,124,213	50,154,795	55.27%	- -*	- -*
01/01/2010	63,499,612	123,684,550	60,184,938	51.34%	\$19,351,253	311.01%
01/01/2012	67,144,549	134,522,071	67,377,522	49.91%	20,823,251	323.57%
01/01/2014	77,213,290	150,911,920	73,698,630	51.16%	25,142,886	293.12%

* Information not available.

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

EXHIBIT IV

Supplementary Information Required by the GASB

Valuation date	January 1, 2014
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level payments on the 2002 ERI liability, payments increasing 4.5% per year for the 2003 ERI liability, and remaining liability amortized so that total payment increases 6.97% annually.
Remaining amortization period	4 years from July 1, 2014 for the 2002 ERI liability, 11 years from July 1, 2014 for the 2003 ERI liability and 13 years from July 1, 2014 for the remaining unfunded liability.
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual and expected return on a market value basis, and is recognized over a five-year period at 20% per year, further adjusted, if necessary, to be within 20% of the market value.
Actuarial assumptions:	
Investment rate of return	7.75%
Inflation rate	4.00%
Projected salary increases	Varies by length of service with ultimate rates of 3.75% for Groups 1 and 2 and 4.25% for Group 4
Cost of living adjustments	3.00% of first \$12,000 of retirement income
Plan membership:	
Retired participants and beneficiaries receiving benefits	346
Inactive participants entitled to a return of their employee contributions	155
Inactive participants with a vested right to a deferred or immediate benefit	9
Active participants	<u>458</u>
Total	968

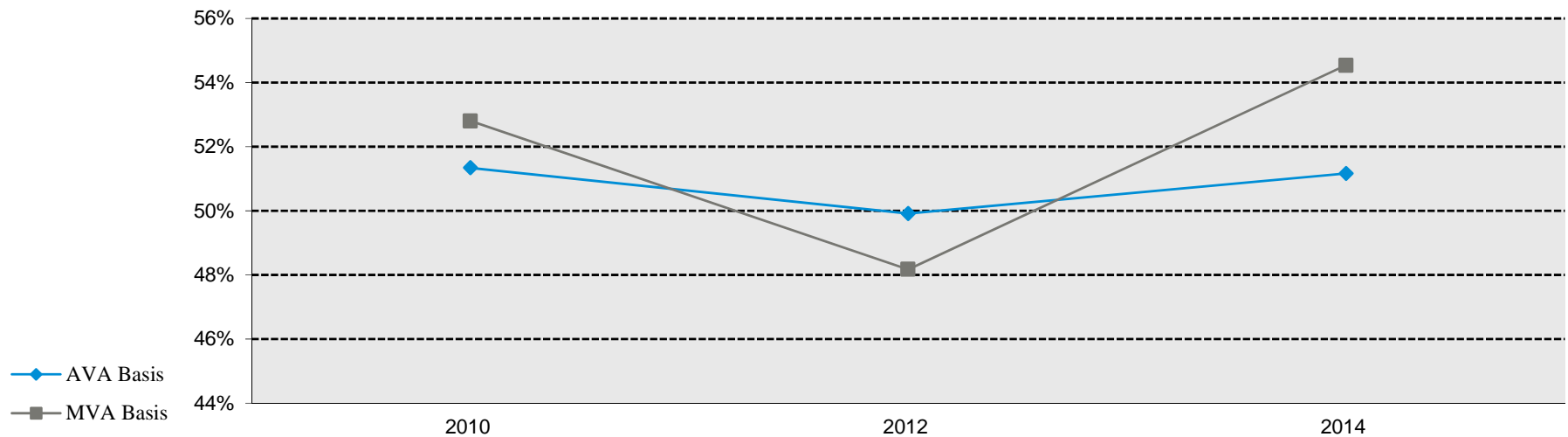
SECTION 4: Reporting Information for the Belmont Contributory Retirement System

EXHIBIT V

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.

The chart below depicts a history of the funded ratios for this plan. On a market value basis, the funded ratio has increased from 48.17% as of January 1, 2012 to 54.54% as of January 1, 2014. On an actuarial basis, the funded ratio has increased from 49.91% as of January 1, 2012 to 51.16% as of January 1, 2014.



SECTION 4: Reporting Information for the Belmont Contributory Retirement System

EXHIBIT VI

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

<i>Pre-Retirement:</i>	RP-2000 Employee Mortality Table projected 27 years with Scale AA
<i>Healthy Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected 19 years with Scale AA
<i>Disabled Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table set forward 3 years projected 19 years with Scale AA (Previously, set forward 2 years and no projection)
	The RP-2000 Combined Healthy Mortality Table projected 19 years with Scale AA was determined to contain provisions appropriate to reasonably reflect future mortality improvement.

Termination Rates before Retirement:

Groups 1 and 2 - Rate (%)

Age	Mortality		Disability
	Male	Female	
20	0.02	0.01	0.01
25	0.03	0.01	0.02
30	0.04	0.02	0.03
35	0.07	0.04	0.06
40	0.09	0.05	0.10
45	0.11	0.07	0.15
50	0.13	0.11	0.19
55	0.18	0.20	0.24
60	0.32	0.34	0.28

Notes: 90% of the disability rates shown represent accidental disability. (Previously, 60%)
20% of the accidental disabilities will die from the same cause as the disability. (Previously, 0%)
55% of the death rates shown represent accidental death. (Previously, 20%)

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

Termination Rates before Retirement (continued):

d):

Age	Group 4 – Rate (%)		Disability
	Mortality		
	Male	Female	
20	0.02	0.01	0.10
25	0.03	0.01	0.20
30	0.04	0.02	0.30
35	0.07	0.04	0.30
40	0.09	0.05	0.30
45	0.11	0.07	1.00
50	0.13	0.11	1.25
55	0.18	0.20	1.20
60	0.32	0.34	0.85

Notes: 90% of the disability rates shown represent accidental disability.

60% of the accidental disabilities will die from the same cause as the disability. (Previously, 0%)

90% of the death rates shown represent accidental death. (Previously, 20%)

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

Withdrawal Rates:

Years of Service	Rate per year (%)		Years of Service	Group 4
	Groups 1 and 2			
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			

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

Retirement Rates:

Age	Rate per year (%)		
	Groups 1 and 2		Group 4
	Male	Female	
45 – 49	0.0	0.0	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	--

Retirement Age for Inactive Vested Participants:

Age 60 for Group 1 and Group 2 members and age 55 for Group 4 members hired prior to April 2, 2012. For members hired April 2, 2012 or later, age 60 for Group 1 members, age 55 for Group 2 members and age 50 for Group 4 members. (Previously, all inactive participants were assumed to take a refund of their annuity savings fund at termination.)

Unknown Data for Participants:

Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

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.

Net Investment Return: 7.75%

Interest on Employee Contributions: 3.5%

Salary Increases:

Years of Service	Group 1	Group 2	Group 4
0	6.00%	6.00%	7.00%
1	5.50%	5.50%	6.50%
2	5.50%	5.50%	6.00%
3	5.00%	5.00%	5.50%
4	5.00%	5.00%	5.00%
5	4.50%	4.50%	5.00%
6	4.50%	4.50%	4.50%
7	4.00%	4.00%	4.50%
8	4.00%	4.00%	4.25%
9+	3.75%	3.75%	4.25%

Note: Total payroll is projected to increase at 4% per year.

Administrative Expenses: \$175,000 for calendar year 2014, increasing 4.0% per year (Previously, \$100,000 for calendar year 2012, increasing 3.0% per year)

Allowance for Net 3(8)(c) Payments: \$200,000 for calendar year 2014, increasing 4.0% per year (Previously, \$75,000 for calendar year 2012).

2013 Salary: 2013 salaries are equal to salaries provided in the data, except for actives missing salary and employees with less than one year of service, where salaries are calculated from annualized contributions divided by the contribution rates provided.

Total Service: Total creditable service reported in the data.

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

Actuarial Value of Assets:	Market value of assets as reported in the System's Annual Statement less unrecognized return in each of the last five years. Unrecognized return is equal to the difference between the actual market value return and the expected market value return and is recognized at 20% per year over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the age of the participant less total creditable service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary. Normal Cost is determined by using the plan of benefits applicable to each participant.
Changes in Assumptions:	<p>This valuation reflects the following:</p> <ul style="list-style-type: none">➤ The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward two years to the RP-2000 Healthy Annuity Mortality Table set forward three years projected 19 years with Scale AA.➤ The liability for vested members in inactive status was changed from the employee's annuity savings fund to the greater of the employee's annuity savings fund or the present value of a deferred annuity.➤ The percentage of accidental disability retirees that are assumed to die from the same cause of the disability was changed from 0% for all participants to 20% for Groups 1 and 2 and 60% for Group 4.➤ The percentage of disabilities assumed to be accidental was changed from 60% to 90% for Groups 1 and 2.➤ The percentage of deaths assumed to be accidental was changed from 20% for all participants to 55% for Groups 1 and 2 and 90% for Group 4.➤ The administrative expense assumption was increased from \$100,000 for 2012, increasing 3% annually, to \$175,000 for 2014, increasing 4% annually.➤ The assumed net 3(8)(c) disbursements were increased from \$75,000 to \$200,000, increasing 4% annually.

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

EXHIBIT VII

Summary of Plan Provisions

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

Plan Year: January 1 – 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:

Age Last Birthday at Date of Retirement

Percent	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 Belmont 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

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

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

Date of Hire	Contribution Rate
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 Belmont 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.

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

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 \$6,000 per year 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.

SECTION 4: Reporting Information for the Belmont Contributory Retirement System

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

Members hired on or after April 2, 2012 are covered by the provisions of Chapter 32 as amended by of Chapter 176 of the Acts of 2011 and Chapter 139 of the Acts of 2012.

SECTION 5: GASB 67/68 Information for the Belmont Contributory Retirement System

EXHIBIT 1

Net Pension Liability

The components of the net pension liability of the Belmont Contributory Retirement System at December 31, 2013 were as follows:

Total pension liability	\$150,911,920
Plan fiduciary net position	82,305,953
System's net pension liability	68,605,967
Plan fiduciary net position as a percentage of the total pension liability	54.54%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of December 31, 2013, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	4.00%
Salary increases	Varies by length of service with ultimate rates of 3.75% for Groups 1 and 2 and 4.25% for Group 4
Investment rate of return	7.75%, net of pension plan investment expense, including inflation
Cost of Living Adjustments	3% of first \$12,000
Pre-retirement:	RP-2000 Employee Mortality Table projected 27 years using Scale AA
Healthy Retiree:	RP-2000 Healthy Annuitant Mortality Table projected 19 years using Scale AA
Disabled Retiree:	RP-2000 Healthy Annuitant Mortality Table set forward 3 years projected 19 years using Scale AA

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, 2013 are summarized in the following table:

SECTION 5: GASB 67/68 Information for the Belmont Contributory Retirement System

Asset Class	Long-Term Expected Real Rate of Return
Domestic equity	6.60%
International developed markets equity	7.10%
Core fixed income	2.20%
High-yield fixed income	4.70%
Real estate	4.40%
Hedge fund, GTAA, Risk parity	3.90%
Cash	1.80%

Discount rate: The discount rate used to measure the total pension liability was 7.75%. 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 Belmont Contributory Retirement System 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 of the Belmont Contributory Retirement System, calculated using the discount rate of 7.75%, as well as what the Belmont Contributory Retirement System's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75%) or 1-percentage-point higher (8.75%) than the current rate:

	1% Decrease (6.75%)	Current Discount (7.75%)	1% Increase (8.75%)
Belmont Contributory Retirement System's net pension liability as of December 31, 2013	\$84,210,828	\$68,605,967	\$55,253,849

SECTION 5: GASB 67/68 Information for the Belmont Contributory Retirement System

EXHIBIT 2

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

A. Pension expense for the year ended June 30, 2015

Service cost	\$3,290,948
Interest	--
Recognized portion of current-period difference between expected and actual experience	--
Contributions – employee	--
Projected earnings on pension plan investments	--
Recognized portion of current-period difference between projected and actual earnings on pension plan investments	--
Recognition of deferred outflows of resources	--
Recognition of deferred inflows of resources	--
Pension expense for fiscal year ended June 30, 2015	To be determined

B. Deferred outflows/inflows of resources related to pensions

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	--	--
Changes of assumptions	--	--
Changes of benefit terms	--	--
Net difference between projected and actual earnings on pension plan investments	--	--
Total	To be determined	To be determined

C. Projected recognition of deferred outflows/(inflows)

	Year Ended June 30,	Recognition
	2016	--
	2017	--
	2018	--
	2019	--
	2020	--
	Thereafter	--

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.

SECTION 5: GASB 67/68 Information for the Belmont Contributory Retirement System

EXHIBIT 3

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	\$3,290,948									
Interest	- -									
Differences between expected and actual experience	- -									
Changes of assumptions	- -									
Changes of benefit terms	- -									
Benefit payments, including refunds of employee contributions	- -									
Net change in total pension liability	TBD									
Total pension liability - beginning	150,911,920									
Total pension liability - ending (a)	TBD									
Plan fiduciary net position										
Contributions - employer	- -									
Contributions - employee	- -									
Net investment income	- -									
Benefit payments, including refunds of employee contributions	- -									
Other	- -									
Net change in fiduciary net position	TBD									
Plan fiduciary net position - beginning	82,305,953									
Plan fiduciary net position - ending (b)	TBD									
Net pension liability – ending: (a)-(b)	TDB									
Plan's fiduciary net position as a percentage of the total pension liability	TBD									
Covered-employee payroll	\$25,142,886									
Net pension liability as a percentage of covered-employee payroll	TBD									

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

SECTION 5: GASB 67/68 Information for the Belmont Contributory Retirement System

EXHIBIT 4

Schedule of Contributions – Last Ten Years

	Year End December 31,									
	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Actuarially determined contribution*	\$7,364,523									
Contributions in relation to the actuarially determined contribution	TBD									
Contribution deficiency (excess)	TBD									
Covered-employee payroll	\$25,142,886									
Contributions as a percentage of covered-employee payroll	29.29%									

* Based on the results of the January 1, 2012 actuarial valuation (including assumptions and methods) which determined budgeted appropriation for fiscal 2015.

SECTION 5: GASB Information for the Belmont Contributory Retirement System

EXHIBIT 5

Notes to Required Supplementary Information

Valuation date	Actuarial determined contribution rates 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	Level payments on the 2002 ERI liability, payments increasing 4.5% per year for the 2003 ERI liability, and remaining liability amortized so that total payment increases 6.97% annually.
Remaining amortization period	4 years from July 1, 2014 for the 2002 ERI liability, 11 years from July 1, 2014 for the 2003 ERI liability and 13 years from July 1, 2014 for the remaining unfunded liability.
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual and expected return on a market value basis, and is recognized over a five-year period at 20% per year, further adjusted, if necessary, to be within 20% of the market value.
Actuarial assumptions:	
Investment rate of return	7.75%
Discount rate	7.75%
Inflation rate	4.00%
Projected salary increases	Varies by length of service with ultimate rates of 3.75% for Groups 1 and 2 and 4.25% for Group 4
Cost of living adjustments	3.00% of first \$12,000 of retirement income
Plan membership:	
Retired participants and beneficiaries receiving benefits	346
Inactive participants entitled to a return of their employee contributions	155
Inactive participants with a vested right to a deferred or immediate benefit	9
Active participants	<u>458</u>
Total	968

SECTION 5: GASB Information for the Belmont Contributory Retirement System

Changes in Assumptions:

The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward two years to the RP-2000 Healthy Annuitant Mortality Table set forward three years projected 19 years with Scale AA.

The liability for vested members in inactive status was changed from the employee's annuity savings fund to the greater of the employee's annuity savings fund or the present value of a deferred annuity.

The percentage of accidental disability retirees that are assumed to die from the same cause of the disability was changed from 0% for all participants to 20% for Groups 1 and 2 and 60% for Group 4.

The percentage of disabilities assumed to be accidental was changed from 60% to 90% for Groups 1 and 2.

The percentage of deaths assumed to be accidental was changed from 20% for all participants to 55% for Groups 1 and 2 and 90% for Group 4.

The administrative expense assumption was increased from \$100,000 for 2012, increasing 3% annually, to \$175,000 for 2014, increasing 4% annually.

The assumed net 3(8)(c) disbursements were increased from \$75,000 to \$200,000, increasing 4% annually.

Changes in Plan Provisions:

Members hired on or after April 2, 2012 are covered by the provisions of Chapter 32 as amended by Chapter 176 of the Acts of 2011 and Chapter 139 of the Acts of 2012.
