



WORCESTER REGIONAL RETIREMENT SYSTEM

FINANCIAL REPORTING AND DISCLOSURES Governmental Accounting Standards Board Statements 67 and 68

**Disclosures as of
December 31, 2019**

KMS Actuarial, LLC
52 Hunt Road
Kingston, NH 03848

October, 2020



October 19, 2020

Mr. Kevin Blanchette
Chairman
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 as of December 31, 2019. Results are based on liabilities developed in an actuarial valuation performed as of January 1, 2018 and rolled forward to the plan's measurement date of December 31, 2019.

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 7.65%, 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.

K M S A C T U A R I E S

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Mr. Kevin Blanchette

October 19, 2020

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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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EXECUTIVE SUMMARY

GASB 67 and GASB 68

In June 2012, the GASB approved two related Statements that significantly changed the way pension plans and governments account and report pension liabilities. Effective for plans with fiscal years beginning after June 15, 2013, **GASB Statement No. 67**, *Financial Reporting for Pension Plans*, replaced the requirements of Statement No. 25 and effective for employers with fiscal years beginning after June 15, 2014, **GASB Statement No. 68**, *Accounting and Financial Reporting for Pensions*, replaced the requirements of Statement No. 27.

The pension standards reflect changes from those previously in place regarding how governments calculate total pension liability and pension expense. Further, the standards contain requirements for disclosing information in the notes to financial statements and presenting required supplementary information following the notes.

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 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 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.

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.

The effective date for GASB 67 is for plan years beginning after June 15, 2013, which is the fiscal year ending December 31, 2014 for the Worcester Regional Retirement System. The effective date for GASB 68 is for employers' fiscal years beginning after June 15, 2014. The disclosures prepared as of December 31, 2019 (the measurement date) presents information to assist the Worcester Regional Retirement Board in providing the required information under GASB 68 to participating employers.

GASB Statement No. 73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68*, clarifies the application of certain provisions of Statements 67 and 68 with regard to the following issues:

- (1) Information about investment-related factors that significantly affect trends in the amounts reported for GASB 67 and GASB 68 should be limited to those factors over which the pension plan or participating governments have influence (such as an investment policy) and
- (2) The contribution-related schedules in the RSI should exclude amounts associated with payables to the pension plan that arose in a prior fiscal year.

GASB Statement No. 82, *Pension Issues - An Amendment of GASB Statements No. 67, No. 68, and No. 73*, clarifies the definition of covered payroll, that a deviation from the Actuarial Standards of Practice with respect to selection of assumptions is not considered to be in conformity with GASB 67, GASB 68 and GASB 73, and that employer-paid member contributions are to be classified as plan member contributions.

EXECUTIVE SUMMARY

A summary of principal results from the current disclosures and prior disclosures follows.

Disclosure Date	December 31, 2019	December 31, 2018	% Change
Valuation Date	January 1, 2018	January 1, 2018	
Membership Data			
Active Plan Members	7,024	7,815	(10.1%)
Inactive Members Currently in Receipt	3,802	3,837	(0.9%)
Inactive Members Deferred	2,247	1,839	22.2%
Total Plan Members	13,073	13,491	(3.1%)
Covered Payroll	\$301,686,927	\$273,888,022	10.1%
Net Pension Liability			
Discount Rate	7.65%	7.75%	
Total Pension Liability (TPL)	\$1,690,869,266	\$1,592,300,205	6.2%
Fiduciary Net Position (FNP)	800,739,275	685,538,013	16.8%
Net Pension Liability (NPL)	\$890,129,991	\$906,762,192	(1.8%)
FNP as % of TPL	47.4%	43.1%	10.0%
Pension Expense			
Pension Expense	\$109,427,624	\$116,960,934	(6.4%)
Deferred Outflows	\$52,365,133	\$94,476,944	
Deferred Inflows	\$29,781,954	\$6,721,912	
Recognition Period	5.84	5.84	

EXECUTIVE SUMMARY

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 Section 1, Fiduciary Net Position.

Total Pension Liability

The Total Pension Liability is based on liabilities developed in an actuarial valuation performed as of January 1, 2018 and rolled forward to the plan's measurement date of December 31, 2019 and is shown in Section 1, Total Pension Liability.

Benefit Changes

All benefit provisions remained the same from the prior measurement date. The Plan provisions used in these disclosures are detailed in Section 5, Summary of Plan Provisions, in the most recent funding actuarial report.

Assumption Changes

Most of the Actuarial Assumptions and Methods used in these disclosures are the same as the last measurement date, except the investment rate of return assumption decreased from 7.75% to 7.65%. The Actuarial Assumptions and Methods used in these disclosures are detailed in Section 6, Actuarial Assumptions and Methods, in the most recent funding valuation report.

Pension Expense

The Pension Expense for the fiscal year ending December 31, 2019 is \$109,427,624 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 are 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

Fiduciary Net Position

Asset information was provided by the Worcester Regional Retirement Board. The Trust Fund Composition, Asset Activity and the Gain or Loss on Pension Plan Investments for the current and prior fiscal years are as follows:

Fiscal Year Ended December 31 **2019** **2018**

Trust Fund Composition at Fiscal Year-End			
		2019	2018
Cash	\$	2,813,343	\$ 2,840,100
Individually Owned Short Term Investments		0	0
Fixed Income Securities		0	0
Equities (at market value)		0	0
Pooled Short Term Funds		0	0
Pooled Domestic Equity Funds		0	0
Pooled International Equity Funds		0	0
Pooled Global Equity Funds		0	0
Pooled Domestic Fixed Income Funds		0	0
Pooled International Fixed Income Funds		0	0
Pooled Global Fixed Income Funds		0	0
Pooled Alternative/Private Equity		1,187,279	1,367,019
Pooled Real Estate Funds		0	0
Pooled Domestic Balanced Funds		0	0
Pooled International Balanced Funds		0	0
Hedge Funds		0	0
PRIT Cash		0	0
PRIT Fund		801,583,801	688,874,681
Interest Due and Accrued		0	0
Prepaid Expenses		0	0
Accounts Receivable (A)		5,363,063	4,447,865
Land		0	0
Buildings		0	0
Accumulated Depreciation - Buildings		0	0
Accounts Payable (A)		(9,496,354)	(7,230,927)
Auditor or Other Adjustments		(711,857)	(4,760,725)
Total Market Value of Assets	\$	800,739,275	\$ 685,538,013

SECTION 1 - PRINCIPAL VALUATION RESULTS

Fiscal Year Ended December 31	Fiduciary Net Position	
	2019	2018
Asset Activity		
Market value as of beginning of year	\$ 685,538,013	\$ 705,993,287
Contributions - employer	60,887,972	55,674,504
Contributions - member	35,087,583	33,362,836
Net investment income	110,458,217	(17,770,572)
Benefit payments, including refunds of member contributions	(88,229,714)	(83,571,930)
Administrative expenses	(1,112,640)	(1,178,272)
Other	(1,890,156)	(6,971,840)
Market Value as of end of year	\$ 800,739,275	\$ 685,538,013
Money-Weighted Rate of Return	16.55%	-2.75%
 (Gain) / Loss on Pension Plan Investments		
Projected earnings	\$ 52,987,612	\$ 54,446,778
Actual earnings	110,458,217	(17,770,572)
(Gain) / Loss on pension plan investments	\$ (57,470,605)	\$ 72,217,350

SECTION 1 - PRINCIPAL VALUATION RESULTS

Total Pension Liability

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, 2019 measurement date was developed from an actuarial valuation as of January 1, 2018 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, 2018 to the end of the measurement period, December 31, 2019 is shown below:

Measurement Date	December 31, 2019
1. Total Pension Liability, beginning of year:	
a. Actives	\$ 823,211,447
b. Retired and Disabled Members and Beneficiaries	749,122,660
c. Inactive Members	19,966,098
d. Total Pension Liability at 7.75% (a. + b. + c.)	\$ 1,592,300,205
2. Service Cost	\$ 45,464,593
3. Benefit Payments	(88,229,714)
4. Interest [7.75% x (1.d. + 2. + .5 x 3)]	\$ 123,507,870
5. Changes of benefit terms	-
6. Differences between expected and actual experience	-
7. Changes of assumptions or other inputs	17,826,312
8. Total Pension Liability, end of year (1.d. + 2. + 3. + 4. + 5. + 6. + 7.)	
a. Actives	\$ 948,131,957
b. Retired and Disabled Members and Beneficiaries	721,263,752
c. Inactive Members	21,473,557
d. Total Pension Liability at 7.65% (a. + b. + c.)	\$ 1,690,869,266

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

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 99 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, 2019, pension plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefits	3,802
Inactive plan members entitled to but not yet receiving benefits	2,247
Active plan members	7,024
	<hr/>
	13,073

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, 2018 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

Net Pension Liability

The components of the Net Pension Liability at December 31, 2019, were as follows:

Total Pension Liability	\$ 1,690,869,266
Fiduciary Net Position	(800,739,275)
Net Pension Liability	\$ 890,129,991

Fiduciary Net Position as a percentage of the Total Pension Liability 47.4%

Actuarial assumptions

The Total Pension Liability was determined by an actuarial valuation as of January 1, 2018, rolled forward to the measurement date of December 31, 2019 using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.4% per year
Salary increases	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service
Investment rate of return	7.65%, net of pension plan investment expense, including inflation

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

Long-Term Real Rates of Return

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, 2019 (see the discussion of the pension plan's investment policy) are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rates of Return¹
Global Equity	39%	4.68%
Core Fixed Income	15%	0.59%
Value-Added Fixed Income	8%	4.40%
Private Equity	13%	8.50%
Real Estate	10%	3.70%
Timberland	4%	4.30%
Portfolio Completion (PCS)	11%	3.40%
Total	100%	

¹ Provided by NEPC, Inc. (inclusive of fees). Inflation of 2.4% is added to the long-term expected real rates of return to approximate the long-term expected rate of return.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Discount Rate

The discount rate used to measure the Total Pension Liability is 7.65%. 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.

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 7.65%, as well as what the Net Pension Liability would be if it were calculated using a discount rate 1-percentage point lower (6.65%) or 1-percentage point higher (8.65%) than the current rate:

	1% Decrease (6.65%)	Current Discount Rate (7.65%)	1% Increase (8.65%)
Total Pension Liability	\$ 1,886,929,651	\$ 1,690,869,266	\$ 1,525,301,854
Fiduciary Net Position	800,739,275	800,739,275	800,739,275
Net Pension Liability	\$ 1,086,190,376	\$ 890,129,991	\$ 724,562,579

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net Pension Liability and Related Ratios

Fiscal Year Ended December 31	2019	2018	2017	2016	2015
Total Pension Liability					
Service cost	\$ 45,464,593	\$ 44,445,482	\$ 42,736,040	\$ 35,984,130	\$ 31,996,981
Interest	123,507,870	118,116,251	112,224,318	99,124,367	91,276,045
Changes of benefit terms	-	-	-	-	49,721,211
Differences between expected and actual experience	-	(8,110,737)	-	8,235,183	-
Changes of assumptions	17,826,312	-	-	94,194,565	31,534,870
Benefit payments, including refunds of member contributions	(88,229,714)	(83,571,930)	(77,717,794)	(72,799,275)	(68,086,158)
Net change in Total Pension Liability	<u>\$ 98,569,061</u>	<u>\$ 70,879,066</u>	<u>\$ 77,242,564</u>	<u>\$ 164,738,970</u>	<u>\$ 136,442,949</u>
Total Pension Liability--beginning	<u>\$1,592,300,205</u>	<u>\$1,521,421,139</u>	<u>\$1,444,178,575</u>	<u>\$1,279,439,605</u>	<u>\$1,142,996,656</u>
Total Pension Liability--ending (a)	<u><u>\$1,690,869,266</u></u>	<u><u>\$1,592,300,205</u></u>	<u><u>\$1,521,421,139</u></u>	<u><u>\$1,444,178,575</u></u>	<u><u>\$1,279,439,605</u></u>
Fiduciary Net Position					
Contributions--employer	\$ 60,887,972	\$ 55,674,504	\$ 50,599,326	\$ 48,574,831	\$ 44,986,040
Contributions--member	35,087,583	33,362,836	31,592,837	29,032,767	52,111,046
Net investment income	110,458,217	(17,770,572)	103,123,070	40,509,286	1,177,960
Benefit payments, including refunds of member contributions	(88,229,714)	(83,571,930)	(77,717,794)	(72,799,275)	(68,086,158)
Administrative expenses	(1,112,640)	(1,178,272)	(1,145,509)	(1,170,184)	(1,055,662)
Other	(1,890,156)	(6,971,840)	(7,043,455)	(7,195,247)	(7,429,438)
Net change in Fiduciary Net Position	<u>\$ 115,201,262</u>	<u>\$ (20,455,274)</u>	<u>\$ 99,408,475</u>	<u>\$ 36,952,178</u>	<u>\$ 21,703,788</u>
Fiduciary Net Position--beginning	<u>\$ 685,538,013</u>	<u>\$ 705,993,287</u>	<u>\$ 606,584,812</u>	<u>\$ 569,632,634</u>	<u>\$ 547,928,846</u>
Fiduciary Net Position--ending (b)	<u><u>\$ 800,739,275</u></u>	<u><u>\$ 685,538,013</u></u>	<u><u>\$ 705,993,287</u></u>	<u><u>\$ 606,584,812</u></u>	<u><u>\$ 569,632,634</u></u>
Net Pension Liability and Related Ratios					
Net Pension Liability--ending (a) -- (b)	<u><u>\$ 890,129,991</u></u>	<u><u>\$ 906,762,192</u></u>	<u><u>\$ 815,427,852</u></u>	<u><u>\$ 837,593,763</u></u>	<u><u>\$ 709,806,971</u></u>
Fiduciary Net Position as a percentage of the Total Pension Liability	47.36%	43.05%	46.40%	42.00%	44.52%
Covered Payroll	\$ 301,686,927	\$ 273,888,022	\$ 271,037,131	\$ 282,918,805	\$ 269,899,678
Net Pension Liability as a percentage of Covered Payroll	295.05%	331.07%	300.85%	296.05%	262.99%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net Pension Liability and Related Ratios (continued)

Fiscal Year Ended December 31	2014	2013	2012	2011	2010
Total Pension Liability					
Service cost	\$ 31,996,981				
Interest	84,568,061				
Changes of benefit terms	-				
Differences between expected and actual experience	-				
Changes of assumptions	-				
Benefit payments, including refunds of member contributions	(61,338,289)				
Net change in Total Pension Liability	\$ 55,226,753				
Total Pension Liability—beginning	\$1,087,769,903				
Total Pension Liability—ending (a)	<u>\$1,142,996,656</u>				
Fiduciary Net Position					
Contributions—employer	\$ 39,519,038				
Contributions—member	27,066,085				
Net investment income	40,135,521				
Benefit payments, including refunds of member contributions	(61,338,289)				
Administrative expenses	(1,054,297)				
Other	(3,178,354)				
Net change in Fiduciary Net Position	\$ 41,149,704				
Fiduciary Net Position—beginning	\$ 506,779,142				
Fiduciary Net Position—ending (b)	<u>\$ 547,928,846</u>				
Net Pension Liability and Related Ratios					
Net Pension Liability—ending (a) – (b)	<u>\$ 595,067,810</u>				
Fiduciary Net Position as a percentage of the Total Pension Liability	47.94%				
Covered Payroll	\$ 252,829,591				
Net Pension Liability as a percentage of Covered Payroll	235.36%				

Note: Only 6 years are presented here and on the previous page, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Schedule of Employer Contributions

Fiscal Year Ended December 31	2019	2018	2017	2016	2015
Actuarially Determined Contribution	\$ 60,887,972	\$ 55,674,504	\$ 50,599,326	\$ 48,574,831	\$ 44,986,040
Contributions in relation to the Actuarially Determined Contribution	<u>60,887,972</u>	<u>55,674,504</u>	<u>50,599,326</u>	<u>48,574,831</u>	<u>44,986,040</u>
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
 Covered Payroll	 \$ 301,686,927	 \$ 273,888,022	 \$ 271,037,131	 \$ 282,918,805	 \$ 269,899,678
Contributions as a percentage of Covered Payroll	20.18%	20.33%	18.67%	17.17%	16.67%

The contribution shown above, \$60,887,972, represents the actual contributions made by member units of the Worcester Regional Retirement System for the 2020 fiscal year.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Schedule of Employer Contributions (continued)

Fiscal Year Ended December 31	2014	2013	2012	2011	2010
Actuarially Determined Contribution	\$ 39,519,038				
Contributions in relation to the Actuarially Determined Contribution	39,519,038				
Contribution deficiency (excess)	\$ -				
Covered Payroll	\$ 252,829,591				
Contributions as a percentage of Covered Payroll	15.63%				

Note: Only 6 years are presented here and on the previous page, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Investment Returns

Fiscal Year Ended December 31	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Annual money-weighted rate of return, net of investment expense	16.55%	-2.75%	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 investments.

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

Note: Only 6 years are presented here, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Notes to the Required Supplementary Information

Changes of benefit terms

All benefit provisions remained the same from the prior measurement date. The Plan provisions used in these disclosures are detailed in Section 5, Summary of Plan Provisions, in the most recent funding actuarial report.

Changes of assumptions

Most of the Actuarial Assumptions and Methods used in these disclosures are the same as the last measurement date, except the investment rate of return assumption decreased from 7.75% to 7.65%. The Actuarial Assumptions and Methods used in these disclosures are detailed in Section 6, Actuarial Assumptions and Methods, in the most recent funding valuation report.

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: <ul style="list-style-type: none">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, andd) 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

Notes to the Required Supplementary Information

Inflation	2.4% per year
Salary increases	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service
Payroll growth	3.5% per year
Investment rate of return	7.65%, 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.

			Balances at December 31, 2019		
	Experience Losses	Experience Gains	Amounts Recognized in Pension Expense through December 31, 2019	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)
2015	\$ -	\$ -	\$ -	\$ -	\$ -
2016	8,235,183	-	5,621,284	2,613,899	-
2017	-	-	-	-	-
2018	-	8,110,737	(2,777,650)	-	5,333,087
2019	-	-	-	-	-
				<u>\$ 2,613,899</u>	<u>\$ 5,333,087</u>

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.

			Balances at December 31, 2019		
	Increases in the Total Pension Liability	Decreases in the Total Pension Liability	Amounts Recognized in Pension Expense through December 31, 2019	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)
2015	\$ 31,534,870	\$ -	\$ 26,455,430	\$ 5,079,440	\$ -
2016	94,194,565	-	64,296,632	29,897,933	-
2017	-	-	-	-	-
2018	-	-	-	-	-
2019	17,826,312	-	3,052,451	14,773,861	-
				<u>\$ 49,751,234</u>	<u>\$ -</u>

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.

				Balances at December 31, 2019	
Year	Investment Earnings Less Than Projected (a)	Investment Earnings Greater Than Projected (b)	Amounts Recognized in Pension Expense through December 31, 2019 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2015	\$ 43,477,381	\$ -	\$ 43,477,381	\$ -	\$ -
2016	3,499,405	-	2,799,524	699,881	-
2017	-	56,256,688	(33,754,014)	-	22,502,674
2018	72,217,350	-	28,886,940	43,330,410	-
2019	-	57,470,605	(11,494,121)	-	45,976,484
Subtotal				<u>\$ 44,030,291</u>	<u>\$ 68,479,158</u>
Net				<u>\$ -</u>	<u>\$ 24,448,867</u>

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 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.

				Balances at December 31, 2019	
	Proportionate Share* Outflows	Proportionate Share* Inflows	Amounts Recognized in Pension Expense through December 31, 2019	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)
2015	\$ 39,045,388	\$ 39,045,388	\$ 32,756,199	\$ 6,289,189	\$ 6,289,189
2016	1,803,974	1,803,974	1,231,382	572,592	572,592
2017	22,317,342	22,317,342	11,425,263	10,892,079	10,892,079
2018	2,319,170	2,319,170	794,230	1,524,940	1,524,940
2019	12,790,409	12,790,409	2,190,140	10,600,269	10,600,269
				<u>\$ 29,879,069</u>	<u>\$ 29,879,069</u>

* Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions

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

Year ended December 31		
2020	\$	16,620,438
2021	\$	8,393,991
2022	\$	4,612,975
2023	\$	(9,608,282)
2024	\$	2,564,057
Thereafter	\$	-
Total Deferred Outflows	\$	82,244,202
Total Deferred Inflows	\$	59,661,023

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, 2019 is presented below:

Fiscal Year Ended December 31, 2019

1. Service cost		\$ 45,464,593
2. Interest on the total pension liability		
a. Total Pension Liability, beginning of year	1,592,300,205	
b. Service cost, beginning of year	45,464,593	
c. Benefit payments, including refunds of employee contributions	<u>(88,229,714)</u>	
d. Interest on Total Pension Liability		123,507,870
3. Differences between expected and actual experience		16,496
4. Changes of benefit terms		-
5. Changes of assumptions		24,417,695
6. Employee contributions		(35,087,583)
7. Projected earnings on pension plan investments		
a. Fiduciary Net Position, beginning of year	685,538,013	
b. Employer contributions	60,887,972	
c. Employee contributions	35,087,583	
d. Benefit payments, including refunds of employee contributions	<u>(88,229,714)</u>	
e. Administrative expenses and other	<u>(3,002,796)</u>	
f. Total projected earnings		(52,987,612)
8. Differences between projected and actual earnings on plan investments		1,093,369
9. Pension plan administrative expenses		1,112,640
10. Other changes in Fiduciary Net Position		<u>1,890,156</u>
11. Total Pension Expense		<u>\$109,427,624</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 2019 and 2018, based on employer contributions made for the 2020 fiscal year and 2019 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2019		2018	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
Ashburnham	799,982	1.313859%	738,689	1.326799%
Ashburnham-Westminster Regional	658,485	1.081470%	602,476	1.082140%
Athol	1,464,108	2.404593%	1,329,300	2.387628%
Athol Housing Authority	34,868	0.057266%	38,167	0.068554%
Athol-Royalston Regional	557,966	0.916381%	528,350	0.948998%
Auburn	3,232,114	5.308296%	2,884,358	5.180752%
Auburn Housing Authority	64,005	0.105119%	61,048	0.109652%
Auburn Water District	92,076	0.151222%	95,200	0.170994%
Barre	326,085	0.535549%	293,130	0.526507%
Barre Housing Authority	18,657	0.030642%	15,271	0.027429%
Berlin	483,121	0.793459%	461,279	0.828528%
Berlin-Boylston Regional	161,942	0.265967%	122,776	0.220525%
Blackstone	840,143	1.379818%	733,583	1.317628%
Blackstone Housing Authority	17,586	0.028883%	18,506	0.033240%
Blackstone-Millville Regional	526,516	0.864729%	489,785	0.879729%
Bolton	472,043	0.775265%	410,977	0.738178%
Boylston	660,605	1.084952%	605,133	1.086912%
Boylston Water District	12,214	0.020060%	10,427	0.018729%
Brookfield	285,203	0.468406%	270,221	0.485359%
Charlton	1,354,689	2.224888%	1,165,224	2.092922%
Cherry Valley-Rochdale Water	53,835	0.088416%	46,094	0.082792%
Cherry Valley Sewer District	-	0.000000%	1,747	0.003138%
Douglas	1,088,352	1.787466%	998,134	1.792803%
Dudley	869,193	1.427528%	802,934	1.442193%
Dudley Housing Authority	15,752	0.025870%	14,002	0.025150%
Dudley-Charlton Regional	1,023,723	1.681322%	928,512	1.667751%
East Brookfield	154,539	0.253809%	137,783	0.247480%
Grafton	1,878,900	3.085831%	1,678,129	3.014179%
Grafton Housing Authority	50,938	0.083659%	50,350	0.090436%
Hardwick	190,328	0.312587%	191,746	0.344405%
Harvard	900,768	1.479386%	836,356	1.502224%
Hillcrest Water District	8,020	0.013172%	7,347	0.013196%

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 2019 and 2018, based on employer contributions made for the 2020 fiscal year and 2019 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2019		2018	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
Holden	2,149,451	3.530173%	2,075,442	3.727814%
Holden Housing Authority	33,309	0.054705%	28,888	0.051887%
Hopedale	987,717	1.622187%	911,521	1.637232%
Hopedale Housing Authority	4,900	0.008048%	5,000	0.008981%
Hubbardston	251,032	0.412285%	255,716	0.459305%
Lancaster	657,598	1.080013%	560,308	1.006400%
Lancaster Housing Authority	15,733	0.025839%	14,766	0.026522%
Lancaster Sewer	2,141	0.003516%	1,586	0.002849%
Leicester	1,314,800	2.159376%	1,161,943	2.087029%
Leicester Housing Authority	47,470	0.077963%	38,234	0.068674%
Leicester Water District	42,193	0.069296%	44,900	0.080647%
Lunenburg	1,354,353	2.224336%	1,221,814	2.194566%
Lunenburg Housing Authority	1,699	0.002790%	1,346	0.002418%
Lunenburg Water District	57,971	0.095209%	49,960	0.089736%
Mendon	652,398	1.071473%	568,755	1.021572%
Mendon-Upton Regional	778,108	1.277934%	709,531	1.274427%
Millbury	1,827,524	3.001453%	1,749,124	3.141697%
Millbury Housing Authority	96,700	0.158816%	90,482	0.162520%
Millville	181,637	0.298313%	154,122	0.276827%
Narragansett Regional	399,543	0.656194%	370,470	0.665421%
Nashoba Regional	1,039,818	1.707756%	979,158	1.758719%
Nashoba Valley Dispatch	38,988	0.064032%	17,063	0.030648%
New Braintree	57,671	0.094717%	50,451	0.090618%
Northboro	2,118,897	3.479993%	1,886,814	3.389009%
Northboro Housing Authority	67,847	0.111429%	62,318	0.111933%
Northboro-Southboro Regional	395,639	0.649782%	353,655	0.635219%
North Brookfield	516,126	0.847665%	424,197	0.761923%
North Brookfield Housing Authority	16,211	0.026624%	18,244	0.032769%
Oakham	70,935	0.116501%	64,138	0.115202%
Oxford	1,982,069	3.255272%	1,908,579	3.428102%
Oxford Housing Authority	75,748	0.124406%	57,696	0.103631%
Oxford-Rochdale Sewer District	33,977	0.055802%	29,467	0.052927%

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 2019 and 2018, based on employer contributions made for the 2020 fiscal year and 2019 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2019		2018	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
Paxton	766,116	1.258239%	654,321	1.175261%
Petersham	158,460	0.260248%	151,368	0.271880%
Phillipston	136,442	0.224087%	123,033	0.220986%
Princeton	364,146	0.598059%	353,988	0.635817%
Quabbin Regional	1,035,747	1.701070%	961,940	1.727793%
Quaboag Regional	364,718	0.598998%	330,446	0.593532%
Royalston	55,615	0.091340%	52,449	0.094206%
Rutland	619,706	1.017781%	559,439	1.004839%
Southboro	1,958,833	3.217110%	1,777,093	3.191933%
Southboro Housing Authority	15,836	0.026008%	14,698	0.026400%
Spencer	881,810	1.448250%	840,649	1.509935%
Spencer-East Brookfield Regional	605,694	0.994768%	576,493	1.035470%
Spencer Housing Authority	46,111	0.075731%	39,634	0.071189%
Sterling	1,085,683	1.783083%	929,676	1.669842%
Sterling Housing Authority	5,447	0.008946%	8,849	0.015894%
Sturbridge	1,371,067	2.251786%	1,275,676	2.291311%
Sutton	1,184,523	1.945414%	1,066,773	1.916089%
Tantasqua Regional	708,239	1.163184%	628,020	1.128021%
Templeton	797,870	1.310390%	737,540	1.324736%
Templeton Housing Authority	43,018	0.070651%	40,190	0.072187%
Upton	628,639	1.032452%	564,142	1.013286%
Uxbridge	1,847,788	3.034734%	1,729,739	3.106878%
Uxbridge Housing Authority	53,485	0.087842%	47,624	0.085540%
Wachusett Regional	1,886,660	3.098576%	1,825,956	3.279699%
Warren	367,357	0.603333%	358,868	0.644582%
Warren Water District	17,774	0.029191%	15,342	0.027557%
Westboro	4,051,220	6.653564%	3,750,330	6.736171%
Westboro Housing Authority	46,690	0.076682%	36,891	0.066262%
West Boylston	1,305,298	2.143770%	1,158,181	2.080272%
West Boylston Housing Authority	5,445	0.008943%	10,385	0.018653%
West Boylston Water District	65,426	0.107453%	50,900	0.091424%
West Brookfield	287,712	0.472527%	258,800	0.464845%

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 2019 and 2018, based on employer contributions made for the 2020 fiscal year and 2019 fiscal year, respectively, shows the proportionate relationship of each employer to all employers and each employer's allocation percentage.

Entity	2019		2018	
	Employer Contribution	Proportionate Share of Total Employer Contribution	Employer Contribution	Proportionate Share of Total Employer Contribution
Westminster	866,935	1.423820%	812,024	1.458520%
Winchendon	1,569,295	2.577348%	1,407,627	2.528315%
Winchendon Housing Authority	116,208	0.190855%	92,698	0.166500%
Total	60,887,972	100.000000%	55,674,504	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 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 2019:

- ◆ 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 the current year. 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 2015.
- ◆ Net difference between projected and actual investment earnings (gain on pension plan investments for 2019) is amortized over 5 years, with the first amortized amount recognized in Pension Expense in the current year. 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 change in Total Pension Liability as a result of changes in assumptions is amortized over the average of the expected future service lives of all participants, with the first amortized amount recognized in Pension Expense in the current year. 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 2015.

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 68

Exhibit 4.4 - Pension Amounts by Employer

For 2019 (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 the current year. Similar Deferred Outflows of Resources and Deferred Inflows of Resources were established during prior years, with the first amortized amount recognized in 2015.

- ◆ 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 (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.

Covered Payroll – The payroll on which contributions to a pension plan are based.

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.

Discount Rate – Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of:

- (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.*

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.

SECTION 5 - GLOSSARY OF TERMS

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.

GASB – Governmental Accounting Standards Board.

Long-Term Expected Rate of Return – Long-term expected rate of return on pension plan investments expected to be used to finance the payment of benefits, net of investment expenses.

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

Municipal Bond Rate – Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.

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 using the Entry Age Normal cost method based on the requirements of GASB 67 and GASB 68.

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, 2019	\$ 685,538,013	12	1.00	\$ 799,027,687
Monthly net external cash flows:				
January	(3,931,375)	11	0.92	(4,524,083)
February	(5,213,357)	10	0.83	(5,923,241)
March	(6,882,449)	9	0.75	(7,720,416)
April	(3,746,720)	8	0.67	(4,149,586)
May	(4,957,352)	7	0.58	(5,420,746)
June	668,851	6	0.50	722,095
July	49,695,610	5	0.42	52,971,098
August	(5,781,725)	4	0.33	(6,084,630)
September	(3,744,251)	3	0.25	(3,890,429)
October	(5,401,371)	2	0.17	(5,541,054)
November	(5,134,411)	1	0.08	(5,200,377)
December	(3,527,043)	0	0.00	(3,527,043)
Ending value - December 31, 2019				\$ 800,739,275
Money-weighted rate of return				16.55%

Note: Beginning and ending values are based on amounts reported in the System's 2019 Annual Statement, and monthly cash flows are based on amounts provided by the Retirement Board.

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

Year	Differences between Expected and Actual Experience	Recognition Period (Years)											
			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
2015	-	5.96	-	-	-	-	-	-	-	-	-	-	-
2016	8,235,183	5.86	1,405,321	1,405,321	1,208,578	-	-	-	-	-	-	-	-
2017	-	5.86	-	-	-	-	-	-	-	-	-	-	-
2018	(8,110,737)	5.84	(1,388,825)	(1,388,825)	(1,388,825)	(1,388,825)	(1,166,612)	-	-	-	-	-	-
2019	-	5.84	-	-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in Pension Expense			16,496	16,496	(180,247)	(1,388,825)	(1,166,612)	-	-	-	-	-	-

Year	Changes of Assumptions	Recognition Period (Years)											
			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
2015	31,534,870	5.96	5,291,086	5,079,440	-	-	-	-	-	-	-	-	-
2016	94,194,565	5.86	16,074,158	16,074,158	13,823,775	-	-	-	-	-	-	-	-
2017	-	5.86	-	-	-	-	-	-	-	-	-	-	-
2018	-	5.84	-	-	-	-	-	-	-	-	-	-	-
2019	17,826,312	5.84	3,052,451	3,052,451	3,052,451	3,052,451	3,052,451	2,564,057	-	-	-	-	-
Net Increase (Decrease) in Pension Expense			24,417,695	24,206,049	16,876,226	3,052,451	3,052,451	2,564,057	-	-	-	-	-

Year	Differences between Projected and Actual Earnings on Pension Plan Investments	Recognition Period (Years)											
			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
2015	43,477,381	5	8,695,477	-	-	-	-	-	-	-	-	-	-
2016	3,499,405	5	699,881	699,881	-	-	-	-	-	-	-	-	-
2017	(56,256,688)	5	(11,251,338)	(11,251,337)	(11,251,337)	-	-	-	-	-	-	-	-
2018	72,217,350	5	14,443,470	14,443,470	14,443,470	14,443,470	-	-	-	-	-	-	-
2019	(57,470,605)	5	(11,494,121)	(11,494,121)	(11,494,121)	(11,494,121)	(11,494,121)	-	-	-	-	-	-
Net Increase (Decrease)			-	-	-	-	-	-	-	-	-	-	-

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Ashburnham
◆ Current Proportionate Share		1.313859%
◆ Prior Proportionate Share		1.326799%
Beginning Net Pension Liability	\$ 906,762,192	\$ 12,030,916
Ending Net Pension Liability	\$ 890,129,991	\$ 11,695,052
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 34,343
◆ Changes of Assumptions	49,751,234	653,661
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	297,715
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 985,719
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 70,069
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	321,224
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	249,805
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 641,098
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,437,725
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(66,432)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,371,293
Covered Payroll:	\$ 301,686,927	\$ 3,633,332
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 11,695,052
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 14,271,008
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 9,519,729
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 157,778
◆ 2021	\$ 8,393,991	\$ 190,059
◆ 2022	\$ 4,612,975	\$ 126,954
◆ 2023	\$ (9,608,282)	\$ (148,612)
◆ 2024	\$ 2,564,057	\$ 18,442
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Ashburnham-Westminster Regional
◆ Current Proportionate Share		1.081470%
◆ Prior Proportionate Share		1.082140%
Beginning Net Pension Liability	\$ 906,762,192	\$ 9,812,435
Ending Net Pension Liability	\$ 890,129,991	\$ 9,626,487
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 28,269
◆ Changes of Assumptions	49,751,234	538,045
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	232,372
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 798,686
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 57,676
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	264,407
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	77,696
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 399,779
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,183,427
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	18,926
Total Employer Pension Expense	\$ 109,427,624	\$ 1,202,353
Covered Payroll:	\$ 301,686,927	\$ 3,978,616
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 9,626,487
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 11,746,820
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 7,835,925
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 200,881
◆ 2021	\$ 8,393,991	\$ 165,196
◆ 2022	\$ 4,612,975	\$ 114,428
◆ 2023	\$ (9,608,282)	\$ (108,542)
◆ 2024	\$ 2,564,057	\$ 26,944
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Athol
◆ Current Proportionate Share		2.404593%
◆ Prior Proportionate Share		2.387628%
Beginning Net Pension Liability	\$ 906,762,192	\$ 21,650,107
Ending Net Pension Liability	\$ 890,129,991	\$ 21,404,005
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 62,854
◆ Changes of Assumptions	49,751,234	1,196,315
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	3,504,113
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 4,763,282
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 128,239
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	587,896
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	3,962,287
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 4,678,422
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 2,631,289
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,173,746
Total Employer Pension Expense	\$ 109,427,624	\$ 4,805,035
Covered Payroll:	\$ 301,686,927	\$ 5,609,600
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 21,404,005
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 26,118,459
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 17,422,782
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 2,432,231
◆ 2021	\$ 8,393,991	\$ (1,153,702)
◆ 2022	\$ 4,612,975	\$ (1,054,186)
◆ 2023	\$ (9,608,282)	\$ (221,124)
◆ 2024	\$ 2,564,057	\$ 81,641
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Athol Housing Authority
◆ Current Proportionate Share		0.057266%
◆ Prior Proportionate Share		0.068554%
Beginning Net Pension Liability	\$ 906,762,192	\$ 621,620
Ending Net Pension Liability	\$ 890,129,991	\$ 509,740
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 1,497
◆ Changes of Assumptions	49,751,234	28,490
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	127,621
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 157,608
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 3,054
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	14,001
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	283,414
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 300,469
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 62,665
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	40,719
Total Employer Pension Expense	\$ 109,427,624	\$ 103,384
Covered Payroll:	\$ 301,686,927	\$ 258,051
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 509,740
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 622,016
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 414,927
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 45,094
◆ 2021	\$ 8,393,991	\$ (82,728)
◆ 2022	\$ 4,612,975	\$ (72,979)
◆ 2023	\$ (9,608,282)	\$ (20,417)
◆ 2024	\$ 2,564,057	\$ (11,831)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Athol-Royalston Regional
◆ Current Proportionate Share		0.916381%
◆ Prior Proportionate Share		0.948998%
Beginning Net Pension Liability	\$ 906,762,192	\$ 8,605,156
Ending Net Pension Liability	\$ 890,129,991	\$ 8,156,985
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 23,953
◆ Changes of Assumptions	49,751,234	455,911
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	1,480,725
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,960,589
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 48,871
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	224,045
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	2,170,597
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 2,443,513
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,002,774
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	788,431
Total Employer Pension Expense	\$ 109,427,624	\$ 1,791,205
Covered Payroll:	\$ 301,686,927	\$ 2,362,099
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 8,156,985
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 9,953,646
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 6,639,756
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 879,920
◆ 2021	\$ 8,393,991	\$ (650,992)
◆ 2022	\$ 4,612,975	\$ (567,750)
◆ 2023	\$ (9,608,282)	\$ (129,174)
◆ 2024	\$ 2,564,057	\$ (14,928)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Auburn
◆ Current Proportionate Share		5.308296%
◆ Prior Proportionate Share		5.180752%
Beginning Net Pension Liability	\$ 906,762,192	\$ 46,977,101
Ending Net Pension Liability	\$ 890,129,991	\$ 47,250,738
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 138,754
◆ Changes of Assumptions	49,751,234	2,640,943
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	2,150,100
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 4,929,797
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 283,096
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	1,297,818
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	182,465
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,763,379
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 5,808,743
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	536,778
Total Employer Pension Expense	\$ 109,427,624	\$ 6,345,521
Covered Payroll:	\$ 301,686,927	\$ 15,448,580
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 47,250,738
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 57,658,204
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 38,461,929
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 1,421,217
◆ 2021	\$ 8,393,991	\$ 1,037,559
◆ 2022	\$ 4,612,975	\$ 778,698
◆ 2023	\$ (9,608,282)	\$ (357,418)
◆ 2024	\$ 2,564,057	\$ 286,362
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Auburn Housing Authority
◆ Current Proportionate Share		0.105119%
◆ Prior Proportionate Share		0.109652%
Beginning Net Pension Liability	\$ 906,762,192	\$ 994,280
Ending Net Pension Liability	\$ 890,129,991	\$ 935,698
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,748
◆ Changes of Assumptions	49,751,234	52,298
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	18,933
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 73,979
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 5,606
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	25,700
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	72,907
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 104,213
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 115,030
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(42,921)
Total Employer Pension Expense	\$ 109,427,624	\$ 72,109
Covered Payroll:	\$ 301,686,927	\$ 275,103
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 935,698
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 1,141,796
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 761,655
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (23,715)
◆ 2021	\$ 8,393,991	\$ 9,156
◆ 2022	\$ 4,612,975	\$ 3,532
◆ 2023	\$ (9,608,282)	\$ (16,564)
◆ 2024	\$ 2,564,057	\$ (2,643)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Auburn Water District
◆ Current Proportionate Share		0.151222%
◆ Prior Proportionate Share		0.170994%
Beginning Net Pension Liability	\$ 906,762,192	\$ 1,550,508
Ending Net Pension Liability	\$ 890,129,991	\$ 1,346,072
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 3,953
◆ Changes of Assumptions	49,751,234	75,235
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	16,806
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 95,994
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 8,065
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	36,972
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	149,090
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 194,127
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 165,479
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(21,636)
Total Employer Pension Expense	\$ 109,427,624	\$ 143,843
Covered Payroll:	\$ 301,686,927	\$ 490,158
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 1,346,072
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 1,642,559
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 1,095,698
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 3,151
◆ 2021	\$ 8,393,991	\$ (17,730)
◆ 2022	\$ 4,612,975	\$ (23,408)
◆ 2023	\$ (9,608,282)	\$ (40,729)
◆ 2024	\$ 2,564,057	\$ (19,417)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Barre
◆ Current Proportionate Share		0.535549%
◆ Prior Proportionate Share		0.526507%
Beginning Net Pension Liability	\$ 906,762,192	\$ 4,774,164
Ending Net Pension Liability	\$ 890,129,991	\$ 4,767,083
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 13,999
◆ Changes of Assumptions	49,751,234	266,442
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	144,119
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 424,560
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 28,561
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	130,936
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	226,291
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 385,788
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 586,039
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(149,659)
Total Employer Pension Expense	\$ 109,427,624	\$ 436,380
Covered Payroll:	\$ 301,686,927	\$ 2,105,671
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 4,767,083
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 5,817,083
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 3,880,389
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (53,552)
◆ 2021	\$ 8,393,991	\$ 72,403
◆ 2022	\$ 4,612,975	\$ 46,564
◆ 2023	\$ (9,608,282)	\$ (51,026)
◆ 2024	\$ 2,564,057	\$ 24,383
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Barre Housing Authority
◆ Current Proportionate Share		0.030642%
◆ Prior Proportionate Share		0.027429%
Beginning Net Pension Liability	\$ 906,762,192	\$ 248,716
Ending Net Pension Liability	\$ 890,129,991	\$ 272,749
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 801
◆ Changes of Assumptions	49,751,234	15,245
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	32,254
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 48,300
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 1,634
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	7,492
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 9,126
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 33,530
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	9,418
Total Employer Pension Expense	\$ 109,427,624	\$ 42,948
Covered Payroll:	\$ 301,686,927	\$ 92,821
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 272,749
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 332,825
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 222,017
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 14,428
◆ 2021	\$ 8,393,991	\$ 9,879
◆ 2022	\$ 4,612,975	\$ 8,221
◆ 2023	\$ (9,608,282)	\$ 2,076
◆ 2024	\$ 2,564,057	\$ 4,570
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Berlin
◆ Current Proportionate Share		0.793459%
◆ Prior Proportionate Share		0.828528%
Beginning Net Pension Liability	\$ 906,762,192	\$ 7,512,781
Ending Net Pension Liability	\$ 890,129,991	\$ 7,062,815
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 20,740
◆ Changes of Assumptions	49,751,234	394,756
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	274,488
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 689,984
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 42,316
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	193,992
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	242,483
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 478,791
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 868,263
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	83,627
Total Employer Pension Expense	\$ 109,427,624	\$ 951,890
Covered Payroll:	\$ 301,686,927	\$ 2,278,623
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 7,062,815
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 8,618,474
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 5,749,106
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 213,259
◆ 2021	\$ 8,393,991	\$ 93,832
◆ 2022	\$ 4,612,975	\$ 51,460
◆ 2023	\$ (9,608,282)	\$ (126,392)
◆ 2024	\$ 2,564,057	\$ (20,966)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Berlin-Boylston Regional
◆ Current Proportionate Share		0.265967%
◆ Prior Proportionate Share		0.220525%
Beginning Net Pension Liability	\$ 906,762,192	\$ 1,999,634
Ending Net Pension Liability	\$ 890,129,991	\$ 2,367,453
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 6,952
◆ Changes of Assumptions	49,751,234	132,322
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	347,050
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 486,324
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 14,184
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	65,026
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	31,516
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 110,726
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 291,042
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	45,298
Total Employer Pension Expense	\$ 109,427,624	\$ 336,340
Covered Payroll:	\$ 301,686,927	\$ 1,264,674
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 2,367,453
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 2,888,910
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 1,927,098
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 90,768
◆ 2021	\$ 8,393,991	\$ 99,240
◆ 2022	\$ 4,612,975	\$ 87,310
◆ 2023	\$ (9,608,282)	\$ 37,926
◆ 2024	\$ 2,564,057	\$ 60,354
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Blackstone
◆ Current Proportionate Share		1.379818%
◆ Prior Proportionate Share		1.317628%
Beginning Net Pension Liability	\$ 906,762,192	\$ 11,947,755
Ending Net Pension Liability	\$ 890,129,991	\$ 12,282,171
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 36,067
◆ Changes of Assumptions	49,751,234	686,476
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	820,861
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,543,404
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 73,587
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	337,350
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	438,024
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 848,961
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,509,902
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(228,824)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,281,078
Covered Payroll:	\$ 301,686,927	\$ 3,805,657
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 12,282,171
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 14,987,447
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 9,997,643
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 18,758
◆ 2021	\$ 8,393,991	\$ 342,761
◆ 2022	\$ 4,612,975	\$ 268,517
◆ 2023	\$ (9,608,282)	\$ (44,231)
◆ 2024	\$ 2,564,057	\$ 108,638
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Blackstone Housing Authority
◆ Current Proportionate Share		0.028883%
◆ Prior Proportionate Share		0.033240%
Beginning Net Pension Liability	\$ 906,762,192	\$ 301,404
Ending Net Pension Liability	\$ 890,129,991	\$ 257,092
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 755
◆ Changes of Assumptions	49,751,234	14,369
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	16,799
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 31,923
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 1,540
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	7,061
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	32,361
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 40,962
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 31,605
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(178)
Total Employer Pension Expense	\$ 109,427,624	\$ 31,427
Covered Payroll:	\$ 301,686,927	\$ -
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 257,092
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 313,719
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 209,272
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 4,587
◆ 2021	\$ 8,393,991	\$ 1,283
◆ 2022	\$ 4,612,975	\$ (1,023)
◆ 2023	\$ (9,608,282)	\$ (9,495)
◆ 2024	\$ 2,564,057	\$ (4,391)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Blackstone-Millville Regional
◆ Current Proportionate Share		0.864729%
◆ Prior Proportionate Share		0.879729%
Beginning Net Pension Liability	\$ 906,762,192	\$ 7,977,054
Ending Net Pension Liability	\$ 890,129,991	\$ 7,697,213
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 22,603
◆ Changes of Assumptions	49,751,234	430,213
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	23,722
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 476,538
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 46,117
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	211,416
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	264,379
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 521,912
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 946,252
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(60,524)
Total Employer Pension Expense	\$ 109,427,624	\$ 885,728
Covered Payroll:	\$ 301,686,927	\$ 2,489,983
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 7,697,213
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 9,392,604
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 6,265,503
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 82,209
◆ 2021	\$ 8,393,991	\$ (9,543)
◆ 2022	\$ 4,612,975	\$ (17,432)
◆ 2023	\$ (9,608,282)	\$ (105,111)
◆ 2024	\$ 2,564,057	\$ 4,503
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Bolton
◆ Current Proportionate Share		0.775265%
◆ Prior Proportionate Share		0.738178%
Beginning Net Pension Liability	\$ 906,762,192	\$ 6,693,520
Ending Net Pension Liability	\$ 890,129,991	\$ 6,900,864
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 20,265
◆ Changes of Assumptions	49,751,234	385,704
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	468,917
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 874,886
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 41,346
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	189,543
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	22,102
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 252,991
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 848,354
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	171,011
Total Employer Pension Expense	\$ 109,427,624	\$ 1,019,365
Covered Payroll:	\$ 301,686,927	\$ 2,766,634
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 6,900,864
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 8,420,851
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 5,617,278
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 296,784
◆ 2021	\$ 8,393,991	\$ 159,757
◆ 2022	\$ 4,612,975	\$ 127,280
◆ 2023	\$ (9,608,282)	\$ (25,492)
◆ 2024	\$ 2,564,057	\$ 63,566
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Boylston
◆ Current Proportionate Share		1.084952%
◆ Prior Proportionate Share		1.086912%
Beginning Net Pension Liability	\$ 906,762,192	\$ 9,855,709
Ending Net Pension Liability	\$ 890,129,991	\$ 9,657,479
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 28,360
◆ Changes of Assumptions	49,751,234	539,777
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	465,109
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,033,246
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 57,861
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	265,258
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	153,683
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 476,802
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,187,237
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	61,519
Total Employer Pension Expense	\$ 109,427,624	\$ 1,248,756
Covered Payroll:	\$ 301,686,927	\$ 3,096,661
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 9,657,479
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 11,784,639
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 7,861,153
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 245,041
◆ 2021	\$ 8,393,991	\$ 233,032
◆ 2022	\$ 4,612,975	\$ 172,319
◆ 2023	\$ (9,608,282)	\$ (119,459)
◆ 2024	\$ 2,564,057	\$ 25,511
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Boylston Water District
◆ Current Proportionate Share		0.020060%
◆ Prior Proportionate Share		0.018729%
Beginning Net Pension Liability	\$ 906,762,192	\$ 169,823
Ending Net Pension Liability	\$ 890,129,991	\$ 178,558
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 524
◆ Changes of Assumptions	49,751,234	9,980
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	18,150
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 28,654
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 1,070
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	4,904
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	26,595
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 32,569
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 21,951
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(22,728)
Total Employer Pension Expense	\$ 109,427,624	\$ (777)
Covered Payroll:	\$ 301,686,927	\$ 63,887
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 178,558
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 217,888
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 145,346
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (18,285)
◆ 2021	\$ 8,393,991	\$ 6,652
◆ 2022	\$ 4,612,975	\$ 5,457
◆ 2023	\$ (9,608,282)	\$ 178
◆ 2024	\$ 2,564,057	\$ 2,083
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Brookfield
◆ Current Proportionate Share		0.468406%
◆ Prior Proportionate Share		0.485359%
Beginning Net Pension Liability	\$ 906,762,192	\$ 4,401,048
Ending Net Pension Liability	\$ 890,129,991	\$ 4,169,424
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 12,244
◆ Changes of Assumptions	49,751,234	233,038
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	147,601
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 392,883
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 24,981
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	114,520
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	189,769
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 329,270
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 512,566
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(36,722)
Total Employer Pension Expense	\$ 109,427,624	\$ 475,844
Covered Payroll:	\$ 301,686,927	\$ 1,509,835
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 4,169,424
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 5,087,782
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 3,393,896
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 43,474
◆ 2021	\$ 8,393,991	\$ 61,527
◆ 2022	\$ 4,612,975	\$ 38,487
◆ 2023	\$ (9,608,282)	\$ (71,913)
◆ 2024	\$ 2,564,057	\$ (7,962)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Charlton
◆ Current Proportionate Share		2.224888%
◆ Prior Proportionate Share		2.092922%
Beginning Net Pension Liability	\$ 906,762,192	\$ 18,977,826
Ending Net Pension Liability	\$ 890,129,991	\$ 19,804,393
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 58,156
◆ Changes of Assumptions	49,751,234	1,106,909
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	1,247,165
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 2,412,230
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 118,655
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	543,960
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	42,445
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 705,060
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 2,434,642
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	407,682
Total Employer Pension Expense	\$ 109,427,624	\$ 2,842,324
Covered Payroll:	\$ 301,686,927	\$ 5,987,940
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 19,804,393
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 24,166,516
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 16,120,704
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 770,760
◆ 2021	\$ 8,393,991	\$ 426,898
◆ 2022	\$ 4,612,975	\$ 334,501
◆ 2023	\$ (9,608,282)	\$ (37,492)
◆ 2024	\$ 2,564,057	\$ 212,503
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Cherry Valley- Rochdale Water
◆ Current Proportionate Share		0.088416%
◆ Prior Proportionate Share		0.082792%
Beginning Net Pension Liability	\$ 906,762,192	\$ 750,726
Ending Net Pension Liability	\$ 890,129,991	\$ 787,022
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,311
◆ Changes of Assumptions	49,751,234	43,988
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	52,975
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 99,274
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 4,715
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	21,617
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	20,485
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 46,817
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 96,752
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(3,359)
Total Employer Pension Expense	\$ 109,427,624	\$ 93,393
Covered Payroll:	\$ 301,686,927	\$ 332,372
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 787,022
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 960,371
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 640,633
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 11,861
◆ 2021	\$ 8,393,991	\$ 16,973
◆ 2022	\$ 4,612,975	\$ 12,716
◆ 2023	\$ (9,608,282)	\$ 2,015
◆ 2024	\$ 2,564,057	\$ 8,892
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Cherry Valley Sewer District
◆ Current Proportionate Share		0.000000%
◆ Prior Proportionate Share		0.003138%
Beginning Net Pension Liability	\$ 906,762,192	\$ 28,453
Ending Net Pension Liability	\$ 890,129,991	\$ -
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ -
◆ Changes of Assumptions	49,751,234	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	10,972
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 10,972
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ -
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	-
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	21,887
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 21,887
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ -
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(1,239)
Total Employer Pension Expense	\$ 109,427,624	\$ (1,239)
Covered Payroll:	\$ 301,686,927	\$ -
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ -
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ -
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ -
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (1,214)
◆ 2021	\$ 8,393,991	\$ (625)
◆ 2022	\$ 4,612,975	\$ (1,129)
◆ 2023	\$ (9,608,282)	\$ (4,253)
◆ 2024	\$ 2,564,057	\$ (3,694)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Douglas
◆ Current Proportionate Share		1.787466%
◆ Prior Proportionate Share		1.792803%
Beginning Net Pension Liability	\$ 906,762,192	\$ 16,256,457
Ending Net Pension Liability	\$ 890,129,991	\$ 15,910,774
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 46,723
◆ Changes of Assumptions	49,751,234	889,287
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	485,668
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,421,678
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 95,327
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	437,015
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	166,902
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 699,244
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,955,982
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	90,733
Total Employer Pension Expense	\$ 109,427,624	\$ 2,046,715
Covered Payroll:	\$ 301,686,927	\$ 6,208,415
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 15,910,774
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 19,415,287
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 12,951,312
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 389,590
◆ 2021	\$ 8,393,991	\$ 286,255
◆ 2022	\$ 4,612,975	\$ 202,131
◆ 2023	\$ (9,608,282)	\$ (195,088)
◆ 2024	\$ 2,564,057	\$ 39,546
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Dudley
◆ Current Proportionate Share		1.427528%
◆ Prior Proportionate Share		1.442193%
Beginning Net Pension Liability	\$ 906,762,192	\$ 13,077,264
Ending Net Pension Liability	\$ 890,129,991	\$ 12,706,857
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 37,314
◆ Changes of Assumptions	49,751,234	710,213
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 747,527
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 76,131
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	349,014
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	557,684
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 982,829
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,562,110
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(329,724)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,232,386
Covered Payroll:	\$ 301,686,927	\$ 3,208,904
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 12,706,857
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 15,505,674
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 10,343,335
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (83,389)
◆ 2021	\$ 8,393,991	\$ 17,192
◆ 2022	\$ 4,612,975	\$ (24,993)
◆ 2023	\$ (9,608,282)	\$ (163,442)
◆ 2024	\$ 2,564,057	\$ 19,330
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Dudley Housing Authority
◆ Current Proportionate Share		0.025870%
◆ Prior Proportionate Share		0.025150%
Beginning Net Pension Liability	\$ 906,762,192	\$ 228,048
Ending Net Pension Liability	\$ 890,129,991	\$ 230,281
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 676
◆ Changes of Assumptions	49,751,234	12,871
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	12,500
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 26,047
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 1,380
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	6,325
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	85,925
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 93,630
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 28,309
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(35,146)
Total Employer Pension Expense	\$ 109,427,624	\$ (6,837)
Covered Payroll:	\$ 301,686,927	\$ 121,400
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 230,281
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 281,002
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 187,448
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (30,373)
◆ 2021	\$ 8,393,991	\$ (21,054)
◆ 2022	\$ 4,612,975	\$ (17,857)
◆ 2023	\$ (9,608,282)	\$ 189
◆ 2024	\$ 2,564,057	\$ 1,512
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Dudley-Charlton Regional
◆ Current Proportionate Share		1.681322%
◆ Prior Proportionate Share		1.667751%
Beginning Net Pension Liability	\$ 906,762,192	\$ 15,122,534
Ending Net Pension Liability	\$ 890,129,991	\$ 14,965,953
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 43,948
◆ Changes of Assumptions	49,751,234	836,479
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	195,045
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,075,472
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 89,666
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	411,064
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	23,644
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 524,374
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,839,831
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	74,118
Total Employer Pension Expense	\$ 109,427,624	\$ 1,913,949
Covered Payroll:	\$ 301,686,927	\$ 5,221,272
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 14,965,953
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 18,262,360
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 12,182,232
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 351,957
◆ 2021	\$ 8,393,991	\$ 175,523
◆ 2022	\$ 4,612,975	\$ 111,111
◆ 2023	\$ (9,608,282)	\$ (146,591)
◆ 2024	\$ 2,564,057	\$ 59,098
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	East Brookfield
◆ Current Proportionate Share		0.253809%
◆ Prior Proportionate Share		0.247480%
Beginning Net Pension Liability	\$ 906,762,192	\$ 2,244,051
Ending Net Pension Liability	\$ 890,129,991	\$ 2,259,228
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 6,634
◆ Changes of Assumptions	49,751,234	126,273
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	253,614
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 386,521
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 13,536
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	62,053
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	19,091
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 94,680
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 277,737
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	101,934
Total Employer Pension Expense	\$ 109,427,624	\$ 379,671
Covered Payroll:	\$ 301,686,927	\$ 670,136
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 2,259,228
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 2,756,846
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 1,839,003
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 142,630
◆ 2021	\$ 8,393,991	\$ 86,129
◆ 2022	\$ 4,612,975	\$ 68,536
◆ 2023	\$ (9,608,282)	\$ (19,418)
◆ 2024	\$ 2,564,057	\$ 13,964
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Grafton
◆ Current Proportionate Share		3.085831%
◆ Prior Proportionate Share		3.014179%
Beginning Net Pension Liability	\$ 906,762,192	\$ 27,331,432
Ending Net Pension Liability	\$ 890,129,991	\$ 27,467,908
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 80,661
◆ Changes of Assumptions	49,751,234	1,535,239
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	626,939
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 2,242,839
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 164,570
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	754,451
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	58,047
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 977,068
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,376,752
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	106,275
Total Employer Pension Expense	\$ 109,427,624	\$ 3,483,027
Covered Payroll:	\$ 301,686,927	\$ 11,433,973
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 27,467,908
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 33,518,001
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 22,358,778
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 620,582
◆ 2021	\$ 8,393,991	\$ 401,400
◆ 2022	\$ 4,612,975	\$ 280,304
◆ 2023	\$ (9,608,282)	\$ (200,045)
◆ 2024	\$ 2,564,057	\$ 163,530
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Grafton Housing Authority
◆ Current Proportionate Share		0.083659%
◆ Prior Proportionate Share		0.090436%
Beginning Net Pension Liability	\$ 906,762,192	\$ 820,043
Ending Net Pension Liability	\$ 890,129,991	\$ 744,670
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,187
◆ Changes of Assumptions	49,751,234	41,621
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	4,618
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 48,426
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 4,462
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	20,454
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	63,317
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 88,233
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 91,546
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(10,609)
Total Employer Pension Expense	\$ 109,427,624	\$ 80,937
Covered Payroll:	\$ 301,686,927	\$ 249,030
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 744,670
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 908,691
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 606,159
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 3,102
◆ 2021	\$ 8,393,991	\$ (8,264)
◆ 2022	\$ 4,612,975	\$ (10,102)
◆ 2023	\$ (9,608,282)	\$ (18,701)
◆ 2024	\$ 2,564,057	\$ (5,842)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Hardwick
◆ Current Proportionate Share		0.312587%
◆ Prior Proportionate Share		0.344405%
Beginning Net Pension Liability	\$ 906,762,192	\$ 3,122,938
Ending Net Pension Liability	\$ 890,129,991	\$ 2,782,432
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 8,171
◆ Changes of Assumptions	49,751,234	155,516
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	7,266
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 170,953
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 16,671
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	76,424
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	450,821
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 543,916
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 342,057
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(158,785)
Total Employer Pension Expense	\$ 109,427,624	\$ 183,272
Covered Payroll:	\$ 301,686,927	\$ 993,792
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 2,782,432
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 3,395,292
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 2,264,890
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (104,713)
◆ 2021	\$ 8,393,991	\$ (79,925)
◆ 2022	\$ 4,612,975	\$ (84,809)
◆ 2023	\$ (9,608,282)	\$ (74,047)
◆ 2024	\$ 2,564,057	\$ (29,469)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Harvard
◆ Current Proportionate Share		1.479386%
◆ Prior Proportionate Share		1.502224%
Beginning Net Pension Liability	\$ 906,762,192	\$ 13,621,603
Ending Net Pension Liability	\$ 890,129,991	\$ 13,168,457
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 38,670
◆ Changes of Assumptions	49,751,234	736,013
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	34,309
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 808,992
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 78,897
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	361,693
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	393,389
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 833,979
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,618,857
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(215,781)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,403,076
Covered Payroll:	\$ 301,686,927	\$ 4,972,953
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 13,168,457
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 16,068,946
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 10,719,076
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 36,708
◆ 2021	\$ 8,393,991	\$ 73,514
◆ 2022	\$ 4,612,975	\$ 20,767
◆ 2023	\$ (9,608,282)	\$ (167,006)
◆ 2024	\$ 2,564,057	\$ 11,030
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Hillcrest Water District
◆ Current Proportionate Share		0.013172%
◆ Prior Proportionate Share		0.013196%
Beginning Net Pension Liability	\$ 906,762,192	\$ 119,659
Ending Net Pension Liability	\$ 890,129,991	\$ 117,246
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 344
◆ Changes of Assumptions	49,751,234	6,553
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	29,587
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 36,484
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 702
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	3,220
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	15,395
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 19,317
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 14,414
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	10,778
Total Employer Pension Expense	\$ 109,427,624	\$ 25,192
Covered Payroll:	\$ 301,686,927	\$ 49,437
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 117,246
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 143,070
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 95,437
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 12,897
◆ 2021	\$ 8,393,991	\$ 8,204
◆ 2022	\$ 4,612,975	\$ (3,427)
◆ 2023	\$ (9,608,282)	\$ (815)
◆ 2024	\$ 2,564,057	\$ 308
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Holden
◆ Current Proportionate Share		3.530173%
◆ Prior Proportionate Share		3.727814%
Beginning Net Pension Liability	\$ 906,762,192	\$ 33,802,409
Ending Net Pension Liability	\$ 890,129,991	\$ 31,423,132
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 92,275
◆ Changes of Assumptions	49,751,234	1,756,305
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	115,016
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,963,596
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 188,267
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	863,087
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	2,055,428
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 3,106,782
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,862,985
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(619,373)
Total Employer Pension Expense	\$ 109,427,624	\$ 3,243,612
Covered Payroll:	\$ 301,686,927	\$ 10,532,682
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 31,423,132
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 38,344,404
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 25,578,316
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (24,666)
◆ 2021	\$ 8,393,991	\$ (126,338)
◆ 2022	\$ 4,612,975	\$ (250,824)
◆ 2023	\$ (9,608,282)	\$ (599,049)
◆ 2024	\$ 2,564,057	\$ (142,309)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Holden Housing Authority
◆ Current Proportionate Share		0.054705%
◆ Prior Proportionate Share		0.051887%
Beginning Net Pension Liability	\$ 906,762,192	\$ 470,494
Ending Net Pension Liability	\$ 890,129,991	\$ 486,949
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 1,430
◆ Changes of Assumptions	49,751,234	27,217
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	23,710
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 52,357
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 2,917
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	13,375
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	11,826
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 28,118
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 59,863
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	4,739
Total Employer Pension Expense	\$ 109,427,624	\$ 64,602
Covered Payroll:	\$ 301,686,927	\$ 38,418
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 486,949
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 594,205
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 396,375
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 13,640
◆ 2021	\$ 8,393,991	\$ 4,631
◆ 2022	\$ 4,612,975	\$ 3,359
◆ 2023	\$ (9,608,282)	\$ (2,115)
◆ 2024	\$ 2,564,057	\$ 4,724
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Hopedale
◆ Current Proportionate Share		1.622187%
◆ Prior Proportionate Share		1.637232%
Beginning Net Pension Liability	\$ 906,762,192	\$ 14,845,804
Ending Net Pension Liability	\$ 890,129,991	\$ 14,439,576
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 42,402
◆ Changes of Assumptions	49,751,234	807,058
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	369,103
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,218,563
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 86,513
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	396,606
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	360,312
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 843,431
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,775,121
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(121,789)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,653,332
Covered Payroll:	\$ 301,686,927	\$ 5,234,698
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 14,439,576
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 17,620,043
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 11,753,763
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 156,413
◆ 2021	\$ 8,393,991	\$ 229,453
◆ 2022	\$ 4,612,975	\$ 152,568
◆ 2023	\$ (9,608,282)	\$ (187,171)
◆ 2024	\$ 2,564,057	\$ 23,869
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Hopedale Housing Authority
◆ Current Proportionate Share		0.008048%
◆ Prior Proportionate Share		0.008981%
Beginning Net Pension Liability	\$ 906,762,192	\$ 81,434
Ending Net Pension Liability	\$ 890,129,991	\$ 71,634
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 210
◆ Changes of Assumptions	49,751,234	4,004
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	2,601
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 6,815
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 429
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	1,968
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	25,727
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 28,124
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 8,806
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(8,057)
Total Employer Pension Expense	\$ 109,427,624	\$ 749
Covered Payroll:	\$ 301,686,927	\$ -
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 71,634
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 87,412
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 58,310
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (6,669)
◆ 2021	\$ 8,393,991	\$ (6,182)
◆ 2022	\$ 4,612,975	\$ (5,906)
◆ 2023	\$ (9,608,282)	\$ (1,659)
◆ 2024	\$ 2,564,057	\$ (893)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Hubbardston
◆ Current Proportionate Share		0.412285%
◆ Prior Proportionate Share		0.459305%
Beginning Net Pension Liability	\$ 906,762,192	\$ 4,164,808
Ending Net Pension Liability	\$ 890,129,991	\$ 3,669,873
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 10,777
◆ Changes of Assumptions	49,751,234	205,117
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	167,832
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 383,726
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 21,988
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	100,799
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	392,235
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 515,022
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 451,154
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	12,230
Total Employer Pension Expense	\$ 109,427,624	\$ 463,384
Covered Payroll:	\$ 301,686,927	\$ 1,350,338
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 3,669,873
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 4,478,200
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 2,987,263
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 78,256
◆ 2021	\$ 8,393,991	\$ (14,803)
◆ 2022	\$ 4,612,975	\$ (30,728)
◆ 2023	\$ (9,608,282)	\$ (119,202)
◆ 2024	\$ 2,564,057	\$ (44,819)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Lancaster
◆ Current Proportionate Share		1.080013%
◆ Prior Proportionate Share		1.006400%
Beginning Net Pension Liability	\$ 906,762,192	\$ 9,125,651
Ending Net Pension Liability	\$ 890,129,991	\$ 9,613,519
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 28,230
◆ Changes of Assumptions	49,751,234	537,320
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	516,121
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,081,671
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 57,598
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	264,051
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	24,878
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 346,527
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,181,833
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	84,454
Total Employer Pension Expense	\$ 109,427,624	\$ 1,266,287
Covered Payroll:	\$ 301,686,927	\$ 2,894,469
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 9,613,519
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 11,730,997
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 7,825,370
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 264,994
◆ 2021	\$ 8,393,991	\$ 200,345
◆ 2022	\$ 4,612,975	\$ 155,146
◆ 2023	\$ (9,608,282)	\$ 248
◆ 2024	\$ 2,564,057	\$ 114,411
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Lancaster Housing Authority
◆ Current Proportionate Share		0.025839%
◆ Prior Proportionate Share		0.026522%
Beginning Net Pension Liability	\$ 906,762,192	\$ 240,492
Ending Net Pension Liability	\$ 890,129,991	\$ 230,003
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 675
◆ Changes of Assumptions	49,751,234	12,855
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	31,687
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 45,217
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 1,378
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	6,317
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	18,208
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 25,903
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 28,275
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(3,948)
Total Employer Pension Expense	\$ 109,427,624	\$ 24,327
Covered Payroll:	\$ 301,686,927	\$ 42,050
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 230,003
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 280,664
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 187,222
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 912
◆ 2021	\$ 8,393,991	\$ 12,324
◆ 2022	\$ 4,612,975	\$ 9,610
◆ 2023	\$ (9,608,282)	\$ (3,392)
◆ 2024	\$ 2,564,057	\$ (140)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Lancaster Sewer
◆ Current Proportionate Share		0.003516%
◆ Prior Proportionate Share		0.002849%
Beginning Net Pension Liability	\$ 906,762,192	\$ 25,831
Ending Net Pension Liability	\$ 890,129,991	\$ 31,300
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 92
◆ Changes of Assumptions	49,751,234	1,749
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	18,724
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 20,565
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 188
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	860
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,048
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,848
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	4,632
Total Employer Pension Expense	\$ 109,427,624	\$ 8,480
Covered Payroll:	\$ 301,686,927	\$ 35,750
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 31,300
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 38,194
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 25,478
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 5,216
◆ 2021	\$ 8,393,991	\$ 4,927
◆ 2022	\$ 4,612,975	\$ 4,794
◆ 2023	\$ (9,608,282)	\$ 3,703
◆ 2024	\$ 2,564,057	\$ 877
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Leicester
◆ Current Proportionate Share		2.159376%
◆ Prior Proportionate Share		2.087029%
Beginning Net Pension Liability	\$ 906,762,192	\$ 18,924,389
Ending Net Pension Liability	\$ 890,129,991	\$ 19,221,250
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 56,444
◆ Changes of Assumptions	49,751,234	1,074,316
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	508,132
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,638,892
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 115,161
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	527,943
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	437,799
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,080,903
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 2,362,953
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(292,919)
Total Employer Pension Expense	\$ 109,427,624	\$ 2,070,034
Covered Payroll:	\$ 301,686,927	\$ 5,198,182
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 19,221,250
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 23,454,930
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 15,646,027
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 80,960
◆ 2021	\$ 8,393,991	\$ 262,035
◆ 2022	\$ 4,612,975	\$ 179,107
◆ 2023	\$ (9,608,282)	\$ (104,704)
◆ 2024	\$ 2,564,057	\$ 140,591
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Leicester Housing Authority
◆ Current Proportionate Share		0.077963%
◆ Prior Proportionate Share		0.068674%
Beginning Net Pension Liability	\$ 906,762,192	\$ 622,711
Ending Net Pension Liability	\$ 890,129,991	\$ 693,971
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,038
◆ Changes of Assumptions	49,751,234	38,787
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	67,962
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 108,787
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 4,158
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	19,061
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	21,307
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 44,526
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 85,313
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	5,240
Total Employer Pension Expense	\$ 109,427,624	\$ 90,553
Covered Payroll:	\$ 301,686,927	\$ 217,840
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 693,971
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 846,825
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 564,890
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 18,308
◆ 2021	\$ 8,393,991	\$ 14,475
◆ 2022	\$ 4,612,975	\$ 12,093
◆ 2023	\$ (9,608,282)	\$ 6,446
◆ 2024	\$ 2,564,057	\$ 12,939
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Leicester Water District
◆ Current Proportionate Share		0.069296%
◆ Prior Proportionate Share		0.080647%
Beginning Net Pension Liability	\$ 906,762,192	\$ 731,279
Ending Net Pension Liability	\$ 890,129,991	\$ 616,826
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 1,811
◆ Changes of Assumptions	49,751,234	34,476
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	7,671
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 43,958
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 3,696
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	16,942
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	166,776
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 187,414
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 75,829
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(57,772)
Total Employer Pension Expense	\$ 109,427,624	\$ 18,057
Covered Payroll:	\$ 301,686,927	\$ 302,831
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 616,826
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 752,688
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 502,094
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (45,757)
◆ 2021	\$ 8,393,991	\$ (37,820)
◆ 2022	\$ 4,612,975	\$ (27,383)
◆ 2023	\$ (9,608,282)	\$ (20,899)
◆ 2024	\$ 2,564,057	\$ (11,597)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Lunenburg
◆ Current Proportionate Share		2.224336%
◆ Prior Proportionate Share		2.194566%
Beginning Net Pension Liability	\$ 906,762,192	\$ 19,899,499
Ending Net Pension Liability	\$ 890,129,991	\$ 19,799,481
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 58,142
◆ Changes of Assumptions	49,751,234	1,106,635
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	386,869
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,551,646
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 118,626
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	543,825
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 662,451
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 2,434,038
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	139,611
Total Employer Pension Expense	\$ 109,427,624	\$ 2,573,649
Covered Payroll:	\$ 301,686,927	\$ 6,631,003
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 19,799,481
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 24,160,522
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 16,116,705
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 507,454
◆ 2021	\$ 8,393,991	\$ 277,825
◆ 2022	\$ 4,612,975	\$ 176,344
◆ 2023	\$ (9,608,282)	\$ (164,532)
◆ 2024	\$ 2,564,057	\$ 92,104
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Lunenburg Housing Authority
◆ Current Proportionate Share		0.002790%
◆ Prior Proportionate Share		0.002418%
Beginning Net Pension Liability	\$ 906,762,192	\$ 21,922
Ending Net Pension Liability	\$ 890,129,991	\$ 24,838
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 73
◆ Changes of Assumptions	49,751,234	1,388
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	2,530
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 3,991
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 149
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	682
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	22,415
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 23,246
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,053
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(9,845)
Total Employer Pension Expense	\$ 109,427,624	\$ (6,792)
Covered Payroll:	\$ 301,686,927	\$ 50,813
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 24,838
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 30,309
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 20,218
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (9,236)
◆ 2021	\$ 8,393,991	\$ (5,903)
◆ 2022	\$ 4,612,975	\$ (4,746)
◆ 2023	\$ (9,608,282)	\$ 122
◆ 2024	\$ 2,564,057	\$ 508
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Lunenburg Water District
◆ Current Proportionate Share		0.095209%
◆ Prior Proportionate Share		0.089736%
Beginning Net Pension Liability	\$ 906,762,192	\$ 813,691
Ending Net Pension Liability	\$ 890,129,991	\$ 847,486
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,489
◆ Changes of Assumptions	49,751,234	47,368
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	56,750
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 106,607
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 5,078
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	23,278
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	57,409
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 85,765
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 104,185
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(22,057)
Total Employer Pension Expense	\$ 109,427,624	\$ 82,128
Covered Payroll:	\$ 301,686,927	\$ 331,155
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 847,486
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 1,034,154
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 689,851
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (5,248)
◆ 2021	\$ 8,393,991	\$ 10,121
◆ 2022	\$ 4,612,975	\$ 5,521
◆ 2023	\$ (9,608,282)	\$ 1,560
◆ 2024	\$ 2,564,057	\$ 8,888
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Mendon
◆ Current Proportionate Share		1.071473%
◆ Prior Proportionate Share		1.021572%
Beginning Net Pension Liability	\$ 906,762,192	\$ 9,263,226
Ending Net Pension Liability	\$ 890,129,991	\$ 9,537,500
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 28,007
◆ Changes of Assumptions	49,751,234	533,071
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	637,884
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,198,962
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 57,143
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	261,963
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	24,395
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 343,501
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,172,487
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	209,182
Total Employer Pension Expense	\$ 109,427,624	\$ 1,381,669
Covered Payroll:	\$ 301,686,927	\$ 2,955,933
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 9,537,500
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 11,638,233
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 7,763,490
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 385,157
◆ 2021	\$ 8,393,991	\$ 244,052
◆ 2022	\$ 4,612,975	\$ 178,302
◆ 2023	\$ (9,608,282)	\$ (38,304)
◆ 2024	\$ 2,564,057	\$ 86,254
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Mendon-Upton Regional
◆ Current Proportionate Share		1.277934%
◆ Prior Proportionate Share		1.274427%
Beginning Net Pension Liability	\$ 906,762,192	\$ 11,556,024
Ending Net Pension Liability	\$ 890,129,991	\$ 11,375,272
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 33,404
◆ Changes of Assumptions	49,751,234	635,788
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	198,765
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 867,957
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 68,153
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	312,440
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	64,586
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 445,179
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,398,413
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	94,991
Total Employer Pension Expense	\$ 109,427,624	\$ 1,493,404
Covered Payroll:	\$ 301,686,927	\$ 4,535,477
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 11,375,272
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 13,880,794
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 9,259,430
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 304,313
◆ 2021	\$ 8,393,991	\$ 126,815
◆ 2022	\$ 4,612,975	\$ 82,509
◆ 2023	\$ (9,608,282)	\$ (127,757)
◆ 2024	\$ 2,564,057	\$ 36,898
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Millbury
◆ Current Proportionate Share		3.001453%
◆ Prior Proportionate Share		3.141697%
Beginning Net Pension Liability	\$ 906,762,192	\$ 28,487,717
Ending Net Pension Liability	\$ 890,129,991	\$ 26,716,835
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 78,455
◆ Changes of Assumptions	49,751,234	1,493,260
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	112,309
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,684,024
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 160,070
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	733,821
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	1,260,841
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 2,154,732
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,284,419
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(466,592)
Total Employer Pension Expense	\$ 109,427,624	\$ 2,817,827
Covered Payroll:	\$ 301,686,927	\$ 7,513,228
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 26,716,835
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 32,601,496
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 21,747,407
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 44,643
◆ 2021	\$ 8,393,991	\$ 93,488
◆ 2022	\$ 4,612,975	\$ (32,941)
◆ 2023	\$ (9,608,282)	\$ (487,649)
◆ 2024	\$ 2,564,057	\$ (88,249)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Millbury Housing Authority
◆ Current Proportionate Share		0.158816%
◆ Prior Proportionate Share		0.162520%
Beginning Net Pension Liability	\$ 906,762,192	\$ 1,473,667
Ending Net Pension Liability	\$ 890,129,991	\$ 1,413,671
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 4,151
◆ Changes of Assumptions	49,751,234	79,013
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	8,974
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 92,138
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 8,470
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	38,829
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	29,964
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 77,263
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 173,789
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	2,312
Total Employer Pension Expense	\$ 109,427,624	\$ 176,101
Covered Payroll:	\$ 301,686,927	\$ 442,544
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 1,413,671
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 1,725,047
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 1,150,723
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 28,366
◆ 2021	\$ 8,393,991	\$ 7,049
◆ 2022	\$ 4,612,975	\$ 788
◆ 2023	\$ (9,608,282)	\$ (21,040)
◆ 2024	\$ 2,564,057	\$ (288)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Millville
◆ Current Proportionate Share		0.298313%
◆ Prior Proportionate Share		0.276827%
Beginning Net Pension Liability	\$ 906,762,192	\$ 2,510,162
Ending Net Pension Liability	\$ 890,129,991	\$ 2,655,377
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 7,798
◆ Changes of Assumptions	49,751,234	148,415
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	391,661
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 547,874
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 15,909
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	72,934
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	92,564
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 181,407
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 326,437
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	153,405
Total Employer Pension Expense	\$ 109,427,624	\$ 479,842
Covered Payroll:	\$ 301,686,927	\$ 716,932
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 2,655,377
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 3,240,252
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 2,161,468
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 199,091
◆ 2021	\$ 8,393,991	\$ 81,969
◆ 2022	\$ 4,612,975	\$ 68,656
◆ 2023	\$ (9,608,282)	\$ (16,212)
◆ 2024	\$ 2,564,057	\$ 32,963
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Narragansett Regional
◆ Current Proportionate Share		0.656194%
◆ Prior Proportionate Share		0.665421%
Beginning Net Pension Liability	\$ 906,762,192	\$ 6,033,789
Ending Net Pension Liability	\$ 890,129,991	\$ 5,840,976
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 17,152
◆ Changes of Assumptions	49,751,234	326,464
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 343,616
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 34,995
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	160,432
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	209,079
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 404,506
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 718,057
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(92,410)
Total Employer Pension Expense	\$ 109,427,624	\$ 625,647
Covered Payroll:	\$ 301,686,927	\$ 2,546,348
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 5,840,976
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 7,127,512
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 4,754,534
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 18,328
◆ 2021	\$ 8,393,991	\$ 4,793
◆ 2022	\$ 4,612,975	\$ (13,630)
◆ 2023	\$ (9,608,282)	\$ (76,338)
◆ 2024	\$ 2,564,057	\$ 5,957
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Nashoba Regional
◆ Current Proportionate Share		1.707756%
◆ Prior Proportionate Share		1.758719%
Beginning Net Pension Liability	\$ 906,762,192	\$ 15,947,398
Ending Net Pension Liability	\$ 890,129,991	\$ 15,201,248
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 44,639
◆ Changes of Assumptions	49,751,234	849,630
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	645,110
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,539,379
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 91,076
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	417,527
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	672,737
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,181,340
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,868,757
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(125,396)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,743,361
Covered Payroll:	\$ 301,686,927	\$ 6,423,956
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 15,201,248
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 18,549,481
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 12,373,761
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 168,428
◆ 2021	\$ 8,393,991	\$ 269,562
◆ 2022	\$ 4,612,975	\$ 185,293
◆ 2023	\$ (9,608,282)	\$ (248,996)
◆ 2024	\$ 2,564,057	\$ (16,248)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Nashoba Valley Dispatch
◆ Current Proportionate Share		0.064032%
◆ Prior Proportionate Share		0.030648%
Beginning Net Pension Liability	\$ 906,762,192	\$ 277,902
Ending Net Pension Liability	\$ 890,129,991	\$ 569,971
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 1,674
◆ Changes of Assumptions	49,751,234	31,857
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	379,299
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 412,830
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 3,415
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	15,655
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 19,070
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 70,069
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	86,584
Total Employer Pension Expense	\$ 109,427,624	\$ 156,653
Covered Payroll:	\$ 301,686,927	\$ 700,123
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 569,971
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 695,513
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 463,954
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 97,226
◆ 2021	\$ 8,393,991	\$ 91,959
◆ 2022	\$ 4,612,975	\$ 89,538
◆ 2023	\$ (9,608,282)	\$ 74,069
◆ 2024	\$ 2,564,057	\$ 40,968
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	New Braintree
◆ Current Proportionate Share		0.094717%
◆ Prior Proportionate Share		0.090618%
Beginning Net Pension Liability	\$ 906,762,192	\$ 821,688
Ending Net Pension Liability	\$ 890,129,991	\$ 843,101
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,476
◆ Changes of Assumptions	49,751,234	47,123
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	49,299
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 98,898
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 5,051
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	23,157
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	137,480
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 165,688
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 103,646
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(25,088)
Total Employer Pension Expense	\$ 109,427,624	\$ 78,558
Covered Payroll:	\$ 301,686,927	\$ 227,593
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 843,101
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 1,028,802
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 686,281
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (10,000)
◆ 2021	\$ 8,393,991	\$ (33,252)
◆ 2022	\$ 4,612,975	\$ (28,706)
◆ 2023	\$ (9,608,282)	\$ (2,093)
◆ 2024	\$ 2,564,057	\$ 7,261
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Northboro
◆ Current Proportionate Share		3.479993%
◆ Prior Proportionate Share		3.389009%
Beginning Net Pension Liability	\$ 906,762,192	\$ 30,730,253
Ending Net Pension Liability	\$ 890,129,991	\$ 30,976,459
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 90,963
◆ Changes of Assumptions	49,751,234	1,731,339
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	936,604
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 2,758,906
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 185,591
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	850,819
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	161,407
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,197,817
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,808,073
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	65,292
Total Employer Pension Expense	\$ 109,427,624	\$ 3,873,365
Covered Payroll:	\$ 301,686,927	\$ 11,378,045
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 30,976,459
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 37,799,346
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 25,214,725
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 650,407
◆ 2021	\$ 8,393,991	\$ 522,301
◆ 2022	\$ 4,612,975	\$ 364,919
◆ 2023	\$ (9,608,282)	\$ (172,949)
◆ 2024	\$ 2,564,057	\$ 196,411
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Northboro Housing Authority
◆ Current Proportionate Share		0.111429%
◆ Prior Proportionate Share		0.111933%
Beginning Net Pension Liability	\$ 906,762,192	\$ 1,014,964
Ending Net Pension Liability	\$ 890,129,991	\$ 991,865
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,913
◆ Changes of Assumptions	49,751,234	55,437
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	42,701
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 101,051
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 5,943
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	27,243
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	4,599
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 37,785
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 121,934
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	27,807
Total Employer Pension Expense	\$ 109,427,624	\$ 149,741
Covered Payroll:	\$ 301,686,927	\$ 400,712
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 991,865
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 1,210,334
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 807,375
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 45,481
◆ 2021	\$ 8,393,991	\$ 16,042
◆ 2022	\$ 4,612,975	\$ 11,017
◆ 2023	\$ (9,608,282)	\$ (11,537)
◆ 2024	\$ 2,564,057	\$ 2,263
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Northboro- Southboro Regional
◆ Current Proportionate Share		0.649782%
◆ Prior Proportionate Share		0.635219%
Beginning Net Pension Liability	\$ 906,762,192	\$ 5,759,925
Ending Net Pension Liability	\$ 890,129,991	\$ 5,783,903
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 16,985
◆ Changes of Assumptions	49,751,234	323,274
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	343,186
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 683,445
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 34,653
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	158,864
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	121,347
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 314,864
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 711,041
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	5,040
Total Employer Pension Expense	\$ 109,427,624	\$ 716,081
Covered Payroll:	\$ 301,686,927	\$ 2,738,955
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 5,783,903
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 7,057,868
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 4,708,076
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 116,662
◆ 2021	\$ 8,393,991	\$ 150,550
◆ 2022	\$ 4,612,975	\$ 116,093
◆ 2023	\$ (9,608,282)	\$ (48,542)
◆ 2024	\$ 2,564,057	\$ 33,818
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	North Brookfield
◆ Current Proportionate Share		0.847665%
◆ Prior Proportionate Share		0.761923%
Beginning Net Pension Liability	\$ 906,762,192	\$ 6,908,832
Ending Net Pension Liability	\$ 890,129,991	\$ 7,545,320
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 22,157
◆ Changes of Assumptions	49,751,234	421,724
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	593,589
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,037,470
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 45,207
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	207,244
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	178,845
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 431,296
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 927,580
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	20,730
Total Employer Pension Expense	\$ 109,427,624	\$ 948,310
Covered Payroll:	\$ 301,686,927	\$ 2,620,007
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 7,545,320
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 9,207,255
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 6,141,863
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 164,079
◆ 2021	\$ 8,393,991	\$ 153,214
◆ 2022	\$ 4,612,975	\$ 125,517
◆ 2023	\$ (9,608,282)	\$ 40,624
◆ 2024	\$ 2,564,057	\$ 122,740
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	North Brookfield Housing Authority
◆ Current Proportionate Share		0.026624%
◆ Prior Proportionate Share		0.032769%
Beginning Net Pension Liability	\$ 906,762,192	\$ 297,137
Ending Net Pension Liability	\$ 890,129,991	\$ 236,991
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 696
◆ Changes of Assumptions	49,751,234	13,246
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	10,006
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 23,948
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 1,420
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	6,509
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	41,709
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 49,638
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 29,134
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(3,565)
Total Employer Pension Expense	\$ 109,427,624	\$ 25,569
Covered Payroll:	\$ 301,686,927	\$ 60,389
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 236,991
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 289,191
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 192,910
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 753
◆ 2021	\$ 8,393,991	\$ (4,096)
◆ 2022	\$ 4,612,975	\$ (5,708)
◆ 2023	\$ (9,608,282)	\$ (10,079)
◆ 2024	\$ 2,564,057	\$ (6,560)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Oakham
◆ Current Proportionate Share		0.116501%
◆ Prior Proportionate Share		0.115202%
Beginning Net Pension Liability	\$ 906,762,192	\$ 1,044,606
Ending Net Pension Liability	\$ 890,129,991	\$ 1,037,009
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 3,045
◆ Changes of Assumptions	49,751,234	57,961
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	8,818
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 69,824
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 6,213
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	28,483
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	111,453
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 146,149
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 127,484
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(64,396)
Total Employer Pension Expense	\$ 109,427,624	\$ 63,088
Covered Payroll:	\$ 301,686,927	\$ 262,901
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 1,037,009
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 1,265,421
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 844,122
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (43,396)
◆ 2021	\$ 8,393,991	\$ (13,601)
◆ 2022	\$ 4,612,975	\$ (14,132)
◆ 2023	\$ (9,608,282)	\$ (9,716)
◆ 2024	\$ 2,564,057	\$ 4,520
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Oxford
◆ Current Proportionate Share		3.255272%
◆ Prior Proportionate Share		3.428102%
Beginning Net Pension Liability	\$ 906,762,192	\$ 31,084,736
Ending Net Pension Liability	\$ 890,129,991	\$ 28,976,151
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 85,090
◆ Changes of Assumptions	49,751,234	1,619,538
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	291,306
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,995,934
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 173,606
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	795,877
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	2,461,130
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 3,430,613
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,562,167
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(776,538)
Total Employer Pension Expense	\$ 109,427,624	\$ 2,785,629
Covered Payroll:	\$ 301,686,927	\$ 8,279,284
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 28,976,151
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 35,358,449
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 23,586,482
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (225,977)
◆ 2021	\$ 8,393,991	\$ (264,645)
◆ 2022	\$ 4,612,975	\$ (332,494)
◆ 2023	\$ (9,608,282)	\$ (491,432)
◆ 2024	\$ 2,564,057	\$ (120,131)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Oxford Housing Authority
◆ Current Proportionate Share		0.124406%
◆ Prior Proportionate Share		0.103631%
Beginning Net Pension Liability	\$ 906,762,192	\$ 939,686
Ending Net Pension Liability	\$ 890,129,991	\$ 1,107,371
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 3,252
◆ Changes of Assumptions	49,751,234	61,893
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	150,441
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 215,586
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 6,635
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	30,416
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	10,325
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 47,376
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 136,134
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	32,804
Total Employer Pension Expense	\$ 109,427,624	\$ 168,938
Covered Payroll:	\$ 301,686,927	\$ 347,433
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 1,107,371
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 1,351,281
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 901,396
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 53,234
◆ 2021	\$ 8,393,991	\$ 37,013
◆ 2022	\$ 4,612,975	\$ 32,503
◆ 2023	\$ (9,608,282)	\$ 17,798
◆ 2024	\$ 2,564,057	\$ 27,662
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Oxford-Rochdale Sewer District
◆ Current Proportionate Share		0.055802%
◆ Prior Proportionate Share		0.052927%
Beginning Net Pension Liability	\$ 906,762,192	\$ 479,925
Ending Net Pension Liability	\$ 890,129,991	\$ 496,715
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 1,459
◆ Changes of Assumptions	49,751,234	27,762
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	86,155
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 115,376
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 2,976
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	13,643
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 16,619
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 61,063
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	32,990
Total Employer Pension Expense	\$ 109,427,624	\$ 94,053
Covered Payroll:	\$ 301,686,927	\$ 162,681
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 496,715
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 606,121
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 404,324
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 41,931
◆ 2021	\$ 8,393,991	\$ 29,184
◆ 2022	\$ 4,612,975	\$ 23,581
◆ 2023	\$ (9,608,282)	\$ (757)
◆ 2024	\$ 2,564,057	\$ 4,818
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Paxton
◆ Current Proportionate Share		1.258239%
◆ Prior Proportionate Share		1.175261%
Beginning Net Pension Liability	\$ 906,762,192	\$ 10,656,827
Ending Net Pension Liability	\$ 890,129,991	\$ 11,199,960
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 32,889
◆ Changes of Assumptions	49,751,234	625,989
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	1,225,847
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,884,725
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 67,103
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	307,625
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	99,382
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 474,110
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,376,861
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	276,136
Total Employer Pension Expense	\$ 109,427,624	\$ 1,652,997
Covered Payroll:	\$ 301,686,927	\$ 3,474,575
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 11,199,960
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 13,666,867
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 9,116,726
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 487,748
◆ 2021	\$ 8,393,991	\$ 443,688
◆ 2022	\$ 4,612,975	\$ 362,379
◆ 2023	\$ (9,608,282)	\$ (13,211)
◆ 2024	\$ 2,564,057	\$ 130,011
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Petersham
◆ Current Proportionate Share		0.260248%
◆ Prior Proportionate Share		0.271880%
Beginning Net Pension Liability	\$ 906,762,192	\$ 2,465,308
Ending Net Pension Liability	\$ 890,129,991	\$ 2,316,549
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 6,803
◆ Changes of Assumptions	49,751,234	129,477
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 136,280
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 13,879
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	63,628
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	308,071
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 385,578
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 284,784
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(234,304)
Total Employer Pension Expense	\$ 109,427,624	\$ 50,480
Covered Payroll:	\$ 301,686,927	\$ 596,575
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 2,316,549
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 2,826,794
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 1,885,663
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (182,723)
◆ 2021	\$ 8,393,991	\$ (4,152)
◆ 2022	\$ 4,612,975	\$ (12,176)
◆ 2023	\$ (9,608,282)	\$ (43,219)
◆ 2024	\$ 2,564,057	\$ (7,028)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Phillipston
◆ Current Proportionate Share		0.224087%
◆ Prior Proportionate Share		0.220986%
Beginning Net Pension Liability	\$ 906,762,192	\$ 2,003,820
Ending Net Pension Liability	\$ 890,129,991	\$ 1,994,665
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 5,857
◆ Changes of Assumptions	49,751,234	111,486
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	70,867
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 188,210
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 11,951
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	54,787
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	21,623
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 88,361
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 245,213
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	48,904
Total Employer Pension Expense	\$ 109,427,624	\$ 294,117
Covered Payroll:	\$ 301,686,927	\$ 535,100
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 1,994,665
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 2,434,011
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 1,623,650
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 84,072
◆ 2021	\$ 8,393,991	\$ 16,050
◆ 2022	\$ 4,612,975	\$ 9,478
◆ 2023	\$ (9,608,282)	\$ (19,151)
◆ 2024	\$ 2,564,057	\$ 9,400
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Princeton
◆ Current Proportionate Share		0.598059%
◆ Prior Proportionate Share		0.635817%
Beginning Net Pension Liability	\$ 906,762,192	\$ 5,765,349
Ending Net Pension Liability	\$ 890,129,991	\$ 5,323,503
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 15,633
◆ Changes of Assumptions	49,751,234	297,542
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	82,111
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 395,286
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 31,895
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	146,219
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	648,309
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 826,423
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 654,442
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(292,008)
Total Employer Pension Expense	\$ 109,427,624	\$ 362,434
Covered Payroll:	\$ 301,686,927	\$ 1,816,387
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 5,323,503
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 6,496,059
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 4,333,312
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (184,541)
◆ 2021	\$ 8,393,991	\$ (43,001)
◆ 2022	\$ 4,612,975	\$ (73,616)
◆ 2023	\$ (9,608,282)	\$ (100,834)
◆ 2024	\$ 2,564,057	\$ (29,145)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Quabbin Regional
◆ Current Proportionate Share		1.701070%
◆ Prior Proportionate Share		1.727793%
Beginning Net Pension Liability	\$ 906,762,192	\$ 15,666,971
Ending Net Pension Liability	\$ 890,129,991	\$ 15,141,734
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 44,464
◆ Changes of Assumptions	49,751,234	846,303
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	146,560
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,037,327
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 90,720
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	415,892
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	616,220
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,122,832
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,861,440
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(232,859)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,628,581
Covered Payroll:	\$ 301,686,927	\$ 4,827,495
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 15,141,734
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 18,476,858
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 12,325,316
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 54,686
◆ 2021	\$ 8,393,991	\$ 31,004
◆ 2022	\$ 4,612,975	\$ (14,467)
◆ 2023	\$ (9,608,282)	\$ (168,860)
◆ 2024	\$ 2,564,057	\$ 12,132
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Quaboag Regional
◆ Current Proportionate Share		0.598998%
◆ Prior Proportionate Share		0.593532%
Beginning Net Pension Liability	\$ 906,762,192	\$ 5,381,924
Ending Net Pension Liability	\$ 890,129,991	\$ 5,331,865
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 15,657
◆ Changes of Assumptions	49,751,234	298,009
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	37,104
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 350,770
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 31,945
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	146,448
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	91,403
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 269,796
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 655,470
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(58,016)
Total Employer Pension Expense	\$ 109,427,624	\$ 597,454
Covered Payroll:	\$ 301,686,927	\$ 2,365,005
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 5,331,865
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 6,506,263
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 4,340,119
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 43,555
◆ 2021	\$ 8,393,991	\$ 43,141
◆ 2022	\$ 4,612,975	\$ 24,770
◆ 2023	\$ (9,608,282)	\$ (52,290)
◆ 2024	\$ 2,564,057	\$ 21,798
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Royalston
◆ Current Proportionate Share		0.091340%
◆ Prior Proportionate Share		0.094206%
Beginning Net Pension Liability	\$ 906,762,192	\$ 854,229
Ending Net Pension Liability	\$ 890,129,991	\$ 813,044
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,388
◆ Changes of Assumptions	49,751,234	45,443
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	41,018
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 88,849
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 4,871
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	22,332
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	49,391
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 76,594
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 99,951
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	24,561
Total Employer Pension Expense	\$ 109,427,624	\$ 124,512
Covered Payroll:	\$ 301,686,927	\$ 254,511
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 813,044
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 992,125
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 661,815
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 38,246
◆ 2021	\$ 8,393,991	\$ (5,257)
◆ 2022	\$ 4,612,975	\$ (7,772)
◆ 2023	\$ (9,608,282)	\$ (11,926)
◆ 2024	\$ 2,564,057	\$ (1,036)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Rutland
◆ Current Proportionate Share		1.017781%
◆ Prior Proportionate Share		1.004839%
Beginning Net Pension Liability	\$ 906,762,192	\$ 9,111,498
Ending Net Pension Liability	\$ 890,129,991	\$ 9,059,571
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 26,604
◆ Changes of Assumptions	49,751,234	506,358
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	506,233
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,039,195
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 54,279
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	248,836
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	177,359
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 480,474
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,113,733
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	4,647
Total Employer Pension Expense	\$ 109,427,624	\$ 1,118,380
Covered Payroll:	\$ 301,686,927	\$ 3,586,382
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 9,059,571
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 11,055,036
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 7,374,458
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 179,833
◆ 2021	\$ 8,393,991	\$ 240,912
◆ 2022	\$ 4,612,975	\$ 182,956
◆ 2023	\$ (9,608,282)	\$ (86,321)
◆ 2024	\$ 2,564,057	\$ 41,341
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Southboro
◆ Current Proportionate Share		3.217110%
◆ Prior Proportionate Share		3.191933%
Beginning Net Pension Liability	\$ 906,762,192	\$ 28,943,244
Ending Net Pension Liability	\$ 890,129,991	\$ 28,636,460
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 84,092
◆ Changes of Assumptions	49,751,234	1,600,552
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	336,228
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 2,020,872
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 171,571
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	786,547
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	84,331
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,042,449
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,520,407
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	6,653
Total Employer Pension Expense	\$ 109,427,624	\$ 3,527,060
Covered Payroll:	\$ 301,686,927	\$ 9,585,231
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 28,636,460
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 34,943,939
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 23,309,975
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 544,865
◆ 2021	\$ 8,393,991	\$ 362,799
◆ 2022	\$ 4,612,975	\$ 225,124
◆ 2023	\$ (9,608,282)	\$ (266,513)
◆ 2024	\$ 2,564,057	\$ 112,148
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Southboro Housing Authority
◆ Current Proportionate Share		0.026008%
◆ Prior Proportionate Share		0.026400%
Beginning Net Pension Liability	\$ 906,762,192	\$ 239,384
Ending Net Pension Liability	\$ 890,129,991	\$ 231,509
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 680
◆ Changes of Assumptions	49,751,234	12,940
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 13,620
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 1,387
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	6,359
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	20,249
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 27,995
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 28,460
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(11,459)
Total Employer Pension Expense	\$ 109,427,624	\$ 17,001
Covered Payroll:	\$ 301,686,927	\$ 96,425
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 231,509
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 282,501
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 188,447
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (6,834)
◆ 2021	\$ 8,393,991	\$ (1,565)
◆ 2022	\$ 4,612,975	\$ (1,447)
◆ 2023	\$ (9,608,282)	\$ (4,734)
◆ 2024	\$ 2,564,057	\$ 205
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Spencer
◆ Current Proportionate Share		1.448250%
◆ Prior Proportionate Share		1.509935%
Beginning Net Pension Liability	\$ 906,762,192	\$ 13,691,523
Ending Net Pension Liability	\$ 890,129,991	\$ 12,891,307
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 37,856
◆ Changes of Assumptions	49,751,234	720,522
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	286,632
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,045,010
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 77,236
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	354,081
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	520,800
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 952,117
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,584,785
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(93,097)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,491,688
Covered Payroll:	\$ 301,686,927	\$ 4,085,106
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 12,891,307
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 15,730,751
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 10,493,477
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 151,862
◆ 2021	\$ 8,393,991	\$ 134,428
◆ 2022	\$ 4,612,975	\$ 64,260
◆ 2023	\$ (9,608,282)	\$ (222,123)
◆ 2024	\$ 2,564,057	\$ (35,534)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Spencer-East Brookfield Regional
◆ Current Proportionate Share		0.994768%
◆ Prior Proportionate Share		1.035470%
Beginning Net Pension Liability	\$ 906,762,192	\$ 9,389,254
Ending Net Pension Liability	\$ 890,129,991	\$ 8,854,727
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 26,002
◆ Changes of Assumptions	49,751,234	494,909
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	20,828
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 541,739
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 53,052
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	243,209
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	308,877
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 605,138
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,088,551
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(83,667)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,004,884
Covered Payroll:	\$ 301,686,927	\$ 2,990,038
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 8,854,727
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 10,805,073
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 7,207,716
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 83,027
◆ 2021	\$ 8,393,991	\$ 33,549
◆ 2022	\$ 4,612,975	\$ (6,150)
◆ 2023	\$ (9,608,282)	\$ (151,385)
◆ 2024	\$ 2,564,057	\$ (22,440)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Spencer Housing Authority
◆ Current Proportionate Share		0.075731%
◆ Prior Proportionate Share		0.071189%
Beginning Net Pension Liability	\$ 906,762,192	\$ 645,513
Ending Net Pension Liability	\$ 890,129,991	\$ 674,103
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 1,980
◆ Changes of Assumptions	49,751,234	37,677
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	48,928
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 88,585
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 4,039
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	18,515
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	19,064
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 41,618
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 82,871
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	14,078
Total Employer Pension Expense	\$ 109,427,624	\$ 96,949
Covered Payroll:	\$ 301,686,927	\$ 299,535
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 674,103
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 822,582
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 548,718
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 26,163
◆ 2021	\$ 8,393,991	\$ 7,823
◆ 2022	\$ 4,612,975	\$ 5,469
◆ 2023	\$ (9,608,282)	\$ 219
◆ 2024	\$ 2,564,057	\$ 7,293
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Sterling
◆ Current Proportionate Share		1.783083%
◆ Prior Proportionate Share		1.669842%
Beginning Net Pension Liability	\$ 906,762,192	\$ 15,141,492
Ending Net Pension Liability	\$ 890,129,991	\$ 15,871,755
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 46,608
◆ Changes of Assumptions	49,751,234	887,106
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	929,972
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,863,686
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 95,093
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	435,944
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	115,532
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 646,569
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,951,185
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	114,648
Total Employer Pension Expense	\$ 109,427,624	\$ 2,065,833
Covered Payroll:	\$ 301,686,927	\$ 4,900,421
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 15,871,755
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 19,367,675
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 12,919,551
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 414,746
◆ 2021	\$ 8,393,991	\$ 357,950
◆ 2022	\$ 4,612,975	\$ 283,185
◆ 2023	\$ (9,608,282)	\$ (17,882)
◆ 2024	\$ 2,564,057	\$ 179,118
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Sterling Housing Authority
◆ Current Proportionate Share		0.008946%
◆ Prior Proportionate Share		0.015894%
Beginning Net Pension Liability	\$ 906,762,192	\$ 144,122
Ending Net Pension Liability	\$ 890,129,991	\$ 79,630
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 234
◆ Changes of Assumptions	49,751,234	4,451
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	5,284
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 9,969
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 477
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	2,187
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	48,710
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 51,374
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 9,789
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(6,358)
Total Employer Pension Expense	\$ 109,427,624	\$ 3,431
Covered Payroll:	\$ 301,686,927	\$ 54,408
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 79,630
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 97,170
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 64,819
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (4,993)
◆ 2021	\$ 8,393,991	\$ (8,637)
◆ 2022	\$ 4,612,975	\$ (8,944)
◆ 2023	\$ (9,608,282)	\$ (10,873)
◆ 2024	\$ 2,564,057	\$ (7,958)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Sturbridge
◆ Current Proportionate Share		2.251786%
◆ Prior Proportionate Share		2.291311%
Beginning Net Pension Liability	\$ 906,762,192	\$ 20,776,741
Ending Net Pension Liability	\$ 890,129,991	\$ 20,043,825
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 58,859
◆ Changes of Assumptions	49,751,234	1,120,291
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	457,656
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,636,806
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 120,090
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	550,536
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	422,199
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,092,825
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 2,464,076
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	44,547
Total Employer Pension Expense	\$ 109,427,624	\$ 2,508,623
Covered Payroll:	\$ 301,686,927	\$ 7,398,242
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 20,043,825
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 24,458,686
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 16,315,601
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 419,606
◆ 2021	\$ 8,393,991	\$ 254,955
◆ 2022	\$ 4,612,975	\$ 155,611
◆ 2023	\$ (9,608,282)	\$ (297,366)
◆ 2024	\$ 2,564,057	\$ 11,175
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Sutton
◆ Current Proportionate Share		1.945414%
◆ Prior Proportionate Share		1.916089%
Beginning Net Pension Liability	\$ 906,762,192	\$ 17,374,370
Ending Net Pension Liability	\$ 890,129,991	\$ 17,316,712
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 50,851
◆ Changes of Assumptions	49,751,234	967,867
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	311,611
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,330,329
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 103,751
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	475,632
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	265,618
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 845,001
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 2,128,820
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(197,718)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,931,102
Covered Payroll:	\$ 301,686,927	\$ 6,599,368
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 17,316,712
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 21,130,897
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 14,095,740
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 136,686
◆ 2021	\$ 8,393,991	\$ 241,872
◆ 2022	\$ 4,612,975	\$ 162,015
◆ 2023	\$ (9,608,282)	\$ (139,671)
◆ 2024	\$ 2,564,057	\$ 84,426
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Tantasqua Regional
◆ Current Proportionate Share		1.163184%
◆ Prior Proportionate Share		1.128021%
Beginning Net Pension Liability	\$ 906,762,192	\$ 10,228,466
Ending Net Pension Liability	\$ 890,129,991	\$ 10,353,847
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 30,404
◆ Changes of Assumptions	49,751,234	578,698
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	307,985
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 917,087
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 62,034
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	284,385
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	64,322
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 410,741
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,272,844
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	37,038
Total Employer Pension Expense	\$ 109,427,624	\$ 1,309,882
Covered Payroll:	\$ 301,686,927	\$ 3,832,614
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 10,353,847
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 12,634,390
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 8,427,994
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 231,254
◆ 2021	\$ 8,393,991	\$ 157,749
◆ 2022	\$ 4,612,975	\$ 115,513
◆ 2023	\$ (9,608,282)	\$ (69,419)
◆ 2024	\$ 2,564,057	\$ 71,249
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Templeton
◆ Current Proportionate Share		1.310390%
◆ Prior Proportionate Share		1.324736%
Beginning Net Pension Liability	\$ 906,762,192	\$ 12,012,202
Ending Net Pension Liability	\$ 890,129,991	\$ 11,664,176
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 34,252
◆ Changes of Assumptions	49,751,234	651,935
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	36,067
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 722,254
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 69,884
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	320,376
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	606,890
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 997,150
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,433,929
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(427,948)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,005,981
Covered Payroll:	\$ 301,686,927	\$ 3,579,056
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 11,664,176
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 14,233,332
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 9,494,597
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (195,608)
◆ 2021	\$ 8,393,991	\$ 45,036
◆ 2022	\$ 4,612,975	\$ (887)
◆ 2023	\$ (9,608,282)	\$ (140,135)
◆ 2024	\$ 2,564,057	\$ 16,698
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Templeton Housing Authority
◆ Current Proportionate Share		0.070651%
◆ Prior Proportionate Share		0.072187%
Beginning Net Pension Liability	\$ 906,762,192	\$ 654,568
Ending Net Pension Liability	\$ 890,129,991	\$ 628,886
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 1,847
◆ Changes of Assumptions	49,751,234	35,150
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	-
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 36,997
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 3,768
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	17,273
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	46,799
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 67,840
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 77,312
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(30,282)
Total Employer Pension Expense	\$ 109,427,624	\$ 47,030
Covered Payroll:	\$ 301,686,927	\$ 90,498
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 628,886
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 767,405
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 511,911
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (17,593)
◆ 2021	\$ 8,393,991	\$ (524)
◆ 2022	\$ 4,612,975	\$ (1,975)
◆ 2023	\$ (9,608,282)	\$ (10,756)
◆ 2024	\$ 2,564,057	\$ 5
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Upton
◆ Current Proportionate Share		1.032452%
◆ Prior Proportionate Share		1.013286%
Beginning Net Pension Liability	\$ 906,762,192	\$ 9,188,095
Ending Net Pension Liability	\$ 890,129,991	\$ 9,190,164
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 26,987
◆ Changes of Assumptions	49,751,234	513,658
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	440,131
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 980,776
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 55,062
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	252,423
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	177,510
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 484,995
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,129,788
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(49,327)
Total Employer Pension Expense	\$ 109,427,624	\$ 1,080,461
Covered Payroll:	\$ 301,686,927	\$ 3,654,382
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 9,190,164
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 11,214,393
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 7,480,760
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 129,668
◆ 2021	\$ 8,393,991	\$ 221,653
◆ 2022	\$ 4,612,975	\$ 164,836
◆ 2023	\$ (9,608,282)	\$ (69,428)
◆ 2024	\$ 2,564,057	\$ 49,052
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Uxbridge
◆ Current Proportionate Share		3.034734%
◆ Prior Proportionate Share		3.106878%
Beginning Net Pension Liability	\$ 906,762,192	\$ 28,171,996
Ending Net Pension Liability	\$ 890,129,991	\$ 27,013,078
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 79,325
◆ Changes of Assumptions	49,751,234	1,509,818
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	204,067
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,793,210
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 161,845
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	741,958
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	935,367
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,839,170
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,320,837
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(232,498)
Total Employer Pension Expense	\$ 109,427,624	\$ 3,088,339
Covered Payroll:	\$ 301,686,927	\$ 8,380,293
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 27,013,078
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 32,962,989
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 21,988,547
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 276,077
◆ 2021	\$ 8,393,991	\$ 115,836
◆ 2022	\$ 4,612,975	\$ (50,281)
◆ 2023	\$ (9,608,282)	\$ (380,421)
◆ 2024	\$ 2,564,057	\$ (7,171)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Uxbridge Housing Authority
◆ Current Proportionate Share		0.087842%
◆ Prior Proportionate Share		0.085540%
Beginning Net Pension Liability	\$ 906,762,192	\$ 775,645
Ending Net Pension Liability	\$ 890,129,991	\$ 781,905
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,296
◆ Changes of Assumptions	49,751,234	43,702
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	36,777
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 82,775
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 4,685
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	21,476
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	80,054
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 106,215
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 96,123
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(8,644)
Total Employer Pension Expense	\$ 109,427,624	\$ 87,479
Covered Payroll:	\$ 301,686,927	\$ 183,302
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 781,905
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 954,128
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 636,468
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 5,406
◆ 2021	\$ 8,393,991	\$ (15,117)
◆ 2022	\$ 4,612,975	\$ (14,993)
◆ 2023	\$ (9,608,282)	\$ (3,701)
◆ 2024	\$ 2,564,057	\$ 4,965
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Wachusett Regional
◆ Current Proportionate Share		3.098576%
◆ Prior Proportionate Share		3.279699%
Beginning Net Pension Liability	\$ 906,762,192	\$ 29,739,068
Ending Net Pension Liability	\$ 890,129,991	\$ 27,581,353
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 80,994
◆ Changes of Assumptions	49,751,234	1,541,580
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	1,309,533
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 2,932,107
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 165,250
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	757,567
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	1,847,768
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 2,770,585
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 3,390,698
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(204,501)
Total Employer Pension Expense	\$ 109,427,624	\$ 3,186,197
Covered Payroll:	\$ 301,686,927	\$ 12,057,098
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 27,581,353
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 33,656,433
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 22,451,121
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 321,032
◆ 2021	\$ 8,393,991	\$ 332,509
◆ 2022	\$ 4,612,975	\$ 234,294
◆ 2023	\$ (9,608,282)	\$ (592,393)
◆ 2024	\$ 2,564,057	\$ (133,920)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Warren
◆ Current Proportionate Share		0.603333%
◆ Prior Proportionate Share		0.644582%
Beginning Net Pension Liability	\$ 906,762,192	\$ 5,844,829
Ending Net Pension Liability	\$ 890,129,991	\$ 5,370,445
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 15,771
◆ Changes of Assumptions	49,751,234	300,165
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	244,076
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 560,012
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 32,176
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	147,508
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	335,173
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 514,857
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 660,213
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	22,791
Total Employer Pension Expense	\$ 109,427,624	\$ 683,004
Covered Payroll:	\$ 301,686,927	\$ 1,369,050
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 5,370,445
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 6,553,341
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 4,371,522
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 122,330
◆ 2021	\$ 8,393,991	\$ 55,695
◆ 2022	\$ 4,612,975	\$ 26,108
◆ 2023	\$ (9,608,282)	\$ (125,853)
◆ 2024	\$ 2,564,057	\$ (33,125)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Warren Water District
◆ Current Proportionate Share		0.029191%
◆ Prior Proportionate Share		0.027557%
Beginning Net Pension Liability	\$ 906,762,192	\$ 249,873
Ending Net Pension Liability	\$ 890,129,991	\$ 259,841
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 763
◆ Changes of Assumptions	49,751,234	14,523
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	30,189
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 45,475
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 1,557
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	7,137
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	1,958
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 10,652
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 31,943
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	12,214
Total Employer Pension Expense	\$ 109,427,624	\$ 44,157
Covered Payroll:	\$ 301,686,927	\$ 90,283
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 259,841
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 317,073
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 211,509
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 16,833
◆ 2021	\$ 8,393,991	\$ 8,856
◆ 2022	\$ 4,612,975	\$ 7,304
◆ 2023	\$ (9,608,282)	\$ (841)
◆ 2024	\$ 2,564,057	\$ 2,671
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Westboro
◆ Current Proportionate Share		6.653564%
◆ Prior Proportionate Share		6.736171%
Beginning Net Pension Liability	\$ 906,762,192	\$ 61,081,056
Ending Net Pension Liability	\$ 890,129,991	\$ 59,225,365
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 173,914
◆ Changes of Assumptions	49,751,234	3,310,230
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	426,348
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 3,910,492
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 354,839
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	1,626,725
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	571,598
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 2,553,162
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 7,280,834
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	188,384
Total Employer Pension Expense	\$ 109,427,624	\$ 7,469,218
Covered Payroll:	\$ 301,686,927	\$ 20,874,703
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 59,225,366
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 72,270,369
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 48,209,233
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 1,284,465
◆ 2021	\$ 8,393,991	\$ 498,962
◆ 2022	\$ 4,612,975	\$ 224,737
◆ 2023	\$ (9,608,282)	\$ (724,121)
◆ 2024	\$ 2,564,057	\$ 73,287
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Westboro Housing Authority
◆ Current Proportionate Share		0.076682%
◆ Prior Proportionate Share		0.066262%
Beginning Net Pension Liability	\$ 906,762,192	\$ 600,838
Ending Net Pension Liability	\$ 890,129,991	\$ 682,568
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,004
◆ Changes of Assumptions	49,751,234	38,150
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	89,233
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 129,387
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 4,090
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	18,748
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	2,422
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 25,260
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 83,911
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	20,946
Total Employer Pension Expense	\$ 109,427,624	\$ 104,857
Covered Payroll:	\$ 301,686,927	\$ 205,236
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 682,568
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 832,910
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 555,608
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 33,662
◆ 2021	\$ 8,393,991	\$ 26,654
◆ 2022	\$ 4,612,975	\$ 22,855
◆ 2023	\$ (9,608,282)	\$ 6,715
◆ 2024	\$ 2,564,057	\$ 14,241
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	West Boylston
◆ Current Proportionate Share		2.143770%
◆ Prior Proportionate Share		2.080272%
Beginning Net Pension Liability	\$ 906,762,192	\$ 18,863,118
Ending Net Pension Liability	\$ 890,129,991	\$ 19,082,339
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 56,036
◆ Changes of Assumptions	49,751,234	1,066,552
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	545,025
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,667,613
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 114,329
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	524,127
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	240,144
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 878,600
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 2,345,876
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(73,703)
Total Employer Pension Expense	\$ 109,427,624	\$ 2,272,173
Covered Payroll:	\$ 301,686,927	\$ 5,166,400
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 19,082,339
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 23,285,422
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 15,532,954
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 289,901
◆ 2021	\$ 8,393,991	\$ 289,608
◆ 2022	\$ 4,612,975	\$ 208,334
◆ 2023	\$ (9,608,282)	\$ (128,600)
◆ 2024	\$ 2,564,057	\$ 129,770
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	West Boylston Housing Authority
◆ Current Proportionate Share		0.008943%
◆ Prior Proportionate Share		0.018653%
Beginning Net Pension Liability	\$ 906,762,192	\$ 169,139
Ending Net Pension Liability	\$ 890,129,991	\$ 79,601
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 234
◆ Changes of Assumptions	49,751,234	4,449
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	3,583
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 8,266
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 477
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	2,186
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	76,348
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 79,011
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 9,786
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(15,661)
Total Employer Pension Expense	\$ 109,427,624	\$ (5,875)
Covered Payroll:	\$ 301,686,927	\$ 23,622
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 79,601
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 97,134
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 64,795
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (14,200)
◆ 2021	\$ 8,393,991	\$ (15,600)
◆ 2022	\$ 4,612,975	\$ (15,752)
◆ 2023	\$ (9,608,282)	\$ (13,981)
◆ 2024	\$ 2,564,057	\$ (11,212)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	West Boylston Water District
◆ Current Proportionate Share		0.107453%
◆ Prior Proportionate Share		0.091424%
Beginning Net Pension Liability	\$ 906,762,192	\$ 829,001
Ending Net Pension Liability	\$ 890,129,991	\$ 956,472
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 2,809
◆ Changes of Assumptions	49,751,234	53,459
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	116,749
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 173,017
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 5,731
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	26,271
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	32,065
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 64,067
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 117,583
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(5,756)
Total Employer Pension Expense	\$ 109,427,624	\$ 111,827
Covered Payroll:	\$ 301,686,927	\$ 382,367
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 956,472
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 1,167,145
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 778,565
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 13,284
◆ 2021	\$ 8,393,991	\$ 32,652
◆ 2022	\$ 4,612,975	\$ 27,896
◆ 2023	\$ (9,608,282)	\$ 13,480
◆ 2024	\$ 2,564,057	\$ 21,638
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	West Brookfield
◆ Current Proportionate Share		0.472527%
◆ Prior Proportionate Share		0.464845%
Beginning Net Pension Liability	\$ 906,762,192	\$ 4,215,036
Ending Net Pension Liability	\$ 890,129,991	\$ 4,206,103
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 12,351
◆ Changes of Assumptions	49,751,234	235,088
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	73,081
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 320,520
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 25,200
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	115,527
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	145,127
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 285,854
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 517,075
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(112,581)
Total Employer Pension Expense	\$ 109,427,624	\$ 404,494
Covered Payroll:	\$ 301,686,927	\$ 1,157,128
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 4,206,103
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 5,132,541
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 3,423,753
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ (29,644)
◆ 2021	\$ 8,393,991	\$ 39,095
◆ 2022	\$ 4,612,975	\$ 34,097
◆ 2023	\$ (9,608,282)	\$ (30,048)
◆ 2024	\$ 2,564,057	\$ 21,166
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Westminster
◆ Current Proportionate Share		1.423820%
◆ Prior Proportionate Share		1.458520%
Beginning Net Pension Liability	\$ 906,762,192	\$ 13,225,312
Ending Net Pension Liability	\$ 890,129,991	\$ 12,673,847
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 37,217
◆ Changes of Assumptions	49,751,234	708,368
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	171,866
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 917,451
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 75,934
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	348,108
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	242,483
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 666,525
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 1,558,052
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	100,497
Total Employer Pension Expense	\$ 109,427,624	\$ 1,658,549
Covered Payroll:	\$ 301,686,927	\$ 3,904,499
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 12,673,847
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 15,465,394
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 10,316,465
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 331,608
◆ 2021	\$ 8,393,991	\$ 80,844
◆ 2022	\$ 4,612,975	\$ 22,203
◆ 2023	\$ (9,608,282)	\$ (179,357)
◆ 2024	\$ 2,564,057	\$ (4,372)
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Winchendon
◆ Current Proportionate Share		2.577348%
◆ Prior Proportionate Share		2.528315%
Beginning Net Pension Liability	\$ 906,762,192	\$ 22,925,807
Ending Net Pension Liability	\$ 890,129,991	\$ 22,941,749
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 67,369
◆ Changes of Assumptions	49,751,234	1,282,262
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	398,290
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 1,747,921
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 137,452
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	630,132
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	784,623
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 1,552,207
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 2,820,331
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	(245,654)
Total Employer Pension Expense	\$ 109,427,624	\$ 2,574,677
Covered Payroll:	\$ 301,686,927	\$ 6,534,548
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 22,941,749
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 27,994,907
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 18,674,500
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 186,396
◆ 2021	\$ 8,393,991	\$ 61,679
◆ 2022	\$ 4,612,975	\$ (8,455)
◆ 2023	\$ (9,608,282)	\$ (167,753)
◆ 2024	\$ 2,564,057	\$ 123,847
◆ Thereafter	\$ -	\$ -

APPENDIX C - SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Pension Amounts as of December 31, 2019	Worcester Regional Retirement System	Winchendon Housing Authority
◆ Current Proportionate Share		0.190855%
◆ Prior Proportionate Share		0.166500%
Beginning Net Pension Liability	\$ 906,762,192	\$ 1,509,758
Ending Net Pension Liability	\$ 890,129,991	\$ 1,698,861
Total Deferred Outflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 2,613,899	\$ 4,989
◆ Changes of Assumptions	49,751,234	94,953
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	230,262
Total Deferred Outflows of Resources	\$ 82,244,202	\$ 330,204
Total Deferred Inflows of Resources:		
◆ Differences Between Expected and Actual Experience	\$ 5,333,087	\$ 10,178
◆ Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	24,448,867	46,662
◆ Changes of Assumptions	-	-
◆ Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	29,879,069	3
Total Deferred Inflows of Resources	\$ 59,661,023	\$ 56,843
Employer Pension Expense:		
◆ Proportionate Share of Plan Pension Expense	\$ 109,427,624	\$ 208,849
◆ Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	-	70,973
Total Employer Pension Expense	\$ 109,427,624	\$ 279,822
Covered Payroll:	\$ 301,686,927	\$ 584,661
Sensitivity of the Net Pension Liability to Changes in the Discount Rate:		
◆ Current discount rate: 7.65%	\$ 890,129,991	\$ 1,698,861
◆ 1% decrease in the discount rate: 6.65%	\$ 1,086,190,376	\$ 2,073,053
◆ 1% increase in the discount rate: 8.65%	\$ 724,562,579	\$ 1,382,867
Deferred Outflows of Resources and Deferred Inflows of Resources Recognized in Future Pension Expense:		
◆ 2020	\$ 16,620,438	\$ 101,834
◆ 2021	\$ 8,393,991	\$ 65,497
◆ 2022	\$ 4,612,975	\$ 56,208
◆ 2023	\$ (9,608,282)	\$ 16,237
◆ 2024	\$ 2,564,057	\$ 33,585
◆ Thereafter	\$ -	\$ -

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 7.65%; the municipal bond rate is 2.74%, based on the December 2019 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 7.65%.

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)
2020	279,503,187	-	279,503,187	27,883,609	21,725,204	46,718,949	96,327,762
2021	269,695,370	19,590,429	289,285,799	27,017,064	20,933,613	52,800,136	100,750,813
2022	260,237,301	39,173,501	299,410,802	26,179,594	20,175,381	59,529,775	105,884,750
2023	250,400,975	59,489,205	309,890,180	25,329,897	19,393,459	66,974,125	111,697,481
2024	240,436,090	80,300,246	320,736,336	24,469,513	18,606,693	75,206,103	118,282,309
2025	230,795,607	101,166,501	331,962,108	23,622,562	17,849,590	84,305,954	125,778,106
2026	220,998,069	122,582,713	343,580,782	22,763,221	17,084,374	94,361,984	134,209,579
2027	211,001,568	144,604,541	355,606,109	21,864,463	16,307,318	105,471,365	143,643,146
2028	201,086,267	166,966,056	368,052,323	20,943,186	15,539,599	117,741,010	154,223,795
2029	191,166,808	189,767,346	380,934,154	20,031,396	14,774,151	131,288,566	166,094,113
2030	182,245,598	212,021,251	394,266,849	19,170,596	14,088,012	146,243,467	179,502,075
2031	173,919,046	234,147,143	408,066,189	18,351,089	13,449,630	162,748,118	194,548,837
2032	165,697,376	256,651,130	422,348,506	17,565,323	12,820,803	180,959,190	211,345,316
2033	157,687,236	279,443,468	437,130,704	16,791,100	12,209,460	198,008,618	227,009,178
2034	150,093,966	302,336,313	452,430,279	16,017,895	11,631,223	205,928,963	233,578,081
2035	142,951,558	325,313,781	468,265,339	15,282,079	11,088,513	-	26,370,592
2036	135,916,714	348,737,912	484,654,626	14,598,081	10,554,502	-	25,152,583
2037	129,052,422	372,565,116	501,617,538	13,916,950	10,033,856	-	23,950,806
2038	122,406,527	396,767,625	519,174,152	13,234,678	9,530,105	-	22,764,783
2039	115,960,684	421,384,563	537,345,247	12,581,752	9,041,658	-	21,623,410
2040	109,854,613	446,297,718	556,152,331	11,931,728	8,579,283	-	20,511,011
2041	103,572,353	472,045,310	575,617,663	11,306,472	8,102,544	-	19,409,016
2042	97,365,870	498,398,411	595,764,281	10,663,729	7,630,923	-	18,294,652
2043	91,104,953	525,511,078	616,616,031	10,021,692	7,154,041	-	17,175,733
2044	85,169,728	553,027,864	638,197,592	9,339,840	6,701,601	-	16,041,441
2045	79,369,711	581,164,797	660,534,508	8,640,923	6,258,573	-	14,899,496
2046	73,403,730	610,249,486	683,653,216	7,877,349	5,801,066	-	13,678,415
2047	67,310,447	640,270,632	707,581,079	7,087,555	5,331,896	-	12,419,451
2048	61,663,873	670,682,544	732,346,417	6,299,554	4,895,980	-	11,195,534
2049	55,944,168	702,034,374	757,978,542	5,450,775	4,452,185	-	9,902,960
2050	50,738,241	733,769,550	784,507,791	4,936,514	4,047,281	-	8,983,795
2051	45,272,038	766,693,526	811,965,564	4,391,913	3,619,658	-	8,011,571
2052	39,978,364	800,405,995	840,384,359	3,873,754	3,203,850	-	7,077,604
2053	34,735,802	835,062,010	869,797,812	3,369,922	2,790,191	-	6,160,113
2054	29,857,329	870,383,406	900,240,735	2,906,570	2,403,904	-	5,310,474
2055	24,932,570	906,816,591	931,749,161	2,453,331	2,012,069	-	4,465,400

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)
2056	20,300,705	944,059,677	964,360,382	2,017,772	1,642,088	-	3,659,860
2057	16,019,880	982,093,115	998,112,995	1,600,233	1,298,836	-	2,899,069
2058	12,371,054	1,020,675,896	1,033,046,950	1,224,846	1,005,336	-	2,230,182
2059	9,361,870	1,059,841,723	1,069,203,593	922,099	762,565	-	1,684,664
2060	6,862,991	1,099,762,728	1,106,625,719	672,054	560,321	-	1,232,375
2061	4,865,265	1,140,492,354	1,145,357,619	472,016	398,144	-	870,160
2062	3,440,594	1,182,004,542	1,185,445,136	332,687	282,213	-	614,900
2063	2,289,771	1,224,645,945	1,226,935,716	221,569	188,254	-	409,823
2064	1,424,681	1,268,453,785	1,269,878,466	138,789	117,403	-	256,192
2065	663,776	1,313,660,436	1,314,324,212	65,337	54,827	-	120,164
2066	312,417	1,360,013,142	1,360,325,559	30,676	25,865	-	56,541
2067	134,554	1,407,802,400	1,407,936,954	13,389	11,166	-	24,555
2068	58,398	1,457,156,349	1,457,214,747	5,996	4,857	-	10,853
2069	22,053	1,508,195,210	1,508,217,263	2,217	1,839	-	4,056
2070	-	1,561,004,867	1,561,004,867	-	-	-	-

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)
2020	800,739,275	96,327,762	94,847,263	1,100,000	61,271,109	862,390,883
2021	862,390,883	100,750,813	100,606,485	1,138,500	65,934,875	927,331,586
2022	927,331,586	105,884,750	106,738,276	1,178,348	70,863,147	996,162,859
2023	996,162,859	111,697,481	113,022,584	1,219,590	76,109,124	1,069,727,290
2024	1,069,727,290	118,282,309	119,186,573	1,262,276	81,751,268	1,149,312,018
2025	1,149,312,018	125,778,106	125,414,199	1,306,456	87,886,317	1,236,255,786
2026	1,236,255,786	134,209,579	131,718,055	1,352,182	94,617,147	1,332,012,275
2027	1,332,012,275	143,643,146	138,153,512	1,399,508	102,055,386	1,438,157,787
2028	1,438,157,787	154,223,795	144,894,345	1,448,491	110,320,517	1,556,359,263
2029	1,556,359,263	166,094,113	151,748,672	1,499,188	119,552,853	1,688,758,369
2030	1,688,758,369	179,502,075	158,331,870	1,551,660	129,940,425	1,838,317,339
2031	1,838,317,339	194,548,837	164,662,936	1,605,968	141,712,984	2,008,310,256
2032	2,008,310,256	211,345,316	170,695,869	1,662,177	155,126,998	2,202,424,524
2033	2,202,424,524	227,009,178	176,466,727	1,720,353	170,352,921	2,421,599,543
2034	2,421,599,543	233,578,081	181,745,326	1,780,565	187,166,861	2,658,818,594
2035	2,658,818,594	26,370,592	186,567,581	1,842,885	197,201,597	2,693,980,317
2036	2,693,980,317	25,152,583	190,999,044	1,907,386	199,672,910	2,725,899,380
2037	2,725,899,380	23,950,806	194,953,045	1,974,145	201,914,956	2,754,837,952
2038	2,754,837,952	22,764,783	198,413,019	2,043,240	203,948,404	2,781,094,880
2039	2,781,094,880	21,623,410	201,341,950	2,114,753	205,798,635	2,805,060,222
2040	2,805,060,222	20,511,011	203,909,799	2,188,769	207,488,383	2,826,961,048
2041	2,826,961,048	19,409,016	206,083,489	2,265,376	209,035,571	2,847,056,770
2042	2,847,056,770	18,294,652	207,818,510	2,344,664	210,460,872	2,865,649,120
2043	2,865,649,120	17,175,733	208,971,913	2,426,727	211,793,131	2,883,219,344
2044	2,883,219,344	16,041,441	209,614,975	2,511,662	213,066,021	2,900,200,169
2045	2,900,200,169	14,899,496	210,048,774	2,599,570	214,301,419	2,916,752,740
2046	2,916,752,740	13,678,415	210,119,175	2,690,555	215,514,812	2,933,136,237
2047	2,933,136,237	12,419,451	209,511,518	2,784,724	216,739,635	2,949,999,081
2048	2,949,999,081	11,195,534	208,703,043	2,882,189	218,010,024	2,967,619,407
2049	2,967,619,407	9,902,960	207,007,741	2,983,066	219,369,524	2,986,901,084
2050	2,986,901,084	8,983,795	205,160,054	3,087,473	220,876,095	3,008,513,447
2051	3,008,513,447	8,011,571	202,822,883	3,195,535	222,577,517	3,033,084,117
2052	3,033,084,117	7,077,604	200,138,124	3,307,379	224,519,863	3,061,236,081
2053	3,061,236,081	6,160,113	196,952,804	3,423,137	226,755,805	3,093,776,058
2054	3,093,776,058	5,310,474	193,554,782	3,542,947	229,338,006	3,131,326,809
2055	3,131,326,809	4,465,400	189,833,145	3,666,950	232,315,924	3,174,608,038

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)
2056	3,174,608,038	3,659,860	185,800,849	3,795,293	235,745,452	3,224,417,208
2057	3,224,417,208	2,899,069	181,300,088	3,928,128	239,693,827	3,281,781,888
2058	3,281,781,888	2,230,182	176,241,290	4,065,612	244,244,880	3,347,950,048
2059	3,347,950,048	1,684,664	170,747,235	4,207,908	249,490,583	3,424,170,152
2060	3,424,170,152	1,232,375	164,882,342	4,355,185	255,522,820	3,511,687,820
2061	3,511,687,820	870,160	158,589,732	4,507,616	262,438,928	3,611,899,560
2062	3,611,899,560	614,900	152,129,420	4,665,383	270,336,435	3,726,056,092
2063	3,726,056,092	409,823	145,517,945	4,828,671	279,308,209	3,855,427,508
2064	3,855,427,508	256,192	138,918,754	4,997,674	289,445,200	4,001,212,472
2065	4,001,212,472	120,164	132,105,087	5,172,593	300,846,479	4,164,901,435
2066	4,164,901,435	56,541	125,284,819	5,353,634	313,620,202	4,347,939,725
2067	4,347,939,725	24,555	118,533,778	5,541,011	327,872,468	4,551,761,959
2068	4,551,761,959	10,853	111,913,570	5,734,946	343,710,149	4,777,834,445
2069	4,777,834,445	4,056	105,447,862	5,935,669	361,244,070	5,027,699,040
2070	5,027,699,040	-	99,132,745	6,143,417	380,592,163	5,303,015,041
2071	5,303,015,041	-	92,987,326	6,358,437	401,880,675	5,605,549,953
2072	5,605,549,953	-	87,010,919	6,580,982	425,244,681	5,937,202,733
2073	5,937,202,733	-	81,199,650	6,811,316	450,829,590	6,300,021,357
2074	6,300,021,357	-	75,551,411	7,049,712	478,792,141	6,696,212,375
2075	6,696,212,375	-	70,063,658	7,296,452	509,301,222	7,128,153,487
2076	7,128,153,487	-	64,736,126	7,551,828	542,538,728	7,598,404,261
2077	7,598,404,261	-	59,570,217	7,816,142	578,700,398	8,109,718,300
2078	8,109,718,300	-	54,569,373	8,089,707	617,996,740	8,665,055,960
2079	8,665,055,960	-	49,738,495	8,372,847	660,654,022	9,267,598,640
2080	9,267,598,640	-	45,083,055	8,665,897	706,915,399	9,920,765,087
2081	9,920,765,087	-	40,612,118	8,969,203	757,042,044	10,628,225,810
2082	10,628,225,810	-	36,333,523	9,283,125	811,314,438	11,393,923,600
2083	11,393,923,600	-	32,260,936	9,608,034	870,033,667	12,222,088,297
2084	12,222,088,297	-	28,406,595	9,944,315	933,522,832	13,117,260,219
2085	13,117,260,219	-	24,781,486	10,292,366	1,002,128,832	14,084,315,199
2086	14,084,315,199	-	21,398,556	10,652,599	1,076,224,156	15,128,488,200
2087	15,128,488,200	-	18,271,397	11,025,440	1,156,208,743	16,255,400,106
2088	16,255,400,106	-	15,413,906	11,411,330	1,242,512,043	17,471,086,913
2089	17,471,086,913	-	12,837,464	11,810,727	1,335,595,356	18,782,034,078
2090	18,782,034,078	-	10,550,051	12,224,102	1,435,954,496	20,195,214,421
2091	20,195,214,421	-	8,551,506	12,651,946	1,544,122,871	21,718,133,840

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)
2092	21,718,133,840	-	6,837,587	13,094,764	1,660,674,826	23,358,876,315
2093	23,358,876,315	-	5,394,085	13,553,081	1,786,229,309	25,126,158,458
2094	25,126,158,458	-	4,197,253	14,027,439	1,921,454,028	27,029,387,794
2095	27,029,387,794	-	3,221,190	14,518,399	2,067,069,627	29,078,717,832
2096	29,078,717,832	-	2,436,862	15,026,543	2,223,853,939	31,285,108,366
2097	31,285,108,366	-	1,816,697	15,552,472	2,392,646,419	33,660,385,616
2098	33,660,385,616	-	1,333,627	16,096,809	2,574,352,785	36,217,307,965
2099	36,217,307,965	-	963,879	16,660,197	2,769,949,938	38,969,633,827
2100	38,969,633,827	-	685,710	17,243,304	2,980,491,203	41,932,196,016
2101	41,932,196,016	-	480,758	17,846,820	3,207,111,965	45,120,980,403
2102	45,120,980,403	-	332,600	18,471,459	3,451,035,746	48,553,212,090
2103	48,553,212,090	-	226,968	19,117,960	3,713,580,781	52,247,447,943
2104	52,247,447,943	-	152,894	19,787,089	3,996,167,063	56,223,675,023
2105	56,223,675,023	-	101,641	20,479,637	4,300,323,905	60,503,417,650
2106	60,503,417,650	-	66,676	21,196,424	4,627,698,137	65,109,852,687
2107	65,109,852,687	-	43,116	21,938,299	4,980,062,941	70,067,934,213
2108	70,067,934,213	-	27,490	22,706,139	5,359,327,406	75,404,527,990
2109	75,404,527,990	-	17,280	23,500,854	5,767,546,823	81,148,556,679
2110	81,148,556,679	-	10,683	24,323,384	6,206,933,808	87,331,156,420
2111	87,331,156,420	-	6,482	25,174,702	6,679,870,286	93,985,845,522
2112	93,985,845,522	-	3,840	26,055,817	7,188,920,401	101,148,706,266
2113	101,148,706,266	-	2,225	26,967,771	7,736,844,427	108,858,580,697
2114	108,858,580,697	-	1,241	27,911,643	8,326,613,756	117,157,281,569
2115	117,157,281,569	-	656	28,888,551	8,961,427,028	126,089,819,390
2116	126,089,819,390	-	343	29,899,650	9,644,727,509	135,704,646,906
2117	135,704,646,906	-	180	30,946,138	10,380,221,792	146,053,922,380
2118	146,053,922,380	-	92	32,029,253	11,171,899,940	157,193,792,975
2119	157,193,792,975	-	46	33,150,277	12,024,057,163	169,184,699,815
2120	169,184,699,815	-	24	34,310,537	12,941,317,157	182,091,706,411
2121	182,091,706,411	-	11	35,511,406	13,928,657,229	195,984,852,223
2122	195,984,852,223	-	4	36,754,305	14,991,435,343	210,939,533,257
2123	210,939,533,257	-	2	38,040,706	16,135,419,237	227,036,911,786
2124	227,036,911,786	-	1	39,372,131	17,366,817,768	244,364,357,422
2125	244,364,357,422	-	-	40,750,156	18,692,314,649	263,015,921,915
2126	263,015,921,915	-	-	42,176,411	20,119,104,779	283,092,850,283

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 (b)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"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)
2020	800,739,275	94,847,263	94,847,263	-	91,415,068	-	91,415,068
2021	862,390,883	100,606,485	100,606,485	-	90,075,136	-	90,075,136
2022	927,331,586	106,738,276	106,738,276	-	88,773,859	-	88,773,859
2023	996,162,859	113,022,584	113,022,584	-	87,320,480	-	87,320,480
2024	1,069,727,290	119,186,573	119,186,573	-	85,539,002	-	85,539,002
2025	1,149,312,018	125,414,199	125,414,199	-	83,612,175	-	83,612,175
2026	1,236,255,786	131,718,055	131,718,055	-	81,574,437	-	81,574,437
2027	1,332,012,275	138,153,512	138,153,512	-	79,479,783	-	79,479,783
2028	1,438,157,787	144,894,345	144,894,345	-	77,434,080	-	77,434,080
2029	1,556,359,263	151,748,672	151,748,672	-	75,334,095	-	75,334,095
2030	1,688,758,369	158,331,870	158,331,870	-	73,016,495	-	73,016,495
2031	1,838,317,339	164,662,936	164,662,936	-	70,539,839	-	70,539,839
2032	2,008,310,256	170,695,869	170,695,869	-	67,927,805	-	67,927,805
2033	2,202,424,524	176,466,727	176,466,727	-	65,233,904	-	65,233,904
2034	2,421,599,543	181,745,326	181,745,326	-	62,410,801	-	62,410,801
2035	2,658,818,594	186,567,581	186,567,581	-	59,513,933	-	59,513,933
2036	2,693,980,317	190,999,044	190,999,044	-	56,597,810	-	56,597,810
2037	2,725,899,380	194,953,045	194,953,045	-	53,664,171	-	53,664,171
2038	2,754,837,952	198,413,019	198,413,019	-	50,735,335	-	50,735,335
2039	2,781,094,880	201,341,950	201,341,950	-	47,825,620	-	47,825,620
2040	2,805,060,222	203,909,799	203,909,799	-	44,993,564	-	44,993,564
2041	2,826,961,048	206,083,489	206,083,489	-	42,241,707	-	42,241,707
2042	2,847,056,770	207,818,510	207,818,510	-	39,570,219	-	39,570,219
2043	2,865,649,120	208,971,913	208,971,913	-	36,962,226	-	36,962,226
2044	2,883,219,344	209,614,975	209,614,975	-	34,441,215	-	34,441,215
2045	2,900,200,169	210,048,774	210,048,774	-	32,059,909	-	32,059,909
2046	2,916,752,740	210,119,175	210,119,175	-	29,791,597	-	29,791,597
2047	2,933,136,237	209,511,518	209,511,518	-	27,594,464	-	27,594,464
2048	2,949,999,081	208,703,043	208,703,043	-	25,534,585	-	25,534,585
2049	2,967,619,407	207,007,741	207,007,741	-	23,527,326	-	23,527,326
2050	2,986,901,084	205,160,054	205,160,054	-	21,660,315	-	21,660,315
2051	3,008,513,447	202,822,883	202,822,883	-	19,891,836	-	19,891,836
2052	3,033,084,117	200,138,124	200,138,124	-	18,233,654	-	18,233,654
2053	3,061,236,081	196,952,804	196,952,804	-	16,668,327	-	16,668,327

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 (b)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"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)
2054	3,093,776,058	193,554,782	193,554,782	-	15,216,674	-	15,216,674
2055	3,131,326,809	189,833,145	189,833,145	-	13,863,530	-	13,863,530
2056	3,174,608,038	185,800,849	185,800,849	-	12,604,785	-	12,604,785
2057	3,224,417,208	181,300,088	181,300,088	-	11,425,408	-	11,425,408
2058	3,281,781,888	176,241,290	176,241,290	-	10,317,331	-	10,317,331
2059	3,347,950,048	170,747,235	170,747,235	-	9,285,372	-	9,285,372
2060	3,424,170,152	164,882,342	164,882,342	-	8,329,247	-	8,329,247
2061	3,511,687,820	158,589,732	158,589,732	-	7,442,051	-	7,442,051
2062	3,611,899,560	152,129,420	152,129,420	-	6,631,576	-	6,631,576
2063	3,726,056,092	145,517,945	145,517,945	-	5,892,588	-	5,892,588
2064	3,855,427,508	138,918,754	138,918,754	-	5,225,602	-	5,225,602
2065	4,001,212,472	132,105,087	132,105,087	-	4,616,161	-	4,616,161
2066	4,164,901,435	125,284,819	125,284,819	-	4,066,735	-	4,066,735
2067	4,347,939,725	118,533,778	118,533,778	-	3,574,172	-	3,574,172
2068	4,551,761,959	111,913,570	111,913,570	-	3,134,744	-	3,134,744
2069	4,777,834,445	105,447,862	105,447,862	-	2,743,741	-	2,743,741
2070	5,027,699,040	99,132,745	99,132,745	-	2,396,119	-	2,396,119
2071	5,303,015,041	92,987,326	92,987,326	-	2,087,858	-	2,087,858
2072	5,605,549,953	87,010,919	87,010,919	-	1,814,834	-	1,814,834
2073	5,937,202,733	81,199,650	81,199,650	-	1,573,270	-	1,573,270
2074	6,300,021,357	75,551,411	75,551,411	-	1,359,808	-	1,359,808
2075	6,696,212,375	70,063,658	70,063,658	-	1,171,423	-	1,171,423
2076	7,128,153,487	64,736,126	64,736,126	-	1,005,434	-	1,005,434
2077	7,598,404,261	59,570,217	59,570,217	-	859,453	-	859,453
2078	8,109,718,300	54,569,373	54,569,373	-	731,355	-	731,355
2079	8,665,055,960	49,738,495	49,738,495	-	619,238	-	619,238
2080	9,267,598,640	45,083,055	45,083,055	-	521,392	-	521,392
2081	9,920,765,087	40,612,118	40,612,118	-	436,307	-	436,307
2082	10,628,225,810	36,333,523	36,333,523	-	362,602	-	362,602
2083	11,393,923,600	32,260,936	32,260,936	-	299,079	-	299,079
2084	12,222,088,297	28,406,595	28,406,595	-	244,632	-	244,632
2085	13,117,260,219	24,781,486	24,781,486	-	198,248	-	198,248
2086	14,084,315,199	21,398,556	21,398,556	-	159,020	-	159,020
2087	15,128,488,200	18,271,397	18,271,397	-	126,132	-	126,132

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 (b)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"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)
2088	16,255,400,106	15,413,906	15,413,906	-	98,844	-	98,844
2089	17,471,086,913	12,837,464	12,837,464	-	76,472	-	76,472
2090	18,782,034,078	10,550,051	10,550,051	-	58,380	-	58,380
2091	20,195,214,421	8,551,506	8,551,506	-	43,958	-	43,958
2092	21,718,133,840	6,837,587	6,837,587	-	32,650	-	32,650
2093	23,358,876,315	5,394,085	5,394,085	-	23,927	-	23,927
2094	25,126,158,458	4,197,253	4,197,253	-	17,295	-	17,295
2095	27,029,387,794	3,221,190	3,221,190	-	12,330	-	12,330
2096	29,078,717,832	2,436,862	2,436,862	-	8,665	-	8,665
2097	31,285,108,366	1,816,697	1,816,697	-	6,001	-	6,001
2098	33,660,385,616	1,333,627	1,333,627	-	4,092	-	4,092
2099	36,217,307,965	963,879	963,879	-	2,747	-	2,747
2100	38,969,633,827	685,710	685,710	-	1,816	-	1,816
2101	41,932,196,016	480,758	480,758	-	1,182	-	1,182
2102	45,120,980,403	332,600	332,600	-	760	-	760
2103	48,553,212,090	226,968	226,968	-	482	-	482
2104	52,247,447,943	152,894	152,894	-	301	-	301
2105	56,223,675,023	101,641	101,641	-	186	-	186
2106	60,503,417,650	66,676	66,676	-	113	-	113
2107	65,109,852,687	43,116	43,116	-	68	-	68
2108	70,067,934,213	27,490	27,490	-	40	-	40
2109	75,404,527,990	17,280	17,280	-	24	-	24
2110	81,148,556,679	10,683	10,683	-	14	-	14
2111	87,331,156,420	6,482	6,482	-	8	-	8
2112	93,985,845,522	3,840	3,840	-	4	-	4
2113	101,148,706,266	2,225	2,225	-	2	-	2
2114	108,858,580,697	1,241	1,241	-	1	-	1
2115	117,157,281,569	656	656	-	1	-	1
2116	126,089,819,390	343	343	-	-	-	-
2117	135,704,646,906	180	180	-	-	-	-
2118	146,053,922,380	92	92	-	-	-	-
2119	157,193,792,975	46	46	-	-	-	-
2120	169,184,699,815	24	24	-	-	-	-
2121	182,091,706,411	11	11	-	-	-	-