



WORCESTER REGIONAL RETIREMENT SYSTEM

**FINANCIAL REPORTING AND DISCLOSURES UNDER
GASB 67 and GASB 68
as of
December 31, 2017**

Prepared by:

KMS Actuarial, LLC
814 Elm Street, Suite 204
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October, 2018



October 15, 2018

Mr. Kevin Blanchette
Chairman/CEO
Worcester Regional Retirement System
23 Midstate Drive, Suite 106
Auburn, MA 01501

Dear Kevin:

We are pleased to present the enclosed report providing financial reporting and disclosures under Governmental Accounting Standards Board (GASB) Statement No. 67, Financial Reporting for Pension Plans (GASB 67), and GASB Statement No. 68, Accounting and Financial Reporting for Pensions (GASB 68) for the Worcester Regional Retirement System and participating employers. Results are based on liabilities developed in an actuarial valuation performed as of January 1, 2016 and rolled forward to the plan's measurement date of December 31, 2017.

The Principal Valuation Results are provided in Section 1. The Notes to the Financial Statements and the Required Supplementary Information are provided in Sections 2 and 3, respectively. Employer Reporting Amounts Under GASB 68 are provided in Section 4. Finally, a Glossary of Terms is provided in Section 5.

The financial reporting and disclosures contained in this report are based on the member data provided by the Worcester Regional Retirement Board, asset information reported to the Public Employee Retirement Administration Commission (PERAC) by the Retirement Board and plan provisions contained in Chapter 32 of the Massachusetts General Laws. Although we did not audit the data used in the valuation and disclosure calculations, we believe that the information is complete and reliable.

Liabilities presented in this report are based on a long-term investment return rate of 7.75%, net of investment expense, compounded annually.

This report was completed in accordance with generally accepted actuarial standards and procedures, and conforms to the Code of Professional Conduct of the American Academy of Actuaries. The actuarial assumptions used in the determination of costs are reasonably related to the experience of the Plan and to reasonable expectations, and represent our best estimate of anticipated long-term experience under the Plan.

Mr. Kevin Blanchette

October 15, 2018

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Future actuarial valuation results may differ significantly from the current results presented in this report. Examples of potential sources of volatility include plan experience differing from that anticipated by the economic or demographic assumptions, the effect of new entrants, changes in economic or demographic assumptions, the effect of law changes and the delayed effect of smoothing techniques.

Our valuation follows generally accepted actuarial methods and we perform such tests as we consider necessary to assure the accuracy of the results. The amounts presented in this report have been appropriately determined according to the actuarial assumptions and methods stated herein.

This report is intended for the sole use of the Worcester Regional Retirement System and participating employers and is intended to provide information to comply with the stated purpose of the report. It may not be appropriate for other purposes.

The undersigned credentialed actuaries are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. They are available to answer any questions with regard to this report.

Respectfully submitted,



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INTRODUCTION

GASB 67 and GASB 68

In June 2012, the GASB approved two related Statements that significantly change the way pension plans and governments account and report pension liabilities. The Worcester Regional Retirement System implemented GASB Statement No. 67, Financial Reporting for Pension Plans for the fiscal year ending December 31, 2014.

GASB 67 requires defined benefit pension plans, such as the Worcester Regional Retirement System, to present a statement of fiduciary net position (pension plan assets) and a statement of changes in fiduciary net position. Further, the statement requires that notes to financial statements include descriptive information such as the types of benefits provided, the classes of plan members covered and the composition of the pension plan's retirement board. Finally, GASB 67 requires pension plans to present in required supplementary information the sources of the changes in the net pension liability and information about the actuarially determined contributions compared with the actual contributions made to the plan and related ratios.

GASB 67 and GASB 68 require projected benefit payments be discounted to their actuarial present value using the single rate that reflects:

- (1) a long-term expected rate of return on pension plan investments *to the extent that the pension plan's assets are sufficient to pay benefits and pension plan assets are expected to be invested using a strategy to achieve that return and*
- (2) a tax-exempt, high-quality municipal bond rate *to the extent that the conditions for use of the long-term expected rate of return are not met.*

The pension plan's fiduciary net position was projected to be available to make all projected 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.

GASB 68 establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources and pension expense by state and local governments.

Fiduciary Net Position

Pension plan investments are reported at market value as of the measurement date. The fiduciary net position as of the current and prior measurement dates are shown in Exhibit 1.1.

INTRODUCTION

Total Pension Liability

The Total Pension Liability as of December 31, 2017 shown in this report is based on a roll-forward of liabilities determined as of the most recent valuation date, January 1, 2016. The Total Pension Liability is developed in Exhibit 1.2.

Benefit Changes

All benefits remained the same from the prior measurement date.

Assumption Changes

All assumptions remained the same since the prior measurement date.

Pension Expense

The Pension Expense for the fiscal year ending December 31, 2017 is \$105,694,163 and is developed in Exhibit 4.2. Pension Expense, as well as the Net Pension Liability and Deferred Outflows of Resources and Deferred Inflows of Resources, are developed for each member unit and is shown in Appendix C. Amounts by employer are developed using a proportionate share, the proportion of each employer's contribution to the aggregate amount of employer contributions, as shown in Exhibit 4.3.

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.1 - Plan Assets

Asset information was provided by the Worcester Regional Retirement System. The Trust Fund Composition, Asset Activity and the Computed Rate of Return for the current and prior fiscal years are as follows:

Fiscal Year Ended December 31	<u>2017</u>	<u>2016</u>
Trust Fund Composition at Fiscal Year-End		
External investment pools	\$ 705,763,910	\$ 601,435,651
Real estate	449,652	1,737,097
Alternative	2,863,638	4,109,766
Cash and cash equivalents	2,919,956	4,322,402
Receivables	4,281,182	6,087,919
Liabilities	(10,285,051)	(11,108,023)
Total Market Value of Assets	<u>\$ 705,993,287</u>	<u>\$ 606,584,812</u>
Asset Activity		
Market value as of beginning of year	\$ 606,584,812	\$ 569,632,634
Contributions - employer	50,599,326	48,574,831
Contributions - member	31,592,837	29,032,767
Net investment income	103,123,070	40,509,286
Benefit payments, including refunds of member contributions	(77,717,794)	(72,799,275)
Administrative expenses	(1,145,509)	(1,170,184)
Other	(7,043,455)	(7,195,247)
Market Value as of end of year	<u>\$ 705,993,287</u>	<u>\$ 606,584,812</u>
Money-Weighted Rate of Return	16.71%	7.06%
(Gain) / Loss on Pension Plan Investments		
Projected earnings	\$ 46,866,382	\$ 44,008,691
Actual earnings	103,123,070	40,509,286
(Gain) / Loss on pension plan investments	<u>\$ (56,256,688)</u>	<u>\$ 3,499,405</u>

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.2 - Actuarial Liabilities

The Total Pension Liability, developed using the Entry Age Normal funding method, is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service. The total pension liability as of the December 31, 2017 measurement date was developed from an actuarial valuation as of January 1, 2016 and rolled forward to the pension plan's fiscal year-end.

The Service Cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year. Only active employees who have not reached the age at which the probability of retirement is 100% incur a service cost.

Actuarial gains and losses arise from the difference between estimates and actual experience, excluding amounts related to benefit changes and changes in assumptions or other inputs.

The development of the Total Pension Liability from the beginning of the measurement period, December 31, 2016 to the end of the measurement period, December 31, 2017 is shown below:

<u>Measurement Date</u>		<u>December 31, 2017</u>
1. Total Pension Liability, beginning of year:		
a. Actives	\$ 785,716,890	
b. Retired and Disabled Members and Beneficiaries	640,937,915	
c. Inactive Members	17,523,770	
d. Total Pension Liability at 7.75% (a. + b. + c.)		\$ 1,444,178,575
2. Service Cost		\$ 42,736,040
3. Benefit Payments		\$ (77,717,794)
4. Interest [7.75% x (1.c. + 2. + .5 x 3.d)]		\$ 112,224,318
5. Changes of benefit terms		\$ -
6. Differences between expected and actual experience		\$ -
7. Changes of assumptions or other inputs		\$ -
8. Total Pension Liability, end of year (1.d. + 2. + 3. + 4. + 5. + 6. + 7.)		
a. Actives	\$ 892,658,032	
b. Retired and Disabled Members and Beneficiaries	609,881,245	
c. Inactive Members	18,881,862	
d. Total Pension Liability at 7.75% (a. + b. + c.)		\$ 1,521,421,139

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.1 - Plan Description

Plan administration:

The Worcester Regional Retirement System (the "System") is a cost-sharing, multiple-employer defined benefit pension plan that provides pensions for eligible employees of 97 participating employers. The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The System does not have the authority to amend benefit provisions.

The System is governed by a Retirement Board made up of five elected and appointed members.

Plan membership:

At December 31, 2017, pension plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	3,723
Inactive plan members entitled to but not yet receiving benefits	1,653
Active plan members	7,601
	<u>12,977</u>

Benefits provided:

The System provides retirement, disability and death benefits. Retirement benefits are determined as a percentage of the member's 3-year (5-year for members hired after April 1, 2012) final average compensation times the member's years of service. The percentage is based on the age of the member at retirement and his or her Group classification. Cost-of-living adjustments of 3% of the first \$16,000 of the annual retirement allowance are provided at the discretion of the System's Retirement Board. A summary of the benefits is outlined in the January 1, 2016 actuarial valuation report.

Contributions:

Plan members are required to contribute a percentage of their annual compensation that varies according to their membership date, as follows:

Prior to 1975:	5% of Salary
1975 - 1983:	7% of Salary
1984 - June 30, 1996:	8% of Salary
July 1, 1996 - present:	9% of Salary
1979 - present:	An additional 2% of Salary in excess of \$30,000.
Group 1 members hired on or after April 2, 2012:	6% of Salary with 30 or more years of creditable service.

Employer contributions are determined in accordance with the requirements set forth in Section 22D and Section 22F of Chapter 32 of the Massachusetts General Laws ("M.G.L."). The appropriation is comprised of the annual employer normal cost and amortization payments to pay the unfunded actuarial accrued liability.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net Pension Liability

The components of the Net Pension Liability at December 31, 2017, were as follows:

Total Pension Liability	\$ 1,521,421,139
Fiduciary Net Position	(705,993,287)
Net Pension Liability	<u>\$ 815,427,852</u>

Fiduciary Net Position as a percentage of the Total Pension Liability 46.40%

Actuarial assumptions:

The Total Pension Liability was determined by an actuarial valuation as of January 1, 2016, rolled forward to the measurement date of December 31, 2017 using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3% per year
Salary increases	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service
Investment rate of return	7.75%, net of pension plan investment expense, including inflation
Administrative expenses	\$1,100,000 in 2017, increasing 4 percent per year

Mortality rates were based on the RP-2000 Mortality Table (base year 2009) with full generational mortality improvement using Scale BB. For disabled lives, the mortality rates were based on the RP-2000 Mortality Table (base year 2012) with full generational mortality improvement using Scale BB.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net Pension Liability

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, 2017 (see the discussion of the pension plan's investment policy) are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rates of Return¹</u>
Global Equity	40%	4.91%
Fixed Income	22%	2.04%
Private Equity	11%	6.50%
Real Estate	10%	3.70%
Timber/Natural Resources	4%	3.25%
Hedge Funds	13%	3.40%
Total	100%	

¹ Long-term expected rate of return is 7.75% and is based on the 30-year expected return.

Discount rate:

The discount rate used to measure the Total Pension Liability is 7.75%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rates and that contributions from participating employers will be made in accordance with Sections 22D and 22F of Chapter 32 of the Massachusetts General Laws. Based on those assumptions, the pension plan's Fiduciary Net Position was projected to be available to make all projected 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.

We have developed the single discount rate showing the projection of cash flows in Appendix D.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net Pension Liability

Sensitivity of the Net Pension Liability to changes in the discount rate:

The following presents the Net Pension Liability calculated using the discount rate of 7.75%, as well as what the Net Pension Liability would be if it were calculated using a discount rate 1-percentage point lower (6.75%) or 1-percentage point higher (8.75%) than the current rate:

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Net Pension Liability	\$ 993,831,171	\$ 815,427,852	\$ 664,765,107

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net Pension Liability and Related Ratios

Fiscal Year Ended December 31	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Total Pension Liability				
Service cost	\$ 42,736,040	\$ 35,984,130	\$ 31,996,981	\$ 31,996,981
Interest	112,224,318	99,124,367	91,276,045	84,568,061
Changes of benefit terms	-	-	49,721,211	-
Differences between expected and actual experience	-	8,235,183	-	-
Changes of assumptions	-	94,194,565	31,534,870	-
Benefit payments, including refunds of member contributions	(77,717,794)	(72,799,275)	(68,086,158)	(61,338,289)
Net change in Total Pension Liability	<u>\$ 77,242,564</u>	<u>\$ 164,738,970</u>	<u>\$ 136,442,949</u>	<u>\$ 55,226,753</u>
Total Pension Liability—beginning	<u>1,444,178,575</u>	<u>1,279,439,605</u>	<u>1,142,996,656</u>	<u>1,087,769,903</u>
Total Pension Liability—ending (a)	<u><u>\$ 1,521,421,139</u></u>	<u><u>\$ 1,444,178,575</u></u>	<u><u>\$ 1,279,439,605</u></u>	<u><u>\$ 1,142,996,656</u></u>
Fiduciary Net Position				
Contributions—employer	\$ 50,599,326	\$ 48,574,831	\$ 44,986,040	\$ 39,519,038
Contributions—member	31,592,837	29,032,767	52,111,046	27,066,085
Net investment income	103,123,070	40,509,286	1,177,960	40,135,521
Benefit payments, including refunds of member contributions	(77,717,794)	(72,799,275)	(68,086,158)	(61,338,289)
Administrative expenses	(1,145,509)	(1,170,184)	(1,055,662)	(1,054,297)
Other	(7,043,455)	(7,195,247)	(7,429,438)	(3,178,354)
Net change in Fiduciary Net Position	<u>\$ 99,408,475</u>	<u>\$ 36,952,178</u>	<u>\$ 21,703,788</u>	<u>\$ 41,149,704</u>
Fiduciary Net Position—beginning	<u>606,584,812</u>	<u>569,632,634</u>	<u>547,928,846</u>	<u>506,779,142</u>
Fiduciary Net Position—ending (b)	<u><u>\$ 705,993,287</u></u>	<u><u>\$ 606,584,812</u></u>	<u><u>\$ 569,632,634</u></u>	<u><u>\$ 547,928,846</u></u>
Net Pension Liability—ending (a) – (b)	<u><u>\$ 815,427,852</u></u>	<u><u>\$ 837,593,763</u></u>	<u><u>\$ 709,806,971</u></u>	<u><u>\$ 595,067,810</u></u>
Fiduciary Net Position as a percentage of the Total Pension Liability	46.40%	42.00%	44.52%	47.94%
Covered Payroll ¹	\$ 271,037,131	\$ 282,918,805	\$ 269,899,678	\$ 252,829,591
Net Pension Liability as a percentage of Covered Payroll	300.85%	296.05%	262.99%	235.36%

¹ Covered Payroll for 2017 is the valuation payroll from the January 1, 2018 funding valuation.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Schedule of Employer Contributions

Fiscal Year Ended December 31	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Actuarially Determined Contribution	\$ 50,599,326	\$ 48,574,831	\$ 44,986,040	\$ 39,519,038
Contributions in relation to the Actuarially Determined Contribution	<u>50,599,326</u>	<u>48,574,831</u>	<u>44,986,040</u>	<u>39,519,038</u>
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
 Covered Payroll	 \$ 271,037,131	 \$ 282,918,805	 \$ 269,899,678	 \$ 252,829,591
Contributions as a percentage of Covered Payroll	18.67%	17.17%	16.67%	15.63%

The contribution shown above, \$50,599,326, represents the actual contributions made by member units of the Worcester Regional Retirement System for the 2018 fiscal year.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Investment Returns

Fiscal Year Ended December 31	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Annual money-weighted rate of return, net of investment expense	16.71%	7.06%	0.05%	7.79%

The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amount of pension plan investments by the proportion of time they are available to earn a return during that period. The rate of return is then calculated by solving, through an iterative process, for the rate that equates the sum of the weighted external cash flows into and out of the pension plan investments to the ending fair value of pension plan

Appendix A shows the details of the calculation of the money-weighted rate of return for the current fiscal year.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.4 - Notes to the Required Supplementary Information

Changes of benefit terms:

None.

Changes of assumptions:

None.

Methods and assumptions used in calculations of Actuarially Determined Contributions:

The Actuarially Determined Contributions in the schedule of employers' contributions are calculated as of July 1 of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contributions reported in that schedule:

Actuarial cost method	Entry Age Normal
Amortization method	UAAL: Increasing dollar amount at 4% to reduce the Unfunded Actuarial Accrued Liability to zero on or before June 30, 2035. The annual increase in appropriation is further limited to 9.95%. 2002, 2003 & 2010 ERI Increasing dollar amount at 4% to reduce the 2002 and 2003 ERI Actuarial Accrued Liability to zero on or before June 30, 2028 and the 2010 ERI Actuarial Accrued Liability to zero on or before June 30, 2022.
Asset valuation method	The Actuarial Value of Assets is the market value of assets as of the valuation date reduced by the sum of: a) 80% of gains and losses of the prior year, b) 60% of gains and losses of the second prior year, c) 40% of gains and losses of the third prior year and d) 20% of gains and losses of the fourth prior year.

Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 80% or more than 120% of market value.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.4 - Notes to the Required Supplementary Information

Inflation	3% per year
Salary increases	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service
Payroll growth	4% per year
Investment rate of return	7.75%, net of pension plan investment expense, including inflation.

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.1 - Deferred Outflows of Resources and Deferred Inflows of Resources

Deferred Outflows of Resources and Deferred Inflows of Resources arising from differences between expected and actual experience are recognized in Pension Expense over the average expected remaining service life of all active and inactive members.

Year	Experience	Experience	Amounts Recognized in Pension Expense through December 31, 2017 (c)	Balances at December 31, 2017	
	Losses	Gains		Deferred	Deferred
	(a)	(b)		Outflows of Resources (a) - (c)	Inflows of Resources (b) - (c)
2014	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 8,235,183	\$ -	\$ 2,810,642	\$ 5,424,541	\$ -
2017	\$ -	\$ -	\$ -	\$ -	\$ -
				\$ 5,424,541	\$ -

Deferred Outflows of Resources and Deferred Inflows of Resources arising from changes of assumptions are recognized in Pension Expense over the average expected remaining service life of all active and inactive members.

Year	Increases in the	Decreases in the	Amounts Recognized in Pension Expense through December 31, 2017 (c)	Balances at December 31, 2017	
	Total Pension Liability	Total Pension Liability		Deferred	Deferred
	(a)	(b)		Outflows of Resources (a) - (c)	Inflows of Resources (b) - (c)
2014	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 31,534,870	\$ -	\$ 15,873,258	\$ 15,661,612	\$ -
2016	\$ 94,194,565	\$ -	\$ 32,148,316	\$ 62,046,249	\$ -
2017	\$ -	\$ -	\$ -	\$ -	\$ -
				\$ 77,707,861	\$ -

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.1 - Deferred Outflows of Resources and Deferred Inflows of Resources

Deferred Outflows of Resources and Deferred Inflows of Resources arising from differences between projected and actual earnings on Pension Plan investments are recognized in Pension Expense over five years.

Year	Investment Earnings Less Than Projected (a)	Investment Earnings Greater Than Projected (b)	Amounts Recognized in Pension Expense through December 31, 2017 (c)	Balances at December 31, 2017	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2014	\$ 447,378	\$ -	\$ 357,904	\$ 89,474	\$ -
2015	\$ 43,477,381	\$ -	\$ 26,086,428	\$ 17,390,953	\$ -
2016	\$ 3,499,405	\$ -	\$ 1,399,762	\$ 2,099,643	\$ -
2017	\$ -	\$ 56,256,688	\$ (11,251,338)	\$ -	\$ 45,005,350
Total				<u>\$ 19,580,070</u>	<u>\$ 45,005,350</u>
Net				<u>\$ -</u>	<u>\$ 25,425,280</u>

Deferred Outflows of Resources and Deferred Inflows of Resources arising from changes in proportion and differences between employer contributions and proportionate share of contributions are recognized in Pension Expense over the average expected remaining service life of all active and inactive members.

Year	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (Outflows) (a)	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions (Inflows) (b)	Amounts Recognized in Pension Expense through December 31, 2017 (c)	Balances at December 31, 2017	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2015	\$ 39,045,388	\$ 39,045,388	\$ 19,653,717	\$ 19,391,671	\$ 19,391,671
2016	\$ 1,803,974	\$ 1,803,974	\$ 615,691	\$ 1,188,283	\$ 1,188,283
2017	\$ 22,317,342	\$ 22,317,342	\$ 3,808,422	\$ 18,508,920	\$ 18,508,920
				<u>\$ 39,088,874</u>	<u>\$ 39,088,874</u>

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.1 - Deferred Outflows of Resources and Deferred Inflows of Resources

Amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources will be recognized in Pension Expense as follows:

Year ended December 31		
2018	\$	21,004,058
2019	\$	20,914,585
2020	\$	12,007,463
2021	\$	3,781,016
2022	\$	-
Thereafter	\$	-

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.2 - Pension Expense

The Pension Expense and deferred outflows and inflows of resources primarily result from changes in the components of the net pension liability (NPL). Most changes in the NPL are included in the Pension Expense in the period of the change, including service cost, interest on total pension liability, changes in benefit terms and projected earnings on the pension plan's investments. Other changes in the net pension liability are included in Pension Expense over the current and future periods. These include the effects on the total pension liability of changes of economic and demographic assumptions and differences between expected and actual experience. In addition, the effect on the net pension liability of differences between the projected earnings on pension plan investments and actual experience with regard to those earnings are included in Pension Expense over the current and future periods. The Pension Expense for the reporting period ending December 31, 2017 is presented below:

Fiscal Year Ended December 31	<u>2017</u>
1. Service cost	\$ 42,736,040
2. Interest on the total pension liability	
a. Total Pension Liability, beginning of year	1,444,178,575
b. Service cost, beginning of year	42,736,040
c. Benefit payments, including refunds of employee contributions	<u>(77,717,794)</u>
d. Interest on Total Pension Liability	112,224,318
3. Differences between expected and actual experience	1,405,321
4. Changes of benefit terms	-
5. Changes of assumptions	21,365,244
6. Employee contributions	(31,592,837)
7. Projected earnings on pension plan investments	
a. Fiduciary Net Position, beginning of year	606,584,812
b. Employer contributions	50,599,326
c. Employee contributions	31,592,837
d. Benefit payments, including refunds of employee contributions	<u>(77,717,794)</u>
e. Administrative expenses and other	<u>(8,188,964)</u>
f. Total projected earnings	(46,866,382)
8. Differences between projected and actual earnings on plan investments	(1,766,505)
9. Pension plan administrative expenses	1,145,509
10. Other changes in Fiduciary Net Position	<u>7,043,455</u>
11. Total Pension Expense	<u><u>\$105,694,163</u></u>

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.3 - Proportionate Share of Contributions

The basis of an employer's allocation of the collective pension amount is consistent with the manner in which contributions to the plan are made. The schedule of employer allocations for 2017 and 2016, based on employer contributions made for the 2018 fiscal year and 2017 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2017		2016	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
010 Ashburnham	673,313	1.330676%	604,202	1.243858%
020 Ashburnham-Westminster Regional	549,269	1.085526%	494,377	1.017764%
025 Athol	1,214,566	2.400360%	1,718,246	3.537318%
026 Athol Housing Authority	34,263	0.067714%	61,571	0.126755%
027 Athol-Royalston Regional School District	478,043	0.944762%	727,322	1.497323%
030 Auburn	2,633,613	5.204838%	2,346,309	4.830298%
040 Auburn Housing Authority	55,533	0.109750%	50,877	0.104739%
050 Auburn Water District	85,812	0.169591%	84,487	0.173932%
060 Barre	272,096	0.537746%	250,016	0.514703%
070 Barre Housing Authority	13,640	0.026957%	12,298	0.025318%
080 Berlin	419,681	0.829420%	372,177	0.766193%
090 Berlin-Boylston Regional	111,699	0.220752%	101,762	0.209495%
100 Blackstone	666,186	1.316591%	584,744	1.203800%
105 Blackstone Housing Authority	17,102	0.033799%	14,307	0.029454%
110 Blackstone-Millville Regional	445,596	0.880636%	444,306	0.914684%
120 Bolton	374,912	0.740943%	339,612	0.699152%
130 Boylston	555,757	1.098349%	467,638	0.962717%
135 Boylston Water District	9,366	0.018510%	7,869	0.016200%
140 Brookfield	247,043	0.488234%	216,251	0.445191%
150 Charlton	1,063,085	2.100986%	993,577	2.045456%
160 Cherry Valley-Rochdale Water	40,675	0.080386%	40,165	0.082687%
165 Cherry Valley Sewer District	1,519	0.003002%	-	0.000000%
170 Douglas	914,509	1.807354%	809,124	1.665727%
180 Dudley	732,393	1.447436%	732,991	1.508993%
190 Dudley Housing Authority	11,953	0.023623%	21,858	0.044999%
200 Dudley-Charlton Regional	845,764	1.671493%	802,798	1.652704%
210 East Brookfield	127,037	0.251065%	97,174	0.200050%
220 Grafton	1,527,028	3.017882%	1,446,017	2.976885%
230 Grafton Housing Authority	46,298	0.091499%	45,895	0.094483%
240 Hardwick	173,984	0.343846%	193,088	0.397506%

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.3 - Proportionate Share of Contributions

The basis of an employer's allocation of the collective pension amount is consistent with the manner in which contributions to the plan are made. The schedule of employer allocations for 2017 and 2016, based on employer contributions made for the 2018 fiscal year and 2017 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2017		2016	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
250 Harvard	756,788	1.495648%	737,805	1.518904%
260 Hillcrest Water District	6,452	0.012751%	8,351	0.017192%
270 Holden	1,878,211	3.711929%	1,877,072	3.864289%
280 Holden Housing Authority	26,631	0.052631%	26,579	0.054718%
290 Hopedale	833,168	1.646599%	747,549	1.538964%
300 Hopedale Housing Authority	4,348	0.008593%	6,751	0.013898%
310 Hubbardston	238,741	0.471826%	213,907	0.440366%
320 Lancaster	508,868	1.005681%	487,963	1.004559%
325 Lancaster Housing Authority	13,397	0.026477%	8,472	0.017441%
330 Leicester	1,055,412	2.085822%	1,024,269	2.108641%
340 Leicester Housing Authority	34,326	0.067839%	35,597	0.073283%
350 Leicester Water District	40,028	0.079108%	46,274	0.095263%
360 Lunenburg	1,106,982	2.187741%	1,051,795	2.165309%
370 Lunenburg Housing Authority	1,285	0.002540%	3,702	0.007621%
380 Lunenburg Water District	43,998	0.086954%	47,022	0.096803%
390 Mendon	519,386	1.026468%	467,870	0.963194%
400 Mendon-Upton Regional	649,442	1.283499%	609,132	1.254007%
410 Millbury	1,590,876	3.144066%	1,513,867	3.116567%
420 Millbury Housing Authority	82,506	0.163058%	79,509	0.163684%
430 Millville	148,282	0.293051%	120,768	0.248623%
440 Narragansett Regional	336,860	0.665740%	337,771	0.695362%
450 Nashoba Regional	896,139	1.771049%	768,904	1.582927%
460 New Braintree	45,267	0.089462%	62,451	0.128567%
470 Northboro	1,699,113	3.357976%	1,613,924	3.322552%
480 Northboro Housing Authority	56,695	0.112047%	51,256	0.105520%
490 Northboro-Southboro Regional	324,449	0.641212%	276,857	0.569960%
500 North Brookfield	384,681	0.760249%	386,250	0.795165%
510 North Brookfield Housing Authority	16,072	0.031763%	15,252	0.031399%
530 Oakham	58,451	0.115517%	65,966	0.135803%
540 Oxford	1,705,012	3.369634%	1,785,719	3.676223%

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SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.3 - Proportionate Share of Contributions

The basis of an employer's allocation of the collective pension amount is consistent with the manner in which contributions to the plan are made. The schedule of employer allocations for 2017 and 2016, based on employer contributions made for the 2018 fiscal year and 2017 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2017		2016	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
550 Oxford Housing Authority	52,150	0.103065%	51,526	0.106076%
555 Oxford-Rochdale Sewer District	26,515	0.052402%	17,779	0.036601%
560 Paxton	598,706	1.183229%	481,335	0.990914%
570 Petersham	138,452	0.273624%	135,553	0.279060%
580 Phillipston	112,731	0.222792%	109,570	0.225569%
590 Princeton	317,271	0.627026%	332,680	0.684881%
600 Quabbin Regional	859,367	1.698376%	869,089	1.789176%
610 Quaboag Regional	301,439	0.595737%	292,990	0.603172%
620 Royalston	47,264	0.093408%	49,613	0.102137%
630 Rutland	511,543	1.010968%	431,811	0.888960%
640 Southboro	1,611,713	3.185246%	1,531,807	3.153499%
650 Southboro Housing	14,141	0.027947%	13,618	0.028035%
660 Spencer	762,375	1.506690%	694,304	1.429349%
670 Spencer-East Brookfield Regional	523,348	1.034298%	500,749	1.030882%
680 Spencer Housing Authority	35,499	0.070157%	36,779	0.075716%
690 Sterling	847,421	1.674767%	790,663	1.627722%
700 Sterling Housing Authority	8,167	0.016141%	7,507	0.015455%
710 Sturbridge	1,171,263	2.314780%	1,059,573	2.181321%
720 Sutton	966,685	1.910470%	916,769	1.887333%
730 Tantasqua Regional	574,007	1.134416%	541,223	1.114205%
740 Templeton	667,573	1.319332%	663,582	1.366103%
750 Templeton Housing Authority	37,368	0.073851%	36,307	0.074744%
760 Upton	511,372	1.010630%	449,983	0.926371%
770 Uxbridge	1,566,330	3.095555%	1,552,552	3.196207%
780 Uxbridge Housing Authority	42,581	0.084153%	52,217	0.107498%
790 Wachusett Regional	1,678,385	3.317011%	1,425,736	2.935133%
800 Warren	330,813	0.653789%	285,511	0.587776%
810 Warren Water District	14,096	0.027858%	11,622	0.023926%
820 Westboro	3,394,054	6.707706%	3,259,798	6.710879%
825 Westboro Housing Authority	33,774	0.066748%	29,909	0.061573%

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.3 - Proportionate Share of Contributions

The basis of an employer's allocation of the collective pension amount is consistent with the manner in which contributions to the plan are made. The schedule of employer allocations for 2017 and 2016, based on employer contributions made for the 2018 fiscal year and 2017 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2017		2016	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
830 West Boylston	1,058,022	2.090980%	999,539	2.057730%
835 West Boylston Housing Authority	9,208	0.018198%	10,318	0.021241%
840 West Boylston Water District	45,645	0.090209%	44,345	0.091292%
850 West Brookfield	233,082	0.460642%	225,606	0.464450%
860 Westminster	735,164	1.452913%	706,734	1.454939%
870 Winchendon	1,274,147	2.518111%	1,321,787	2.721136%
880 Winchendon Housing Authority	84,054	0.166117%	74,685	0.153752%
Total	50,599,326	100.000000%	48,574,831	100.000000%

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.4 - Pension Amounts by Employer

The schedule of Pension Amounts by Employer is provided in Appendix C. The schedule shows the Net Pension Liability, the various categories of Deferred Outflows of Resources and Deferred Inflows of Resources and Pension Expense for each employer. The schedule includes the differences between expected and actual economic experience, differences between projected and actual investment earnings and changes of assumptions. Further, each employer is required to recognize Deferred Outflows of Resources and Deferred Inflows of Resources related to (1) the net impact from changes in proportion between periods and (2) differences between actual contributions made by an employer and their proportionate share of contributions.

Each employer's allocation of Pension Expense and Net Pension Liability can be based on the proportion of its contributions to the aggregate amount of employer contributions.

Under GASB 68, gains and losses (investment, experience or assumption changes) and changes in employer's proportionate shares related to pensions are recognized in Pension Expense systematically over time.

The first amortized amounts are recognized in Pension Expense for the year the gain or loss occurs. The remaining amounts are categorized as Deferred Inflows and Deferred Outflows to be recognized in future Pension Expense.

The amortization period differs depending on the source of the gain or loss:

Difference between projected and actual earnings	5 year straight-line amortization
All other amounts	Straight-line amortization over the average expected remaining service lives of all members that are provided with benefits (actives, inactives and retirees) as of the beginning of the measurement period

For 2017:

- ◆ Net Pension Liability, Deferred Outflows of Resources, Deferred Inflows of Resources and Pension Expense are allocated to each employer based on its proportionate share of Total Employer Contribution shown in Exhibit 4.3.
- ◆ The difference between expected and actual experience is amortized over the average of the expected future service lives of all participants, with the first amortized amount recognized in Pension Expense in 2016.
- ◆ Net difference between projected and actual investment earnings (gain on pension plan investments for 2016) is amortized over 5 years, with the first amortized amount recognized in pension expense in 2016. Similar Deferred Outflows of Resources and Deferred Inflows of Resources were established during prior years, with the first amortized amount recognized in Pension Expense in 2014.
- ◆ The increase in Total Pension Liability as a result of changes in assumptions (mortality rates and expected future salary increases) is amortized over the average of the expected future service lives of all participants, with the first amortized amount recognized in Pension Expense in 2015.

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.4 - Pension Amounts by Employer

For 2017 (continued):

- ◆ There are no differences between employer contributions and the proportionate share of contributions because the Plan utilizes employer contributions as the method of allocation.
- ◆ The net effect of the change in the employer's proportionate shares of the collective Net Pension Liability, collective Deferred Outflows and Deferred Inflows is amortized over the average expected remaining service lives of all members, with the first amortized amount recognized in Pension Expense in 2016.
- ◆ No adjustments have been made for employer contributions made subsequent to the measurement date as defined in paragraph 57 of GASB 68.

SECTION 5 - GLOSSARY OF TERMS

Actuarial Assumptions – Assumptions, based upon past experience or standard tables, used to predict the occurrence of future events affecting the commencement, amount and duration of pension benefits, such as: changes in compensation, mortality, withdrawal, disablement and retirement; rates of investment earnings and asset appreciation or depreciation; and any other relevant items.

Actuarial Cost Method (or Funding Method) – A procedure for allocating the Actuarial Present Value of projected benefit payments to the current year (Service Cost) and the past (Total Pension Liability).

Actuarial Gain or Loss (or Experience Gain or Loss) – A measure of the difference between actual experience and that expected based upon the set of Actuarial Assumptions during the period between the valuation date and the most recent immediately preceding valuation date.

Actuarial Present Value of Projected Benefit Payments – The dollar value on the valuation date of all benefits expected to be paid to current members based upon the Actuarial Assumptions and the terms of the Plan.

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.

Actuarial Valuation Date – The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

Deferred Inflow of Resources – Acquisition of resources by a government that is applicable to future reporting periods. Under GASB 68, deferred inflows of resources are made up of experience gains, assumption changes reducing the Total Pension Liability and investment gains that are recognized in future reporting periods.

Deferred Outflow of Resources – Consumption of resources by a government that is applicable to future reporting periods. Under GASB 68, deferred outflows of resources are made up of experience losses, assumption changes increasing the Total Pension Liability and investment losses that are recognized in future reporting periods.

Entry Age Normal Actuarial Cost Method – A method under which the actuarial present value of the projected benefits of each individual 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.

Fiduciary Net Position – The fair market value of assets as of the measurement date.

Funded Ratio – The Actuarial Value of Assets expressed as a percentage of the Actuarial Accrued Liability.

SECTION 5 - GLOSSARY OF TERMS

GASB – Governmental Accounting Standards Board.

Measurement Date – The date as of which the Total Pension Liability and Fiduciary Net Position are measured.

Net Pension Liability – The liability of the employer for benefits provided through a defined benefit pension plan. It is calculated as the Total Pension Liability less the Fiduciary Net Position.

Present Value of Future Benefits – The actuarial present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value of money and the probabilities of payment.

Reporting Date – The last day of the Plan or employer's fiscal year.

Service Cost – The portion of the actuarial present value of projected benefit amounts that is attributed to a valuation year.

Total Pension Liability – The portion of the actuarial present value of projected benefit amounts that is attributed to past periods of employee service.

Unfunded Actuarial Accrued Liability – The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

APPENDIX A - CALCULATION OF MONEY-WEIGHTED RATE OF RETURN

	Plan Investments/ Net External Cash Flows (a)	Periods Invested (b)	Period Weight (c)=(b)÷12	(d)=(a) x (1+r _{mw}) ^(c)
Beginning value - January 1, 2017	\$ 611,250,515	12	1.00	\$ 713,417,772
Monthly net external cash flows:				
January	(586,304)	11	0.92	(675,544)
February	(4,966,662)	10	0.83	(5,649,394)
March	(5,252,373)	9	0.75	(5,897,923)
April	(3,566,454)	8	0.67	(3,953,543)
May	(7,970,206)	7	0.58	(8,722,191)
June	(4,057,006)	6	0.50	(4,382,965)
July	45,356,731	5	0.42	48,373,818
August	(5,058,681)	4	0.33	(5,326,135)
September	(4,727,358)	3	0.25	(4,913,598)
October	(3,871,492)	2	0.17	(3,972,517)
November	(4,743,904)	1	0.08	(4,805,401)
December	(3,287,119)	0	0.00	(3,287,119)
Ending value - December 31, 2017				\$ 710,205,260
Money-weighted rate of return				16.71%

Note: Beginning and ending values are based on amounts reported in the System's 2017 Annual Statement, and monthly cash flows are based on amounts provided by the Retirement System.

APPENDIX B - SCHEDULE OF DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES

Year		Differences between Expected and Actual Experience	Recognition Period (Years)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
2014	\$	-		-	-	-	-	-	-	-	-	-	-
2015	\$	-		-	-	-	-	-	-	-	-	-	-
2016	\$	8,235,183	5.86	-	-	1,405,321	1,405,321	1,405,321	1,405,321	1,405,321	1,208,578	-	-
2017	\$	-		-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in Pension Expense				-	-	1,405,321	1,405,321	1,405,321	1,405,321	1,405,321	1,208,578	-	-

Year		Changes of Assumptions	Recognition Period (Years)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
2014	\$	-		-	-	-	-	-	-	-	-	-	-
2015	\$	31,534,870	5.96	-	5,291,086	5,291,086	5,291,086	5,291,086	5,291,086	5,079,440	-	-	-
2016	\$	94,194,565	5.86	-	-	16,074,158	16,074,158	16,074,158	16,074,158	16,074,158	13,823,775	-	-
2017	\$	-		-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in Pension Expense				-	5,291,086	21,365,244	21,365,244	21,365,244	21,365,244	21,153,598	13,823,775	-	-

Year		Differences between Projected and Actual Earnings on Pension Plan Investments	Recognition Period (Years)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
2014	\$	447,378	5	89,476	89,476	89,476	89,476	89,474	-	-	-	-	-
2015	\$	43,477,381	5	-	8,695,476	8,695,476	8,695,476	8,695,476	8,695,477	-	-	-	-
2016	\$	3,499,405	5	-	-	699,881	699,881	699,881	699,881	699,881	-	-	-
2017	\$	(56,256,688)	5	-	-	-	(11,251,338)	(11,251,338)	(11,251,338)	(11,251,337)	(11,251,337)	-	-
Net Increase (Decrease) in Pension Expense				89,476	8,784,952	9,484,833	(1,766,505)	(1,766,507)	(1,855,980)	(10,551,456)	(11,251,337)	-	-

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Ashburnham
◆ Current Proportionate Share		1.330676%
◆ Prior Proportionate Share		1.243858%
Beginning Net Pension Liability	\$ 837,593,763	\$ 10,418,478
Ending Net Pension Liability	\$ 815,427,852	\$ 10,850,701
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 72,183
◆ Changes of Assumptions	77,707,861	1,034,040
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	505,908
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,612,131</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 338,328
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 437,358
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 775,686</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,406,447
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(43,255)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,363,192</u>
Covered Payroll:	\$ 271,037,131	\$ 3,252,999
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 10,850,701
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 13,224,671
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 8,845,869
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 236,240
◆ 2019	\$ 20,914,585	\$ 235,051
◆ 2020	\$ 12,007,463	\$ 122,366
◆ 2021	\$ 3,781,016	\$ 153,264
◆ 2022	\$ -	\$ 89,524
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Ashburnham- Westminster Regional
◆ Current Proportionate Share		1.085526%
◆ Prior Proportionate Share		1.017764%
Beginning Net Pension Liability	\$ 837,593,763	\$ 8,524,725
Ending Net Pension Liability	\$ 815,427,852	\$ 8,851,684
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 58,885
◆ Changes of Assumptions	77,707,861	843,539
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	394,869
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,297,293</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 275,998
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 170,253
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 446,251</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,147,338
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	24,259
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,171,597</u>
Covered Payroll:	\$ 271,037,131	\$ 3,456,372
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 8,851,684
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 10,788,299
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 7,216,200
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 252,265
◆ 2019	\$ 20,914,585	\$ 251,293
◆ 2020	\$ 12,007,463	\$ 156,814
◆ 2021	\$ 3,781,016	\$ 120,796
◆ 2022	\$ -	\$ 69,874
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Athol
◆ Current Proportionate Share		2.400360%
◆ Prior Proportionate Share		3.537318%
Beginning Net Pension Liability	\$ 837,593,763	\$ 29,628,351
Ending Net Pension Liability	\$ 815,427,852	\$ 19,573,204
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 130,209
◆ Changes of Assumptions	77,707,861	1,865,268
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	10,448,376
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 12,443,853</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 610,298
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 6,625,323
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 7,235,621</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 2,537,040
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,166,473
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 4,703,513</u>
Covered Payroll:	\$ 271,037,131	\$ 4,915,678
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 19,573,204
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 23,855,526
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 15,956,756
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 2,670,647
◆ 2019	\$ 20,914,585	\$ 2,668,499
◆ 2020	\$ 12,007,463	\$ 2,313,525
◆ 2021	\$ 3,781,016	\$ (1,272,058)
◆ 2022	\$ -	\$ (1,172,381)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Athol Housing Authority
◆ Current Proportionate Share		0.067714%
◆ Prior Proportionate Share		0.126755%
Beginning Net Pension Liability	\$ 837,593,763	\$ 1,061,692
Ending Net Pension Liability	\$ 815,427,852	\$ 552,162
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 3,673
◆ Changes of Assumptions	77,707,861	52,619
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	380,600
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 436,892</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 17,217
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 353,036
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 370,253</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 71,570
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	55,461
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 127,031</u>
Covered Payroll:	\$ 271,037,131	\$ 238,879
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 552,162
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 672,966
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 450,141
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 69,683
◆ 2019	\$ 20,914,585	\$ 69,623
◆ 2020	\$ 12,007,463	\$ 58,448
◆ 2021	\$ 3,781,016	\$ (70,234)
◆ 2022	\$ -	\$ (60,881)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Athol-Royalston Regional School District
◆ Current Proportionate Share		0.944762%
◆ Prior Proportionate Share		1.497323%
Beginning Net Pension Liability	\$ 837,593,763	\$ 12,541,482
Ending Net Pension Liability	\$ 815,427,852	\$ 7,703,849
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 51,249
◆ Changes of Assumptions	77,707,861	734,154
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	4,500,486
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 5,285,889</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 240,208
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 3,332,723
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 3,572,931</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 998,558
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	828,675
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,827,233</u>
Covered Payroll:	\$ 271,037,131	\$ 2,353,633
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 7,703,849
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 9,389,335
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 6,280,445
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 1,027,113
◆ 2019	\$ 20,914,585	\$ 1,026,268
◆ 2020	\$ 12,007,463	\$ 881,300
◆ 2021	\$ 3,781,016	\$ (651,946)
◆ 2022	\$ -	\$ (569,777)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Auburn
◆ Current Proportionate Share		5.204838%
◆ Prior Proportionate Share		4.830298%
Beginning Net Pension Liability	\$ 837,593,763	\$ 40,458,273
Ending Net Pension Liability	\$ 815,427,852	\$ 42,441,700
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 282,339
◆ Changes of Assumptions	77,707,861	4,044,568
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	2,182,536
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 6,509,443</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 1,323,345
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 182,303
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,505,648</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 5,501,210
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	389,161
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 5,890,371</u>
Covered Payroll:	\$ 271,037,131	\$ 14,036,616
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 42,441,700
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 51,727,303
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 34,599,948
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 1,482,388
◆ 2019	\$ 20,914,585	\$ 1,477,731
◆ 2020	\$ 12,007,463	\$ 1,016,307
◆ 2021	\$ 3,781,016	\$ 641,159
◆ 2022	\$ -	\$ 386,210
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Auburn Housing Authority
◆ Current Proportionate Share		0.109750%
◆ Prior Proportionate Share		0.104739%
Beginning Net Pension Liability	\$ 837,593,763	\$ 877,291
Ending Net Pension Liability	\$ 815,427,852	\$ 894,936
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 5,953
◆ Changes of Assumptions	77,707,861	85,285
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	32,830
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 124,068</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 27,904
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 128,421
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 156,325</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 116,000
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(36,437)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 79,563</u>
Covered Payroll:	\$ 271,037,131	\$ 266,335
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 894,936
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 1,090,734
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 729,583
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (13,385)
◆ 2019	\$ 20,914,585	\$ (13,483)
◆ 2020	\$ 12,007,463	\$ (21,523)
◆ 2021	\$ 3,781,016	\$ 10,967
◆ 2022	\$ -	\$ 5,167
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Auburn Water District
◆ Current Proportionate Share		0.169591%
◆ Prior Proportionate Share		0.173932%
Beginning Net Pension Liability	\$ 837,593,763	\$ 1,456,841
Ending Net Pension Liability	\$ 815,427,852	\$ 1,382,894
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 9,200
◆ Changes of Assumptions	77,707,861	131,786
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	28,771
◆ Total Deferred Outflows of Resources	<u><u>\$ 122,221,276</u></u>	<u><u>\$ 169,757</u></u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 43,119
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 25,294
◆ Total Deferred Inflows of Resources	<u><u>\$ 64,514,154</u></u>	<u><u>\$ 68,413</u></u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 179,248
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	4,273
◆ Total Employer Pension Expense	<u><u>\$ 105,694,163</u></u>	<u><u>\$ 183,521</u></u>
Covered Payroll:	\$ 271,037,131	\$ 529,006
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 1,382,894
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 1,685,450
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 1,127,383
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 39,892
◆ 2019	\$ 20,914,585	\$ 39,743
◆ 2020	\$ 12,007,463	\$ 24,288
◆ 2021	\$ 3,781,016	\$ 1,896
◆ 2022	\$ -	\$ (4,476)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Barre
◆ Current Proportionate Share		0.537746%
◆ Prior Proportionate Share		0.514703%
Beginning Net Pension Liability	\$ 837,593,763	\$ 4,311,118
Ending Net Pension Liability	\$ 815,427,852	\$ 4,384,933
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 29,170
◆ Changes of Assumptions	77,707,861	417,871
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	142,002
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 589,043</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 136,724
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 525,068
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 661,792</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 568,366
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(147,756)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 420,610</u>
Covered Payroll:	\$ 271,037,131	\$ 1,768,710
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 4,384,933
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 5,344,290
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 3,574,750
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (34,809)
◆ 2019	\$ 20,914,585	\$ (35,291)
◆ 2020	\$ 12,007,463	\$ (76,092)
◆ 2021	\$ 3,781,016	\$ 49,683
◆ 2022	\$ -	\$ 23,761
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Barre Housing Authority
◆ Current Proportionate Share		0.026957%
◆ Prior Proportionate Share		0.025318%
Beginning Net Pension Liability	\$ 837,593,763	\$ 212,059
Ending Net Pension Liability	\$ 815,427,852	\$ 219,814
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 1,462
◆ Changes of Assumptions	77,707,861	20,948
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	16,694
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 39,104</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 6,854
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ -
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 6,854</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 28,492
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	4,300
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 32,792</u>
Covered Payroll:	\$ 271,037,131	\$ 100,268
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 219,814
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 267,906
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 179,200
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 9,962
◆ 2019	\$ 20,914,585	\$ 9,937
◆ 2020	\$ 12,007,463	\$ 7,453
◆ 2021	\$ 3,781,016	\$ 3,208
◆ 2022	\$ -	\$ 1,690
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Berlin
◆ Current Proportionate Share		0.829420%
◆ Prior Proportionate Share		0.766193%
Beginning Net Pension Liability	\$ 837,593,763	\$ 6,417,586
Ending Net Pension Liability	\$ 815,427,852	\$ 6,763,323
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 44,992
◆ Changes of Assumptions	77,707,861	644,525
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	542,423
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,231,940</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 210,882
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ -
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 210,882</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 876,649
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	133,966
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,010,615</u>
Covered Payroll:	\$ 271,037,131	\$ 1,809,105
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 6,763,323
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 8,243,036
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 5,513,696
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 308,181
◆ 2019	\$ 20,914,585	\$ 307,436
◆ 2020	\$ 12,007,463	\$ 231,315
◆ 2021	\$ 3,781,016	\$ 108,929
◆ 2022	\$ -	\$ 65,197
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Berlin-Boylston Regional
◆ Current Proportionate Share		0.220752%
◆ Prior Proportionate Share		0.209495%
Beginning Net Pension Liability	\$ 837,593,763	\$ 1,754,720
Ending Net Pension Liability	\$ 815,427,852	\$ 1,800,073
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 11,975
◆ Changes of Assumptions	77,707,861	171,542
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	65,595
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 249,112</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 56,127
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 93,650
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 149,777</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 233,322
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(18,136)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 215,186</u>
Covered Payroll:	\$ 271,037,131	\$ 541,031
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 1,800,073
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 2,193,902
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 1,467,482
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 28,231
◆ 2019	\$ 20,914,585	\$ 28,033
◆ 2020	\$ 12,007,463	\$ 9,636
◆ 2021	\$ 3,781,016	\$ 21,828
◆ 2022	\$ -	\$ 11,607
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Blackstone
◆ Current Proportionate Share		1.316591%
◆ Prior Proportionate Share		1.203800%
Beginning Net Pension Liability	\$ 837,593,763	\$ 10,082,957
Ending Net Pension Liability	\$ 815,427,852	\$ 10,735,847
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 71,419
◆ Changes of Assumptions	77,707,861	1,023,094
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	671,349
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,765,862</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 334,747
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 1,350,573
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,685,320</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,391,559
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(317,385)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,074,174</u>
Covered Payroll:	\$ 271,037,131	\$ 3,862,150
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 10,735,847
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 13,084,688
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 8,752,235
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (40,849)
◆ 2019	\$ 20,914,585	\$ (42,026)
◆ 2020	\$ 12,007,463	\$ (141,046)
◆ 2021	\$ 3,781,016	\$ 188,158
◆ 2022	\$ -	\$ 116,305
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Blackstone Housing Authority
◆ Current Proportionate Share		0.033799%
◆ Prior Proportionate Share		0.029454%
Beginning Net Pension Liability	\$ 837,593,763	\$ 246,701
Ending Net Pension Liability	\$ 815,427,852	\$ 275,605
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 1,833
◆ Changes of Assumptions	77,707,861	26,264
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	30,116
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 58,213</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 8,593
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ -
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 8,593</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 35,723
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	6,660
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 42,383</u>
Covered Payroll:	\$ 271,037,131	\$ 37,083
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 275,605
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 335,904
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 224,683
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 13,757
◆ 2019	\$ 20,914,585	\$ 13,728
◆ 2020	\$ 12,007,463	\$ 10,681
◆ 2021	\$ 3,781,016	\$ 6,973
◆ 2022	\$ -	\$ 4,481
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Blackstone-Millville Regional
◆ Current Proportionate Share		0.880636%
◆ Prior Proportionate Share		0.914684%
Beginning Net Pension Liability	\$ 837,593,763	\$ 7,661,333
Ending Net Pension Liability	\$ 815,427,852	\$ 7,180,953
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 47,770
◆ Changes of Assumptions	77,707,861	684,324
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	73,144
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 805,238</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 223,904
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 284,083
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 507,987</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 930,781
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(38,310)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 892,471</u>
Covered Payroll:	\$ 271,037,131	\$ 2,552,660
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 7,180,953
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 8,752,037
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 5,854,162
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 146,660
◆ 2019	\$ 20,914,585	\$ 145,871
◆ 2020	\$ 12,007,463	\$ 66,444
◆ 2021	\$ 3,781,016	\$ (26,617)
◆ 2022	\$ -	\$ (35,108)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Bolton
◆ Current Proportionate Share		0.740943%
◆ Prior Proportionate Share		0.699152%
Beginning Net Pension Liability	\$ 837,593,763	\$ 5,856,055
Ending Net Pension Liability	\$ 815,427,852	\$ 6,041,853
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 40,193
◆ Changes of Assumptions	77,707,861	575,771
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	471,313
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,087,277</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 188,387
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 17,283
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 205,670</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 783,133
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	122,586
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 905,719</u>
Covered Payroll:	\$ 271,037,131	\$ 2,079,408
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 6,041,853
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 7,363,719
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 4,925,528
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 278,215
◆ 2019	\$ 20,914,585	\$ 277,551
◆ 2020	\$ 12,007,463	\$ 208,475
◆ 2021	\$ 3,781,016	\$ 74,272
◆ 2022	\$ -	\$ 43,093
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Boylston
◆ Current Proportionate Share		1.098349%
◆ Prior Proportionate Share		0.962717%
Beginning Net Pension Liability	\$ 837,593,763	\$ 8,063,655
Ending Net Pension Liability	\$ 815,427,852	\$ 8,956,241
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 59,580
◆ Changes of Assumptions	77,707,861	853,503
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	790,360
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,703,443</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 279,258
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 250,431
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 529,689</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,160,890
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	79,108
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,239,998</u>
Covered Payroll:	\$ 271,037,131	\$ 2,804,604
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 8,956,241
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 10,915,731
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 7,301,438
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 309,806
◆ 2019	\$ 20,914,585	\$ 308,823
◆ 2020	\$ 12,007,463	\$ 214,190
◆ 2021	\$ 3,781,016	\$ 201,078
◆ 2022	\$ -	\$ 139,858
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Boylston Water District
◆ Current Proportionate Share		0.018510%
◆ Prior Proportionate Share		0.016200%
Beginning Net Pension Liability	\$ 837,593,763	\$ 135,688
Ending Net Pension Liability	\$ 815,427,852	\$ 150,937
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 1,004
◆ Changes of Assumptions	77,707,861	14,384
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	13,679
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 29,067</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 4,706
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 82,002
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 86,708</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 19,564
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(24,879)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ (5,315)</u>
Covered Payroll:	\$ 271,037,131	\$ 60,809
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 150,937
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 183,959
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 123,049
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (20,988)
◆ 2019	\$ 20,914,585	\$ (21,007)
◆ 2020	\$ 12,007,463	\$ (21,547)
◆ 2021	\$ 3,781,016	\$ 3,519
◆ 2022	\$ -	\$ 2,382
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Brookfield
◆ Current Proportionate Share		0.488234%
◆ Prior Proportionate Share		0.445191%
Beginning Net Pension Liability	\$ 837,593,763	\$ 3,728,896
Ending Net Pension Liability	\$ 815,427,852	\$ 3,981,194
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 26,484
◆ Changes of Assumptions	77,707,861	379,396
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	250,819
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 656,699</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 124,135
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 182,032
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 306,167</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 516,035
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(9,218)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 506,817</u>
Covered Payroll:	\$ 271,037,131	\$ 1,075,165
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 3,981,194
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 4,852,219
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 3,245,608
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 93,331
◆ 2019	\$ 20,914,585	\$ 92,894
◆ 2020	\$ 12,007,463	\$ 51,750
◆ 2021	\$ 3,781,016	\$ 68,173
◆ 2022	\$ -	\$ 44,384
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Charlton
◆ Current Proportionate Share		2.100986%
◆ Prior Proportionate Share		2.045456%
Beginning Net Pension Liability	\$ 837,593,763	\$ 17,132,615
Ending Net Pension Liability	\$ 815,427,852	\$ 17,132,029
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 113,969
◆ Changes of Assumptions	77,707,861	1,632,632
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	820,014
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,566,615</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 534,182
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 4,702
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 538,884</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 2,220,620
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	233,075
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 2,453,695</u>
Covered Payroll:	\$ 271,037,131	\$ 5,223,794
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 17,132,029
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 20,880,259
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 13,966,625
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 674,368
◆ 2019	\$ 20,914,585	\$ 672,488
◆ 2020	\$ 12,007,463	\$ 478,642
◆ 2021	\$ 3,781,016	\$ 144,973
◆ 2022	\$ -	\$ 57,260
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Cherry Valley- Rochdale Water
◆ Current Proportionate Share		0.080386%
◆ Prior Proportionate Share		0.082687%
Beginning Net Pension Liability	\$ 837,593,763	\$ 692,580
Ending Net Pension Liability	\$ 815,427,852	\$ 655,493
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 4,361
◆ Changes of Assumptions	77,707,861	62,467
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	5,835
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 72,663</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 20,438
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 52,245
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 72,683</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 84,964
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(14,369)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 70,595</u>
Covered Payroll:	\$ 271,037,131	\$ 274,647
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 655,493
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 798,906
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 534,381
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 2,516
◆ 2019	\$ 20,914,585	\$ 2,443
◆ 2020	\$ 12,007,463	\$ (4,191)
◆ 2021	\$ 3,781,016	\$ 1,581
◆ 2022	\$ -	\$ (2,372)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Cherry Valley Sewer District
◆ Current Proportionate Share		0.003002%
◆ Prior Proportionate Share		0.000000%
Beginning Net Pension Liability	\$ 837,593,763	\$ -
Ending Net Pension Liability	\$ 815,427,852	\$ 24,479
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 163
◆ Changes of Assumptions	77,707,861	2,333
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	17,494
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 19,990</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 763
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 1,816
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 2,579</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 3,173
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,986
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 6,159</u>
Covered Payroll:	\$ 271,037,131	\$ -
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 24,479
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 29,835
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 19,956
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 3,617
◆ 2019	\$ 20,914,585	\$ 3,614
◆ 2020	\$ 12,007,463	\$ 3,371
◆ 2021	\$ 3,781,016	\$ 3,713
◆ 2022	\$ -	\$ 3,096
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Douglas
◆ Current Proportionate Share		1.807354%
◆ Prior Proportionate Share		1.665727%
Beginning Net Pension Liability	\$ 837,593,763	\$ 13,952,024
Ending Net Pension Liability	\$ 815,427,852	\$ 14,737,669
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 98,041
◆ Changes of Assumptions	77,707,861	1,404,456
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	825,295
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,327,792</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 459,525
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 163,614
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 623,139</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,910,268
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	117,096
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 2,027,364</u>
Covered Payroll:	\$ 271,037,131	\$ 5,726,211
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 14,737,669
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 17,962,049
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 12,014,660
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 496,715
◆ 2019	\$ 20,914,585	\$ 495,097
◆ 2020	\$ 12,007,463	\$ 335,886
◆ 2021	\$ 3,781,016	\$ 230,915
◆ 2022	\$ -	\$ 146,040
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Dudley
◆ Current Proportionate Share		1.447436%
◆ Prior Proportionate Share		1.508993%
Beginning Net Pension Liability	\$ 837,593,763	\$ 12,639,235
Ending Net Pension Liability	\$ 815,427,852	\$ 11,802,799
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 78,517
◆ Changes of Assumptions	77,707,861	1,124,772
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,203,289</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 368,015
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 1,036,731
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,404,746</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,529,856
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(302,354)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,227,502</u>
Covered Payroll:	\$ 271,037,131	\$ 3,132,977
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 11,802,799
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 14,385,073
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 9,622,051
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 1,665
◆ 2019	\$ 20,914,585	\$ 369
◆ 2020	\$ 12,007,463	\$ (119,480)
◆ 2021	\$ 3,781,016	\$ (20,537)
◆ 2022	\$ -	\$ (63,475)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Dudley Housing Authority
◆ Current Proportionate Share		0.023623%
◆ Prior Proportionate Share		0.044999%
Beginning Net Pension Liability	\$ 837,593,763	\$ 376,906
Ending Net Pension Liability	\$ 815,427,852	\$ 192,627
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 1,281
◆ Changes of Assumptions	77,707,861	18,357
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	\$ 122,221,276	\$ 19,638
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 6,006
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 162,200
◆ Total Deferred Inflows of Resources	\$ 64,514,154	\$ 168,206
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 24,968
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(38,137)
◆ Total Employer Pension Expense	\$ 105,694,163	\$ (13,169)
Covered Payroll:	\$ 271,037,131	\$ 51,225
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 192,627
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 234,771
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 157,036
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (33,176)
◆ 2019	\$ 20,914,585	\$ (33,196)
◆ 2020	\$ 12,007,463	\$ (34,828)
◆ 2021	\$ 3,781,016	\$ (25,325)
◆ 2022	\$ -	\$ (22,042)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Dudley-Charlton Regional
◆ Current Proportionate Share		1.671493%
◆ Prior Proportionate Share		1.652704%
Beginning Net Pension Liability	\$ 837,593,763	\$ 13,842,943
Ending Net Pension Liability	\$ 815,427,852	\$ 13,629,816
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 90,671
◆ Changes of Assumptions	77,707,861	1,298,881
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	228,186
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,617,738</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 424,982
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 10,380
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 435,362</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,766,670
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	59,940
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,826,610</u>
Covered Payroll:	\$ 271,037,131	\$ 4,952,250
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 13,629,816
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 16,611,815
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 11,111,500
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 411,022
◆ 2019	\$ 20,914,585	\$ 409,525
◆ 2020	\$ 12,007,463	\$ 259,040
◆ 2021	\$ 3,781,016	\$ 83,415
◆ 2022	\$ -	\$ 19,374
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	East Brookfield
◆ Current Proportionate Share		0.251065%
◆ Prior Proportionate Share		0.200050%
Beginning Net Pension Liability	\$ 837,593,763	\$ 1,675,607
Ending Net Pension Liability	\$ 815,427,852	\$ 2,047,251
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 13,619
◆ Changes of Assumptions	77,707,861	195,097
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	407,391
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 616,107</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 63,834
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 2,548
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 66,382</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 265,361
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	97,710
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 363,071</u>
Covered Payroll:	\$ 271,037,131	\$ 562,695
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 2,047,251
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 2,495,158
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 1,668,990
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 150,443
◆ 2019	\$ 20,914,585	\$ 150,218
◆ 2020	\$ 12,007,463	\$ 126,367
◆ 2021	\$ 3,781,016	\$ 70,093
◆ 2022	\$ -	\$ 52,604
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Grafton
◆ Current Proportionate Share		3.017882%
◆ Prior Proportionate Share		2.976885%
Beginning Net Pension Liability	\$ 837,593,763	\$ 24,934,203
Ending Net Pension Liability	\$ 815,427,852	\$ 24,608,648
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 163,706
◆ Changes of Assumptions	77,707,861	2,345,132
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	238,896
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,747,734</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 767,305
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 116,718
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 884,023</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 3,189,723
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	10,594
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 3,200,317</u>
Covered Payroll:	\$ 271,037,131	\$ 9,948,856
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 24,608,648
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 29,992,653
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 20,061,827
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 644,471
◆ 2019	\$ 20,914,585	\$ 641,773
◆ 2020	\$ 12,007,463	\$ 374,393
◆ 2021	\$ 3,781,016	\$ 160,801
◆ 2022	\$ -	\$ 42,274
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Grafton Housing Authority
◆ Current Proportionate Share		0.091499%
◆ Prior Proportionate Share		0.094483%
Beginning Net Pension Liability	\$ 837,593,763	\$ 791,384
Ending Net Pension Liability	\$ 815,427,852	\$ 746,110
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 4,963
◆ Changes of Assumptions	77,707,861	71,102
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	14,240
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 90,305</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 23,264
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 21,088
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 44,352</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 96,709
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	275
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 96,984</u>
Covered Payroll:	\$ 271,037,131	\$ 213,338
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 746,110
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 909,348
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 608,255
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 19,493
◆ 2019	\$ 20,914,585	\$ 19,413
◆ 2020	\$ 12,007,463	\$ 11,068
◆ 2021	\$ 3,781,016	\$ (942)
◆ 2022	\$ -	\$ (3,077)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Hardwick
◆ Current Proportionate Share		0.343846%
◆ Prior Proportionate Share		0.397506%
Beginning Net Pension Liability	\$ 837,593,763	\$ 3,329,488
Ending Net Pension Liability	\$ 815,427,852	\$ 2,803,820
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 18,652
◆ Changes of Assumptions	77,707,861	267,196
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	9,299
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 295,147</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 87,424
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 469,442
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 556,866</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 363,426
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(114,888)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 248,538</u>
Covered Payroll:	\$ 271,037,131	\$ 855,402
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 2,803,820
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 3,417,253
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 2,285,771
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (42,665)
◆ 2019	\$ 20,914,585	\$ (42,974)
◆ 2020	\$ 12,007,463	\$ (71,482)
◆ 2021	\$ 3,781,016	\$ (49,266)
◆ 2022	\$ -	\$ (55,332)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Harvard
◆ Current Proportionate Share		1.495648%
◆ Prior Proportionate Share		1.518904%
Beginning Net Pension Liability	\$ 837,593,763	\$ 12,722,244
Ending Net Pension Liability	\$ 815,427,852	\$ 12,195,933
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 81,132
◆ Changes of Assumptions	77,707,861	1,162,236
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	3,207
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,246,575</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 380,273
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 624,599
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,004,872</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,580,813
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(192,284)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,388,529</u>
Covered Payroll:	\$ 271,037,131	\$ 3,892,960
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 12,195,933
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 14,864,220
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 9,942,549
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 121,863
◆ 2019	\$ 20,914,585	\$ 120,525
◆ 2020	\$ 12,007,463	\$ (6,086)
◆ 2021	\$ 3,781,016	\$ 29,382
◆ 2022	\$ -	\$ (23,980)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Hillcrest Water District
◆ Current Proportionate Share		0.012751%
◆ Prior Proportionate Share		0.017192%
Beginning Net Pension Liability	\$ 837,593,763	\$ 143,999
Ending Net Pension Liability	\$ 815,427,852	\$ 103,976
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 692
◆ Changes of Assumptions	77,707,861	9,909
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	58,487
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 69,088</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 3,242
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 25,877
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 29,119</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 13,477
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	10,234
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 23,711</u>
Covered Payroll:	\$ 271,037,131	\$ -
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 103,976
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 126,725
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 84,765
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 12,913
◆ 2019	\$ 20,914,585	\$ 12,902
◆ 2020	\$ 12,007,463	\$ 11,696
◆ 2021	\$ 3,781,016	\$ 7,036
◆ 2022	\$ -	\$ (4,579)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Holden
◆ Current Proportionate Share		3.711929%
◆ Prior Proportionate Share		3.864289%
Beginning Net Pension Liability	\$ 837,593,763	\$ 32,367,046
Ending Net Pension Liability	\$ 815,427,852	\$ 30,268,102
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 201,355
◆ Changes of Assumptions	77,707,861	2,884,461
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	74,444
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 3,160,260</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 943,768
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 1,478,102
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 2,421,870</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 3,923,292
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(362,810)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 3,560,482</u>
Covered Payroll:	\$ 271,037,131	\$ 8,715,703
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 30,268,102
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 36,890,306
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 24,675,608
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 416,846
◆ 2019	\$ 20,914,585	\$ 413,525
◆ 2020	\$ 12,007,463	\$ 90,875
◆ 2021	\$ 3,781,016	\$ (25,749)
◆ 2022	\$ -	\$ (157,107)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Holden Housing Authority
◆ Current Proportionate Share		0.052631%
◆ Prior Proportionate Share		0.054718%
Beginning Net Pension Liability	\$ 837,593,763	\$ 458,312
Ending Net Pension Liability	\$ 815,427,852	\$ 429,169
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 2,855
◆ Changes of Assumptions	77,707,861	40,899
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	14,125
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 57,879</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 13,382
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 14,160
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 27,542</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 55,628
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	1,751
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 57,379</u>
Covered Payroll:	\$ 271,037,131	\$ 120,102
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 429,169
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 523,065
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 349,873
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 12,807
◆ 2019	\$ 20,914,585	\$ 12,760
◆ 2020	\$ 12,007,463	\$ 7,881
◆ 2021	\$ 3,781,016	\$ (958)
◆ 2022	\$ -	\$ (2,152)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Hopedale
◆ Current Proportionate Share		1.646599%
◆ Prior Proportionate Share		1.538964%
Beginning Net Pension Liability	\$ 837,593,763	\$ 12,890,264
Ending Net Pension Liability	\$ 815,427,852	\$ 13,426,827
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 89,320
◆ Changes of Assumptions	77,707,861	1,279,537
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	627,216
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,996,073</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 418,652
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 646,712
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,065,364</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,740,359
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(88,537)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,651,822</u>
Covered Payroll:	\$ 271,037,131	\$ 4,840,183
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 13,426,827
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 16,364,414
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 10,946,016
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 257,317
◆ 2019	\$ 20,914,585	\$ 255,841
◆ 2020	\$ 12,007,463	\$ 117,765
◆ 2021	\$ 3,781,016	\$ 188,797
◆ 2022	\$ -	\$ 110,989
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Hopedale Housing Authority
◆ Current Proportionate Share		0.008593%
◆ Prior Proportionate Share		0.013898%
Beginning Net Pension Liability	\$ 837,593,763	\$ 116,410
Ending Net Pension Liability	\$ 815,427,852	\$ 70,070
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 466
◆ Changes of Assumptions	77,707,861	6,677
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	1,389
◆ Total Deferred Outflows of Resources	<u><u>\$ 122,221,276</u></u>	<u><u>\$ 8,532</u></u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 2,185
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 34,615
◆ Total Deferred Inflows of Resources	<u><u>\$ 64,514,154</u></u>	<u><u>\$ 36,800</u></u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 9,082
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(7,252)
◆ Total Employer Pension Expense	<u><u>\$ 105,694,163</u></u>	<u><u>\$ 1,830</u></u>
Covered Payroll:	\$ 271,037,131	\$ -
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 70,070
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 85,400
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 57,123
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (5,446)
◆ 2019	\$ 20,914,585	\$ (5,454)
◆ 2020	\$ 12,007,463	\$ (6,169)
◆ 2021	\$ 3,781,016	\$ (5,727)
◆ 2022	\$ -	\$ (5,471)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Hubbardston
◆ Current Proportionate Share		0.471826%
◆ Prior Proportionate Share		0.440366%
Beginning Net Pension Liability	\$ 837,593,763	\$ 3,688,477
Ending Net Pension Liability	\$ 815,427,852	\$ 3,847,404
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 25,594
◆ Changes of Assumptions	77,707,861	366,646
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	368,166
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 760,406</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 119,963
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 22,190
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 142,153</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 498,693
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	94,418
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 593,111</u>
Covered Payroll:	\$ 271,037,131	\$ 1,094,952
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 3,847,404
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 4,689,158
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 3,136,538
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 193,522
◆ 2019	\$ 20,914,585	\$ 193,099
◆ 2020	\$ 12,007,463	\$ 148,574
◆ 2021	\$ 3,781,016	\$ 50,618
◆ 2022	\$ -	\$ 32,441
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Lancaster
◆ Current Proportionate Share		1.005681%
◆ Prior Proportionate Share		1.004559%
Beginning Net Pension Liability	\$ 837,593,763	\$ 8,414,126
Ending Net Pension Liability	\$ 815,427,852	\$ 8,200,606
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 54,554
◆ Changes of Assumptions	77,707,861	781,493
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	25,278
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 861,325</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 255,697
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 76,707
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 332,404</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,062,947
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(19,715)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,043,232</u>
Covered Payroll:	\$ 271,037,131	\$ 2,689,773
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 8,200,606
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 9,994,775
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 6,685,419
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 191,520
◆ 2019	\$ 20,914,585	\$ 190,619
◆ 2020	\$ 12,007,463	\$ 102,079
◆ 2021	\$ 3,781,016	\$ 43,546
◆ 2022	\$ -	\$ 1,157
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Lancaster Housing Authority
◆ Current Proportionate Share		0.026477%
◆ Prior Proportionate Share		0.017441%
Beginning Net Pension Liability	\$ 837,593,763	\$ 146,086
Ending Net Pension Liability	\$ 815,427,852	\$ 215,898
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 1,436
◆ Changes of Assumptions	77,707,861	20,574
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	53,640
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 75,650</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 6,732
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 41,853
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 48,585</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 27,984
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(3,049)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 24,935</u>
Covered Payroll:	\$ 271,037,131	\$ 51,542
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 215,898
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 263,133
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 176,007
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 2,511
◆ 2019	\$ 20,914,585	\$ 2,487
◆ 2020	\$ 12,007,463	\$ 695
◆ 2021	\$ 3,781,016	\$ 12,055
◆ 2022	\$ -	\$ 9,317
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Leicester
◆ Current Proportionate Share		2.085822%
◆ Prior Proportionate Share		2.108641%
Beginning Net Pension Liability	\$ 837,593,763	\$ 17,661,849
Ending Net Pension Liability	\$ 815,427,852	\$ 17,008,376
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 113,146
◆ Changes of Assumptions	77,707,861	1,620,848
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	22,945
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,756,939</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 530,326
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 1,241,575
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,771,901</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 2,204,592
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(395,945)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,808,647</u>
Covered Payroll:	\$ 271,037,131	\$ 5,205,603
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 17,008,376
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 20,729,552
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 13,865,819
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 42,164
◆ 2019	\$ 20,914,585	\$ 40,297
◆ 2020	\$ 12,007,463	\$ (130,510)
◆ 2021	\$ 3,781,016	\$ 56,616
◆ 2022	\$ -	\$ (23,530)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Leicester Housing Authority
◆ Current Proportionate Share		0.067839%
◆ Prior Proportionate Share		0.073283%
Beginning Net Pension Liability	\$ 837,593,763	\$ 613,812
Ending Net Pension Liability	\$ 815,427,852	\$ 553,177
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 3,680
◆ Changes of Assumptions	77,707,861	52,716
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	1,558
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 57,954</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 17,248
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 39,859
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 57,107</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 71,702
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(8,872)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 62,830</u>
Covered Payroll:	\$ 271,037,131	\$ 183,792
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 553,177
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 674,204
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 450,969
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 5,376
◆ 2019	\$ 20,914,585	\$ 5,316
◆ 2020	\$ 12,007,463	\$ (616)
◆ 2021	\$ 3,781,016	\$ (3,615)
◆ 2022	\$ -	\$ (5,614)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Leicester Water District
◆ Current Proportionate Share		0.079108%
◆ Prior Proportionate Share		0.095263%
Beginning Net Pension Liability	\$ 837,593,763	\$ 797,920
Ending Net Pension Liability	\$ 815,427,852	\$ 645,067
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 4,291
◆ Changes of Assumptions	77,707,861	61,473
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 65,764</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 20,113
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 177,430
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 197,543</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 83,612
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(43,852)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 39,760</u>
Covered Payroll:	\$ 271,037,131	\$ 245,965
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 645,067
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 786,198
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 525,881
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (27,236)
◆ 2019	\$ 20,914,585	\$ (27,305)
◆ 2020	\$ 12,007,463	\$ (33,854)
◆ 2021	\$ 3,781,016	\$ (26,725)
◆ 2022	\$ -	\$ (16,659)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Lunenburg
◆ Current Proportionate Share		2.187741%
◆ Prior Proportionate Share		2.165309%
Beginning Net Pension Liability	\$ 837,593,763	\$ 18,136,490
Ending Net Pension Liability	\$ 815,427,852	\$ 17,839,446
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 118,675
◆ Changes of Assumptions	77,707,861	1,700,046
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	328,810
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,147,531</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 556,239
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ -
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 556,239</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 2,312,314
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	89,008
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 2,401,322</u>
Covered Payroll:	\$ 271,037,131	\$ 5,865,311
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 17,839,446
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 21,742,448
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 14,543,336
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 548,521
◆ 2019	\$ 20,914,585	\$ 546,563
◆ 2020	\$ 12,007,463	\$ 349,849
◆ 2021	\$ 3,781,016	\$ 123,228
◆ 2022	\$ -	\$ 23,131
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Lunenburg Housing Authority
◆ Current Proportionate Share		0.002540%
◆ Prior Proportionate Share		0.007621%
Beginning Net Pension Liability	\$ 837,593,763	\$ 63,835
Ending Net Pension Liability	\$ 815,427,852	\$ 20,708
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 138
◆ Changes of Assumptions	77,707,861	1,973
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,111</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 646
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 42,229
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 42,875</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 2,684
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(10,210)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ (7,526)</u>
Covered Payroll:	\$ 271,037,131	\$ 43,051
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 20,708
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 25,239
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 16,882
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (9,678)
◆ 2019	\$ 20,914,585	\$ (9,679)
◆ 2020	\$ 12,007,463	\$ (9,761)
◆ 2021	\$ 3,781,016	\$ (6,406)
◆ 2022	\$ -	\$ (5,240)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Lunenburg Water District
◆ Current Proportionate Share		0.086954%
◆ Prior Proportionate Share		0.096803%
Beginning Net Pension Liability	\$ 837,593,763	\$ 810,818
Ending Net Pension Liability	\$ 815,427,852	\$ 709,045
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 4,717
◆ Changes of Assumptions	77,707,861	67,570
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	11,907
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 84,194</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 22,108
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 130,265
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 152,373</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 91,905
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(33,343)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 58,562</u>
Covered Payroll:	\$ 271,037,131	\$ 280,959
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 709,045
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 864,173
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 578,038
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (15,079)
◆ 2019	\$ 20,914,585	\$ (15,157)
◆ 2020	\$ 12,007,463	\$ (21,918)
◆ 2021	\$ 3,781,016	\$ (5,868)
◆ 2022	\$ -	\$ (10,157)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Mendon
◆ Current Proportionate Share		1.026468%
◆ Prior Proportionate Share		0.963194%
Beginning Net Pension Liability	\$ 837,593,763	\$ 8,067,655
Ending Net Pension Liability	\$ 815,427,852	\$ 8,370,108
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 55,681
◆ Changes of Assumptions	77,707,861	797,646
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	590,282
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,443,609</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 260,982
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ -
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 260,982</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,084,917
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	145,554
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,230,471</u>
Covered Payroll:	\$ 271,037,131	\$ 2,674,232
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 8,370,108
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 10,201,361
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 6,823,603
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 361,153
◆ 2019	\$ 20,914,585	\$ 360,237
◆ 2020	\$ 12,007,463	\$ 266,698
◆ 2021	\$ 3,781,016	\$ 129,294
◆ 2022	\$ -	\$ 65,246
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Mendon-Upton Regional
◆ Current Proportionate Share		1.283499%
◆ Prior Proportionate Share		1.254007%
Beginning Net Pension Liability	\$ 837,593,763	\$ 10,503,488
Ending Net Pension Liability	\$ 815,427,852	\$ 10,466,011
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 69,624
◆ Changes of Assumptions	77,707,861	997,380
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	399,498
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,466,502</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 326,333
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 40,231
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 366,564</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,356,584
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	101,846
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,458,430</u>
Covered Payroll:	\$ 271,037,131	\$ 4,331,019
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 10,466,011
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 12,755,816
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 8,532,256
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 371,432
◆ 2019	\$ 20,914,585	\$ 370,284
◆ 2020	\$ 12,007,463	\$ 252,884
◆ 2021	\$ 3,781,016	\$ 74,927
◆ 2022	\$ -	\$ 30,411
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Millbury
◆ Current Proportionate Share		3.144066%
◆ Prior Proportionate Share		3.116567%
Beginning Net Pension Liability	\$ 837,593,763	\$ 26,104,168
Ending Net Pension Liability	\$ 815,427,852	\$ 25,637,587
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 170,551
◆ Changes of Assumptions	77,707,861	2,443,186
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	197,618
	<hr/>	<hr/>
◆ Total Deferred Outflows of Resources	\$ 122,221,276	\$ 2,811,355
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 799,387
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 916,103
	<hr/>	<hr/>
◆ Total Deferred Inflows of Resources	\$ 64,514,154	\$ 1,715,490
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 3,323,094
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(266,840)
	<hr/>	<hr/>
◆ Total Employer Pension Expense	\$ 105,694,163	\$ 3,056,254
Covered Payroll:	\$ 271,037,131	\$ 7,071,781
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 25,637,587
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 31,246,704
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 20,900,651
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 393,542
◆ 2019	\$ 20,914,585	\$ 390,728
◆ 2020	\$ 12,007,463	\$ 123,062
◆ 2021	\$ 3,781,016	\$ 160,177
◆ 2022	\$ -	\$ 28,356
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Millbury Housing Authority
◆ Current Proportionate Share		0.163058%
◆ Prior Proportionate Share		0.163684%
Beginning Net Pension Liability	\$ 837,593,763	\$ 1,371,003
Ending Net Pension Liability	\$ 815,427,852	\$ 1,329,616
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 8,845
◆ Changes of Assumptions	77,707,861	126,709
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	26,885
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 162,439</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 41,458
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 3,648
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 45,106</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 172,342
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	8,204
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 180,546</u>
Covered Payroll:	\$ 271,037,131	\$ 402,818
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 1,329,616
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 1,620,516
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 1,083,949
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 42,454
◆ 2019	\$ 20,914,585	\$ 42,308
◆ 2020	\$ 12,007,463	\$ 27,441
◆ 2021	\$ 3,781,016	\$ 5,776
◆ 2022	\$ -	\$ (646)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Millville
◆ Current Proportionate Share		0.293051%
◆ Prior Proportionate Share		0.248623%
Beginning Net Pension Liability	\$ 837,593,763	\$ 2,082,447
Ending Net Pension Liability	\$ 815,427,852	\$ 2,389,622
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 15,897
◆ Changes of Assumptions	77,707,861	227,724
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	547,075
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 790,696</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 74,509
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 24,343
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 98,852</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 309,738
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	144,322
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 454,060</u>
Covered Payroll:	\$ 271,037,131	\$ 682,493
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 2,389,622
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 2,912,436
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 1,948,103
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 205,876
◆ 2019	\$ 20,914,585	\$ 205,611
◆ 2020	\$ 12,007,463	\$ 175,616
◆ 2021	\$ 3,781,016	\$ 58,927
◆ 2022	\$ -	\$ 45,813
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Narragansett Regional
◆ Current Proportionate Share		0.665740%
◆ Prior Proportionate Share		0.695362%
Beginning Net Pension Liability	\$ 837,593,763	\$ 5,824,310
Ending Net Pension Liability	\$ 815,427,852	\$ 5,428,630
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 36,113
◆ Changes of Assumptions	77,707,861	517,332
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 553,445</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 169,266
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 302,965
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 472,231</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 703,648
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(79,055)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 624,593</u>
Covered Payroll:	\$ 271,037,131	\$ 1,903,545
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 5,428,630
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 6,616,333
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 4,425,608
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 60,778
◆ 2019	\$ 20,914,585	\$ 60,182
◆ 2020	\$ 12,007,463	\$ 2,560
◆ 2021	\$ 3,781,016	\$ (11,761)
◆ 2022	\$ -	\$ (30,545)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Nashoba Regional
◆ Current Proportionate Share		1.771049%
◆ Prior Proportionate Share		1.582927%
Beginning Net Pension Liability	\$ 837,593,763	\$ 13,258,496
Ending Net Pension Liability	\$ 815,427,852	\$ 14,441,629
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 96,071
◆ Changes of Assumptions	77,707,861	1,376,245
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	1,096,235
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,568,551</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 450,294
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 792,365
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,242,659</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,871,896
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(37,927)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,833,969</u>
Covered Payroll:	\$ 271,037,131	\$ 6,360,163
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 14,441,629
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 17,601,240
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 11,773,318
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 334,065
◆ 2019	\$ 20,914,585	\$ 332,480
◆ 2020	\$ 12,007,463	\$ 184,717
◆ 2021	\$ 3,781,016	\$ 280,646
◆ 2022	\$ -	\$ 193,984
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	New Braintree
◆ Current Proportionate Share		0.089462%
◆ Prior Proportionate Share		0.128567%
Beginning Net Pension Liability	\$ 837,593,763	\$ 1,076,866
Ending Net Pension Liability	\$ 815,427,852	\$ 729,495
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 4,853
◆ Changes of Assumptions	77,707,861	69,519
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	48,457
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 122,829</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 22,746
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 234,891
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 257,637</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 94,556
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(32,335)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 62,221</u>
Covered Payroll:	\$ 271,037,131	\$ 184,094
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 729,495
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 889,098
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 594,710
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (13,543)
◆ 2019	\$ 20,914,585	\$ (13,625)
◆ 2020	\$ 12,007,463	\$ (22,248)
◆ 2021	\$ 3,781,016	\$ (45,068)
◆ 2022	\$ -	\$ (40,323)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Northboro
◆ Current Proportionate Share		3.357976%
◆ Prior Proportionate Share		3.322552%
Beginning Net Pension Liability	\$ 837,593,763	\$ 27,829,488
Ending Net Pension Liability	\$ 815,427,852	\$ 27,381,868
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 182,155
◆ Changes of Assumptions	77,707,861	2,609,411
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	295,545
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 3,087,111</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 853,775
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 497,671
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,351,446</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 3,549,184
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(102,571)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 3,446,613</u>
Covered Payroll:	\$ 271,037,131	\$ 10,251,693
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 27,381,868
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 33,372,608
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 22,322,650
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 602,741
◆ 2019	\$ 20,914,585	\$ 599,738
◆ 2020	\$ 12,007,463	\$ 307,364
◆ 2021	\$ 3,781,016	\$ 189,296
◆ 2022	\$ -	\$ 36,527
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Northboro Housing Authority
◆ Current Proportionate Share		0.112047%
◆ Prior Proportionate Share		0.105520%
Beginning Net Pension Liability	\$ 837,593,763	\$ 883,826
Ending Net Pension Liability	\$ 815,427,852	\$ 913,662
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 6,078
◆ Changes of Assumptions	77,707,861	87,069
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	100,682
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 193,829</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 28,488
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 1,271
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 29,759</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 118,427
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	28,661
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 147,088</u>
Covered Payroll:	\$ 271,037,131	\$ 392,781
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 913,662
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 1,113,557
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 744,849
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 52,195
◆ 2019	\$ 20,914,585	\$ 52,095
◆ 2020	\$ 12,007,463	\$ 41,269
◆ 2021	\$ 3,781,016	\$ 11,780
◆ 2022	\$ -	\$ 6,731
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Northboro-Southboro Regional
◆ Current Proportionate Share		0.641212%
◆ Prior Proportionate Share		0.569960%
Beginning Net Pension Liability	\$ 837,593,763	\$ 4,773,948
Ending Net Pension Liability	\$ 815,427,852	\$ 5,228,622
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 34,783
◆ Changes of Assumptions	77,707,861	498,272
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	415,203
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 948,258</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 163,030
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 277,567
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 440,597</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 677,724
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(7,607)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 670,117</u>
Covered Payroll:	\$ 271,037,131	\$ 1,995,581
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 5,228,622
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 6,372,566
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 4,262,554
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 127,074
◆ 2019	\$ 20,914,585	\$ 126,499
◆ 2020	\$ 12,007,463	\$ 73,012
◆ 2021	\$ 3,781,016	\$ 107,604
◆ 2022	\$ -	\$ 73,472
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	North Brookfield
◆ Current Proportionate Share		0.760249%
◆ Prior Proportionate Share		0.795165%
Beginning Net Pension Liability	\$ 837,593,763	\$ 6,660,251
Ending Net Pension Liability	\$ 815,427,852	\$ 6,199,284
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 41,240
◆ Changes of Assumptions	77,707,861	590,773
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	6,772
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 638,785</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 193,296
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 385,726
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 579,022</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 803,539
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(101,686)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 701,853</u>
Covered Payroll:	\$ 271,037,131	\$ 2,072,387
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 6,199,284
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 7,555,594
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 5,053,872
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 57,997
◆ 2019	\$ 20,914,585	\$ 57,317
◆ 2020	\$ 12,007,463	\$ (7,936)
◆ 2021	\$ 3,781,016	\$ (11,611)
◆ 2022	\$ -	\$ (36,003)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	North Brookfield Housing Authority
◆ Current Proportionate Share		0.031763%
◆ Prior Proportionate Share		0.031399%
Beginning Net Pension Liability	\$ 837,593,763	\$ 262,996
Ending Net Pension Liability	\$ 815,427,852	\$ 259,007
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 1,723
◆ Changes of Assumptions	77,707,861	24,683
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	12,490
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 38,896</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 8,076
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ -
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 8,076</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 33,572
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	3,749
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 37,321</u>
Covered Payroll:	\$ 271,037,131	\$ 56,674
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 259,007
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 315,673
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 211,151
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 10,418
◆ 2019	\$ 20,914,585	\$ 10,391
◆ 2020	\$ 12,007,463	\$ 7,454
◆ 2021	\$ 3,781,016	\$ 2,181
◆ 2022	\$ -	\$ 376
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Oakham
◆ Current Proportionate Share		0.115517%
◆ Prior Proportionate Share		0.135803%
Beginning Net Pension Liability	\$ 837,593,763	\$ 1,137,476
Ending Net Pension Liability	\$ 815,427,852	\$ 941,961
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 6,266
◆ Changes of Assumptions	77,707,861	89,766
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 96,032</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 29,371
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 241,496
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 270,867</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 122,095
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(65,809)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 56,286</u>
Covered Payroll:	\$ 271,037,131	\$ 203,353
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 941,961
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 1,148,047
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 767,919
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (41,544)
◆ 2019	\$ 20,914,585	\$ (41,649)
◆ 2020	\$ 12,007,463	\$ (50,300)
◆ 2021	\$ 3,781,016	\$ (20,423)
◆ 2022	\$ -	\$ (20,918)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Oxford
◆ Current Proportionate Share		3.369634%
◆ Prior Proportionate Share		3.676223%
Beginning Net Pension Liability	\$ 837,593,763	\$ 30,791,813
Ending Net Pension Liability	\$ 815,427,852	\$ 27,476,933
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 182,787
◆ Changes of Assumptions	77,707,861	2,618,470
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,801,257</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 856,739
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 2,508,058
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 3,364,797</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 3,561,506
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(610,021)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 2,951,485</u>
Covered Payroll:	\$ 271,037,131	\$ 7,340,857
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 27,476,933
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 33,488,471
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 22,400,150
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 97,738
◆ 2019	\$ 20,914,585	\$ 94,724
◆ 2020	\$ 12,007,463	\$ (195,891)
◆ 2021	\$ 3,781,016	\$ (243,969)
◆ 2022	\$ -	\$ (316,141)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Oxford Housing Authority
◆ Current Proportionate Share		0.103065%
◆ Prior Proportionate Share		0.106076%
Beginning Net Pension Liability	\$ 837,593,763	\$ 888,482
Ending Net Pension Liability	\$ 815,427,852	\$ 840,418
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 5,591
◆ Changes of Assumptions	77,707,861	80,089
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	19,699
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 105,379</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 26,204
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 17,545
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 43,749</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 108,933
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,935
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 111,868</u>
Covered Payroll:	\$ 271,037,131	\$ 329,350
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 840,418
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 1,024,288
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 685,138
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 24,583
◆ 2019	\$ 20,914,585	\$ 24,490
◆ 2020	\$ 12,007,463	\$ 15,064
◆ 2021	\$ 3,781,016	\$ 598
◆ 2022	\$ -	\$ (3,105)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Oxford-Rochdale Sewer District
◆ Current Proportionate Share		0.052402%
◆ Prior Proportionate Share		0.036601%
Beginning Net Pension Liability	\$ 837,593,763	\$ 306,570
Ending Net Pension Liability	\$ 815,427,852	\$ 427,300
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 2,843
◆ Changes of Assumptions	77,707,861	40,720
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	120,575
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 164,138</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 13,323
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ -
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 13,323</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 55,386
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	28,275
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 83,661</u>
Covered Payroll:	\$ 271,037,131	\$ 80,192
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 427,300
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 520,786
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 348,349
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 39,284
◆ 2019	\$ 20,914,585	\$ 39,237
◆ 2020	\$ 12,007,463	\$ 34,234
◆ 2021	\$ 3,781,016	\$ 21,767
◆ 2022	\$ -	\$ 16,293
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Paxton
◆ Current Proportionate Share		1.183229%
◆ Prior Proportionate Share		0.990914%
Beginning Net Pension Liability	\$ 837,593,763	\$ 8,299,837
Ending Net Pension Liability	\$ 815,427,852	\$ 9,648,380
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 64,185
◆ Changes of Assumptions	77,707,861	919,462
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	1,127,181
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,110,828</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 300,839
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 184,028
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 484,867</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,250,604
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	170,106
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,420,710</u>
Covered Payroll:	\$ 271,037,131	\$ 3,036,780
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 9,648,380
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 11,759,301
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 7,865,695
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 418,631
◆ 2019	\$ 20,914,585	\$ 417,574
◆ 2020	\$ 12,007,463	\$ 314,668
◆ 2021	\$ 3,781,016	\$ 276,780
◆ 2022	\$ -	\$ 198,307
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Petersham
◆ Current Proportionate Share		0.273624%
◆ Prior Proportionate Share		0.279060%
Beginning Net Pension Liability	\$ 837,593,763	\$ 2,337,390
Ending Net Pension Liability	\$ 815,427,852	\$ 2,231,208
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 14,843
◆ Changes of Assumptions	77,707,861	212,628
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 227,471</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 69,570
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 651,882
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 721,452</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 289,205
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(215,729)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 73,476</u>
Covered Payroll:	\$ 271,037,131	\$ 581,892
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 2,231,208
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 2,719,363
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 1,818,958
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (158,254)
◆ 2019	\$ 20,914,585	\$ (158,501)
◆ 2020	\$ 12,007,463	\$ (174,547)
◆ 2021	\$ 3,781,016	\$ 2,925
◆ 2022	\$ -	\$ (5,605)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Phillipston
◆ Current Proportionate Share		0.222792%
◆ Prior Proportionate Share		0.225569%
Beginning Net Pension Liability	\$ 837,593,763	\$ 1,889,356
Ending Net Pension Liability	\$ 815,427,852	\$ 1,816,704
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 12,085
◆ Changes of Assumptions	77,707,861	173,127
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	153,615
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 338,827</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 56,645
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 22,628
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 79,273</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 235,478
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	46,897
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 282,375</u>
Covered Payroll:	\$ 271,037,131	\$ 518,030
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 1,816,704
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 2,214,171
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 1,481,040
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 93,693
◆ 2019	\$ 20,914,585	\$ 93,493
◆ 2020	\$ 12,007,463	\$ 71,574
◆ 2021	\$ 3,781,016	\$ 3,659
◆ 2022	\$ -	\$ (2,865)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Princeton
◆ Current Proportionate Share		0.627026%
◆ Prior Proportionate Share		0.684881%
Beginning Net Pension Liability	\$ 837,593,763	\$ 5,736,524
Ending Net Pension Liability	\$ 815,427,852	\$ 5,112,946
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 34,013
◆ Changes of Assumptions	77,707,861	487,249
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	79,509
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 600,771</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 159,423
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 934,139
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,093,562</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 662,730
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(250,462)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 412,268</u>
Covered Payroll:	\$ 271,037,131	\$ 1,776,813
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 5,112,946
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 6,231,581
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 4,168,251
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (118,760)
◆ 2019	\$ 20,914,585	\$ (119,322)
◆ 2020	\$ 12,007,463	\$ (167,103)
◆ 2021	\$ 3,781,016	\$ (27,948)
◆ 2022	\$ -	\$ (59,658)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

<u>Pension Amounts as of December 31, 2017</u>	<u>Worcester Regional Retirement System</u>	<u>Quabbin Regional</u>
◆ Current Proportionate Share		1.698376%
◆ Prior Proportionate Share		1.789176%
Beginning Net Pension Liability	\$ 837,593,763	\$ 14,986,023
Ending Net Pension Liability	\$ 815,427,852	\$ 13,849,034
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 92,129
◆ Changes of Assumptions	77,707,861	1,319,772
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u><u>\$ 122,221,276</u></u>	<u><u>\$ 1,411,901</u></u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 431,817
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 901,935
◆ Total Deferred Inflows of Resources	<u><u>\$ 64,514,154</u></u>	<u><u>\$ 1,333,752</u></u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,795,085
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(233,550)
◆ Total Employer Pension Expense	<u><u>\$ 105,694,163</u></u>	<u><u>\$ 1,561,535</u></u>
Covered Payroll:	\$ 271,037,131	\$ 4,633,757
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 13,849,034
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 16,878,994
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 11,290,214
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 123,178
◆ 2019	\$ 20,914,585	\$ 121,657
◆ 2020	\$ 12,007,463	\$ (24,799)
◆ 2021	\$ 3,781,016	\$ (48,259)
◆ 2022	\$ -	\$ (93,628)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Quaboag Regional
◆ Current Proportionate Share		0.595737%
◆ Prior Proportionate Share		0.603172%
Beginning Net Pension Liability	\$ 837,593,763	\$ 5,052,135
Ending Net Pension Liability	\$ 815,427,852	\$ 4,857,807
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 32,316
◆ Changes of Assumptions	77,707,861	462,935
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 495,251</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 151,468
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 206,057
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 357,525</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 629,659
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(62,820)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 566,839</u>
Covered Payroll:	\$ 271,037,131	\$ 2,019,582
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 4,857,807
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 5,920,622
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 3,960,253
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 62,308
◆ 2019	\$ 20,914,585	\$ 61,776
◆ 2020	\$ 12,007,463	\$ 10,728
◆ 2021	\$ 3,781,016	\$ 10,581
◆ 2022	\$ -	\$ (7,667)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Royalston
◆ Current Proportionate Share		0.093408%
◆ Prior Proportionate Share		0.102137%
Beginning Net Pension Liability	\$ 837,593,763	\$ 855,495
Ending Net Pension Liability	\$ 815,427,852	\$ 761,678
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 5,067
◆ Changes of Assumptions	77,707,861	72,586
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	113,065
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 190,718</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 23,749
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 50,865
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 74,614</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 98,727
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	27,546
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 126,273</u>
Covered Payroll:	\$ 271,037,131	\$ 238,569
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 761,678
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 928,321
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 620,946
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 47,165
◆ 2019	\$ 20,914,585	\$ 47,083
◆ 2020	\$ 12,007,463	\$ 37,265
◆ 2021	\$ 3,781,016	\$ (6,408)
◆ 2022	\$ -	\$ (9,001)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Rutland
◆ Current Proportionate Share		1.010968%
◆ Prior Proportionate Share		0.888960%
Beginning Net Pension Liability	\$ 837,593,763	\$ 7,445,877
Ending Net Pension Liability	\$ 815,427,852	\$ 8,243,715
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 54,840
◆ Changes of Assumptions	77,707,861	785,602
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	710,967
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,551,409</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 257,041
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 450,501
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 707,542</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,068,534
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(5,550)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,062,984</u>
Covered Payroll:	\$ 271,037,131	\$ 2,851,634
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 8,243,715
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 10,047,315
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 6,720,563
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 206,793
◆ 2019	\$ 20,914,585	\$ 205,890
◆ 2020	\$ 12,007,463	\$ 121,867
◆ 2021	\$ 3,781,016	\$ 183,508
◆ 2022	\$ -	\$ 125,809
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Southboro
◆ Current Proportionate Share		3.185246%
◆ Prior Proportionate Share		3.153499%
Beginning Net Pension Liability	\$ 837,593,763	\$ 26,413,514
Ending Net Pension Liability	\$ 815,427,852	\$ 25,973,383
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 172,785
◆ Changes of Assumptions	77,707,861	2,475,187
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	233,049
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,881,021</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 809,858
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 260,022
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,069,880</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 3,366,619
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(37,331)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 3,329,288</u>
Covered Payroll:	\$ 271,037,131	\$ 9,256,067
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 25,973,383
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 31,655,967
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 21,174,404
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 631,700
◆ 2019	\$ 20,914,585	\$ 628,850
◆ 2020	\$ 12,007,463	\$ 348,649
◆ 2021	\$ 3,781,016	\$ 169,206
◆ 2022	\$ -	\$ 32,736
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Southboro Housing
◆ Current Proportionate Share		0.027947%
◆ Prior Proportionate Share		0.028035%
Beginning Net Pension Liability	\$ 837,593,763	\$ 234,820
Ending Net Pension Liability	\$ 815,427,852	\$ 227,888
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 1,516
◆ Changes of Assumptions	77,707,861	21,717
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 23,233</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 7,106
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 27,688
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 34,794</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 29,538
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(8,904)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 20,634</u>
Covered Payroll:	\$ 271,037,131	\$ 53,417
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 227,888
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 277,746
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 185,782
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (3,032)
◆ 2019	\$ 20,914,585	\$ (3,057)
◆ 2020	\$ 12,007,463	\$ (5,245)
◆ 2021	\$ 3,781,016	\$ (135)
◆ 2022	\$ -	\$ (91)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Spencer
◆ Current Proportionate Share		1.506690%
◆ Prior Proportionate Share		1.429349%
Beginning Net Pension Liability	\$ 837,593,763	\$ 11,972,140
Ending Net Pension Liability	\$ 815,427,852	\$ 12,285,970
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 81,731
◆ Changes of Assumptions	77,707,861	1,170,817
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	461,571
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,714,119</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 383,080
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 314,808
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 697,888</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,592,483
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(10,801)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,581,682</u>
Covered Payroll:	\$ 271,037,131	\$ 3,458,720
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 12,285,970
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 14,973,955
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 10,015,950
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 305,666
◆ 2019	\$ 20,914,585	\$ 304,318
◆ 2020	\$ 12,007,463	\$ 174,368
◆ 2021	\$ 3,781,016	\$ 152,128
◆ 2022	\$ -	\$ 79,750
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Spencer-East Brookfield Regional
◆ Current Proportionate Share		1.034298%
◆ Prior Proportionate Share		1.030882%
Beginning Net Pension Liability	\$ 837,593,763	\$ 8,634,600
Ending Net Pension Liability	\$ 815,427,852	\$ 8,433,957
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 56,106
◆ Changes of Assumptions	77,707,861	803,731
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	26,699
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 886,536</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 262,973
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 100,527
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 363,500</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,093,193
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(28,107)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,065,086</u>
Covered Payroll:	\$ 271,037,131	\$ 2,574,126
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 8,433,957
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 10,279,180
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 6,875,655
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 189,139
◆ 2019	\$ 20,914,585	\$ 188,212
◆ 2020	\$ 12,007,463	\$ 97,446
◆ 2021	\$ 3,781,016	\$ 44,716
◆ 2022	\$ -	\$ 3,523
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Spencer Housing Authority
◆ Current Proportionate Share		0.070157%
◆ Prior Proportionate Share		0.075716%
Beginning Net Pension Liability	\$ 837,593,763	\$ 634,194
Ending Net Pension Liability	\$ 815,427,852	\$ 572,080
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 3,806
◆ Changes of Assumptions	77,707,861	54,518
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	39,025
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 97,349</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 17,838
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 32,395
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 50,233</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 74,152
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	6,370
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 80,522</u>
Covered Payroll:	\$ 271,037,131	\$ 284,432
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 572,080
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 697,243
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 466,380
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 21,105
◆ 2019	\$ 20,914,585	\$ 21,042
◆ 2020	\$ 12,007,463	\$ 14,291
◆ 2021	\$ 3,781,016	\$ (3,589)
◆ 2022	\$ -	\$ (5,733)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Sterling
◆ Current Proportionate Share		1.674767%
◆ Prior Proportionate Share		1.627722%
Beginning Net Pension Liability	\$ 837,593,763	\$ 13,633,694
Ending Net Pension Liability	\$ 815,427,852	\$ 13,656,520
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 90,848
◆ Changes of Assumptions	77,707,861	1,301,426
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	274,147
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,666,421</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 425,814
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 279,352
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 705,166</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,770,131
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(37,772)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,732,359</u>
Covered Payroll:	\$ 271,037,131	\$ 4,620,740
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 13,656,520
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 16,644,360
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 11,133,269
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 313,997
◆ 2019	\$ 20,914,585	\$ 312,499
◆ 2020	\$ 12,007,463	\$ 167,066
◆ 2021	\$ 3,781,016	\$ 119,181
◆ 2022	\$ -	\$ 48,512
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Sterling Housing Authority
◆ Current Proportionate Share		0.016141%
◆ Prior Proportionate Share		0.015455%
Beginning Net Pension Liability	\$ 837,593,763	\$ 129,446
Ending Net Pension Liability	\$ 815,427,852	\$ 131,614
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 876
◆ Changes of Assumptions	77,707,861	12,542
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	13,038
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 26,456</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 4,104
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 661
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 4,765</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 17,060
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	3,705
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 20,765</u>
Covered Payroll:	\$ 271,037,131	\$ -
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 131,614
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 160,410
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 107,297
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 7,095
◆ 2019	\$ 20,914,585	\$ 7,083
◆ 2020	\$ 12,007,463	\$ 5,520
◆ 2021	\$ 3,781,016	\$ 1,286
◆ 2022	\$ -	\$ 707
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Sturbridge
◆ Current Proportionate Share		2.314780%
◆ Prior Proportionate Share		2.181321%
Beginning Net Pension Liability	\$ 837,593,763	\$ 18,270,609
Ending Net Pension Liability	\$ 815,427,852	\$ 18,875,360
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 125,566
◆ Changes of Assumptions	77,707,861	1,798,766
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	777,695
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,702,027</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 588,539
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 96,178
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 684,717</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 2,446,587
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	130,427
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 2,577,014</u>
Covered Payroll:	\$ 271,037,131	\$ 6,400,051
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 18,875,360
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 23,005,004
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 15,387,849
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 616,624
◆ 2019	\$ 20,914,585	\$ 614,553
◆ 2020	\$ 12,007,463	\$ 409,174
◆ 2021	\$ 3,781,016	\$ 239,342
◆ 2022	\$ -	\$ 137,617
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Sutton
◆ Current Proportionate Share		1.910470%
◆ Prior Proportionate Share		1.887333%
Beginning Net Pension Liability	\$ 837,593,763	\$ 15,808,187
Ending Net Pension Liability	\$ 815,427,852	\$ 15,578,505
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 103,634
◆ Changes of Assumptions	77,707,861	1,484,585
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	145,673
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,733,892</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 485,742
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 818,990
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,304,732</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 2,019,255
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(246,134)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,773,121</u>
Covered Payroll:	\$ 271,037,131	\$ 6,087,190
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 15,578,505
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 18,986,847
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 12,700,139
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 155,142
◆ 2019	\$ 20,914,585	\$ 153,433
◆ 2020	\$ 12,007,463	\$ (5,666)
◆ 2021	\$ 3,781,016	\$ 102,393
◆ 2022	\$ -	\$ 23,858
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Tantasqua Regional
◆ Current Proportionate Share		1.134416%
◆ Prior Proportionate Share		1.114205%
Beginning Net Pension Liability	\$ 837,593,763	\$ 9,332,508
Ending Net Pension Liability	\$ 815,427,852	\$ 9,250,346
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 61,537
◆ Changes of Assumptions	77,707,861	881,531
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	117,779
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,060,847</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 288,429
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 88,880
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 377,309</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,199,012
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(3,977)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,195,035</u>
Covered Payroll:	\$ 271,037,131	\$ 3,746,283
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 9,250,346
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 11,274,183
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 7,541,204
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 234,298
◆ 2019	\$ 20,914,585	\$ 233,281
◆ 2020	\$ 12,007,463	\$ 133,128
◆ 2021	\$ 3,781,016	\$ 61,989
◆ 2022	\$ -	\$ 20,841
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Templeton
◆ Current Proportionate Share		1.319332%
◆ Prior Proportionate Share		1.366103%
Beginning Net Pension Liability	\$ 837,593,763	\$ 11,442,390
Ending Net Pension Liability	\$ 815,427,852	\$ 10,758,199
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 71,568
◆ Changes of Assumptions	77,707,861	1,025,225
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	18,976
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,115,769</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 335,444
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 1,349,032
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,684,476</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,394,457
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(414,841)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 979,616</u>
Covered Payroll:	\$ 271,037,131	\$ 3,379,162
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 10,758,199
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 13,111,931
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 8,770,457
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (137,728)
◆ 2019	\$ 20,914,585	\$ (138,909)
◆ 2020	\$ 12,007,463	\$ (241,876)
◆ 2021	\$ 3,781,016	\$ (1,967)
◆ 2022	\$ -	\$ (48,228)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Templeton Housing Authority
◆ Current Proportionate Share		0.073851%
◆ Prior Proportionate Share		0.074744%
Beginning Net Pension Liability	\$ 837,593,763	\$ 626,055
Ending Net Pension Liability	\$ 815,427,852	\$ 602,200
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 4,006
◆ Changes of Assumptions	77,707,861	57,388
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 61,394</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 18,777
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 80,020
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 98,797</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 78,056
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(25,968)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 52,088</u>
Covered Payroll:	\$ 271,037,131	\$ 58,039
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 602,200
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 733,952
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 490,934
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (10,456)
◆ 2019	\$ 20,914,585	\$ (10,522)
◆ 2020	\$ 12,007,463	\$ (16,154)
◆ 2021	\$ 3,781,016	\$ 651
◆ 2022	\$ -	\$ (921)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Upton
◆ Current Proportionate Share		1.010630%
◆ Prior Proportionate Share		0.926371%
Beginning Net Pension Liability	\$ 837,593,763	\$ 7,759,223
Ending Net Pension Liability	\$ 815,427,852	\$ 8,240,959
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 54,822
◆ Changes of Assumptions	77,707,861	785,339
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	507,317
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,347,478</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 256,956
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 547,324
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 804,280</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,068,177
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(79,650)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 988,527</u>
Covered Payroll:	\$ 271,037,131	\$ 3,363,936
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 8,240,959
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 10,043,957
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 6,718,316
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 132,621
◆ 2019	\$ 20,914,585	\$ 131,719
◆ 2020	\$ 12,007,463	\$ 49,097
◆ 2021	\$ 3,781,016	\$ 142,876
◆ 2022	\$ -	\$ 86,885
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Uxbridge
◆ Current Proportionate Share		3.095555%
◆ Prior Proportionate Share		3.196207%
Beginning Net Pension Liability	\$ 837,593,763	\$ 26,771,228
Ending Net Pension Liability	\$ 815,427,852	\$ 25,242,018
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 167,920
◆ Changes of Assumptions	77,707,861	2,405,490
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	306,417
	<hr/>	<hr/>
◆ Total Deferred Outflows of Resources	\$ 122,221,276	\$ 2,879,827
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 787,054
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 896,470
	<hr/>	<hr/>
◆ Total Deferred Inflows of Resources	\$ 64,514,154	\$ 1,683,524
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 3,271,821
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(146,013)
	<hr/>	<hr/>
◆ Total Employer Pension Expense	\$ 105,694,163	\$ 3,125,808
Covered Payroll:	\$ 271,037,131	\$ 7,722,133
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 25,242,018
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 30,764,591
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 20,578,170
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 504,178
◆ 2019	\$ 20,914,585	\$ 501,409
◆ 2020	\$ 12,007,463	\$ 229,874
◆ 2021	\$ 3,781,016	\$ 64,629
◆ 2022	\$ -	\$ (103,788)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Uxbridge Housing Authority
◆ Current Proportionate Share		0.084153%
◆ Prior Proportionate Share		0.107498%
Beginning Net Pension Liability	\$ 837,593,763	\$ 900,397
Ending Net Pension Liability	\$ 815,427,852	\$ 686,209
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 4,565
◆ Changes of Assumptions	77,707,861	65,394
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	42,886
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 112,845</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 21,396
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 136,035
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 157,431</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 88,945
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(13,670)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 75,275</u>
Covered Payroll:	\$ 271,037,131	\$ 209,477
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 686,209
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 836,342
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 559,422
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 4,006
◆ 2019	\$ 20,914,585	\$ 3,930
◆ 2020	\$ 12,007,463	\$ (4,115)
◆ 2021	\$ 3,781,016	\$ (24,335)
◆ 2022	\$ -	\$ (24,072)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Wachusett Regional
◆ Current Proportionate Share		3.317011%
◆ Prior Proportionate Share		2.935133%
Beginning Net Pension Liability	\$ 837,593,763	\$ 24,584,493
Ending Net Pension Liability	\$ 815,427,852	\$ 27,047,828
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 179,933
◆ Changes of Assumptions	77,707,861	2,577,578
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	2,225,290
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 4,982,801</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 843,359
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 1,152,393
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,995,752</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 3,505,887
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	97,918
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 3,603,805</u>
Covered Payroll:	\$ 271,037,131	\$ 11,159,876
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 27,047,828
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 32,965,485
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 22,050,329
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 794,624
◆ 2019	\$ 20,914,585	\$ 791,656
◆ 2020	\$ 12,007,463	\$ 506,743
◆ 2021	\$ 3,781,016	\$ 500,250
◆ 2022	\$ -	\$ 393,776
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Warren
◆ Current Proportionate Share		0.653789%
◆ Prior Proportionate Share		0.587776%
Beginning Net Pension Liability	\$ 837,593,763	\$ 4,923,172
Ending Net Pension Liability	\$ 815,427,852	\$ 5,331,180
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 35,465
◆ Changes of Assumptions	77,707,861	508,046
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	439,259
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 982,770</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 166,228
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 19,325
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 185,553</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 691,017
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	92,585
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 783,602</u>
Covered Payroll:	\$ 271,037,131	\$ 1,457,012
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 5,331,180
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 6,497,562
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 4,346,163
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 229,907
◆ 2019	\$ 20,914,585	\$ 229,322
◆ 2020	\$ 12,007,463	\$ 170,352
◆ 2021	\$ 3,781,016	\$ 99,565
◆ 2022	\$ -	\$ 68,071
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Warren Water District
◆ Current Proportionate Share		0.027858%
◆ Prior Proportionate Share		0.023926%
Beginning Net Pension Liability	\$ 837,593,763	\$ 200,402
Ending Net Pension Liability	\$ 815,427,852	\$ 227,163
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 1,511
◆ Changes of Assumptions	77,707,861	21,648
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	40,208
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 63,367</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 7,083
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 947
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 8,030</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 29,444
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	10,312
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 39,756</u>
Covered Payroll:	\$ 271,037,131	\$ 84,934
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 227,163
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 276,862
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 185,191
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 16,163
◆ 2019	\$ 20,914,585	\$ 16,138
◆ 2020	\$ 12,007,463	\$ 13,423
◆ 2021	\$ 3,781,016	\$ 5,557
◆ 2022	\$ -	\$ 4,055
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Westboro
◆ Current Proportionate Share		6.707706%
◆ Prior Proportionate Share		6.710879%
Beginning Net Pension Liability	\$ 837,593,763	\$ 56,209,904
Ending Net Pension Liability	\$ 815,427,852	\$ 54,696,505
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 363,864
◆ Changes of Assumptions	77,707,861	5,212,412
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	826,747
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 6,403,023</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 1,705,455
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 18,492
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,723,947</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 7,089,659
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	267,302
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 7,356,961</u>
Covered Payroll:	\$ 271,037,131	\$ 18,617,363
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 54,696,505
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 66,663,273
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 44,590,489
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 1,676,193
◆ 2019	\$ 20,914,585	\$ 1,670,193
◆ 2020	\$ 12,007,463	\$ 1,062,962
◆ 2021	\$ 3,781,016	\$ 273,001
◆ 2022	\$ -	\$ (3,272)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Westboro Housing Authority
◆ Current Proportionate Share		0.066748%
◆ Prior Proportionate Share		0.061573%
Beginning Net Pension Liability	\$ 837,593,763	\$ 515,732
Ending Net Pension Liability	\$ 815,427,852	\$ 544,281
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 3,621
◆ Changes of Assumptions	77,707,861	51,868
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	32,433
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 87,922</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 16,971
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ -
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 16,971</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 70,549
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	6,965
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 77,514</u>
Covered Payroll:	\$ 271,037,131	\$ 197,365
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 544,281
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 663,362
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 443,717
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 20,984
◆ 2019	\$ 20,914,585	\$ 20,922
◆ 2020	\$ 12,007,463	\$ 14,951
◆ 2021	\$ 3,781,016	\$ 8,759
◆ 2022	\$ -	\$ 5,336
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	West Boylston
◆ Current Proportionate Share		2.090980%
◆ Prior Proportionate Share		2.057730%
Beginning Net Pension Liability	\$ 837,593,763	\$ 17,235,420
Ending Net Pension Liability	\$ 815,427,852	\$ 17,050,437
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 113,426
◆ Changes of Assumptions	77,707,861	1,624,856
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	193,756
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,932,038</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 531,638
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 564,244
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 1,095,882</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 2,210,044
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(148,857)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 2,061,187</u>
Covered Payroll:	\$ 271,037,131	\$ 5,126,766
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 17,050,437
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 20,780,815
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 13,900,108
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 290,331
◆ 2019	\$ 20,914,585	\$ 288,462
◆ 2020	\$ 12,007,463	\$ 109,514
◆ 2021	\$ 3,781,016	\$ 113,564
◆ 2022	\$ -	\$ 34,286
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	West Boylston Housing Authority
◆ Current Proportionate Share		0.018198%
◆ Prior Proportionate Share		0.021241%
Beginning Net Pension Liability	\$ 837,593,763	\$ 177,917
Ending Net Pension Liability	\$ 815,427,852	\$ 148,391
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 987
◆ Changes of Assumptions	77,707,861	14,141
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	3,346
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 18,474</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 4,627
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 17,736
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 22,363</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 19,234
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(2,633)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 16,601</u>
Covered Payroll:	\$ 271,037,131	\$ -
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 148,391
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 180,856
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 120,973
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 1,187
◆ 2019	\$ 20,914,585	\$ 1,173
◆ 2020	\$ 12,007,463	\$ (474)
◆ 2021	\$ 3,781,016	\$ (2,637)
◆ 2022	\$ -	\$ (3,138)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	West Boylston Water District
◆ Current Proportionate Share		0.090209%
◆ Prior Proportionate Share		0.091292%
Beginning Net Pension Liability	\$ 837,593,763	\$ 764,657
Ending Net Pension Liability	\$ 815,427,852	\$ 735,587
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 4,893
◆ Changes of Assumptions	77,707,861	70,099
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	3,929
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 78,921</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 22,936
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 93,724
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 116,660</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 95,345
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(29,812)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 65,533</u>
Covered Payroll:	\$ 271,037,131	\$ 298,365
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 735,587
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 896,522
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 599,676
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (10,864)
◆ 2019	\$ 20,914,585	\$ (10,945)
◆ 2020	\$ 12,007,463	\$ (17,799)
◆ 2021	\$ 3,781,016	\$ 2,987
◆ 2022	\$ -	\$ (1,117)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	West Brookfield
◆ Current Proportionate Share		0.460642%
◆ Prior Proportionate Share		0.464450%
Beginning Net Pension Liability	\$ 837,593,763	\$ 3,890,208
Ending Net Pension Liability	\$ 815,427,852	\$ 3,756,207
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 24,988
◆ Changes of Assumptions	77,707,861	357,955
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	-
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 382,943</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 117,120
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 402,741
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 519,861</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 486,872
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(128,808)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 358,064</u>
Covered Payroll:	\$ 271,037,131	\$ 1,058,730
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 3,756,207
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 4,578,009
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 3,062,191
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ (32,052)
◆ 2019	\$ 20,914,585	\$ (32,467)
◆ 2020	\$ 12,007,463	\$ (69,095)
◆ 2021	\$ 3,781,016	\$ 623
◆ 2022	\$ -	\$ (3,927)
◆ Thereafter	\$ -	\$ -

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APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Westminster
◆ Current Proportionate Share		1.452913%
◆ Prior Proportionate Share		1.454939%
Beginning Net Pension Liability	\$ 837,593,763	\$ 12,186,476
Ending Net Pension Liability	\$ 815,427,852	\$ 11,847,454
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 78,814
◆ Changes of Assumptions	77,707,861	1,129,027
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	432,552
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 1,640,393</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 369,407
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 11,807
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 381,214</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 1,535,644
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	141,884
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 1,677,528</u>
Covered Payroll:	\$ 271,037,131	\$ 3,715,452
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 11,847,454
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 14,439,499
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 9,658,456
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 447,054
◆ 2019	\$ 20,914,585	\$ 445,755
◆ 2020	\$ 12,007,463	\$ 310,809
◆ 2021	\$ 3,781,016	\$ 57,651
◆ 2022	\$ -	\$ (2,089)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Winchendon
◆ Current Proportionate Share		2.518111%
◆ Prior Proportionate Share		2.721136%
Beginning Net Pension Liability	\$ 837,593,763	\$ 22,792,062
Ending Net Pension Liability	\$ 815,427,852	\$ 20,533,375
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 136,596
◆ Changes of Assumptions	77,707,861	1,956,770
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	30,359
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 2,123,725</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 640,237
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 1,455,671
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 2,095,908</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 2,661,496
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(327,658)
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 2,333,838</u>
Covered Payroll:	\$ 271,037,131	\$ 5,598,659
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 20,533,375
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 25,025,768
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 16,739,521
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 201,245
◆ 2019	\$ 20,914,585	\$ 198,994
◆ 2020	\$ 12,007,463	\$ (21,615)
◆ 2021	\$ 3,781,016	\$ (141,457)
◆ 2022	\$ -	\$ (209,351)
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2017	Worcester Regional Retirement System	Winchendon Housing Authority
◆ Current Proportionate Share		0.166117%
◆ Prior Proportionate Share		0.153752%
Beginning Net Pension Liability	\$ 837,593,763	\$ 1,287,821
Ending Net Pension Liability	\$ 815,427,852	\$ 1,354,563
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,424,541	\$ 9,011
◆ Changes of Assumptions	77,707,861	129,086
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	135,678
◆ Total Deferred Outflows of Resources	<u>\$ 122,221,276</u>	<u>\$ 273,775</u>
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ -	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	25,425,280	\$ 42,236
◆ Changes of Assumptions	-	\$ -
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	39,088,874	\$ 7
◆ Total Deferred Inflows of Resources	<u>\$ 64,514,154</u>	<u>\$ 42,243</u>
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 105,694,163	\$ 175,576
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	36,319
◆ Total Employer Pension Expense	<u>\$ 105,694,163</u>	<u>\$ 211,895</u>
Covered Payroll:	\$ 271,037,131	\$ 606,964
Sensitivity of the Net Pension Liability to changes in the discount rate:		
◆ Current discount rate: 7.75%	\$ 815,427,852	\$ 1,354,563
◆ 1% decrease in the discount rate: 6.75%	\$ 993,831,171	\$ 1,650,921
◆ 1% increase in the discount rate: 8.75%	\$ 664,765,107	\$ 1,104,287
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in Pension Expense:		
◆ 2018	\$ 21,004,058	\$ 71,211
◆ 2019	\$ 20,914,585	\$ 71,061
◆ 2020	\$ 12,007,463	\$ 55,406
◆ 2021	\$ 3,781,016	\$ 21,104
◆ 2022	\$ -	\$ 12,750
◆ Thereafter	\$ -	\$ -

Worcester Regional Retirement System
Financial Reporting and Disclosures as of December 31, 2017

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Under GASB 67, a series of projections and calculations are used to determine the discount rate for the purpose of the measurement of the Total Pension Liability. The discount rate is the single rate that reflects (1) the long-term expected rate of return on pension plan investments that are expected to be used to finance the payment of benefits, to the extent that the pension plan's Fiduciary Net Position is projected to be sufficient to make projected benefit payments and pension plan assets are expected to be invested using a strategy to achieve that return, and (2) a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher, to the extent that the conditions for use of the long-term expected rate of return are not met.

Projected cash flows into and out of the pension plan are assumed to be contributions to the pension plan, benefit payments, pension plan administrative expenses and pension plan investment earnings. These projected cash flows are used to project the pension plan's Fiduciary Net Position at the beginning of each period. The pension plan's projected Fiduciary Net Position at the beginning of each period is compared to the amount of benefit payments projected to occur in that period.

It is assumed that the pension plan's Fiduciary Net Position is expected to always be invested using a strategy to achieve the long-term expected rate of return on pension plan investments.

The benefit payments that are projected to occur in a period are discounted using the long-term expected rate of return on pension plan investments if the amount of the pension plan's beginning Fiduciary Net Position is projected to be sufficient to make the benefit payments in that period. In periods in which benefit payments are projected to be greater than the amount of the pension plan's Fiduciary Net Position, they are discounted using a municipal bond rate as required by GASB 67.

For purposes of this valuation, the long-term expected rate of return on pension plan investments is 7.75%; the municipal bond rate is 3.78%, based on the December 2017 Bond Buyer Index as published by the Federal Reserve. For each period, the pension plan's Fiduciary Net Position is projected to be sufficient to make the benefit payments in that period, therefore, the resulting single discount rate is based solely on the long-term expected rate of return of 7.75%.

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Table 1: Projection of Contributions

Year	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Contributions from Current Employees (d)	Employer Service Cost and Expense Contributions (e)	UAL Contributions (f)	Total Contributions (g) = (d) + (e) + (f)
1	261,348,229	32,887,328	294,235,557	24,969,585	15,557,633	31,417,446	71,944,664
2	252,406,287	53,598,692	306,004,979	24,273,077	13,971,301	35,955,316	74,199,694
3	243,847,372	74,397,806	318,245,178	23,558,092	13,335,460	40,983,622	77,877,174
4	235,257,055	95,717,930	330,974,985	22,810,047	12,775,166	46,552,499	82,137,712
5	226,516,175	117,697,809	344,213,984	22,042,036	12,243,254	52,717,122	87,002,412
6	217,542,034	140,440,509	357,982,543	21,264,083	11,708,874	59,538,196	92,511,153
7	208,462,716	163,839,129	372,301,845	20,481,989	11,149,680	67,082,517	98,714,186
8	199,534,164	187,659,755	387,193,919	19,684,483	10,578,956	75,423,588	105,687,027
9	190,373,728	212,307,948	402,681,676	18,837,054	10,046,107	84,642,255	113,525,416
10	181,146,977	237,641,966	418,788,943	18,029,155	9,528,631	94,827,490	122,385,276
11	172,592,037	262,948,464	435,540,501	17,214,005	8,961,745	106,077,152	132,252,902
12	163,737,327	289,224,794	452,962,121	16,434,482	8,502,209	118,498,905	143,435,596
13	155,453,720	315,626,886	471,080,606	15,657,520	7,962,380	132,062,743	155,682,643
14	147,561,118	342,362,712	489,923,830	14,905,794	7,505,084	147,035,512	169,446,390
15	139,648,277	369,872,506	509,520,783	14,161,705	7,080,813	163,559,807	184,802,325
16	131,923,416	397,978,198	529,901,614	13,410,953	6,645,888	181,792,514	201,849,355
17	124,497,255	426,600,424	551,097,679	12,679,551	6,245,636	201,906,228	220,831,415
18	117,319,469	455,822,117	573,141,586	11,983,718	5,870,540	224,091,226	241,945,484
19	110,315,216	485,752,033	596,067,249	11,302,836	5,496,883	-	16,799,719
20	103,614,353	516,295,586	619,909,939	10,633,481	5,134,131	-	15,767,612
21	97,115,834	547,590,503	644,706,337	9,982,007	4,805,058	-	14,787,065
22	90,713,434	579,781,156	670,494,590	9,338,531	4,488,252	-	13,826,783
23	84,758,718	612,555,656	697,314,374	8,733,536	4,177,771	-	12,911,307
24	78,708,099	646,498,850	725,206,949	8,085,554	3,895,513	-	11,981,067
25	72,668,950	681,546,277	754,215,227	7,463,831	3,641,953	-	11,105,784
26	66,792,302	717,591,534	784,383,836	6,786,260	3,363,843	-	10,150,103
27	61,171,823	754,587,366	815,759,189	6,089,232	3,165,793	-	9,255,025
28	55,776,154	792,613,403	848,389,557	5,340,207	3,025,370	-	8,365,577
29	50,397,083	831,928,056	882,325,139	4,593,020	2,970,440	-	7,563,460
30	45,091,551	872,526,594	917,618,145	4,068,534	2,916,145	-	6,984,679

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Table 1: Projection of Contributions

Year	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Contributions from Current Employees (d)	Employer Service Cost and Expense Contributions (e)	UAL Contributions (f)	Total Contributions (g) = (d) + (e) + (f)
31	40,208,091	914,114,780	954,322,871	3,546,906	2,650,107	-	6,197,013
32	35,537,434	956,958,352	992,495,786	3,130,760	2,444,100	-	5,574,860
33	31,377,622	1,000,817,995	1,032,195,617	2,679,609	2,164,318	-	4,843,927
34	27,027,793	1,046,455,649	1,073,483,442	2,274,179	1,995,657	-	4,269,836
35	22,945,433	1,093,477,347	1,116,422,780	1,898,511	1,752,962	-	3,651,473
36	19,112,111	1,141,967,580	1,161,079,691	1,550,940	1,520,359	-	3,071,299
37	15,494,261	1,192,028,618	1,207,522,879	1,234,831	1,296,765	-	2,531,596
38	12,299,843	1,243,523,951	1,255,823,794	951,757	1,073,814	-	2,025,571
39	9,528,283	1,296,528,463	1,306,056,746	710,403	880,920	-	1,591,323
40	7,133,366	1,351,165,650	1,358,299,016	524,997	709,311	-	1,234,308
41	5,326,648	1,407,304,329	1,412,630,977	385,330	537,875	-	923,205
42	3,903,483	1,465,232,733	1,469,136,216	265,292	408,341	-	673,633
43	2,706,317	1,525,195,348	1,527,901,665	174,689	316,327	-	491,016
44	1,779,553	1,587,238,179	1,589,017,732	100,463	228,552	-	329,015
45	1,033,778	1,651,544,663	1,652,578,441	50,524	164,690	-	215,214
46	515,775	1,718,165,804	1,718,681,579	19,601	103,509	-	123,110
47	197,068	1,787,231,774	1,787,428,842	6,971	57,249	-	64,220
48	68,782	1,858,857,214	1,858,925,996	2,196	22,392	-	24,588
49	21,832	1,933,261,204	1,933,283,036	649	8,053	-	8,702
50	6,095	2,010,608,262	2,010,614,357	-	2,604	-	2,604

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Table 2: Projection of the Pension Plan's Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
1	705,993,287	71,944,664	89,539,733	1,100,000	53,990,046	741,288,264
2	741,288,264	74,199,694	77,833,706	1,144,000	57,264,692	793,774,944
3	793,774,944	77,877,174	82,874,824	1,189,760	61,277,796	848,865,330
4	848,865,330	82,137,712	88,138,452	1,237,350	65,506,587	907,133,827
5	907,133,827	87,002,412	93,786,104	1,286,844	69,990,138	969,053,429
6	969,053,429	92,511,153	99,699,293	1,338,318	74,771,241	1,035,298,213
7	1,035,298,213	98,714,186	105,749,135	1,391,851	79,909,073	1,106,780,486
8	1,106,780,486	105,687,027	111,883,293	1,447,525	85,479,291	1,184,615,985
9	1,184,615,985	113,525,416	118,001,828	1,505,426	91,575,943	1,270,210,091
10	1,270,210,091	122,385,276	124,240,330	1,565,643	98,308,730	1,365,098,124
11	1,365,098,124	132,252,902	130,709,783	1,628,269	105,791,805	1,470,804,779
12	1,470,804,779	143,435,596	137,461,042	1,693,399	114,153,265	1,589,239,198
13	1,589,239,198	155,682,643	144,370,268	1,761,135	123,536,148	1,722,326,586
14	1,722,326,586	169,446,390	150,906,429	1,831,581	134,127,760	1,873,162,726
15	1,873,162,726	184,802,325	157,181,010	1,904,844	146,166,625	2,045,045,822
16	2,045,045,822	201,849,355	163,164,453	1,981,038	159,913,326	2,241,663,012
17	2,241,663,012	220,831,415	168,842,532	2,060,279	175,663,617	2,467,255,233
18	2,467,255,233	241,945,484	174,185,624	2,142,691	193,754,946	2,726,627,348
19	2,726,627,348	16,799,719	179,066,093	2,228,398	204,939,447	2,767,072,023
20	2,767,072,023	15,767,612	183,418,781	2,317,534	207,861,795	2,804,965,115
21	2,804,965,115	14,787,065	187,304,660	2,410,235	210,606,343	2,840,643,628
22	2,840,643,628	13,826,783	190,693,388	2,506,645	213,199,168	2,874,469,546
23	2,874,469,546	12,911,307	193,625,813	2,606,911	215,667,685	2,906,815,814
24	2,906,815,814	11,981,067	195,911,658	2,711,187	218,045,857	2,938,219,893
25	2,938,219,893	11,105,784	197,736,770	2,819,635	220,370,830	2,969,140,101
26	2,969,140,101	10,150,103	199,238,904	2,932,420	222,667,536	2,999,786,416
27	2,999,786,416	9,255,025	200,198,531	3,049,717	224,966,210	3,030,759,403
28	3,030,759,403	8,365,577	200,566,924	3,171,705	227,313,148	3,062,699,499
29	3,062,699,499	7,563,460	200,441,365	3,298,574	229,757,373	3,096,280,393
30	3,096,280,393	6,984,679	200,028,951	3,430,517	232,348,332	3,132,153,936
31	3,132,153,936	6,197,013	199,150,580	3,567,737	235,126,730	3,170,759,362
32	3,170,759,362	5,574,860	197,663,965	3,710,447	238,146,618	3,213,106,428
33	3,213,106,428	4,843,927	195,754,805	3,858,865	241,468,421	3,259,805,105

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Table 2: Projection of the Pension Plan's Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
34	3,259,805,105	4,269,836	192,964,614	4,013,219	245,167,461	3,312,264,569
35	3,312,264,569	3,651,473	190,087,762	4,173,748	249,314,365	3,370,968,897
36	3,370,968,897	3,071,299	186,704,381	4,340,698	253,966,106	3,436,961,223
37	3,436,961,223	2,531,596	182,921,270	4,514,326	259,199,465	3,511,256,687
38	3,511,256,687	2,025,571	178,787,560	4,694,899	265,090,939	3,594,890,738
39	3,594,890,738	1,591,323	174,259,748	4,882,695	271,723,926	3,689,063,544
40	3,689,063,544	1,234,308	169,353,994	5,078,003	279,191,014	3,795,056,869
41	3,795,056,869	923,205	164,061,584	5,281,123	287,590,652	3,914,228,018
42	3,914,228,018	673,633	158,295,198	5,492,368	297,032,006	4,048,146,091
43	4,048,146,091	491,016	152,193,392	5,712,062	307,631,513	4,198,363,166
44	4,198,363,166	329,015	145,910,022	5,940,545	319,501,685	4,366,343,299
45	4,366,343,299	215,214	139,452,955	6,178,167	332,756,739	4,553,684,130
46	4,553,684,130	123,110	132,917,599	6,425,293	347,515,754	4,761,980,102
47	4,761,980,102	64,220	126,273,705	6,682,305	363,903,901	4,992,992,214
48	4,992,992,214	24,588	119,581,991	6,949,597	382,054,750	5,248,539,964
49	5,248,539,964	8,702	112,871,159	7,227,581	402,108,358	5,530,558,284
50	5,530,558,284	2,604	106,252,573	7,516,684	424,209,809	5,841,001,439
51	5,841,001,439	908	99,782,499	7,817,352	448,508,153	6,181,910,650
52	6,181,910,650	-	93,491,556	8,130,046	475,160,238	6,555,449,286
53	6,555,449,286	-	87,391,173	8,455,248	504,333,271	6,963,936,136
54	6,963,936,136	-	81,490,692	8,793,457	536,206,540	7,409,858,527
55	7,409,858,527	-	75,790,191	9,145,196	570,972,790	7,895,895,930
56	7,895,895,930	-	70,290,725	9,511,004	608,839,618	8,424,933,819
57	8,424,933,819	-	64,991,693	9,891,444	650,030,649	9,000,081,331
58	9,000,081,331	-	59,888,969	10,287,102	694,786,980	9,624,692,240
59	9,624,692,240	-	54,981,010	10,698,586	743,368,564	10,302,381,208
60	10,302,381,208	-	50,264,488	11,126,529	796,055,642	11,037,045,833
61	11,037,045,833	-	45,735,697	11,571,590	853,150,395	11,832,888,941
62	11,832,888,941	-	41,395,206	12,034,454	914,978,494	12,694,437,775
63	12,694,437,775	-	37,245,999	12,515,832	981,890,657	13,626,566,601
64	13,626,566,601	-	33,293,171	13,016,465	1,054,264,413	14,634,521,378
65	14,634,521,378	-	29,546,062	13,537,124	1,132,505,933	15,723,944,125
66	15,723,944,125	-	26,014,653	14,078,609	1,217,052,056	16,900,902,919

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Table 2: Projection of the Pension Plan's Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
67	16,900,902,919	-	22,705,155	14,641,753	1,308,372,784	18,171,928,795
68	18,171,928,795	-	19,629,947	15,227,423	1,406,973,758	19,544,045,183
69	19,544,045,183	-	16,798,917	15,836,520	1,513,398,878	21,024,808,624
70	21,024,808,624	-	14,217,395	16,469,981	1,628,233,533	22,622,354,781
71	22,622,354,781	-	11,891,354	17,128,780	1,752,107,965	24,345,442,612
72	24,345,442,612	-	9,822,261	17,813,931	1,885,700,900	26,203,507,320
73	26,203,507,320	-	8,007,029	18,526,489	2,029,743,643	28,206,717,445
74	28,206,717,445	-	6,441,373	19,267,548	2,185,024,381	30,366,032,905
75	30,366,032,905	-	5,113,955	20,038,250	2,352,392,902	32,693,273,602
76	32,693,273,602	-	4,005,588	20,839,780	2,532,765,946	35,201,194,180
77	35,201,194,180	-	3,096,569	21,673,371	2,727,132,714	37,903,556,954
78	37,903,556,954	-	2,362,758	22,540,306	2,936,560,670	40,815,214,560
79	40,815,214,560	-	1,778,605	23,441,918	3,162,201,833	43,952,195,870
80	43,952,195,870	-	1,320,591	24,379,595	3,405,299,298	47,331,794,982
81	47,331,794,982	-	966,873	25,354,779	3,667,194,147	50,972,667,477
82	50,972,667,477	-	697,969	26,368,970	3,949,332,886	54,894,933,424
83	54,894,933,424	-	497,255	27,423,729	4,253,275,402	59,120,287,842
84	59,120,287,842	-	350,079	28,520,678	4,580,703,566	63,672,120,651
85	63,672,120,651	-	243,727	29,661,505	4,933,430,523	68,575,645,942
86	68,575,645,942	-	168,123	30,847,965	5,313,410,687	73,858,040,541
87	73,858,040,541	-	114,955	32,081,884	5,722,750,514	79,548,594,216
88	79,548,594,216	-	77,787	33,365,159	6,163,720,138	85,678,871,408
89	85,678,871,408	-	52,151	34,699,766	6,638,765,897	92,282,885,388
90	92,282,885,388	-	34,633	36,087,756	7,150,523,875	99,397,286,874
91	99,397,286,874	-	22,736	37,531,267	7,701,834,515	107,061,567,386
92	107,061,567,386	-	14,755	39,032,517	8,295,758,391	115,318,278,505
93	115,318,278,505	-	9,407	40,593,818	8,935,593,209	124,213,268,489
94	124,213,268,489	-	5,882	42,217,571	9,624,892,149	133,795,937,185
95	133,795,937,185	-	3,589	43,906,274	10,367,483,625	144,119,510,947
96	144,119,510,947	-	2,116	45,662,525	11,167,492,594	155,241,338,900
97	155,241,338,900	-	1,186	47,489,026	12,029,363,519	167,223,212,207
98	167,223,212,207	-	648	49,388,587	12,957,885,113	180,131,708,085
99	180,131,708,085	-	341	51,364,130	13,958,217,003	194,038,560,617
100	194,038,560,617	-	171	53,418,695	15,035,918,467	209,021,060,218

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Table 3: Actuarial Present Value of Projected Benefit Payments

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments			
		Projected Benefit Payments (b)	"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g)
1	705,993,287	89,539,733	89,539,733	-	86,259,544	-	86,259,544
2	741,288,264	77,833,706	77,833,706	-	69,589,192	-	69,589,192
3	793,774,944	82,874,824	82,874,824	-	68,766,896	-	68,766,896
4	848,865,330	88,138,452	88,138,452	-	67,874,234	-	67,874,234
5	907,133,827	93,786,104	93,786,104	-	67,028,691	-	67,028,691
6	969,053,429	99,699,293	99,699,293	-	66,129,775	-	66,129,775
7	1,035,298,213	105,749,135	105,749,135	-	65,097,530	-	65,097,530
8	1,106,780,486	111,883,293	111,883,293	-	63,919,836	-	63,919,836
9	1,184,615,985	118,001,828	118,001,828	-	62,566,501	-	62,566,501
10	1,270,210,091	124,240,330	124,240,330	-	61,136,201	-	61,136,201
11	1,365,098,124	130,709,783	130,709,783	-	59,693,448	-	59,693,448
12	1,470,804,779	137,461,042	137,461,042	-	58,261,401	-	58,261,401
13	1,589,239,198	144,370,268	144,370,268	-	56,788,680	-	56,788,680
14	1,722,326,586	150,906,429	150,906,429	-	55,090,216	-	55,090,216
15	1,873,162,726	157,181,010	157,181,010	-	53,253,669	-	53,253,669
16	2,045,045,822	163,164,453	163,164,453	-	51,304,768	-	51,304,768
17	2,241,663,012	168,842,532	168,842,532	-	49,271,610	-	49,271,610
18	2,467,255,233	174,185,624	174,185,624	-	47,174,785	-	47,174,785
19	2,726,627,348	179,066,093	179,066,093	-	45,008,413	-	45,008,413
20	2,767,072,023	183,418,781	183,418,781	-	42,786,510	-	42,786,510
21	2,804,965,115	187,304,660	187,304,660	-	40,550,328	-	40,550,328
22	2,840,643,628	190,693,388	190,693,388	-	38,314,586	-	38,314,586
23	2,874,469,546	193,625,813	193,625,813	-	36,105,593	-	36,105,593
24	2,906,815,814	195,911,658	195,911,658	-	33,904,257	-	33,904,257
25	2,938,219,893	197,736,770	197,736,770	-	31,758,801	-	31,758,801
26	2,969,140,101	199,238,904	199,238,904	-	29,698,433	-	29,698,433
27	2,999,786,416	200,198,531	200,198,531	-	27,695,104	-	27,695,104
28	3,030,759,403	200,566,924	200,566,924	-	25,750,410	-	25,750,410
29	3,062,699,499	200,441,365	200,441,365	-	23,883,331	-	23,883,331
30	3,096,280,393	200,028,951	200,028,951	-	22,119,899	-	22,119,899
31	3,132,153,936	199,150,580	199,150,580	-	20,438,761	-	20,438,761
32	3,170,759,362	197,663,965	197,663,965	-	18,827,091	-	18,827,091
33	3,213,106,428	195,754,805	195,754,805	-	17,304,174	-	17,304,174

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Table 3: Actuarial Present Value of Projected Benefit Payments

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments			
		Projected Benefit Payments (b)	"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g)
34	3,259,805,105	192,964,614	192,964,614	-	15,830,653	-	15,830,653
35	3,312,264,569	190,087,762	190,087,762	-	14,472,983	-	14,472,983
36	3,370,968,897	186,704,381	186,704,381	-	13,192,926	-	13,192,926
37	3,436,961,223	182,921,270	182,921,270	-	11,995,919	-	11,995,919
38	3,511,256,687	178,787,560	178,787,560	-	10,881,514	-	10,881,514
39	3,594,890,738	174,259,748	174,259,748	-	9,843,099	-	9,843,099
40	3,689,063,544	169,353,994	169,353,994	-	8,877,955	-	8,877,955
41	3,795,056,869	164,061,584	164,061,584	-	7,981,915	-	7,981,915
42	3,914,228,018	158,295,198	158,295,198	-	7,147,442	-	7,147,442
43	4,048,146,091	152,193,392	152,193,392	-	6,377,661	-	6,377,661
44	4,198,363,166	145,910,022	145,910,022	-	5,674,577	-	5,674,577
45	4,366,343,299	139,452,955	139,452,955	-	5,033,370	-	5,033,370
46	4,553,684,130	132,917,599	132,917,599	-	4,452,422	-	4,452,422
47	4,761,980,102	126,273,705	126,273,705	-	3,925,631	-	3,925,631
48	4,992,992,214	119,581,991	119,581,991	-	3,450,206	-	3,450,206
49	5,248,539,964	112,871,159	112,871,159	-	3,022,351	-	3,022,351
50	5,530,558,284	106,252,573	106,252,573	-	2,640,488	-	2,640,488
51	5,841,001,439	99,782,499	99,782,499	-	2,301,345	-	2,301,345
52	6,181,910,650	93,491,556	93,491,556	-	2,001,163	-	2,001,163
53	6,555,449,286	87,391,173	87,391,173	-	1,736,043	-	1,736,043
54	6,963,936,136	81,490,692	81,490,692	-	1,502,393	-	1,502,393
55	7,409,858,527	75,790,191	75,790,191	-	1,296,795	-	1,296,795
56	7,895,895,930	70,290,725	70,290,725	-	1,116,192	-	1,116,192
57	8,424,933,819	64,991,693	64,991,693	-	957,815	-	957,815
58	9,000,081,331	59,888,969	59,888,969	-	819,131	-	819,131
59	9,624,692,240	54,981,010	54,981,010	-	697,914	-	697,914
60	10,302,381,208	50,264,488	50,264,488	-	592,152	-	592,152
61	11,037,045,833	45,735,697	45,735,697	-	500,046	-	500,046
62	11,832,888,941	41,395,206	41,395,206	-	420,037	-	420,037
63	12,694,437,775	37,245,999	37,245,999	-	350,752	-	350,752
64	13,626,566,601	33,293,171	33,293,171	-	290,977	-	290,977
65	14,634,521,378	29,546,062	29,546,062	-	239,654	-	239,654
66	15,723,944,125	26,014,653	26,014,653	-	195,833	-	195,833

APPENDIX D - CALCULATION OF SINGLE DISCOUNT RATE

Table 3: Actuarial Present Value of Projected Benefit Payments

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments			
		Projected Benefit Payments (b)	"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g)
67	16,900,902,919	22,705,155	22,705,155	-	158,626	-	158,626
68	18,171,928,795	19,629,947	19,629,947	-	127,278	-	127,278
69	19,544,045,183	16,798,917	16,798,917	-	101,088	-	101,088
70	21,024,808,624	14,217,395	14,217,395	-	79,400	-	79,400
71	22,622,354,781	11,891,354	11,891,354	-	61,633	-	61,633
72	24,345,442,612	9,822,261	9,822,261	-	47,247	-	47,247
73	26,203,507,320	8,007,029	8,007,029	-	35,745	-	35,745
74	28,206,717,445	6,441,373	6,441,373	-	26,688	-	26,688
75	30,366,032,905	5,113,955	5,113,955	-	19,664	-	19,664
76	32,693,273,602	4,005,588	4,005,588	-	14,294	-	14,294
77	35,201,194,180	3,096,569	3,096,569	-	10,256	-	10,256
78	37,903,556,954	2,362,758	2,362,758	-	7,262	-	7,262
79	40,815,214,560	1,778,605	1,778,605	-	5,074	-	5,074
80	43,952,195,870	1,320,591	1,320,591	-	3,496	-	3,496
81	47,331,794,982	966,873	966,873	-	2,376	-	2,376
82	50,972,667,477	697,969	697,969	-	1,592	-	1,592
83	54,894,933,424	497,255	497,255	-	1,052	-	1,052
84	59,120,287,842	350,079	350,079	-	688	-	688
85	63,672,120,651	243,727	243,727	-	444	-	444
86	68,575,645,942	168,123	168,123	-	284	-	284
87	73,858,040,541	114,955	114,955	-	180	-	180
88	79,548,594,216	77,787	77,787	-	113	-	113
89	85,678,871,408	52,151	52,151	-	71	-	71
90	92,282,885,388	34,633	34,633	-	43	-	43
91	99,397,286,874	22,736	22,736	-	26	-	26
92	107,061,567,386	14,755	14,755	-	16	-	16
93	115,318,278,505	9,407	9,407	-	9	-	9
94	124,213,268,489	5,882	5,882	-	5	-	5
95	133,795,937,185	3,589	3,589	-	3	-	3
96	144,119,510,947	2,116	2,116	-	2	-	2
97	155,241,338,900	1,186	1,186	-	1	-	1
98	167,223,212,207	648	648	-	-	-	-
99	180,131,708,085	341	341	-	-	-	-
100	194,038,560,617	171	171	-	-	-	-

Worcester Regional Retirement System
 Financial Reporting and Disclosures as of December 31, 2017