

Town of Wellesley Contributory Retirement System

**Actuarial Valuation and Review as of
January 1, 2017**



Segal Consulting



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October 26, 2017

Board of Trustees

Town of Wellesley Contributory Retirement System

Town Hall

525 Washington Street

Wellesley, MA 02482

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2017. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2018 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 Town of Wellesley 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.

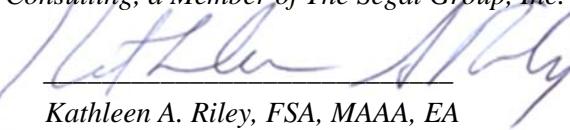
The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in 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 Town of Wellesley Contributory Retirement System

Purpose

This report has been prepared by Segal Consulting to present a valuation of the Town of Wellesley Contributory Retirement System as of January 1, 2017. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to provide certain disclosure information required by Governmental Accounting Standards Board Statements No. 67 and 68 as of December 31, 2016. 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, 2017;
- The assets of the System as of December 31, 2016;
- 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, 2017 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected.
2. During the plan years ending December 31, 2015 and December 31, 2016, the market value rates of return were 0.76% and 7.37%, respectively. Because the actuarial value of assets gradually recognizes market value fluctuations over a 5-year period, the actuarial rates of return for the plan years ending December 31, 2015 and December 31, 2016 were 5.55% and 5.42%, respectively. The actuarial value of assets as of December 31, 2016 of \$169.1 million, or 102.9% of the market value of assets of \$164.4 million (as reported in the Annual Statement). The prior valuation used actuarial value of assets with a fresh start of January 1, 2015, therefore the actuarial value of assets was 100.0% of the market value of assets.
3. As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of December 31, 2016 was \$4,736,662. This investment loss 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 gains derived from future experience. This implies that earning the assumed rate of investment return on a market value basis will result in

SECTION 1: Valuation Summary for the Town of Wellesley Contributory Retirement System

investment losses on the actuarial value of assets in the next few years. The funding schedule shown in Section 2 does not reflect the deferred investment losses.

4. The following actuarial assumptions and method were changed with this valuation:

- The investment return assumption was decreased from 6.75% to 6.625%.
- The mortality assumption was changed from the RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables with MP-2014 improvement projections backed out to a base year of 2006 and projected generationally with Scale BB2D to the RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables set forward one year for females projected generationally with Scale MP-20162D.
- The mortality assumption for disabled participants was changed from the RP-2014 Blue Collar Healthy Annuitant Mortality Table set forward 3 years for males projected with MP-2014 improvement projections backed out to a base year of 2006 and projected generationally with Scale BB2D to the RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2015.
- The administrative expense assumption was increased from \$250,000 to \$275,000.
- The inflation rate was lowered from 3.50% to 2.75%.
- The Cost of Living Adjustment (COLA) assumption was changed from a 3.00% increase on the first \$15,000 of retirement allowance to a 2.75% increase on the first \$15,000 of retirement allowance.

Changing these assumptions resulted in a net increase in the unfunded actuarial accrued liability of \$2,112,997 and a net increase in normal cost of \$105,494.

5. The projected unfunded actuarial accrued liability and appropriation for fiscal 2019 and later years in the funding schedule shown in Chart 16 of Section 2 reflect anticipated increases in the COLA base to \$16,000 effective July 1, 2018, \$17,000 effective July 1, 2019 and to \$18,000 effective July 1, 2020. Note, the normal cost and actuarial accrued liability as of January 1, 2017 do not reflect the anticipated increases in the COLA base.
6. The unfunded liability has remained relatively constant at \$55.0 million from January 1, 2015 to January 1, 2017. Based on our prior valuation, the expected unfunded liability was \$52.5 million. The increase of \$2.5 million from the expected to the actual unfunded liability is primarily due to the assumption changes noted above and the experience loss discussed in Section 2, Subsection C of this report.

SECTION 1: Valuation Summary for the Town of Wellesley Contributory Retirement System

7. The contribution for fiscal year 2018 is the previously budgeted amount of \$7,835,775. For this valuation, the fiscal year 2019 appropriation is set at \$8,350,000, or 6.56% higher than the 2018 appropriation. The payment on the 2010 ERI is a level amortization payment through June 30, 2022 and the payment on the remaining unfunded liability is an increasing (3.5% per year) payment through 2030.
8. The funded ratio on a market value basis has decreased from 73.56% as of January 1, 2015 to 73.33% as of January 1, 2017. The funded ratio on an actuarial value basis increased from 73.56% to 75.44%.
9. Section 5 shows the disclosure information required by the Governmental Accounting Standard Board (GASB) Statements No. 67 and 68.
 - The Net Pension Liability (NPL) is equal to the difference between the Total Pension Liability (TPL) and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) on a market value basis. The NPL decreased from \$63.0 million as of December 31, 2015 to \$59.8 million as of December 31, 2016 and the Plan's Fiduciary Net Position as a percent of the TPL increased from 70.92% to 73.33%.
 - The NPL measured as of December 31, 2016 and 2015 was determined based upon the results of actuarial valuations as of January 1, 2017 and January 1, 2015, respectively.
 - The discount rate used to determine the TPL and NPL was 6.625% as of December 31, 2016 and 6.75% as of December 31, 2015.

SECTION 1: Valuation Summary for the Town of Wellesley Contributory Retirement System

Summary of Key Valuation Results

	2017	2015
Contributions for fiscal year beginning July 1:		
Recommended for fiscal 2018 and 2016	\$7,835,775	\$7,285,897
Recommended for fiscal 2019 and 2017	8,350,000	7,562,273
Recommended for fiscal 2020 and 2018	8,851,508	7,835,775
Funding elements for plan year beginning January 1:		
Normal cost, including administrative expenses	\$6,331,541	\$5,879,329
Market value of assets	164,353,150	152,955,923
Actuarial value of assets	169,089,812	152,955,923
Actuarial accrued liability	224,137,166	207,928,237
Unfunded actuarial accrued liability	55,047,354	54,972,314
Funded ratio based on market value of assets	73.33%	73.56%
Funded ratio based on actuarial value of assets	75.44%	73.56%
Demographic data for plan year beginning January 1:		
Number of retired participants and beneficiaries	403	407
Number of inactive participants entitled to a return of their employee contributions	199	198
Number of inactive participants with a vested right to a deferred or immediate benefit	12	7
Number of active participants	702	685
Total payroll*	\$36,836,364	\$34,685,775
Average payroll*	52,473	50,636

* Payroll figures are for the prior calendar year and reflect annualized salaries for participants hired during the year.

SECTION 1: Valuation Summary for the Town of Wellesley Contributory Retirement System

Important Information About Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the Town of Wellesley Contributory Retirement System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** The valuation is based on the market value of assets as of the valuation date, as provided by the Town of Wellesley Contributory Retirement System. The Town of Wellesley Contributory Retirement System uses an “actuarial value of assets” that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

SECTION 1: Valuation Summary for the Town of Wellesley Contributory Retirement System

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Town of Wellesley Contributory Retirement System. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- Sections of this report may include actuarial results that are not rounded, but that does not imply precision.
- If the Town of Wellesley Contributory Retirement System is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Town of Wellesley Contributory Retirement System should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the System, it is not a fiduciary in its capacity as actuaries and consultants with respect to the System.

SECTION 2: Valuation Results for the Town of Wellesley 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 nine valuations can be seen in this chart.

CHART 1

Participant Population: 2002 – 2016

Year Ended December 31	Active Participants	Inactive Participants	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
2002	600	179	419	1.00
2003	595	163	414	0.97
2005	636	144	415	0.88
2007	669	182	407	0.88
2009	663	201	402	0.91
2011	669	203	406	0.91
2012	662	217	407	0.94
2014	685	205	407	0.89
2016	702	211	403	0.87

SECTION 2: Valuation Results for the Town of Wellesley 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 702 active participants with an average age of 45.5, average years of service of 10.7 years and average payroll of \$52,473. The 685 active participants in the prior valuation had an average age of 45.6, average service of 10.7 years and average payroll of \$50,636.

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

Inactive Participants

In this year's valuation, there were 12 participants with a vested right to a deferred or immediate vested benefit and 199 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, 2016

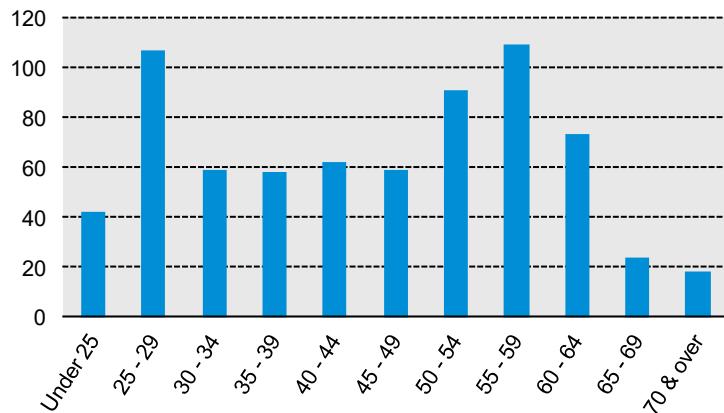
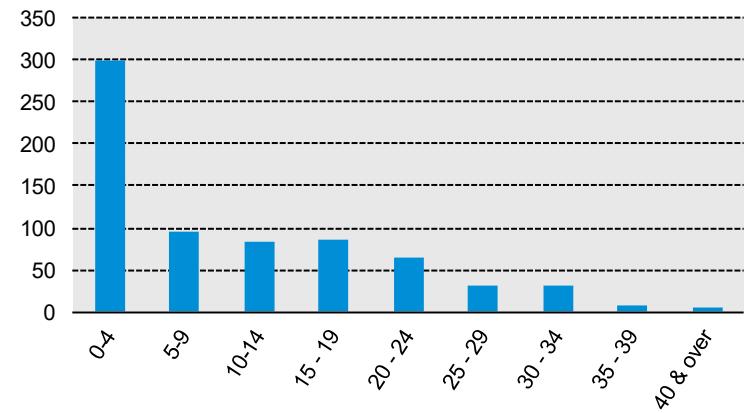


CHART 3

Distribution of Active Participants by Years of Service as of December 31, 2016



SECTION 2: Valuation Results for the Town of Wellesley Contributory Retirement System

Retired Participants and Beneficiaries

As of December 31, 2016, 344 retired participants and 59 beneficiaries were receiving total monthly benefits of \$903,427 excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 348 retired participants and 59 beneficiaries receiving monthly benefits of \$861,568 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, 2016

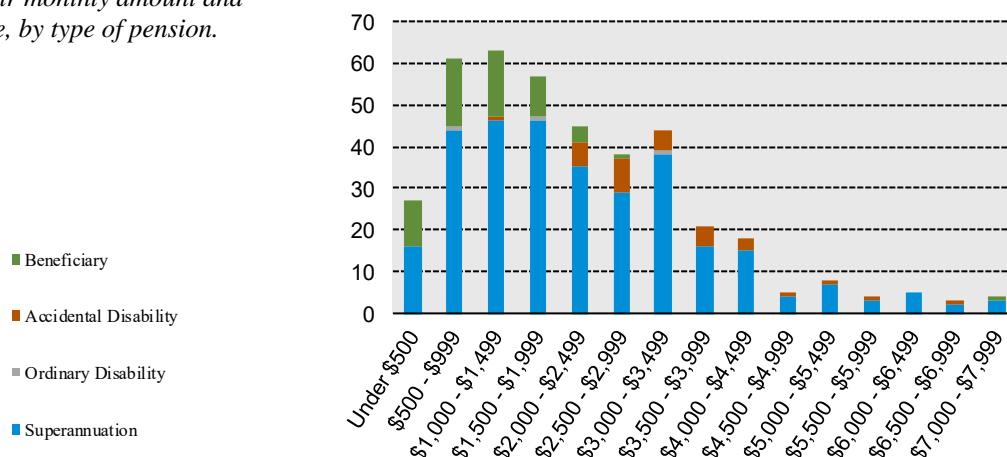
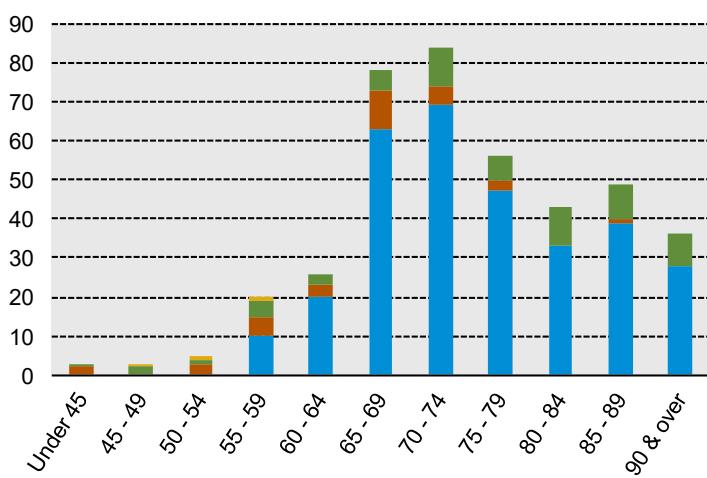


CHART 5

Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2016



SECTION 2: Valuation Results for the Town of Wellesley Contributory Retirement System

B. FINANCIAL INFORMATION

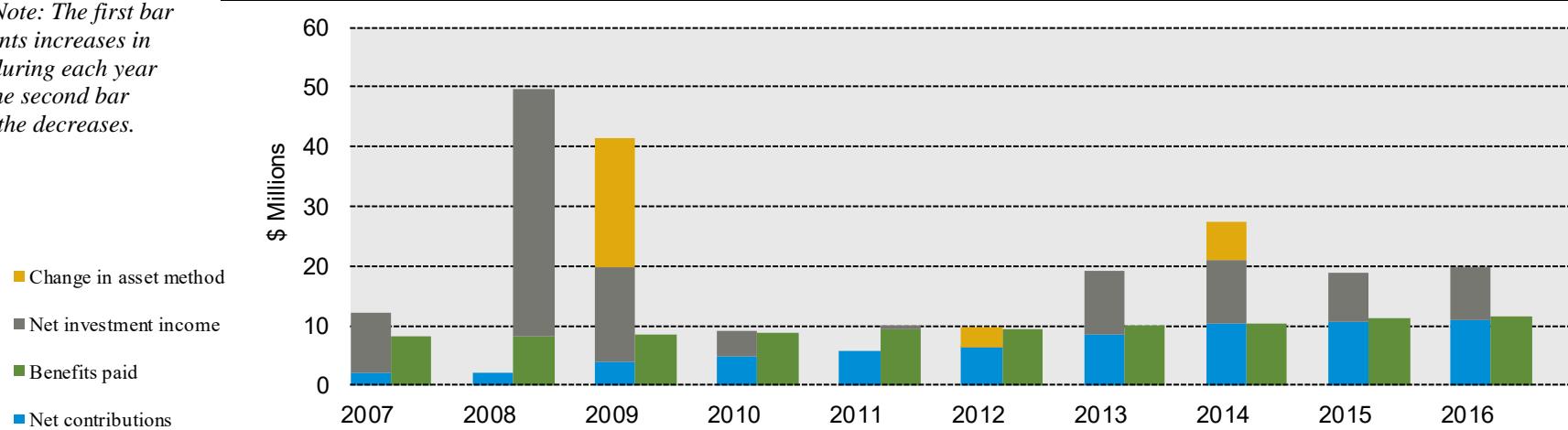
Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

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 ten 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, 2007 – 2016



SECTION 2: Valuation Results for the Town of Wellesley Contributory Retirement System

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

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.

CHART 7

Determination of Actuarial Value of Assets

	Year Ended		
	December 31, 2016		December 31, 2015
1. Market value of assets, December 31, 2016		\$164,353,150	\$153,536,096
	Original	Unrecognized	Unrecognized
2. Calculation of unrecognized return*	Amount	Return	Return
(a) Year ended December 31, 2016	\$943,540	\$754,832	N/A
(b) Year ended December 31, 2015	-9,152,490	-5,491,494	-7,321,992
(c) Year ended December 31, 2014	N/A	0	0
(d) Year ended December 31, 2013	N/A	0	0
(e) Year ended December 31, 2012	N/A	0	0
(f) Total unrecognized return		-4,736,662	-7,321,992
3. Preliminary actuarial value: (1) - (2f)		169,089,812	160,858,089
4. Adjustment to be within 20% corridor		0	0
5. Final actuarial value of assets as of December 31, 2016: (3) + (4)		<u>\$169,089,812</u>	<u>\$160,858,089</u>
6. Actuarial value as a percentage of market value: (5) ÷ (1)		102.9%	104.8%
7. Amount deferred for future recognition: (1) - (5)		-\$4,736,662	-\$7,321,992

* 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.

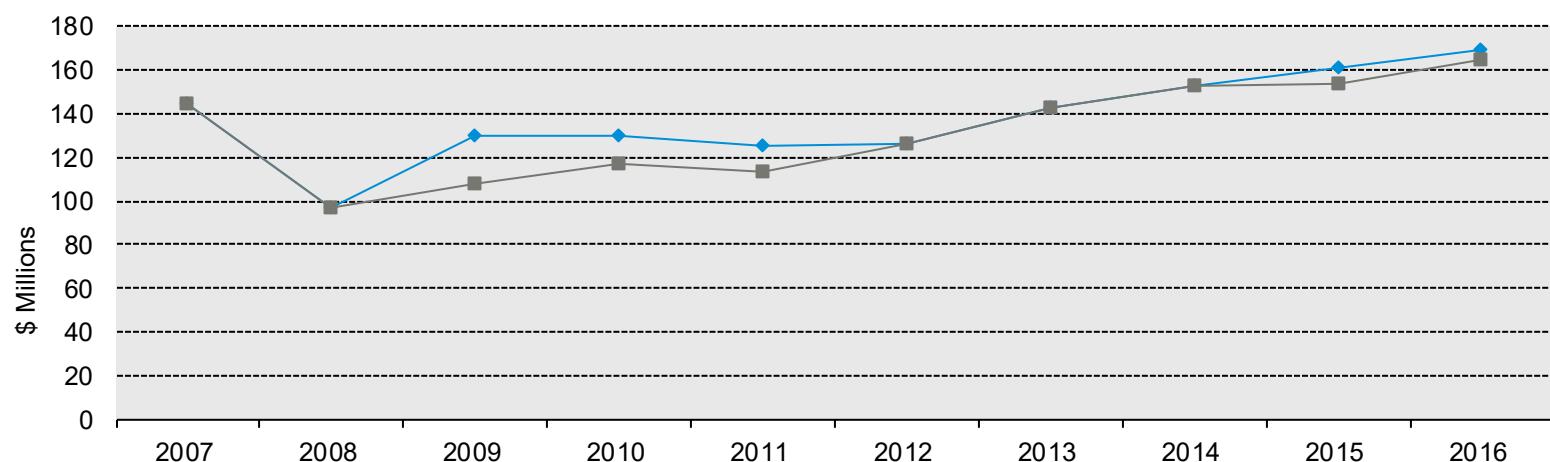
SECTION 2: Valuation Results for the Town of Wellesley Contributory Retirement System

Both the actuarial value and market value of assets are representations of the Town of Wellesley 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 Town of Wellesley 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 ten years.

CHART 8

Actuarial Value of Assets vs. Market Value of Assets as of December 31, 2007 – 2016



SECTION 2: Valuation Results for the Town of Wellesley 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 for the two-year period ending December 31, 2016 is \$470,535. 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, 2016

1. Net loss from investments*	-\$3,966,522
2. Net gain from administrative expenses	13,535
3. Net gain from other experience**	3,482,452
4. Net experience loss: (1) + (2) + (3)	-\$470,535

* *Details in Chart 10*

** *Details in Chart 13*

SECTION 2: Valuation Results for the Town of Wellesley 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 Town of Wellesley Contributory Retirement System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets was 6.75% for 2016 and 2015. The actual rate of return on an actuarial basis for the 2016 and 2015 plan years was 5.42% and 5.55%, respectively.

Since the actual return for the year was less than the assumed return, the Town of Wellesley Contributory Retirement System experienced an actuarial loss of \$3,966,522 during the two-year period ending December 31, 2016 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, 2016	December 31, 2015
1. Actual return	\$8,705,893	\$8,474,704
2. Average value of assets	160,621,004	152,669,654
3. Actual rate of return: (1) ÷ (2)	5.42%	5.55%
4. Assumed rate of return	6.75%	6.75%
5. Expected return: (2) x (4)	\$10,841,918	\$10,305,203
6. Actuarial gain/(loss): (1) – (5)	<u>-\$2,136,025</u>	<u>-\$1,830,497</u>

SECTION 2: Valuation Results for the Town of Wellesley 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 ten years, including five-year and ten-year averages.

Based upon this experience and future expectations, we have decreased the assumed rate of return from 6.75% to 6.625%.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 2007 - 2016

Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
2007	\$9,969,052	7.26%	\$9,969,052	7.26%
2008	-41,672,424	-29.51	-41,672,424	-29.51
2009	15,912,151	16.88	15,912,151	16.88
2010	4,283,430	3.36	13,630,109	12.88
2011	-721,843	-0.56	-160,131	-0.14
2012	175,966	0.14	14,925,118	13.29
2013	10,627,187	8.51	18,149,411	14.53
2014	11,992,245	8.90	10,717,718	7.53
2015	8,474,704	5.55	1,152,711	0.76
2016	<u>8,705,893</u>	5.42	<u>11,291,223</u>	7.37
Total	\$27,746,361		\$53,914,938	
	Five-year average return	5.72%		8.20%
	Ten-year average return	2.09%		4.21%

Note: Each year's yield is weighted by the average asset value in that year.

SECTION 2: Valuation Results for the Town of Wellesley 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.

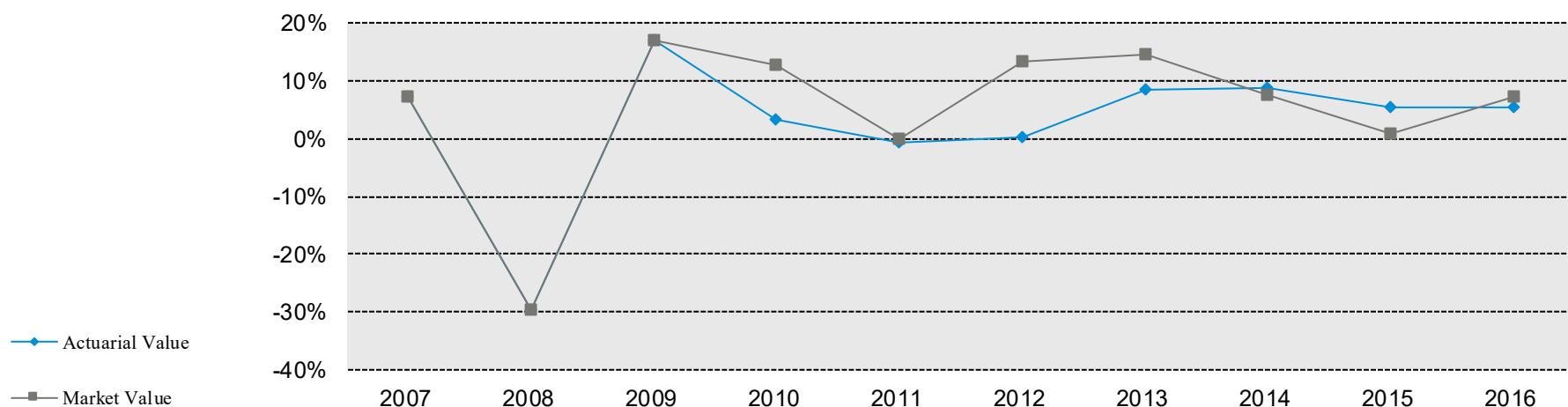
Administrative Expenses

Administrative expenses for the years ended December 31, 2015 and 2016 were \$250,772 and \$245,349, respectively, compared to the assumption of \$250,000 for 2015 and \$258,750 for 2016. This resulted in a gain of \$13,535. Based on projected budget expenses provided by the System, we have increased the assumption from \$250,000 to \$275,000 for calendar year 2017.

This chart illustrates how this leveling effect has actually worked over the years 2007 - 2016.

CHART 12

Market and Actuarial Rates of Return for Years Ended December 31, 2007 - 2016



SECTION 2: Valuation Results for the Town of Wellesley 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 gain from this other experience for the two-year period ending December 31, 2016 amounted to \$3,482,452, which is 1.6% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Town of Wellesley Contributory Retirement System for the two-year period ending December 31, 2016 is shown in the chart below.

The assumption changes included in this valuation are summarized in Section 1.

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

CHART 13

Experience Due to Changes in Demographics for Two-Year Period Ended December 31, 2016

1. Fewer deaths than expected among retired members and beneficiaries	-\$1,493,582
2. Salary increases for continuing actives less than expected	1,371,966
3. COLA increases on July 1, 2016 and July 1, 2017 less than assumed	1,319,167
4. Miscellaneous experience gain, including transfers to other Systems	<u>2,284,901</u>
5. Total	\$3,482,452

SECTION 2: Valuation Results for the Town of Wellesley Contributory Retirement System

The unfunded liability was expected to decrease from \$55.0 million as of January 1, 2015 to \$52.5 million as of January 1, 2017. The actual unfunded liability as of January 1, 2017 of \$55.0 million is \$2.5 million higher than expected as detailed in Chart 14 below.

CHART 14 Development of Unfunded Actuarial Accrued Liability and (Gain)/Loss

	Year Ended	
	December 31, 2016	December 31, 2016
1. Unfunded actuarial accrued liability at beginning of year	\$53,846,125	\$54,972,314
2. Normal cost at beginning of year	6,085,106	5,879,329
3. Total contributions	-11,171,233	-10,783,328
4. Interest		
(a) For whole year on (1) + (2)	\$4,045,358	\$4,107,486
(b) For half year on (3)	<u>-341,534</u>	<u>-329,676</u>
(c) Total interest	<u>3,703,824</u>	<u>3,777,810</u>
5. Expected unfunded actuarial accrued liability	\$52,463,822	\$53,846,125
6. Changes due to:		
(a) Experience loss	\$470,535	--
(b) Assumption changes	<u>2,112,997</u>	--
(c) Total changes	<u>2,583,532</u>	--
7. Unfunded actuarial accrued liability at end of year	<u>\$55,047,354</u>	--

SECTION 2: Valuation Results for the Town of Wellesley 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 year 2018 is the previously budgeted amount of \$7,835,775. For this valuation we have fixed the fiscal year 2019 appropriation at \$8,350,000, or 6.56% higher than the 2018 appropriation. The payment on the 2010 ERI is a level amortization payment through June 30, 2022 and the payment on the remaining unfunded liability is an increasing (3.5% per year) payment through

2030. The funding schedule also reflects anticipated increases to the COLA base to \$16,000 effective July 1, 2018, \$17,000 effective July 1, 2019 and to \$18,000 effective July 1, 2020.

Chart 16 shows the recommended contribution through fiscal 2030 based on this funding schedule.

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

CHART 15 Recommended Contribution

	Year Beginning January 1			
	2017	2015	Amount	% of Payroll
1. Total normal cost			\$6,056,541	15.84%
2. Administrative expenses			275,000	0.72%
3. Expected employee contributions			<u>-3,668,973</u>	<u>-9.60%</u>
4. Employer normal cost: (1) + (2) + (3)			\$2,662,568	6.97%
5. Actuarial accrued liability			224,137,166	207,928,237
6. Actuarial value of assets			<u>169,089,812</u>	<u>152,955,923</u>
7. Unfunded actuarial accrued liability: (5) - (6)			\$55,047,354	\$54,972,314
8. Employer normal cost projected to July 1, 2017 and 2015, adjusted for timing			2,742,562	7.08%
9. Projected unfunded actuarial accrued liability			56,841,558	56,797,335
10. Payment on projected unfunded actuarial accrued liability, adjusted for timing			5,093,213	13.14%
11. Total recommended contribution: (8) + (10)			<u>\$7,835,775</u>	<u>20.22%</u>
12. Projected payroll as of July 1			\$38,748,764	\$36,583,610

Notes: Recommended contributions are assumed to be paid on October 1.

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

SECTION 2: Valuation Results for the Town of Wellesley Contributory Retirement System

CHART 16

Funding Schedule

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of 2010 ERI Liability	(4) Amortization of Remaining Liability	(5) Total Plan Cost: (2) + (3) + (4)	(6) Total Unfunded Actuarial Accrued Liability	(7) Total Plan Cost % Increase
					at Beginning of Year	
2018	\$2,742,562	\$15,534	\$5,077,679	\$7,835,775	\$56,841,558	-
2019	2,852,969	15,534	5,481,496	8,350,000	56,198,155	6.56%
2020	2,966,893	15,534	5,869,081	8,851,508	55,038,209	6.01%
2021	3,084,405	15,534	6,170,468	9,270,408	53,338,955	4.73%
2022	3,179,825	15,534	6,386,435	9,581,794	50,381,770	3.36%
2023	3,278,177	-	6,609,960	9,888,137	47,002,059	3.20%
2024	3,379,550	-	6,841,309	10,220,859	43,180,201	3.36%
2025	3,484,037	-	7,080,754	10,564,791	38,862,393	3.37%
2026	3,591,733	-	7,328,581	10,920,314	34,007,283	3.37%
2027	3,702,735	-	7,585,080	11,287,816	28,570,481	3.37%
2028	3,817,146	-	7,850,559	11,667,704	22,504,349	3.37%
2029	3,935,068	-	8,125,328	12,060,396	15,757,773	3.37%
2030	4,056,608	-	8,409,715	12,466,323	8,275,924	3.37%
2031	4,181,879	-	-	4,181,879	-	-66.45%

Notes: Recommended contributions are assumed to be paid on October 1.

Assumes contribution of budgeted amount for fiscal year 2018.

Item (2) increases at 2.75% per year, plus an additional 0.15% adjustment to total normal cost to reflect the effects of mortality improvement due to generational mortality assumption.

Projected normal cost does not reflect the impact of pension reform for future hires.

Amortization payments of remaining liability calculated to increase at 3.50% per year.

Fiscal 2019 reflects an anticipated increase in the COLA base to \$16,000 effective July 1, 2018, fiscal 2020 reflects an anticipated increase in the COLA base to \$17,000 effective July 1, 2019 and fiscal 2021 and later years reflect an anticipated increase in the COLA base to \$18,000 effective July 1, 2020.

Schedule does not reflect deferred investment losses.

SECTION 3: Supplemental Information for the Town of Wellesley Contributory Retirement System

EXHIBIT A

Table of Plan Coverage

Category	Year Ended December 31		Change From Prior Year
	2016	2014	
Active participants in valuation:			
Number	702	685	2.5%
Average age	45.5	45.6	N/A
Average years of service	10.7	10.7	N/A
Total payroll*	\$36,836,364	\$34,685,775	6.2%
Average payroll*	52,473	50,636	3.6%
Member contributions	35,115,106	32,198,294	9.1%
Inactive participants entitled to a return of employee contributions			
	199	198	0.5%
Inactive participants with a vested right to a deferred or immediate benefit			
	12	7	71.4%
Retired participants:			
Number in pay status	309	314	-1.6%
Average age	75.5	75.2	N/A
Average monthly benefit	\$2,331	\$2,156	8.1%
Disabled participants:			
Number in pay status	35	34	2.9%
Average age	63.7	61.9	N/A
Average monthly benefit	\$3,210	\$3,157	1.7%
Beneficiaries in pay status:			
Number in pay status	59	59	0.0%
Average age	75.2	77.1	N/A
Average monthly benefit	\$1,200	\$1,118	7.3%

* Payroll figures are for the prior year and reflect annualized salaries for participants hired during the year.

SECTION 3: Supplemental Information for the Town of Wellesley Contributory Retirement System

EXHIBIT B

**Participants in Active Service as of December 31, 2016
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	42	41	1	--	--	--	--	--	--	--
	\$29,535	\$29,067	\$48,750	--	--	--	--	--	--	--
25 - 29	107	101	6	--	--	--	--	--	--	--
	\$33,486	\$31,518	\$66,615	--	--	--	--	--	--	--
30 - 34	59	36	18	4	1	--	--	--	--	--
	\$51,045	\$45,734	\$58,334	\$63,189	\$62,453	--	--	--	--	--
35 - 39	58	29	12	11	6	--	--	--	--	--
	\$56,587	\$44,326	\$59,114	\$75,067	\$76,912	--	--	--	--	--
40 - 44	62	16	11	12	17	6	--	--	--	--
	\$66,485	\$39,881	\$63,338	\$66,167	\$85,920	\$88,771	--	--	--	--
45 - 49	59	13	7	9	17	10	2	1	--	--
	\$59,684	\$43,666	\$43,049	\$54,156	\$72,524	\$74,013	\$60,228	\$71,468	--	--
50 - 54	91	28	13	10	12	13	10	5	--	--
	\$54,233	\$35,553	\$51,661	\$55,612	\$61,044	\$68,210	\$70,775	\$77,001	--	--
55 - 59	109	21	14	16	12	15	12	13	5	1
	\$62,641	\$39,804	\$52,185	\$47,511	\$58,552	\$79,630	\$81,230	\$87,114	\$80,733	\$93,197
60 - 64	73	11	9	13	10	11	4	10	2	3
	\$56,402	\$30,212	\$49,378	\$58,407	\$53,736	\$65,947	\$62,803	\$74,082	\$51,803	\$74,303
65 - 69	24	4	3	4	5	4	2	1	--	1
	\$54,871	\$50,507	\$42,408	\$38,458	\$47,432	\$87,724	\$47,896	\$95,783	--	\$54,179
70 & over	18	--	1	4	5	5	1	1	--	1
	\$48,802	--	\$27,314	\$36,404	\$43,529	\$52,739	\$104,253	\$51,247	--	\$68,670
Total	702	300	95	83	85	64	31	31	7	6
	\$52,473	\$36,262	\$54,811	\$57,047	\$66,409	\$73,343	\$72,717	\$79,897	\$72,467	\$73,159

SECTION 3: Supplemental Information for the Town of Wellesley Contributory Retirement System

EXHIBIT C

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended December 31, 2016	Year Ended December 31, 2015
Net assets at actuarial value at the beginning of the year	\$160,858,089	\$152,955,923
Contribution income:		
Employer contributions	\$7,562,273	\$7,285,897
Employee contributions	3,608,960	3,478,496
Other contributions	0	18,935
Less administrative expenses	<u>-245,349</u>	<u>-250,722</u>
Net contribution income	10,925,884	10,532,606
Investment income	<u>8,705,893</u>	<u>8,474,705</u>
Total income available for benefits	\$19,631,777	\$19,007,311
Less benefit payments:		
Pensions	-\$8,994,813	-\$8,659,296
Net 3(8)(c) reimbursements	41,384	99,042
Refunds, annuities, Option B refunds and transfers	-2,456,625	-2,544,891
Workers Compensation Settlements	<u>10,000</u>	0
Net benefit payments	-\$11,400,054	-\$11,105,145
Change in reserve for future benefits	\$8,231,723	\$7,902,166
Net assets at actuarial value at the end of the year	\$169,089,812	\$160,858,089

SECTION 3: Supplemental Information for the Town of Wellesley Contributory Retirement System

EXHIBIT D

Development of the Fund Through December 31, 2016

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
2007	\$0	\$2,287,845	\$35,939	\$9,969,052	\$142,789	\$8,226,694	\$144,298,124
2008	0	2,051,512	39,623	-41,672,425	139,646	8,080,623	96,496,566
2009	1,000,000	3,012,679	46,230	37,497,893	154,822	8,384,093	129,514,453
2010	2,010,429	2,867,996	47,213	4,283,430	192,808	8,907,069	129,623,644
2011	3,138,566	2,920,656	34,125	-721,843	241,583	9,328,950	125,424,614
2012	3,829,620	2,685,904	32,956	3,247,769	216,436	9,289,664	125,714,763
2013	5,944,279	2,790,514	24,160	10,627,187	224,217	10,060,489	134,816,197
2014	7,040,036	3,393,034	30,431	18,239,942	226,954	10,336,763	152,955,923
2015	7,285,897	3,478,496	18,935	8,474,705	250,722	11,105,145	160,858,089
2016	7,562,273	3,608,960	0	8,705,893	245,349	11,400,054	169,089,812

* Net of investment fees. Reflects change in asset method in 2009, 2012 and 2014.

SECTION 3: Supplemental Information for the Town of Wellesley Contributory Retirement System

EXHIBIT E

Table of Amortization Bases

Type	Outstanding Balance as of July 1, 2017	Annual Fiscal Year 2018 Payment	Outstanding Balance as of July 1, 2018	Annual Fiscal Year 2019 Payment	Rate of Increase	Years Remaining as of July 1, 2017
2010 ERI liability	\$67,509	\$15,534	\$55,682	\$15,534	0.0%	5.00
Remaining unfunded liability	<u>56,774,049</u>	<u>5,077,679</u>	<u>56,142,473</u>	<u>5,481,496</u>	3.5%	13.00
Total	\$56,841,558	\$5,093,213	\$56,198,155	\$5,497,031		

Note: Payments assumed to be made on October 1.

SECTION 3: Supplemental Information for the Town of Wellesley Contributory Retirement System

EXHIBIT F

Group Results as of January 1, 2017

Category	Group 1	Percent of Pay	Group 4	Percent of Pay	Total	Percent of Pay
1. Participant counts						
a) Active employees	591		111		702	
b) Inactive members entitled to a return of their employee contributions	199		0		199	
c) Inactive members with a vested right to a deferred or immediate benefit	9		3		12	
d) Retired members	<u>288</u>		<u>115</u>		<u>403</u>	
e) Total members: (a) + (b) + (c) + (d)	1,087		229		1,316	
2. Projected payroll for calendar year 2017	\$28,834,398		\$9,392,313		\$38,226,711	
3. Normal cost						
a) Total normal cost	4,051,973	14.05%	2,004,568	21.34%	6,056,541	15.84%
b) Expense allowance	183,982	0.64%	91,018	0.97%	275,000	0.72%
c) Employee contributions	<u>(2,755,641)</u>	<u>-9.56%</u>	<u>(913,332)</u>	<u>-9.72%</u>	<u>(3,668,973)</u>	<u>-9.60%</u>
d) Employer normal cost: (a) + (b) + (c)	\$1,480,314	5.13%	\$1,182,254	12.59%	\$2,662,568	6.97%
4. Total actuarial accrued liability	138,711,967		85,425,199		224,137,166	
5. Actuarial value of assets	<u>104,644,762</u>		<u>64,445,050</u>		<u>169,089,812</u>	
6. Unfunded actuarial accrued liability: (4) - (5)	\$34,067,205		\$20,980,149		\$55,047,354	

SECTION 3: Supplemental Information for the Town of Wellesley Contributory Retirement System

EXHIBIT G

Department Results as of January 1, 2017

	Housing	Water	Light	School	Veteran	All Other	Total
1. Participant Counts							
a) Active employees*	7	31	27	322	1	314	702
b) Inactive members entitled to a return of their employee contributions	2	0	1	176	1	19	199
c) Inactive members with a vested right to a deferred or immediate benefit	0	0	1	7	0	4	12
d) Retired members	<u>3</u>	<u>16</u>	<u>33</u>	<u>122</u>	<u>1</u>	<u>228</u>	<u>403</u>
e) Total members : (a) + (b) + (c) + (d)	12	47	62	627	3	565	1,316
2. Projected payroll for calendar year 2017	\$360,382	\$1,984,919	\$2,275,487	\$12,038,626	\$57,611	\$21,509,686	\$38,226,711
3. Normal Cost							
a) Total normal cost	49,471	260,416	465,847	1,663,291	6,832	3,610,684	6,056,541
b) Expense allowance	2,246	11,824	21,152	75,522	310	163,946	275,000
c) Employee contributions	<u>-34,257</u>	<u>-181,934</u>	<u>-220,277</u>	<u>-1,130,024</u>	<u>-5,737</u>	<u>-2,096,744</u>	<u>-3,668,973</u>
d) Employer normal cost : (a) + (b) + (c)	\$17,460	\$90,306	\$266,722	\$608,789	\$1,405	\$1,677,886	\$2,662,568
4. Total actuarial accrued liability	1,872,098	12,765,787	20,656,544	45,907,751	279,204	142,655,782	224,137,166
5. Actuarial value of assets	<u>1,412,317</u>	<u>9,630,552</u>	<u>15,583,364</u>	<u>34,632,958</u>	<u>210,632</u>	<u>107,619,989</u>	<u>169,089,812</u>
6. Unfunded actuarial accrued liability : (4) - (5)	\$459,781	\$3,135,236	\$5,073,179	\$11,274,793	\$68,571	\$35,035,794	\$55,047,354
7. Projected Employer Normal Cost, adjusted for timing	17,985	93,019	274,735	627,080	1,447	1,728,296	2,742,562
8. Projected unfunded actuarial accrued liability	474,767	3,237,425	5,238,534	11,642,282	70,806	36,177,744	56,841,558
9. 2010 ERI Payment	0	0	15,534	0	0	0	15,534
10. Payment on projected remaining unfunded actuarial accrued liability	33,471	287,833	480,871	1,044,098	9,017	3,222,389	5,077,679
11. Budgeted contribution for fiscal 2018 (7) + (9) + (10)	\$51,456	\$380,852	\$771,140	\$1,671,178	\$10,464	\$4,950,685	\$7,835,775

SECTION 3: Supplemental Information for the Town of Wellesley Contributory Retirement System

	Housing	Water	Light	School	Veteran	All Other	Total
12. Recommended contribution for fiscal 2019	\$64,562	\$409,372	\$804,239	\$1,776,980	\$8,356	\$5,286,490	\$8,349,999
13. Recommended contribution for fiscal 2020	68,606	435,649	850,422	1,884,111	8,921	5,603,798	8,851,507

** Certain employees have benefit accruals allocated to multiple departments.*

SECTION 3: Supplemental Information for the Town of Wellesley Contributory Retirement System

EXHIBIT H

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 Town of Wellesley 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 Town of Wellesley 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 59 beneficiaries in pay status)	403
2. Participants active during the year ended December 31, 2016 with total accumulated contributions of \$35,115,106 and projected 2017 payroll of \$38,226,711	702
3. Inactive participants with a right to a return of their employee contributions	199
4. Inactive participants with a vested right to a deferred or immediate benefit	12

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

1. Normal cost, including administrative expenses	\$6,331,541
2. Expected employee contributions	-3,668,973
3. Employer normal cost: (1) + (2)	2,662,568
4. Actuarial accrued liability	224,137,166
Retired participants and beneficiaries	\$109,089,242
Active participants	111,805,358
Inactive participants	3,242,566
5. Actuarial value of assets (\$164,353,150 at market value as reported in the Annual Statement)	169,089,812
6. Unfunded actuarial accrued liability: (4) – (5)	55,047,354

The actuarial factors projected to July 1, 2017 are as follows:

1. Employer normal cost projected to July 1, 2017, adjusted for timing	\$2,742,562
2. Projected unfunded actuarial accrued liability	56,841,558
3. Payment on projected unfunded actuarial accrued liability, adjusted for timing	5,093,213
4. Total recommended contribution: (1) + (3)	<u>\$7,835,775</u>
5. Projected payroll as of July 1, 2017	\$38,748,764
6. Total budgeted appropriation as a percentage of projected payroll: (4) ÷ (5)	20.22%

Notes: Recommended contributions are assumed to be paid on October 1.

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

SECTION 4: Reporting Information for the Town of Wellesley Contributory Retirement System

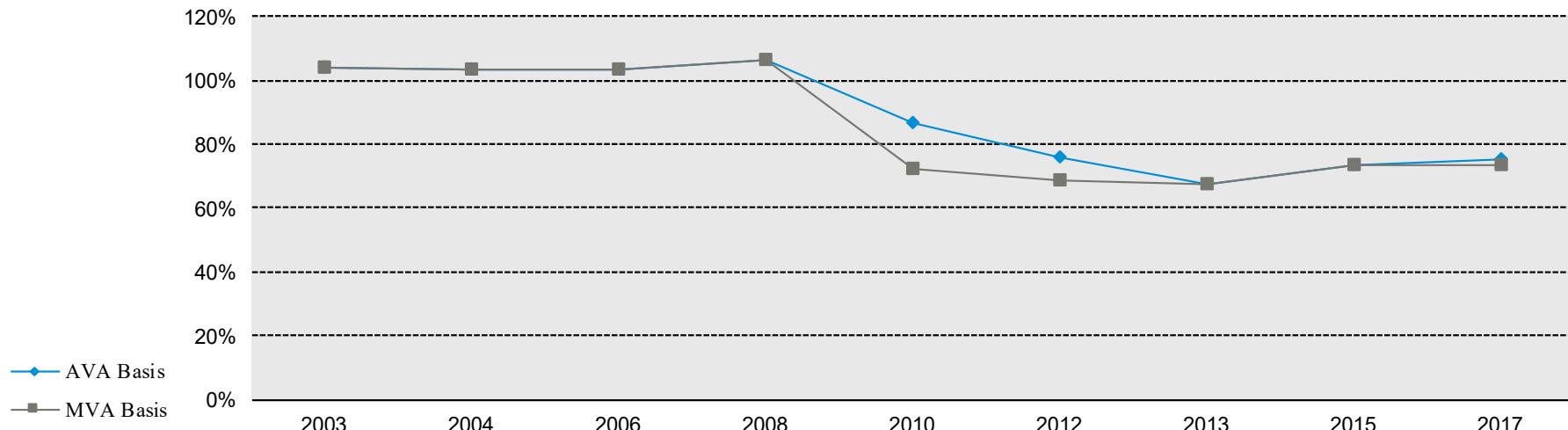
EXHIBIT II

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. The funded ratio on a market value basis has increased from 73.56% as of January 1, 2015 to 73.33% as of January 1, 2017. The funded ratio on an actuarial value basis has increased from 73.56% as of January 1, 2015 to 75.44% as of January 1, 2017.



SECTION 4: Reporting Information for the Town of Wellesley Contributory Retirement System

EXHIBIT III

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

Healthy:

RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables set forward one year for females projected generationaly with Scale MP-20162D (Previously, RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables with MP-2014 improvement projections backed out to a base year of 2006 and projected generationaly with Scale BB2D)

Disabled:

RP-2000 Healthy Annuitant Mortality Table projected generationaly with Scale BB2D from 2015 (Previously, RP-2000 Healthy Annuitant Mortality Table set forward 3 years for males projected generationaly with Scale AA from 2005)

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 years' assumption over the most recent four years. The mortality tables were then adjusted to future years using generational projection to reflect future mortality improvement.

SECTION 4: Reporting Information for the Town of Wellesley Contributory Retirement System

Annuitant Mortality Rates:

Age	Rate per year (%)		Disabled	
	Healthy	Male	Male	Female
55		0.60	0.43	0.59
60		0.85	0.62	0.82
65		1.26	0.96	1.34
70		1.97	1.54	2.22
75		3.15	2.54	3.78
80		5.19	4.24	6.44
85		8.68	7.25	11.08
90		14.64	12.43	18.34
				13.17

Note: Mortality rates do not reflect generational projection.

Termination Rates before Retirement:

Groups 1 and 2 - Rate per year (%)

Mortality

Age	Male	Female	Disability
20	0.05	0.02	0.01
25	0.06	0.02	0.02
30	0.06	0.02	0.03
35	0.07	0.03	0.05
40	0.08	0.05	0.10
45	0.13	0.08	0.15
50	0.22	0.14	0.19
55	0.36	0.20	0.24
60	0.61	0.30	0.28

Notes: Mortality rates do not reflect generational projection.

55% of the disability rates shown represent accidental disability.

40% of the accidental disabilities will die from the same cause as the disability.

55% of the death rates shown represent accidental death.

SECTION 4: Reporting Information for the Town of Wellesley Contributory Retirement System

	Group 4 - Rate per year (%)			
	Age	Male	Female	Disability
20	0.05	0.02	0.10	
25	0.06	0.02	0.20	
30	0.06	0.02	0.30	
35	0.07	0.03	0.30	
40	0.08	0.05	0.30	
45	0.13	0.08	1.00	
50	0.22	0.14	1.25	
55	0.36	0.20	1.20	
60	0.61	0.30	0.85	

Notes: Mortality rates do not reflect generational projection.
90% of the disability rates shown represent accidental disability.
40% 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 Town of Wellesley Contributory Retirement System

Withdrawal Rates:

Years of Service	Rate per year (%)		Group 4
	Groups 1 and 2	Years of Service	
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 years' assumption over the most recent five years.

SECTION 4: Reporting Information for the Town of Wellesley Contributory Retirement System

Retirement Rates:

Age	Rate (%)		
	Groups 1 and 2		Group 4
	Male	Female	
50	--	--	2.0
51	--	--	2.0
52	--	--	2.0
53	--	--	2.0
54	--	--	2.0
55	1.00	2.750	10.0
56	1.25	3.250	5.0
57	1.25	3.250	5.0
58	2.50	3.250	5.0
59	3.25	3.250	15.0
60	9.00	3.750	20.0
61	15.00	9.750	20.0
62	22.50	11.250	25.0
63	18.75	9.375	25.0
64	16.50	13.500	30.0
65	40.00	15.000	100.0
66	25.00	20.000	100.0
67	25.00	20.000	100.0
68	30.00	25.000	100.0
69	30.00	20.000	100.0
70	100.00	100.000	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 years' assumption over the most recent five years.

SECTION 4: Reporting Information for the Town of Wellesley Contributory Retirement System

Retirement Age for Inactive Vested Participants:	Age 60 for Groups 1 and 2 and age 50 for Group 4. 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.
Net Investment Return:	6.625% (Previously, 6.75%) 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.
Interest on Employee Contributions:	3.50%
Cost of Living Adjustment (COLA):	2.75% (previously, 3.00%) increase on the first \$15,000 of retirement allowance.

SECTION 4: Reporting Information for the Town of Wellesley Contributory Retirement System

Salary Increases:

Years of Service	Groups 1 and 2	Group 4
0	7.00%	8.00%
1	6.50%	7.50%
2	6.00%	7.00%
3	5.50%	6.50%
4	5.25%	6.00%
5	5.00%	5.50%
6	4.75%	5.25%
7	4.50%	5.00%
8	4.25%	4.75%
9	4.00%	4.50%
10	3.75%	4.25%
11+	3.50%	4.00%

The salary scale assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment.

Administrative Expenses:

\$275,000 for calendar 2017 increasing 2.75% per year. (Previously, \$250,000 for calendar year 2015 increasing 3.5% per year.)

The administrative expense assumption is based on information on expenses provided by the Retirement System.

Total Service

Total creditable service reported in the data, plus additional anticipated buy-back service.

2016 Salary:

2016 salaries are equal to salaries provided in the data, except salaries for new hires were annualized.

Net 3(8)(c) Liability:

No liability is valued for benefits paid to or received from other municipal systems.

SECTION 4: Reporting Information for the Town of Wellesley Contributory Retirement System

Actuarial Value of Assets:	Market value of assets less unrecognized return in each of the last five years with a fresh start as of January 1, 2015. Unrecognized return is equal to the difference between the actual market value return and the expected market value return and is recognized 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 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 by using the plan of benefits applicable to each participant.
Justification for Changes in Actuarial Assumptions:	<p>The following actuarial assumptions were changed with this valuation:</p> <ul style="list-style-type: none">➤ The investment return assumption was decreased from 6.75% to 6.625%.➤ The mortality assumption was changed from the RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables with MP-2014 improvement projections backed out to a base year of 2006 and projected generationally with Scale BB2D to the RP-2014 Blue Collar Employee and Healthy Annuitant Tables set forward one year for females projected generationally with Scale MP-20162D.➤ The mortality assumption for disabled participants was changed from the RP-2014 Blue Collar Healthy Annuitant Mortality Table projected with MP-2014 improvement projections backed out to a base year of 2006 and projected generationally with Scale BB2D set forward 3 years for males to the RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2015.➤ The administrative expense assumption was increased from \$250,000 to \$275,000.➤ The inflation rate was lowered from 3.50% to 2.75%.➤ The Cost of Living Adjustment (COLA) assumption was changed from a 3.00% increase on the first \$15,000 of retirement allowance to a 2.75% increase on the first \$15,000 of retirement allowance.

SECTION 4: Reporting Information for the Town of Wellesley 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 – 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 Town of Wellesley 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 Town of Wellesley 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 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 Town of Wellesley 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 Town of Wellesley 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 Town of Wellesley 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 3.0% COLA on the first \$15,000 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

The projected unfunded actuarial accrued liability and appropriation for fiscal 2019 and later years in the funding schedule shown in Chart 16 of Section 2 reflect anticipated increases in the COLA base to \$16,000 effective July 1, 2018, \$17,000 effective July 1, 2019 and to \$18,000 effective July 1, 2020.

SECTION 5: GASB Information for the Town of Wellesley Contributory Retirement System

EXHIBIT 1

Net Pension Liability

The components of the net pension liability of the Town of Wellesley Contributory Retirement System are as follows:

	December 31, 2016	December 31, 2015
Total pension liability	\$224,137,166	\$216,492,758
Plan fiduciary net position	164,353,150	153,536,096
System's net pension liability	59,784,016	62,956,662
Plan fiduciary net position as a percentage of the total pension liability*	73.33%	70.92%

* These funded percentages 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.

Actuarial assumptions. The total pension liability as of December 31, 2016 was determined by an actuarial valuation as of December 31, 2016, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75% (previously, 3.50%)
Salary increases	Based on years of service, ranging from 7.00% decreasing to 3.50% after 11 years of service for Group 1 and 2 employees, and ranging from 8.00% decreasing to 4.00% after 11 years for Group 4 employees.
Investment rate of return	6.625% (previously, 6.75%), net of pension plan investment expense, including inflation
Cost of Living Adjustments	2.75% of first \$15,000 (previously 3% of first \$15,000)
Healthy:	RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables set forward one year for females projected generationally with Scale MP-20162D (Previously, RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables with MP-2014 improvement projections backed out to a base year of 2006 and projected generationally with Scale BB2D)
Disabled:	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2015 (Previously, RP-2000 Healthy Annuitant Mortality Table set forward 3 years for males projected generationally with Scale AA from 2005)

SECTION 5: GASB Information for the Town of Wellesley Contributory Retirement System

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, 2016 and the target allocations as of December 31, 2016 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	18.00%	6.44%
International developed markets equity	16.00%	7.40%
International emerging markets equity	6.00%	9.42%
Core fixed income	13.00%	2.02%
High-yield fixed income	10.00%	4.43%
Real estate	10.00%	5.00%
Commodities	4.00%	4.43%
Hedge fund, GTAA, Risk parity	13.00%	3.75%
Private equity	<u>10.00%</u>	10.47%
	100.00%	

Note: Some asset classes in the target allocation have been combined.

Discount rate: The discount rate used to measure the total pension liability was 6.625%. 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.

SECTION 5: GASB Information for the Town of Wellesley Contributory Retirement System

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 6.625%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (5.625%) or 1-percentage-point higher (7.625%) than the current rate:

	1% Decrease (5.625%)	Current Discount (6.625%)	1% Increase (7.625%)
Town of Wellesley Contributory Retirement System's net pension liability as of December 31, 2016	\$87,373,656	\$59,784,016	\$36,679,328

SECTION 5: GASB Information for the Town of Wellesley Contributory Retirement System

EXHIBIT 2

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

	Year End December 31,									
	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Total pension liability										
Service cost	\$5,835,095	\$5,629,329	\$5,067,998							
Interest	14,622,378	14,040,337	13,553,363							
Differences between expected and actual experience	-3,526,008	--	-4,690,325							
Changes of assumptions	2,112,997	--	10,614,112							
Changes of benefit terms	0	--	--							
Benefit payments, including refunds of employee contributions	<u>-11,400,054</u>	<u>-11,105,145</u>	<u>-10,336,763</u>							
Net change in total pension liability	\$7,644,408	\$8,564,521	\$14,208,385							
Total pension liability - beginning	216,492,758	207,928,237	193,719,852							
Total pension liability - ending (a)	\$224,137,166	\$216,492,758	\$207,928,237							
Plan fiduciary net position										
Contributions - employer	\$7,562,273	\$7,304,832	\$7,070,467							
Contributions - employee	3,608,960	3,478,496	3,393,034							
Net investment income	11,291,224	1,152,712	10,717,718							
Benefit payments, including refunds of employee contributions	-11,400,054	-11,105,145	-10,336,763							
Administrative expenses	<u>-245,349</u>	<u>-250,722</u>	<u>-226,954</u>							
Net change in fiduciary net position	\$10,817,054	\$580,173	\$10,617,502							
Plan fiduciary net position - beginning	153,536,096	152,955,923	142,338,421							
Plan fiduciary net position - ending (b)	\$164,353,150	\$153,536,096	\$152,955,923							
Net pension liability - ending: (a)-(b)	\$59,784,016	\$62,956,662	\$54,972,314							
Plan's fiduciary net position as a percentage of the total pension liability	73.33%	70.92%	73.56%							
Covered-employee payroll	\$36,836,364	\$35,959,727	\$35,228,283							
Net pension liability as a percentage of covered-employee payroll	162.30%	175.08%	156.05%							

Notes: Covered-employee payroll for 2016, 2015 and 2014 as estimated in the January 1, 2017, January 1, 2015 and January 1, 2013 funding valuation reports, respectively, adjusted for timing if necessary.

SECTION 5: GASB Information for the Town of Wellesley Contributory Retirement System

Notes to Schedule:

Changes in Assumptions:

The following changes were effective January 1, 2015:

- The investment return assumption was decreased from 7.00% to 6.75%.
- The mortality assumption was changed from the RP-2000 Healthy Employee and Annuitant Mortality Tables projected 15 years with Scale AA to the RP-2014 Blue Collar Healthy Employee and Annuitant Mortality Tables with MP-2014 improvement projections backed out to a base year of 2006 and projected generationally with Scale BB2D.
- The mortality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward 3 years for males to the RP-2014 Blue Collar Healthy Annuitant Mortality Table set forward 3 years for males projected with MP-2014 improvement projections backed out to a base year of 2006 and projected generationally with Scale BB2D.
- The asset valuation method described in Exhibit III of Section 4 was changed from an actuarial value of assets with a fresh start as of January 1, 2013 to an actuarial value of assets with a fresh start as of January 1, 2015.
- The retirement rates were reduced for certain ages.
- The retirement age for inactive vested participants was changed from age 55 to age 60 for Group 1 and 2 members and from age 45 to age 50 for Group 4 members.

The following changes were effective January 1, 2017:

- The investment return assumption was decreased from 6.75% to 6.625%.
- The mortality assumption was changed from the RP-2014 Blue Collar Employee and Healthy Annuitant Mortality Tables with MP-2014 improvement projections backed out to a base year of 2006 and projected generationally with Scale BB2D to the RP-2014 Blue Collar Employee and Healthy Annuitant Tables set forward one year for females projected generationally with Scale MP-20162D.
- The mortality assumption for disabled participants was changed from the RP-2014 Blue Collar Healthy Annuitant Mortality Table projected with MP-2014 improvement projections backed out to a base year of 2006 and projected generationally with Scale BB2D set forward 3 years for males to the RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2015.
- The administrative expense assumption was increased from \$250,000 to \$275,000.
- The inflation rate was lowered from 3.50% to 2.75%.
- The Cost of Living Adjustment (COLA) assumption was changed from a 3.00% increase on the first \$15,000 of retirement allowance to a 2.75% increase on the first \$15,000 of retirement allowance.

Changes in Plan Provisions:

None.

SECTION 5: GASB Information for the Town of Wellesley Contributory Retirement System

EXHIBIT 3

Schedule of Contributions – Last Ten Years

	Year End December 31,									
	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Actuarially determined contribution	\$7,562,273	\$7,285,897	\$7,040,036							
Contributions in relation to the actuarially determined contribution	<u>7,562,273</u>	<u>7,304,832</u>	<u>7,070,467</u>							
Contribution deficiency (excess)	\$0	-\$18,935	-\$30,431							
Covered-employee payroll	\$36,836,364	\$35,959,727	\$35,228,283							
Contributions as a percentage of covered-employee payroll	20.53%	20.31%	20.07%							
										(Historical information prior to implementation of GASB 67/68 is not required)

Note: Actuarially determined contribution for 2016 is based on results from the January 1, 2015 actuarial valuation and actuarially determined contributions for 2015 and 2014 are based on results from the January 1, 2013 actuarial valuation.

SECTION 5: GASB Information for the Town of Wellesley Contributory Retirement System

EXHIBIT 4

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

A. Pension expense for the year ended June 30, 2017

Service cost	\$5,835,095
Interest	14,622,378
Contributions – employee	-3,608,960
Projected earnings on pension plan investments	-10,347,682
Administrative expenses	245,349
Recognized portion of current-period difference between expected and actual experience	-587,668
Recognized portion of current-period difference between projected and actual earnings on pension plan investments	-188,708
Recognized portion of current year period assumption change	352,166
Recognized portion of current year period plan change	0
Recognition of deferred outflows of resources	3,599,517
Recognition of deferred inflows of resources	<u>-933,228</u>
Pension expense for fiscal year ended June 30, 2017	\$8,988,259

B. Deferred outflows/inflows of resources related to pensions

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$0	\$5,283,502
Changes of assumptions	7,067,886	0
Net difference between projected and actual earnings on pension plan investments	<u>4,433,646</u>	0
Total	\$11,501,532	\$5,283,502

C. Projected recognition of deferred outflows/(inflows)

	Year Ended June 30,	Recognition
2018		\$2,242,079
2019		2,242,077
2020		2,393,586
2021		-424,211
2022		-235,501
Thereafter		0

SECTION 5: GASB Information for the Town of Wellesley Contributory Retirement System

EXHIBIT 5

Determination of Proportionate Share

Employer Name	Share of NPL as of January 1, 2016	Percent of NPL as of January 1, 2016	Share of NPL as of January 1, 2017	Percent of NPL as of January 1, 2017
Housing	\$418,652	0.664984%	\$499,344	0.835247%
Water	3,566,354	5.664776%	3,405,014	5.695525%
Light	5,710,679	9.070809%	5,509,711	9.216027%
School	13,091,721	20.794815%	12,244,956	20.481989%
Town of Wellesley	40,169,256	63.804616%	38,124,991	63.771212%
Grand Totals:	\$62,956,662	100.000000%	\$59,784,016	100.000000%

Note: NPL allocations for January 1, 2017 based on the results of the January 1, 2017 actuarial valuation.

SECTION 5: GASB Information for the Town of Wellesley Contributory Retirement System

EXHIBIT 6

Determination of Pension Amounts by Employer as of June 30, 2017

Employer Name	Employer's Proportionate Share Allocation (1)	Net Pension Liability (2)	Covered Employee Payroll (3)	Discount Rate Sensitivity		
				1% Decrease (5.625%) (4)	Current Discount Rate (6.625%) (5)	1% Increase (7.625%) (6)
Housing	0.835247%	\$499,344	\$346,521	\$729,786	\$499,344	\$306,363
Water	5.695525%	3,405,014	1,913,411	4,976,388	3,405,014	2,089,080
Light	9.216027%	5,509,711	2,186,311	8,052,380	5,509,711	3,380,377
School	20.481989%	12,244,956	11,654,867	17,895,863	12,244,956	7,512,656
Town of Wellesley	63.771212%	38,124,991	20,735,254	55,719,239	38,124,991	23,390,852
Grand Totals:	100.000000%	\$59,784,016	\$36,836,364	\$87,373,656	\$59,784,016	\$36,679,328

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Employer Name	Schedule of Contributions					Pension Expense		
	Statutory Required Contribution (7)	Contributions In Relation to the Statutory Required Contribution (8)	Contribution Deficiency/ (Excess) (9)	Contributions as a Percentage of Covered Employee Payroll (10)	Proportionate Share of Plan Pension Expense (11)	Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (12)	Total Employer Pension Expense (13)	
Housing	\$49,649	-\$49,649	\$0	14.33%	\$75,074	\$12,066	\$87,140	
Water	367,560	-367,560	0	19.21%	511,928	-106	511,822	
Light	744,853	-744,853	0	34.07%	828,360	10,220	838,580	
School	1,612,181	-1,612,181	0	13.83%	1,840,974	30,926	1,871,900	
Town of Wellesley	4,788,030	-4,788,030	0	23.09%	5,731,923	-53,106	5,678,817	
Grand Totals:	\$7,562,273	-\$7,562,273	\$0	20.53%	\$8,988,259	\$0	\$8,988,259	

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Employer Name	Deferred Outflows of Resources					Deferred Inflows of Resources				
	Differences Between Expected and Actual Experience (14)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (15)	Changes of Assumptions (16)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (17)	Total Deferred Outflows of Resources (18)	Differences Between Expected and Actual Experience (19)	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments (20)	Changes of Assumptions (21)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (22)	Total Deferred Inflows of Resources (23)
Housing	\$0	\$37,032	\$59,034	\$73,979	\$170,045	\$44,130	\$0	\$0	\$13,170	\$57,300
Water	0	252,519	402,553	44,350	699,422	300,923	0	0	52,626	353,549
Light	0	408,606	651,378	103,024	1,163,008	486,929	0	0	41,536	528,465
School	0	908,099	1,447,644	242,988	2,598,731	1,082,166	0	0	135,922	1,218,088
Town of Wellesley	0	2,827,390	4,507,277	0	7,334,667	3,369,354	0	0	221,087	3,590,441
Grand Totals:	\$0	\$4,433,646	\$7,067,886	\$464,341	\$11,965,873	\$5,283,502	\$0	\$0	\$464,341	\$5,747,843

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Employer Name	Deferred Inflows/(Outflows) Recognized In Future Pension Expense (Year Ended June 30):					
	2018 (24)	2019 (25)	2020 (26)	2021 (27)	2022 (28)	Thereafter (29)
Housing	\$30,793	\$30,793	\$32,058	\$8,523	\$10,578	\$0
Water	127,592	127,592	136,221	-24,267	-21,265	0
Light	216,851	216,850	230,814	-28,875	-1,097	0
School	490,148	490,148	521,180	-55,959	-64,874	0
Town of Wellesley	1,376,695	1,376,694	1,473,313	-323,633	-158,843	0
Grand Totals:	\$2,242,079	\$2,242,077	\$2,393,586	-\$424,211	-\$235,501	\$0

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EXHIBIT 7

Notes to Required Supplementary Information

Valuation date	Actuarially determined contributions for fiscal 2017 and 2018 are determined with the January 1, 2015 actuarial valuation.
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level dollar for 2010 ERI liability and 3.5% increasing payments for the remaining unfunded liability
Remaining amortization period	7 years from July 1, 2015 for 2010 ERI and 15 years from July 1, 2015 for remaining unfunded liability
Asset valuation method	The market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the expected return and the actuarial investment return on a market value basis and is recognized over a five-year period with a fresh start as of January 1, 2015. The actuarial value of assets is adjusted, if necessary, to be within 20% of the market value.
Actuarial assumptions:	
Investment rate of return	6.75%
Discount rate	6.75%
Inflation rate	3.5%
Projected salary increases	Based on years of service, ranging from 7.00% decreasing to 3.50% after 11 years of service for Group 1 and 2 employees, and ranging from 8.00% decreasing to 4.00% after 11 years for Group 4 employees.
Cost of living adjustments	3.00% of first \$15,000 of retirement income
Plan membership:	
Retired participants and beneficiaries receiving benefits	407
Inactive participants entitled to a return of their employee contributions	198
Inactive participants with a vested right to a deferred or immediate benefit	7
Active participants	<u>685</u>
Total	1,297

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Appendix A

Glossary

Definitions of certain terms *as they are used in Statement 68*; the terms may have different meanings in other contexts.

Active employees:	Individuals employed at the end of the reporting or measurement period, as applicable.
Actual contributions:	Cash contributions recognized as additions to a pension plan's fiduciary net position.
Actuarial present value of projected benefit payments:	Projected benefit payments discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial valuation:	The determination, as of a point in time (the actuarial valuation date), of the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
Actuarial valuation date:	The date as of which an actuarial valuation is performed.
Actuarially determined contribution:	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.
Ad hoc cost-of-living adjustments (ad hoc COLAs):	Cost-of-living adjustments that require a decision to grant by the authority responsible for making such decisions.
Ad hoc postemployment benefit changes:	Postemployment benefit changes that require a decision to grant by the authority responsible for making such decisions.
Agent employer:	An employer whose employees are provided with pensions through an agent multiple-employer defined benefit pension plan.

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Agent multiple-employer defined benefit pension plan (agent pension plan):

A multiple-employer defined benefit pension plan in which pension plan assets are pooled for investment purposes but separate accounts are maintained for each individual employer so that each employer's share of the pooled assets is legally available to pay the benefits of only its employees.

Allocated insurance contract:

A contract with an insurance company under which related payments to the insurance company are currently used to purchase immediate or deferred annuities for individual employees. Also may be referred to as an annuity contract.

Automatic cost-of-living adjustments (automatic COLAs):

Cost-of-living adjustments that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

Automatic postemployment benefit changes:

Postemployment benefit changes that occur without a requirement for a decision to grant by a responsible authority, including those for which the amounts are determined by reference to a specified experience factor (such as the earnings experience of the pension plan) or to another variable (such as an increase in the consumer price index).

Closed period:

A specific number of years that is counted from one date and declines to zero with the passage of time. For example, if the recognition period initially is five years on a closed basis, four years remain after the first year, three years after the second year, and so forth.

Collective deferred outflows of resources and deferred inflows of resources related to pensions:

Deferred outflows of resources and deferred inflows of resources related to pensions arising from certain changes in the collective net pension liability.

Collective net pension liability:

The net pension liability for benefits provided through (1) a cost-sharing pension plan or (2) a single-employer or agent pension plan in circumstances in which there is a special funding situation.

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Collective pension expense:	Pension expense arising from certain changes in the collective net pension liability.
Contributions:	Additions to a pension plan's fiduciary net position for amounts from employers, nonemployer contributing entities (for example, state government contributions to a local government pension plan), or employees. Contributions can result from cash receipts by the pension plan or from recognition by the pension plan of a receivable from one of these sources.
Cost-of-living adjustments:	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-sharing employer:	An employer whose employees are provided with pensions through a cost-sharing multiple-employer defined benefit pension plan.
Cost-sharing multiple-employer defined benefit pension plan (cost-sharing pension plan):	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-employee payroll:	The payroll of employees that are provided with pensions through the pension plan.
Deferred retirement option program (DROP):	A program that permits an employee to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The employee continues to provide service to the employer and is paid for that service by the employer after the DROP entry date; however, the pensions that would have been paid to the employee (if the employee had retired and not entered the DROP) are credited to an individual employee account within the defined benefit pension plan until the end of the DROP period.
Defined benefit pension plans:	Pension plans that are used to provide defined benefit pensions.

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Defined benefit pensions:

Pensions for which the income or other benefits that the employee will receive at or after separation from employment are defined by the benefit terms. The pensions may be stated as a specified dollar amount or as an amount that is calculated based on one or more factors such as age, years of service, and compensation. (A pension that does not meet the criteria of a defined contribution pension is classified as a defined benefit pension for purposes of Statement 68.)

Defined contribution pension plans:

Pension plans that are used to provide defined contribution pensions.

Defined contribution pensions:

Pensions having terms that (1) provide an individual account for each employee; (2) define the contributions that an employer is required to make (or the credits that it is required to provide) to an active employee's account for periods in which that employee renders service; and (3) provide that the pensions an employee will receive will depend only on the contributions (or credits) to the employee's account, actual earnings on investments of those contributions (or credits), and the effects of forfeitures of contributions (or credits) made for other employees, as well as pension plan administrative costs, that are allocated to the employee's account.

Discount rate:

The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:

1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension plan's fiduciary net position is projected (under the requirements of Statement 68) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments.
2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.

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Entry age actuarial cost method:	A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this actuarial present value allocated to a valuation year is called the <i>normal cost</i> . The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the <i>actuarial accrued liability</i> .
Inactive employees:	Terminated individuals that have accumulated benefits but are not yet receiving them, and retirees or their beneficiaries currently receiving benefits.
Measurement period:	The period between the prior and the current measurement dates.
Multiple-employer defined benefit pension plan:	A defined benefit pension plan that is used to provide pensions to the employees of more than one employer.
Net pension liability:	The liability of employers and nonemployer contributing entities to employees for benefits provided through a defined benefit pension plan.
Nonemployer contributing entities:	Entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of Statement 68, employees are not considered nonemployer contributing entities.
Other postemployment benefits:	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits, regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
Pension plans:	Arrangements through which pensions are determined, assets dedicated for pensions are accumulated and managed, and benefits are paid as they come due.
Pensions:	Retirement income and, if provided through a pension plan, postemployment benefits other than retirement income (such as death benefits, life insurance, and disability benefits). Pensions do not include postemployment healthcare benefits and termination benefits.

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Plan members:	Individuals that are covered under the terms of a pension plan. Plan members generally include (1) employees in active service (active plan members) and (2) terminated employees who have accumulated benefits but are not yet receiving them and retirees or their beneficiaries currently receiving benefits (inactive plan members).
Postemployment:	The period after employment.
Postemployment benefit changes:	Adjustments to the pension of an inactive employee.
Postemployment healthcare benefits:	Medical, dental, vision, and other health-related benefits paid subsequent to the termination of employment.
Projected benefit payments:	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and their expected future service.
Public employee retirement system:	A special-purpose government that administers one or more pension plans; also may administer other types of employee benefit plans, including postemployment healthcare plans and deferred compensation plans.
Real rate of return:	The rate of return on an investment after adjustment to eliminate inflation.
Service costs:	The portions of the actuarial present value of projected benefit payments that are attributed to valuation years.
Single employer:	An employer whose employees are provided with pensions through a single-employer defined benefit pension plan.
Single-employer defined benefit pension plan (single-employer pension plan):	A defined benefit pension plan that is used to provide pensions to employees of only one employer.
Special funding situations:	Circumstances in which a nonemployer entity is legally responsible for making contributions directly to a pension plan that is used to provide pensions to the employees of another entity or entities and either of the following conditions exists: The amount of contributions for which the nonemployer entity legally is responsible is <i>not</i> dependent upon one or more events or circumstances unrelated to the pensions. The nonemployer entity is the only entity with a legal obligation to make contributions directly to a pension plan.

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Termination benefits:

Inducements offered by employers to active employees to hasten the termination of services, or payments made in consequence of the early termination of services. Termination benefits include early-retirement incentives, severance benefits, and other termination-related benefits.

Total pension liability:

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of Statement.