



Edward M. Augustus, Jr.
City Manager

CITY OF WORCESTER

cm2020dec04084615

Attachment for Item # 10.28 A

December 8, 2020

TO THE WORCESTER CITY COUNCIL

COUNCILORS:

Attached please find the City's latest Other Post-Employment Benefits actuarial valuation and review as of June 30, 2020, as received from Timothy J. McGourthy, Chief Financial Officer, and forwarded for the information of your Honorable Body.

This document was prepared by Lewis & Ellis Actuaries and Consultants in accordance with Governmental Accounting Standards Board Statements No. 75. As outlined in the memo from Mr. McGourthy, the City's net OPEB liability increased this year to \$1,026,328,269, driven primarily by a change in the discount rate and mortality assumptions, as well as certain claims experiences and census changes.

As you know, the City established an irrevocable OPEB Liability Trust Fund, with appointed Trustees in FY20, to manage and invest the City's OPEB funds – approximately \$24 million with the inclusion of Free Cash, as approved by City Council in November. The City's continued annual contributions to OPEB, as outlined in the Financial Integrity Plan, including annual funding and utilization of Free Cash, combined with strategic investment of the funds, will assist the City in reducing and ultimately addressing its OPEB liability over the years.

Respectfully submitted,

Edward M. Augustus, Jr.
City Manager



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CITY OF WORCESTER, MASSACHUSETTS

To: Edward M. Augustus, Jr, City Manager

From: Timothy J. McGourthy, Chief Financial Officer

Date: December 3, 2020

Re: GASB 75 Retiree Health Projections (OPEB) for Fiscal Year End 6/30/2020

I enclose for your review the City of Worcester's latest OPEB actuarial valuation and review as of June 30, 2020, prepared by Lewis & Ellis Actuaries and Consultants. OPEB represents post-retirement medical and life insurance benefits earned by current staff and utilized by retirees. Under Governmental Accounting Standards Board (GASB) Statement No. 75, the City must ascertain and disclose the actuarial value of its OPEB liability periodically. The City's liability increased to \$1,026,328,269 as of 6/30/2020 from \$918,642,242 as of 6/30/2018.

The City has long recognized the critical need to manage its OPEB liabilities. The Financial Integrity Plan, adopted by City Council and embraced by the Administration, requires both annual funding through the City's budget and a contribution of 30% of annual Free Cash. Additionally, in September 2019, the City established an irrevocable OPEB Liability Trust Fund (Trust), led by an appointed Board, which is charged with managing and investing the City's OPEB dollars. The Trust has approximately \$24M in revenues inclusive of Free Cash distributions approved by City Council in November.

The City's net OPEB liability increase this year was driven primarily by a change in the discount rate and mortality assumptions, as well as certain claims experiences and census changes. The creation of the OPEB Trust, and its investment program, will both increase available funds and raise the actuarial discount rate thereby decreasing the City's liability in future analyses. The City's continued annual contributions to OPEB as outlined in the Financial Integrity Plan, including annual funding and utilization of Free Cash, combined with strategic investment of the funds will assist the City in reducing and ultimately addressing its OPEB liability over the years.

Sincerely,

Timothy J. McGourthy
Chief Financial Officer





RETIREE HEALTH PROJECTIONS
GASB STATEMENT No. 75

FISCAL YEAR END 6/30/2020

CITY OF WORCESTER

NOVEMBER 13, 2020

LEWIS & ELLIS

BRIAN C. STENTZ, ASA, MAAA
ARI T. LOIBEN, MS



LEWIS & ELLIS

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November 13, 2020

Mr. Edward M. Augustus, Jr.
City Manager
City of Worcester
455 Main Street
Worcester, MA 01608

Re: GASB 75 Valuation for Fiscal Year End 6/30/2020

Dear Mr. Augustus,

We are pleased to present this Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) provided by the City of Worcester as of June 30, 2020 under Governmental Accounting Standards Board Statements No. 75. The report summarizes the actuarial data used in the valuation, discloses the Total OPEB Liability (TOL) as of June 30, 2020 (measured as of June 30, 2020) and annual OPEB expense for the fiscal year ending June 30, 2020.

We appreciate the opportunity to be of service. If you have any questions, please feel free to contact me.

Sincerely,

Handwritten signature of Brian C. Stentz in black ink.

Brian C. Stentz, ASA, MAAA
Assistant Vice President

Handwritten signature of Ari T. Loiben in black ink.

Ari T. Loiben, MS
Assistant Vice President

Enclosures

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EXECUTIVE SUMMARY

The City of Worcester (“the City”) provides post-retirement medical and life insurance benefits on behalf of its eligible retirees. The Governmental Accounting Standards Board (“GASB”) adopted Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* (“GASB 75”) to replace GASB 45. GASB 75 requires public employers to perform periodic actuarial valuations to measure and disclose their retiree healthcare liabilities for the financial statement of the employer.

GASB 75 allows a measurement date no earlier than one year and one day prior to the fiscal year end reporting date. We have used an actuarial valuation date and measurement date which coincide with the reporting date of June 30, 2020.

Under GASB 75, employers are also required to consider any implicit subsidy that may be occurring. Medical costs generally increase with advancing age. Therefore, the medical costs for the retiree group are higher than the medical costs for the employee group, even taking Medicare into account. Stated another way, when a plan includes both employees and retirees, the blended premiums are almost always higher than what the premiums would be for employees, and lower than what the premiums would be for retirees, if each group were rated separately. The premium rate difference is referred to as the implicit rate subsidy.

The table below sets forth the key results of our GASB 75 valuation for the fiscal year ending June 30, 2020, compared to the 6/30/2019 results.

	GASB 75	GASB 75
Valuation as of	6/30/2018	6/30/2020
Measurement Date	6/30/2019	6/30/2020
Funded Status		
Total OPEB Liability (TOL)	\$918,642,242	\$1,046,833,893
Fiduciary Net Position (FNP)	\$0	\$20,505,624
Net OPEB Liability (NOL)	\$918,642,242	\$1,026,328,269
FNP as Percentage of TOL	0.0%	2.0%
OPEB Expense	\$77,321,481	\$102,091,996
Deferred Inflows of Resources	\$0	\$407,999
Deferred Outflows of Resources	\$66,453,343	\$116,929,264
Discount Rate	3.13%	2.45%

Since our prior measurement period, an irrevocable trust (the Trust) was authorized by City Council vote on June 20, 2017. The Declaration of Trust was submitted to City Council on June 25, 2019 and went into

effect 90-days later in September of 2019. Therefore, we have revised our reporting disclosures to coincide with the requirements of the City's newly established Trust.

BENEFITS AND CONTRIBUTIONS

The City maintains self-insured and fully-insured medical and life insurance coverage for eligible employees and retired employees and their dependents. The plans are funded by a combination of contributions from the City and retirees.

To be eligible to continue coverage under the City's plan, employees must satisfy the retirement eligibility requirements outlined in Appendix G.

A summary of the current retiree contributions is included also in Appendix G.

CHANGES IN ACTUARIAL ASSUMPTIONS

Our valuation of the City's plan is based on assumptions with regard to the survival of plan members, the average per-capita claims costs, when current employees are expected to retire, and so forth. The assumptions were derived from a combination of plan experience and actuarial judgement and are disclosed in Appendix F attached to this report.

The following changes were made to assumptions since the prior valuation.

- **Discount Rate:** The discount rate was decreased from 3.13% to 2.45%. See the next section for more details.
- **Mortality:** We updated the mortality assumptions as follows: mortality rates for School, Fire/Police, and Other active employees were based on the PubT.H-2010, PubS.H-2010 and PubG.H-2010 Employee Mortality Table, respectively, Generational with Projection Scale MP-2019 for males or females, as appropriate. In addition, the mortality rates for School, Fire/Police, and Other retirees were based on the PubT.H-2010, PubS.H-2010 and PubG.H-2010 Healthy Retiree (Disabled Retiree for disabled retirees) Mortality Table, respectively, Generational with Projection Scale MP-2019 for males or females, as appropriate. These base tables were updated from the previously used RPH-2014 tables with a generational projection using Scale MP-2018.
- **Claim Costs:** We have revised the claim costs assumptions based on recent City historical medical claims for self-insured plans and up-to-date premiums for the fully-insured plans. This included reflected the three additional plans that were added since our prior valuation: Fallon Advantage HDHP (self-insured), Fallon Medicare Plus (fully-insured Medicare Advantage) and Fallon Medicare Plus Central).
- **Retiree Contributions:** We have updated the retiree contributions to reflect the most recent rates currently being offered to retirees and their dependents.
- **Claim Cost Trends:** The trend tables used in the prior valuation were developed using plan experience and the SOA Long-Run Medical Cost Trend Model published in August 2017. The

current valuation utilizes updated assumptions in the September 2019 model as well as updated plan experience. Please see Exhibit F for the trend tables used and a complete description of their development.

DISCOUNT RATE

One of the most important assumptions is the discount rate, which is used by the model to compute the present value of future post-retirement benefits. The higher the discount rate, the lower the present values, and therefore the OPEB cost.

Under GASB 75, for plans with a trust that meets the criteria in the statement, the discount rate should be the single rate that reflects the following:

- a) The long-term expected rate of return on OPEB plan investments that are expected to be used to finance the payment of benefits, to the extent that (1) the OPEB plan's fiduciary net position is projected to be sufficient to make projected benefit payments and (2) OPEB plan assets are expected to be invested using a strategy to achieve that return.
- b) 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 in (a) are not met.

Because the current investment mix produces a Long-Term Rate of Return less than that of a 20-year, tax-exempt general obligation municipal bond with an average rating of AA/Aa or higher, we chose to continue to use the Fidelity General Obligation AA 20 Year Yield as of the measurement date, which is 2.45%, as the discount rate for our current valuation. As the Trust diversifies its assets over the next fiscal year, we will re-evaluate the source of the discount rate used in our future valuations.

ACA EXCISE TAX ON HIGH COST EMPLOYER-SPONSORED HEALTH COVERAGE

The ACA Excise Tax on high cost health plans was repealed in December 2019. Therefore, this is no longer applicable.

APPROACH AND METHODOLOGY

Our general approach is to apply assumed retirement probabilities and survivorship factors to the current profile of covered members, along with projected benefits, expenses, and retiree contributions, to estimate total OPEB benefits for current and future retirees and their dependents over each individual's respective lifetime.

Our projections of the benefits are based on employee census information, historical self-insured claims, expenses, stop-loss premiums, historical and expected fully-insured premiums, retiree contribution rates and other information provided by the City. We have reviewed the data for reasonableness but have not audited it. To the extent that there are material inaccuracies in the data, our results are accordingly affected.

The City provided us with a census as of the valuation date of current active employees, including age, current plan elected, and dependent status. The data was taken as of June 30, 2020. As of the start of

our projection, there were 5,867 eligible active members and 4,281 retirees and beneficiaries currently receiving post-employment medical and/or life benefits. We removed two actives from our valuation as they were hired after the valuation date as well as an additional six actives as City staff indicated these terminated employment prior to our valuation date.

Our actuarial model computes a present value of all future net costs (after recognition of retiree contributions) and allocates a portion of that present value to the current fiscal year. The methodology of that allocation is called an "Actuarial Cost Method." GASB 75 requires the use of the Entry Age, Level Percent of Pay method.

For current employees, the Entry Age cost method spreads the actuarial present value of future benefits ("PVB") from the employee's date of hire to the expected retirement date as a level percent of expected salary. The portion of the PVB attributable to the current fiscal year is called the Service Cost under GASB 75. The portion attributable to service prior to the current fiscal year is called the Total OPEB Liability ("TOL") under GASB 75.

NOTES TO FINANCIAL STATEMENT

Paragraphs 50 through 58 of Statement 75 describe the information that employers should include in the notes to their financial statements.

We have provided the actuarial information that is required to be disclosed in the Notes to the Financial Statement in Appendix A and Appendix B. We are available to discuss any other aspects of the required disclosures, as needed by the City.

DISCLOSURES AND LIMITATIONS

See Appendix I.

ACTUARIAL CERTIFICATION

This actuarial valuation has been prepared and presented in accordance with the terms of GASB Statements No. 75. I make no representation to the applicability of this report for any purpose other than that for which it was originally provided and accept no responsibility or liability in this regard.

In preparing the results presented in this report, I have relied upon information provided by the City regarding plan provisions and plan participants. I have reviewed this information for reasonableness but have not audited it. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

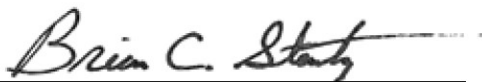
All costs, liabilities and other factors under the plan were determined in accordance with generally accepted actuarial principles and procedures using assumptions that I believe reasonably estimate the anticipated experience of the plan. The calculations reported herein are consistent with my understanding of the provisions of GASB Statement 75.

The determination of present values, cost allocations and future cash flows have been performed in accordance with generally accepted actuarial principles as set forth in the following Actuarial Standards of Practice:

- ASOP No. 6 – Measuring Retiree Group Benefit Obligations
- ASOP No. 21 – Responding to or Assisting Auditors or Examiners in Connection with Financial Statements for All Practice Areas
- ASOP No. 23 – Data Quality
- ASOP No. 41 – Actuarial Communications

The undersigned actuary is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions used in this valuation and described in Appendix F are reasonably related to the experience of and the expectations for the Plan. The actuarial projections are based on these assumptions and the plan of benefits as summarized in Appendix G. I believe the contents of this report fully and fairly disclose the actuarial position of the plan. I am available to respond to any questions on the information contained in the results and to provide explanation or further details as may be appropriate.



Brian C. Stentz, ASA, MAAA
Assistant Vice President
Lewis & Ellis, Inc.

APPENDIX A
NOTES TO FINANCIAL STATEMENT

Assumptions and Other Inputs	
Actuarial Assumptions: The Total OPEB Liability (TOL) was determined using the following actuarial assumptions, applied to all periods included in the measurement, unless otherwise specified.	
Measurement Date	June 30, 2020
Actuarial Valuation Date:	June 30, 2020
Inflation:	2.50%
Salary Increases, including inflation:	3.00%
Prior Year Discount Rate:	3.13%
Health Care Cost Trend Rates:	See Appendix E
Retirees' Share of Benefit-Related Costs:	See Appendix F
The discount rate was based on the 6/30/2020 Fidelity General Obligation AA 20-Year Yield.	
Mortality rates for School, Fire/Police, and Other active employees were based on the PubT.H-2010, PubS.H-2010 and PubG.H-2010 Employee Mortality Table, respectively, Generational with Projection Scale MP-2019 for males or females, as appropriate.	
Mortality rates for School, Fire/Police, and Other retirees were based on the PubT.H-2010, PubS.H-2010 and PubG.H-2010 Healthy Retiree (Disabled Retiree for disabled retirees) Mortality Table, respectively, Generational with Projection Scale MP-2019 for males or females, as appropriate.	

Discount Rate		
Discount Rate:	2.45%	
Prior Year Discount Rate:	3.13%	
Money-Weighted Return (Net of Investment Fees):	4.74%	
The long-term rate of return on OPEB 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 OPEB plan investment expenses 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. The target allocation and best estimates of the geometric real rates of return for each major asset class are summarized in the following table:		
		Long-Term Expected
Asset Class	Target Allocation	Real Rates of Return
Cash & Equivalents	53.00%	-1.50%
Short Term Bonds	47.00%	0.00%
Total	100.00%	-0.80%
Discount Rate: The discount rate used to measure the Total OPEB Liability was 2.45%. This rate is based on the expected yield or index rate for 20-year, tax-exempt obligation municipal bonds with an average rating of AA/Aa or higher as this yield is greater than the current Long-Term Expected Real Rate of Return based on the City's current investment mix.		

APPENDIX A
NOTES TO FINANCIAL STATEMENT

OPEB Plan - Number of Employees Covered	
Inactive employees currently receiving benefits payments	4,281
Inactive employees entitled to but not yet receiving benefit payments	0
Active Employees	5,867
Total	<u>10,148</u>

	Increase/(Decrease)		
	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
Balance at 6/30/2019	<u>\$918,642,242</u>	<u>\$0</u>	<u>\$918,642,242</u>
Changes for the year:			
Service Cost	38,503,704	0	38,503,704
Interest	29,572,938	0	29,572,938
Differences between expected and actual experience	78,078,974	0	78,078,974
Changes in Assumptions/Inputs	6,683,323	0	6,683,323
Change in Benefit Terms	0	0	0
Contributions - Employer	0	19,826,603	(19,826,603)
Contributions for Benefits Due	0	24,647,288	(24,647,288)
Net Investment Income	0	679,021	(679,021)
Benefit payments	(24,647,288)	(24,647,288)	0
Administrative Expense	0	0	0
Net Changes	<u>\$128,191,651</u>	<u>\$20,505,624</u>	<u>\$107,686,027</u>
Balance at 6/30/2020	<u>\$1,046,833,893</u>	<u>\$20,505,624</u>	<u>\$1,026,328,269</u>

	Sensitivity of the Net OPEB Liability		
	1% Decrease	No Change	1% Increase
Discount Rate:	\$1,249,720,227	\$1,026,328,269	\$853,750,809
Healthcare Cost Trend Rates:	\$833,578,741	\$1,026,328,269	\$1,285,858,394

APPENDIX A
NOTES TO FINANCIAL STATEMENT

OPEB Expense and Deferred Outflows and Deferred Inflows of Resources Related to OPEB		
OPEB Expense		
Service Cost		\$38,503,704
Interest on the Total OPEB Liability		\$29,572,938
Projected earnings on plan investments		(\$169,022)
Expensed portion of current-period differences between expected & actual experience in the TOL		\$17,239,744
Expensed portion of current-period differences between actual & projected earnings on plan investments		(\$102,000)
Expensed portion of current-period changes of assumptions or other inputs		\$17,046,631
Expensed portion of current-period benefit changes		\$0
Recognition of beginning of year deferred outflows of resources as OPEB expense		\$0
Recognition of beginning of year deferred inflows of resources as OPEB expense		\$0
Total OPEB Expense		<u>\$102,091,996</u>
Deferred Outflows and Inflows	<u>Outflows</u>	<u>Inflows</u>
Differences between actual and expected experience	\$71,824,618	\$0
Changes of assumptions or other inputs	\$45,104,647	\$0
Differences between actual and projected earnings on plan investments	\$0	\$407,999
Employer amounts for OPEB subsequent to measurement date	\$0	\$0
Total Deferred Outflows and Inflows	<u>\$116,929,264</u>	<u>\$407,999</u>
Amounts reported and deferred outflows of resources and deferred inflows of resources related to OPEB expense will be recognized in OPEB expense as follows:		
Year Ended June 30:		
2021	\$34,184,376	
2022	\$34,184,376	
2023	\$24,731,813	
2024	\$15,207,900	
2025	\$8,212,800	
Thereafter	\$0	

APPENDIX A
NOTES TO FINANCIAL STATEMENT

OPEB Plan - Number of Employees Covered

	Airport	Parks	Fire	Police	Public Works
Inactive employees currently receiving benefits payments	10	36	458	366	154
Inactive employees entitled to but not yet receiving benefit payments	0	0	0	0	0
Active Employees	0	54	425	503	205
Total	10	90	883	869	359

Changes in Net OPEB Liability

	Airport	Parks	Fire	Police	Public Works
Balance at 6/30/2019	\$840,610	\$7,025,587	\$108,675,096	\$117,504,668	\$24,560,552
Changes for the year:					
Service Cost	0	340,902	4,903,674	5,187,270	954,972
Interest	25,531	227,135	3,499,310	3,796,092	784,671
Differences between expected and actual experience	176,652	1,649,618	17,509,116	19,391,467	5,499,835
Changes in Assumptions/Inputs	6,380	57,980	841,898	919,193	198,593
Change in Benefit Terms	0	0	0	0	0
Contributions - Employer	(18,927)	(172,003)	(2,497,556)	(2,726,858)	(589,141)
Contributions for Benefits Due	(49,830)	(219,541)	(3,559,469)	(2,822,056)	(892,317)
Net Investment Income	(648)	(5,891)	(85,536)	(93,389)	(20,177)
Benefit payments	0	0	0	0	0
Administrative Expense	0	0	0	0	0
Net Changes	\$139,158	\$1,878,201	\$20,611,436	\$23,651,719	\$5,936,436
Balance at 6/30/2020	\$979,768	\$8,903,787	\$129,286,531	\$141,156,387	\$30,496,988

OPEB Expense

	Airport	Parks	Fire	Police	Public Works
OPEB Expense					
Service Cost	\$0	\$340,902	\$4,903,674	\$5,187,270	\$954,972
Interest on the Total OPEB Liability (TOL)	\$25,531	\$227,135	\$3,499,310	\$3,796,092	\$784,671
Projected earnings on plan investments	(\$161)	(\$1,466)	(\$21,292)	(\$23,246)	(\$5,022)
Expensed portion of current-period differences between expected & actual experience in the TOL	\$34,057	\$348,098	\$3,443,531	\$3,921,416	\$1,106,922
Expensed portion of current-period differences between actual & projected earnings on plan investments	(\$97)	(\$885)	(\$12,849)	(\$14,029)	(\$3,031)
Expensed portion of current-period changes of assumptions or other inputs	\$11,590	\$124,657	\$1,959,005	\$2,126,511	\$444,085
Expensed portion of current-period benefit changes	\$0	\$0	\$0	\$0	\$0
Recognition of beginning of year deferred outflows of resources as OPEB expense	\$0	\$0	\$0	\$0	\$0
Recognition of beginning of year deferred outflows of resources as OPEB expense	\$0	\$0	\$0	\$0	\$0
Total OPEB Expense	\$70,920	\$1,038,441	\$13,771,379	\$14,994,015	\$3,282,598

APPENDIX A
NOTES TO FINANCIAL STATEMENT

OPEB Plan - Number of Employees Covered					
	Water	Sewer	Inspectional Services	School	Communi- cations
Inactive employees currently receiving benefits payments	87	40	29	2,691	19
Inactive employees entitled to but not yet receiving benefit payments	0	0	0	0	0
Active Employees	86	39	57	4,044	58
Total	173	79	86	6,735	77

Changes in Net OPEB Liability					
	Water	Sewer	Inspectional Services	School	Communi- cations
Balance at 6/30/2019	\$11,332,585	\$6,656,737	\$6,639,494	\$585,175,493	\$4,944,082
Changes for the year:					
Service Cost	549,321	290,811	320,418	23,604,422	294,219
Interest	362,918	214,429	214,544	18,837,006	161,535
Differences between expected and actual experience	7,004,470	500,071	1,468,194	13,839,192	1,671,083
Changes in Assumptions/Inputs	119,994	47,988	54,176	4,032,151	44,438
Change in Benefit Terms	0	0	0	0	0
Contributions - Employer	(355,972)	(142,359)	(160,719)	(11,961,694)	(131,829)
Contributions for Benefits Due	(574,150)	(193,551)	(210,962)	(13,917,285)	(154,860)
Net Investment Income	(12,191)	(4,876)	(5,504)	(409,664)	(4,515)
Benefit payments	0	0	0	0	0
Administrative Expense	0	0	0	0	0
Net Changes	\$7,094,390	\$712,514	\$1,680,147	\$34,024,128	\$1,880,071
Balance at 6/30/2020	\$18,426,975	\$7,369,251	\$8,319,641	\$619,199,621	\$6,824,153

OPEB Expense					
	Water	Sewer	Inspectional Services	School	Communi- cations
OPEB Expense					
Service Cost	\$549,321	\$290,811	\$320,418	\$23,604,422	\$294,219
Interest on the Total OPEB Liability	\$362,918	\$214,429	\$214,544	\$18,837,006	\$161,535
Projected earnings on plan investments	(\$3,035)	(\$1,214)	(\$1,370)	(\$101,973)	(\$1,124)
Expensed portion of current-period difference between expected and actual experience in the Total OPEB Liability	\$1,411,039	\$113,644	\$281,488	\$4,248,196	\$313,957
Expensed portion of current-period differences between actual & projected earnings on plan investments	(\$1,831)	(\$732)	(\$827)	(\$61,538)	(\$678)
Expensed portion of current-period changes of assumptions or other inputs	\$220,328	\$115,340	\$120,613	\$11,000,376	\$103,914
Expensed portion of current-period benefit changes	\$0	\$0	\$0	\$0	\$0
Recognition of beginning of year deferred outflows of resources as OPEB expense	\$0	\$0	\$0	\$0	\$0
Recognition of beginning of year deferred outflows of resources as OPEB expense	\$0	\$0	\$0	\$0	\$0
Total OPEB Expense	\$2,538,740	\$732,278	\$934,866	\$57,526,489	\$871,824

APPENDIX A
NOTES TO FINANCIAL STATEMENT

OPEB Plan - Number of Employees Covered

	Golf	Health	Library	Other	Total
Inactive employees currently receiving benefits payments	0	51	70	270	4,281
Inactive employees entitled to but not yet receiving benefit payments	0	0	0	0	0
Active Employees	2	21	90	283	5,867
Total	2	72	160	553	10,148

Changes in Net OPEB Liability

	Golf	Health	Library	Other	Total
Balance at 6/30/2019	\$288,676	\$3,709,430	\$9,097,836	\$32,191,396	\$918,642,242
Changes for the year:					
Service Cost	9,301	103,486	501,695	1,443,214	38,503,704
Interest	9,327	115,262	293,808	1,031,369	29,572,938
Differences between expected and actual experience	76,139	(50,939)	2,515,985	6,828,091	78,078,974
Changes in Assumptions/Inputs	2,464	23,236	77,001	257,830	6,683,323
Change in Benefit Terms	0	0	0	0	0
Contributions - Employer	(7,309)	(68,933)	(228,429)	(764,873)	(19,826,603)
Contributions for Benefits Due	0	(260,865)	(425,380)	(1,367,023)	(24,647,288)
Net Investment Income	(250)	(2,361)	(7,823)	(26,195)	(679,021)
Benefit payments	0	0	0	0	0
Administrative Expense	0	0	0	0	0
Net Changes	\$89,671	(\$141,112)	\$2,726,856	\$7,402,413	\$107,686,026
Balance at 6/30/2020	\$378,346	\$3,568,317	\$11,824,692	\$39,593,809	\$1,026,328,269

OPEB Expense

	Golf	Health	Library	Other	Total
OPEB Expense					
Service Cost	\$9,301	\$103,486	\$501,695	\$1,443,214	\$38,503,704
Interest on the Total OPEB Liability	\$9,327	\$115,262	\$293,808	\$1,031,369	\$29,572,938
Projected earnings on plan investments	(\$62)	(\$588)	(\$1,947)	(\$6,521)	(\$169,022)
Expensed portion of current-period difference between expected and actual experience in the Total OPEB Liability	\$14,018	\$45,312	\$529,134	\$1,428,931	\$17,239,744
Expensed portion of current-period differences between actual & projected earnings on plan investments	(\$38)	(\$355)	(\$1,175)	(\$3,935)	(\$102,000)
Expensed portion of current-period changes of assumptions or other inputs	\$5,717	\$74,372	\$177,412	\$562,710	\$17,046,632
Expensed portion of current-period benefit changes	\$0	\$0	\$0	\$0	\$0
Recognition of beginning of year deferred outflows of resources as OPEB expense	\$0	\$0	\$0	\$0	\$0
Recognition of beginning of year deferred outflows of resources as OPEB expense	\$0	\$0	\$0	\$0	\$0
Total OPEB Expense	\$38,262	\$337,489	\$1,498,927	\$4,455,769	\$102,091,996

APPENDIX B
REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the Total OPEB Liability and Related Ratios					
	2018	2019	2020	2021	2022
Total OPEB Liability					
Service Cost	\$31,603,603	\$32,551,711	\$38,503,704		
Interest	\$28,218,425	\$25,793,294	\$29,572,938		
Changes in benefit terms	\$0	\$0	\$0		
Differences between expected & actual experience	\$6,664,810	\$8,668,944	\$78,078,974		
Changes in assumptions or other inputs	\$0	\$71,307,434	\$6,683,323		
Benefit payments	(\$23,376,480)	(\$22,388,653)	(\$24,647,288)		
Net Change in Total OPEB Liability	\$43,110,358	\$115,932,730	\$128,191,651		
Total OPEB Liability - beginning	\$759,599,154	\$802,709,512	\$918,642,242		
Total OPEB Liability - end (a)	\$802,709,512	\$918,642,242	\$1,046,833,893		
Plan Fiduciary Net Position					
Contributions - Employer	\$0	\$0	\$19,826,603		
Contributions for Benefits Due	\$0	\$0	\$24,647,288		
Net investment income	\$0	\$0	\$679,021		
Benefit payments	\$0	\$0	(\$24,647,288)		
Administrative expense	\$0	\$0	\$0		
Net Change in Plan Fiduciary Net Position	\$0	\$0	\$20,505,624		
Plan Fiduciary Net Position - beginning	\$0	\$0	\$0		
Plan Fiduciary Net Position - ending (b)	\$0	\$0	\$20,505,624		
Net OPEB Liability (a) - (b)	\$802,709,512	\$918,642,242	\$1,026,328,269		
Plan fiduciary net position as a percentage of total OPEB liability	0.0%	0.0%	2.0%		
Covered Employee Payroll	\$350,441,877	\$360,955,133	\$384,459,031		
Net OPEB Liability as a percentage of covered employee payroll	229.1%	254.5%	267.0%		
Notes to Schedule:					
<i>Changes of Benefit Terms:</i>	None				
<i>Changes of Assumptions:</i>	The following actuarial assumptions have been revised from the prior valuation: claim costs, retiree contributions, claim cost trend and mortality. The summary of the key actuarial assumptions is included in Appendix F.				
	Changes of assumptions and other inputs reflect the effects of changes in the discount rate each period. The following is the discount rate used for this reporting period:				
	2018	3.62%			
	2019	3.13%			
	2020	2.45%			

APPENDIX C
STATEMENT OF FIDUCIARY NET POSITION

	6/30/2020
ASSETS	
Cash, Short-Term	10,814,953
Receivables	
Contributions	0
Due from Broker for Investments Sold	0
Investment Income	0
Total Receivables	<u>0</u>
Investments	
Equity	0
Stock Mutual Funds	0
Fixed Income Mutual Funds	0
Real Estate Mutual Funds	0
Other (MMDT ST Bond Portfolio)	9,775,010
Total Investments	<u>9,775,010</u>
Total Assets	<u>20,589,963</u>
LIABILITIES	
Payables	
Benefits payable	0
Investment management fees	0
Due to broker for investments purchased	0
Due to Employer	84,339
Other	0
Total Liabilities	<u>84,339</u>
NET POSITION RESTRICTED FOR OPEB	<u>\$20,505,624</u>

APPENDIX C
STATEMENT OF CHANGE IN FIDUCIARY NET POSITION

	FY 2020
ADDITIONS	
Contributions	
Employer Remittance	19,826,603
Other Contributions	\$0
Contributions for Benefits Due	24,647,288
Investment Income	
Investment Income - Unrealized Gains	317,301
Investment Income - Realized Gains	361,720
Less Investment Expenses	0
Net Investment Income	<u>679,021</u>
Total Additions	<u>45,152,912</u>
DEDUCTIONS	
Benefit Payments	24,647,288
Administrative Expenses	0
Total Deductions	<u>\$24,647,288</u>
NET POSITION RESTRICTED FOR OPEB	
Beginning of Year	\$0
End of Year	<u><u>\$20,505,624</u></u>

APPENDIX C
CALCULATION OF MONEY-WEIGHTED RATE OF RETURN

	Employer Contributions	Investment Fees	Benefits Paid	Plan Investments/ Net External Cash Flows	Periods Invested	Period Weight	With Investment Return
Beginning Value - Jul 1				\$0	12	1.00	\$0
July	\$0	\$0	\$0	\$0	11	0.92	\$0
August	\$0	\$0	\$0	\$0	10	0.83	\$0
September	\$18,054,901	\$0	\$0	\$18,054,901	9	0.75	\$18,692,455
October	\$0	\$0	\$0	\$0	8	0.67	\$0
November	\$0	\$0	\$0	\$0	7	0.58	\$0
December	\$1,771,702	\$0	\$0	\$1,771,702	6	0.50	\$1,813,169
January	\$0	\$0	\$0	\$0	5	0.42	\$0
February	\$0	\$0	\$0	\$0	4	0.33	\$0
March	\$0	\$0	\$0	\$0	3	0.25	\$0
April	\$0	\$0	\$0	\$0	2	0.17	\$0
May	\$0	\$0	\$0	\$0	1	0.08	\$0
June	\$0	\$0	\$0	\$0	0	0.00	\$0
Ending Value - Jun 30				\$20,505,624			\$20,505,624
Weighted Return*							4.74%

* Net of Investment Fees.

APPENDIX D
 SCHEDULE OF DEFERRED INFLOWS AND OUTFLOWS OF RESOURCES
 DUE TO ECONOMIC/DEMOGRAPHIC GAINS/LOSSES

Deferred Outflows of Resources									
Fiscal Year Ending June 30	2018	2019	2020	2021	2022	2023	2024	Total - Sum by Layer	Balance June 30
Amortization Period	5.50	4.50	5.54						
Deferred Amount	6,664,810	8,668,944	78,078,974					93,412,729	
2018	1,211,370							1,211,370	5,453,440
2019	1,211,370	1,925,628						3,136,997	10,985,388
2020	1,211,370	1,925,628	14,102,747					17,239,744	71,824,618
2021	1,211,370	1,925,628	14,102,747					17,239,744	54,584,873
2022	1,211,370	1,925,628	14,102,747					17,239,744	37,345,129
2023	607,962	966,434	14,102,747					15,677,143	21,667,986
2024	-	-	14,102,747					14,102,747	7,565,239
2025	-	-	7,565,239					7,565,239	-
2026	-	-	-					-	-
2027	-	-	-					-	-
2028	-	-	-					-	-
2029	-	-	-					-	-
2030	-	-	-					-	-
2031	-	-	-					-	-
2032	-	-	-					-	-
2033	-	-	-					-	-
Total Amount	6,664,810	8,668,944	78,078,974	-	-	-	-	93,412,729	

Deferred Inflows of Resources									
Fiscal Year Ending June 30	2018	2019	2020	2021	2022	2023	2024	Total - Sum by Layer	Balance June 30
Amortization Period	5.50	4.50	5.54						
Deferred Amount	-	-	-					-	
2018	-	-	-					-	-
2019	-	-	-					-	-
2020	-	-	-					-	-
2021	-	-	-					-	-
2022	-	-	-					-	-
2023	-	-	-					-	-
2024	-	-	-					-	-
2025	-	-	-					-	-
2026	-	-	-					-	-
2027	-	-	-					-	-
2028	-	-	-					-	-
2029	-	-	-					-	-
2030	-	-	-					-	-
2031	-	-	-					-	-
2032	-	-	-					-	-
2033	-	-	-					-	-
Total Amount	-	-	-	-	-	-	-	-	

APPENDIX D
 SCHEDULE OF DEFERRED INFLOWS AND OUTFLOWS OF RESOURCES
 DUE TO CHANGES IN ASSUMPTIONS AND INPUTS

Deferred Outflows of Resources									
Fiscal Year Ending June 30	2018	2019	2020	2021	2022	2023	2024	Total - Sum by Layer	Balance June 30
Amortization Period	5.50	4.50	5.54						
Deferred Amount	-	71,307,434	6,683,323					77,990,757	-
2018	-	-	-	-	-	-	-	-	-
2019	-	15,839,479	-	-	-	-	-	15,839,479	55,467,955
2020	-	15,839,479	1,207,152	-	-	-	-	17,046,631	45,104,647
2021	-	15,839,479	1,207,152	-	-	-	-	17,046,631	28,058,015
2022	-	15,839,479	1,207,152	-	-	-	-	17,046,631	11,011,384
2023	-	7,949,518	1,207,152	-	-	-	-	9,156,670	1,854,714
2024	-	-	1,207,152	-	-	-	-	1,207,152	647,562
2025	-	-	647,561	-	-	-	-	647,561	-
2026	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-	-	-
2031	-	-	-	-	-	-	-	-	-
2032	-	-	-	-	-	-	-	-	-
2033	-	-	-	-	-	-	-	-	-
Total Amount	-	71,307,434	6,683,323	-	-	-	-	77,990,757	

Deferred Inflows of Resources									
Fiscal Year Ending June 30	2018	2019	2020	2021	2022	2023	2024	Total - Sum by Layer	Balance June 30
Amortization Period	5.50	4.50	5.54						
Deferred Amount	-	-	-					-	-
2018	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-
2021	-	-	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-	-	-
2031	-	-	-	-	-	-	-	-	-
2032	-	-	-	-	-	-	-	-	-
2033	-	-	-	-	-	-	-	-	-
Total Amount	-	-	-	-	-	-	-	-	

APPENDIX D
 SCHEDULE OF DEFERRED INFLOWS AND OUTFLOWS OF RESOURCES
 DUE TO INVESTMENT GAINS/LOSSES

Deferred Outflows of Resources									
Fiscal Year Ending June 30	2018	2019	2020	2021	2022	2023	2024	Total - Sum by Layer	Balance June 30
Amortization Period	5.00	5.00	5.00						
Deferred Amount	-	-	-					-	-
2018	-	-	-					-	-
2019	-	-	-					-	-
2020	-	-	-					-	-
2021	-	-	-					-	-
2022	-	-	-					-	-
2023	-	-	-					-	-
2024	-	-	-					-	-
2025	-	-	-					-	-
2026	-	-	-					-	-
2027	-	-	-					-	-
2028	-	-	-					-	-
2029	-	-	-					-	-
2030	-	-	-					-	-
2031	-	-	-					-	-
2032	-	-	-					-	-
2033	-	-	-					-	-
Total Amount	-	-	-	-	-	-	-	-	-

Deferred Inflows of Resources									
Fiscal Year Ending June 30	2018	2019	2020	2021	2022	2023	2024	Total - Sum by Layer	Balance June 30
Amortization Period	5.00	5.00	5.00						
Deferred Amount	-	-	509,999					509,999	-
2018	-	-	-					-	-
2019	-	-	-					-	-
2020	-	-	102,000					102,000	407,999
2021	-	-	102,000					102,000	306,000
2022	-	-	102,000					102,000	204,000
2023	-	-	102,000					102,000	102,000
2024	-	-	102,000					102,000	-
2025	-	-	-					-	-
2026	-	-	-					-	-
2027	-	-	-					-	-
2028	-	-	-					-	-
2029	-	-	-					-	-
2030	-	-	-					-	-
2031	-	-	-					-	-
2032	-	-	-					-	-
2033	-	-	-					-	-
Total Amount	-	-	509,999	-	-	-	-	509,999	-

APPENDIX E
SUMMARY OF PARTICIPANT DATA

Active Members

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 +	
0-19	-	-	-	-	-	-	-	-	-	-
20-24	119	-	-	-	-	-	-	-	-	119
25-29	460	56	-	-	-	-	-	-	-	516
30-34	436	230	45	-	-	-	-	-	-	711
35-39	258	199	147	29	1	-	-	-	-	634
40-44	239	134	118	126	47	-	-	-	-	664
45-49	159	124	69	131	163	42	-	-	-	688
50-54	163	117	101	128	163	198	45	2	-	917
55-59	119	76	90	97	142	118	128	12	-	782
60-64	57	55	63	75	143	73	63	30	5	564
65-69	21	13	21	34	54	30	13	7	9	202
70-74	2	5	7	3	11	5	3	2	7	45
75 & over	-	2	3	1	4	2	7	2	4	25
Total	2,033	1,011	664	624	728	468	259	55	25	5,867

Retirees & Beneficiaries

Age	Count
<49	39
50-54	32
55-59	136
60-64	369
65-69	754
70-74	1,000
75-79	765
80+	1,186
Total	4,281

APPENDIX F
ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future. Actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

The required schedule of funding progress immediately following the notes to the financial statements presents multi-year trend information about whether the actuarial value of the plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

Calculations are based on the types of benefits provided under the terms of the substantive plan at the time of each valuation and on the pattern of sharing of costs between the employer and plan members to that point. The projection of benefits for financial reporting purposes does not explicitly incorporate the potential effects of legal or contractual funding limitations on the pattern of cost sharing between the employer and plan members in the future.

Actuarial calculations reflect a long-term perspective.

- Valuation Date:** June 30, 2020
- Discount Rate:** 2.45%
- Inflation Rate:** 2.50%
- Salary Scale:** 3.00%, including inflation
- Medical Plan Elections:** Current and future retirees are assumed to enroll in plans based on current plan elections.
- Participation by Retirees:** 95% of future eligible retirees are assumed to choose to participate in the medical plan at retirement. 10% are assumed to elect life insurance coverage.
- Life Insurance:** The cost of life insurance is estimated from net premiums computed using the interest and mortality assumptions disclosed in this Appendix E. The benefit is \$5,000 until age 75.

Age	Rate per \$1,000	Age	Rate per \$1,000
<30	0.061	50-54	0.236
30-34	0.069	55-59	0.416
35-39	0.081	60-64	0.488
40-44	0.111	65-69	0.863
45-49	0.155	70-74	1.429

APPENDIX F
ACTUARIAL METHODS AND ASSUMPTIONS

Claim Costs: For fully-insured plans, age-adjusted premiums and for self-insured plans, actual plan claims experience were used to develop claim costs. They were derived from the premiums/actual claims and adjusted for the risk characteristics of the group. The claims cost included administrative expenses and the cost of stop-loss insurance, and were adjusted for reinsurance payments. An illustration of the claim costs per member per month (before the application of trend factors) at quinquennial ages is as follows.

Age	Males									
	Advantage	Direct	BCBS Network Blue NE	BCBS Preferred Blue	Fallon Adv HDHP	BCBS Medex	THP Med Supp	THP Med Pref	Fallon Med Plus	Fallon Med Plus Central
30-34	\$260.03	\$214.33	\$305.52	\$342.29	\$256.53	\$161.29	\$155.80	\$138.92	\$298.00	\$228.00
35-39	\$322.41	\$265.28	\$379.27	\$425.23	\$302.40	\$198.99	\$194.75	\$173.65	\$298.00	\$228.00
40-44	\$415.97	\$341.70	\$489.89	\$549.65	\$371.22	\$255.53	\$253.18	\$225.75	\$298.00	\$228.00
45-49	\$540.73	\$443.61	\$637.39	\$715.53	\$462.97	\$330.91	\$331.08	\$295.21	\$298.00	\$228.00
50-54	\$808.95	\$662.70	\$954.52	\$1,072.19	\$660.24	\$493.00	\$498.56	\$444.54	\$298.00	\$228.00
55-59	\$1,083.41	\$886.88	\$1,279.01	\$1,437.14	\$862.09	\$658.85	\$669.94	\$597.36	\$298.00	\$228.00
60-64	\$1,463.91	\$1,197.68	\$1,728.89	\$1,943.09	\$1,141.94	\$888.78	\$907.54	\$809.21	\$298.00	\$228.00
65-69	\$502.25	\$412.18	\$591.90	\$664.37	\$434.67	\$307.66	\$307.05	\$273.78	\$298.00	\$228.00
70-74	\$562.46	\$461.36	\$663.09	\$744.44	\$478.95	\$344.05	\$344.65	\$307.31	\$298.00	\$228.00
75-79	\$599.26	\$491.42	\$706.60	\$793.36	\$506.02	\$366.28	\$367.62	\$327.79	\$298.00	\$228.00
80-84	\$619.50	\$507.95	\$730.52	\$820.27	\$520.90	\$378.51	\$380.26	\$339.06	\$298.00	\$228.00
85+	\$621.34	\$509.45	\$732.70	\$822.72	\$522.25	\$379.63	\$381.41	\$340.09	\$298.00	\$228.00

APPENDIX F
ACTUARIAL METHODS AND ASSUMPTIONS

Claim Costs:

Age	Females									
	Advantage	Direct	BCBS Network Blue NE	BCBS Preferred Blue	Fallon Adv HDHP	BCBS Medex	THP Med Supp	THP Med Pref	Fallon Med Plus	Fallon Med Plus Central
30-34	\$509.54	\$418.13	\$600.52	\$674.06	\$440.03	\$312.07	\$311.60	\$277.84	\$298.00	\$228.00
35-39	\$571.92	\$469.08	\$674.27	\$757.01	\$485.91	\$349.76	\$350.55	\$312.57	\$298.00	\$228.00
40-44	\$634.29	\$520.03	\$748.02	\$839.95	\$531.78	\$387.45	\$389.50	\$347.30	\$298.00	\$228.00
45-49	\$696.67	\$570.98	\$821.77	\$922.89	\$577.66	\$425.15	\$428.45	\$382.03	\$298.00	\$228.00
50-54	\$890.04	\$728.93	\$1,050.39	\$1,180.01	\$719.87	\$542.00	\$549.20	\$489.69	\$298.00	\$228.00
55-59	\$1,039.75	\$851.22	\$1,227.39	\$1,379.08	\$829.98	\$632.46	\$642.68	\$573.05	\$298.00	\$228.00
60-64	\$1,283.02	\$1,049.93	\$1,515.01	\$1,702.55	\$1,008.89	\$779.47	\$794.58	\$708.49	\$298.00	\$228.00
65-69	\$429.41	\$352.68	\$505.78	\$567.52	\$381.10	\$263.65	\$261.57	\$233.23	\$298.00	\$228.00
70-74	\$489.26	\$401.56	\$576.54	\$647.09	\$425.11	\$299.81	\$298.93	\$266.55	\$298.00	\$228.00
75-79	\$511.78	\$419.96	\$603.17	\$677.05	\$441.68	\$313.42	\$313.00	\$279.09	\$298.00	\$228.00
80-84	\$523.05	\$429.16	\$616.49	\$692.03	\$449.97	\$320.23	\$320.04	\$285.36	\$298.00	\$228.00
85+	\$524.93	\$430.70	\$618.71	\$694.52	\$451.35	\$321.37	\$321.21	\$286.41	\$298.00	\$228.00

Dependent Status: 55% of future retirees are assumed to have a covered spouse. Current marital status for current retirees is assumed to persist in all future years. Husbands are assumed to be two years older than wives. Due to their immateriality, children of retiree were not included in the valuation.

Claim Cost Trend: For 2021 through 2023, L&E best estimate assumptions, developed by observation and extrapolation of plan experience. Thereafter, rates developed using the baseline projection of the Society of Actuaries Long-Run Medical Cost Trend Model (i.e., "Getzen Model") and the following model input variables:

Rate of Inflation:	2.50%
Rate of Growth in Real Income/GDP per capita:	1.50%
Excess Medical Cost Growth:	1.10%
Health Share of GDP in 2029:	20.00%
Health Share of GDP Resistance Point:	25.00%
Year for Limiting Cost Growth to GDP Growth:	2075

See below for the table of the trend factors.

APPENDIX F
ACTUARIAL METHODS AND ASSUMPTIONS

Claim Cost Trend:

Year	Medical Trend	Stop Loss Trend	Expense Trend
2021	6.0%	8.0%	2.5%
2022	5.8%	7.8%	2.5%
2023	5.6%	7.6%	2.5%
2024-2025	5.5%	7.5%	2.5%
2026	5.4%	7.4%	2.5%
2027-2028	5.3%	7.3%	2.5%
2029-2050	5.2%	7.2%	2.5%
2051	5.1%	7.1%	2.5%
2052-2054	5.0%	7.0%	2.5%
2055-2059	4.9%	6.9%	2.5%
2060-2065	4.8%	6.8%	2.5%
2066	4.7%	6.7%	2.5%
2067	4.6%	6.6%	2.5%
2068-2069	4.5%	6.5%	2.5%
2070	4.4%	6.4%	2.5%
2071	4.3%	6.3%	2.5%
2072-2073	4.2%	6.2%	2.5%
2074	4.1%	6.1%	2.5%
2075+	4.0%	6.0%	2.5%

Pre-Retirement Mortality: Teachers: PubT.H-2010 Employee Mortality Table, Generational with Projection Scale MP-2019.

Public Safety Employees: PubS.H-2010 Employee Mortality Table, Generational with Projection Scale MP-2019.

General Employees: PubT.G-2010 Employee Mortality Table, Generational with Projection Scale MP-2019.

Post-Retirement Mortality: Teachers: PubT.H-2010 Healthy Retiree Mortality Table, Generational with Projection Scale MP-2019.

Public Safety Employees: PubS.H-2010 Healthy Retiree Mortality Table, Generational with Projection Scale MP-2019.

General Employees: PubT.G-2010 Healthy Retiree Mortality Table, Generational with Projection Scale MP-2019.

APPENDIX F
ACTUARIAL METHODS AND ASSUMPTIONS

Post-Disablement Mortality: Teachers: PubT.H-2010 Disabled Retiree Mortality Table, Generational with Projection Scale MP-2019.

Public Safety Employees: PubS.H-2010 Disabled Retiree Mortality Table, Generational with Projection Scale MP-2019.

General Employees: PubT.G-2010 Disabled Retiree Mortality Table, Generational with Projection Scale MP-2019.

Employee Turnover: Turnover rates are as follows (no change from prior valuation):

Sample Age	General & Public Safety Employees		Teachers					
	Employees		0-4 YOS		5-9 YOS		10+ YOS	
	Group 1	Group 4	Male	Female	Male	Female	Male	Female
20	12.00%	2.10%	13.00%	10.00%	5.50%	7.00%	1.50%	5.00%
25	8.78%	1.88%	14.00%	12.50%	5.45%	7.90%	1.50%	4.75%
30	5.55%	1.65%	15.00%	15.00%	5.40%	8.80%	1.50%	4.50%
35	3.93%	1.11%	14.15%	12.75%	5.30%	6.90%	1.60%	3.35%
40	2.31%	0.56%	13.30%	10.50%	5.20%	5.00%	1.70%	2.20%
45	1.89%	0.28%	14.75%	10.15%	6.10%	5.00%	2.00%	2.10%
50	1.46%	0.00%	16.20%	9.80%	7.00%	5.00%	2.30%	2.00%
55	0.00%	0.00%	16.20%	9.80%	7.00%	5.00%	2.30%	2.00%
60	0.00%	0.00%	16.20%	9.80%	7.00%	5.00%	2.30%	2.00%
65	0.00%	0.00%	16.20%	9.80%	7.00%	5.00%	2.30%	2.00%
70	0.00%	0.00%	16.20%	9.80%	7.00%	5.00%	2.30%	2.00%

Disablement: Disability rates are as follows (no change from prior valuation):

Sample Age	General & Public Safety Employees		Teachers
	Group 1	Group 4	
20	0.01%	0.13%	0.004%
25	0.03%	0.25%	0.005%
30	0.04%	0.38%	0.006%
35	0.07%	0.38%	0.008%
40	0.13%	0.38%	0.010%
45	0.18%	1.25%	0.030%
50	0.24%	1.56%	0.050%
55	0.30%	1.50%	0.060%
60	0.35%	1.06%	0.070%
65	0.35%	1.06%	0.070%
70	0.35%	1.06%	0.070%

APPENDIX F
ACTUARIAL METHODS AND ASSUMPTIONS

Retirement: Retirement rates are as follows (no change from prior valuation):

Sample Age	General & Public Safety		Teachers					
	Employees		0-19 YOS		20-29 YOS		30+ YOS	
	Group 1	Group 4	Male	Female	Male	Female	Male	Female
50	3.00%	5.00%	0.00%	0.00%	1.00%	1.00%	2.00%	1.50%
51	1.00%	1.00%	1.00%	0.60%	1.40%	1.40%	2.80%	2.20%
52	1.00%	1.00%	2.00%	1.20%	1.80%	1.80%	3.60%	2.90%
53	1.00%	1.00%	3.00%	1.80%	2.20%	2.20%	4.40%	3.60%
54	1.00%	1.00%	4.00%	2.40%	2.60%	2.60%	5.20%	4.30%
55	2.00%	16.00%	5.00%	3.00%	3.00%	3.00%	6.00%	5.00%
56	2.00%	9.00%	6.00%	4.40%	7.40%	6.40%	12.80%	11.00%
57	3.00%	9.00%	7.00%	5.80%	11.80%	9.80%	19.60%	17.00%
58	3.00%	12.00%	8.00%	7.20%	16.20%	13.20%	26.40%	23.00%
59	3.00%	11.00%	9.00%	8.60%	20.60%	16.60%	33.20%	29.00%
60	8.00%	24.00%	10.00%	10.00%	25.00%	20.00%	40.00%	35.00%
61	7.00%	14.00%	15.00%	11.00%	30.00%	25.00%	37.50%	35.00%
62	15.00%	20.00%	20.00%	12.00%	35.00%	30.00%	35.00%	35.00%
63	11.00%	13.00%	21.67%	14.67%	36.67%	30.00%	35.00%	35.00%
64	10.00%	19.00%	23.33%	17.33%	38.33%	30.00%	35.00%	35.00%
65	36.00%	100.00%	25.00%	20.00%	40.00%	30.00%	35.00%	35.00%
66	22.00%	100.00%	26.25%	22.50%	37.50%	30.00%	36.25%	33.75%
67	22.00%	100.00%	27.50%	25.00%	35.00%	30.00%	37.50%	32.50%
68	22.00%	100.00%	28.75%	27.50%	32.50%	30.00%	38.75%	31.25%
69	25.00%	100.00%	30.00%	30.00%	30.00%	30.00%	40.00%	30.00%
70	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

APPENDIX G

SUMMARY OF PLAN PROVISIONS

Eligibility for Retiree Benefits:	<p>Retirees are eligible to continue medical and life insurance coverage. To be eligible for coverage after retirement, employees must be covered as an active employee in the City health program at the time of retirement, and meet the following conditions:</p> <ul style="list-style-type: none"> ○ Group 1 employees hired before April 2, 2012: <ul style="list-style-type: none"> ▪ Retire after attaining age 55 with 10 or more years of service, or ▪ Retire at any age with 20 or more years of service ○ Group 1 employees hired after April 1, 2012: <ul style="list-style-type: none"> ▪ Retire after attaining age 60 with 10 or more years of service ○ Group 4 employees hired before April 2, 2012: <ul style="list-style-type: none"> ▪ Retire after attaining age 55, or ▪ Retire at any age with 20 or more years of service ○ Group 4 employees hired after April 1, 2012: <ul style="list-style-type: none"> ▪ Retire after attaining age 55
Eligibility for Ordinary Disability Benefits:	Any member who is unable to perform his or her duties due to a non-occupational disability and has ten or more years of creditable service.
Eligibility for Accidental Disability Benefits:	Any member who is unable to perform his or her duties due to a job-related disability.
Dependent Eligibility:	Spouses and children of the retiree are eligible for the plan. Benefits continue upon the death of the retiree.
Medical Benefits:	<p>Retirees can continue in the medical plan and can choose between the following plans:</p> <ul style="list-style-type: none"> ○ Non-Medicare Plans (Self-Insured Plans) <ul style="list-style-type: none"> ▪ City of Worcester Advantage ▪ City of Worcester Direct ▪ BCBS Network Blue NE ▪ BCBS Preferred Blue (Outside NE) ▪ Fallon Advantaged HDHP (City also contributes half the deductible to the retiree's HSA account) ○ Medicare Plans (Fully-Insured Plans) <ul style="list-style-type: none"> ▪ BCBS Medex II w/ PDP * ▪ THP Medicare Supplement w/ PDP * ▪ THP Medicare Preferred HMO ▪ Fallon Medicare Plus ▪ Fallon Medicare Plus Central <p>* These plans are self-insured for the medical benefits and fully insured for the Rx benefits.</p>

APPENDIX G

SUMMARY OF PLAN PROVISIONS

Life Insurance Benefits: The retirees' life insurance benefit is \$5,000 until age 75.

Retiree Contributions: Monthly contributions for retirees (reflecting 25% of total medical premium rates):

Plan	Individual	Family
City of Worcester Advantage	\$189.53	\$470.55
City of Worcester Direct	\$153.46	\$385.51
BCBS Network Blue NE	\$225.42	\$582.78
BCBS Preferred Blue	\$254.43	\$657.88
Fallon Advantage HDHP	\$137.45	\$341.25
BCBS Medex	\$80.50	\$161.00
THP Medicare Supplement	\$82.00	\$164.00
THP Medicare Preferred	\$74.50	\$149.00
Fallon Medicare Plus	\$74.50	\$149.00
Fallon Medicare Plus Central	\$57.00	\$114.00

APPENDIX H

GLOSSARY OF TERMS

Actuarial Present Value of Future Benefits (PVB):	The value of all benefits expected to be paid by the employer, net of expected retiree contributions, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment.
Actuarial Accrued Liability (AAL):	The portion of the Actuarial Present Value of future benefits which is allocated to all periods prior to a valuation year, as determined by a particular Actuarial Cost Method.
Actuarial Cost Method:	A procedure for determining the Actuarial Present Value of benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost (NC) and an Actuarial Accrued Liability (AAL)
Entry Age Normal Actuarial Cost Method:	A method under which the Actuarial Present Value (PVB) of the Projected Benefits of each individual included in the Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit age(s), required under GASB 75
Net OPEB Liability:	The positive excess of the Total OPEB Liability over the assets on the measurement date.
OPEB Expense:	The amount of expense recognized by the employer during the fiscal year. Equals the change to the Net OPEB liability during the measurement period, with adjustment for deferral of experience, change in assumptions and investment gains or losses.
Pay-as-You-Go:	A method of financing an OPEB plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.
Service Cost:	The portion of the Actuarial Present Value of future benefits which is allocated to a valuation year by the Actuarial Cost Method. Also referred to as Normal Cost.
Total OPEB Liability (TOL):	The Actuarial Accrued Liability on the measurement date.

APPENDIX I

ASOP 41 DISCLOSURES

The Actuarial Standards Board (ASB), vested by the U.S.-based actuarial organizations¹, promulgates actuarial standards of practice (ASOPs) for use by actuaries when providing professional services in the United States. Each of these organizations requires its members, through its Code of Professional Conduct², to observe the ASOPs of the ASB when practicing in the United States.

The ASOPs are not narrowly prescriptive and neither dictate a single approach nor mandate a particular outcome. ASOPs are intended to provide actuaries with a framework for performing professional assignments and to offer guidance on relevant issues, recommended practices, documentation, and disclosure. Each ASOP articulates a process of analysis, documentation, and disclosure that, in the ASB's judgment, constitutes appropriate practice within the scope and purpose of the ASOP.

ASOP 41 provides guidance to actuaries with respect to actuarial communications and requires certain disclosures which are contained in this Appendix.

Identification of the Responsible Actuary

The responsible actuary is Brian C. Stentz, ASA, MAAA, Assistant Vice President of Lewis & Ellis, Inc. This actuary is available to provide supplementary information and explanation.

Identification of Actuarial Documents

The date of this document is November 13, 2020, its subject is the City of Worcester's GASB 75 OPEB liabilities, and the document version identification is Version #2 (11/13/2020 3:22 PM).

Disclosures in Actuarial Reports

- The contents of this report are intended for the use of the officers, employees, and elected officials of the City and the City's appointed auditor. The City may distribute this report to those parties that have a legal right to require the City to provide it, in which case it will be provided in its entirety including all assumptions, caveats, and limitations. In addition, we request that the City notify Lewis & Ellis, Inc. to whom it was distributed.
- The purpose of this engagement was to provide the City with analysis of the GASB 75 OPEB liabilities.
- The responsible actuary identified above is qualified as specified in the *Qualification Standards* of the American Academy of Actuaries.
- Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future. Actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

¹ The American Academy of Actuaries (Academy), the American Society of Pension Professionals and Actuaries, the Casualty Actuarial Society, the Conference of Consulting Actuaries, and the Society of Actuaries.

² These organizations adopted identical *Codes of Professional Conduct* effective January 1, 2001

APPENDIX I

ASOP 41 DISCLOSURES

- Actuarial computations under GASB 75 are for purposes of fulfilling financial accounting requirements of the City. Determinations for purposes other than meeting these financial accounting requirements may be significantly different from the results contained in this report. These communications should not be relied upon for any other purpose.
- The City of Worcester has agreed to pay Lewis & Ellis, Inc. a fee for preparing this report. Other than with regard to that contract, we are financially and organizationally independent from the City and any entity or individual related to the City. There is nothing in our relationship with the City that would impair or seem to impair the objectivity of our work.
- The City provided the employee/retiree data, premium rates and other information used to prepare our report. We have reviewed the data for reasonableness but have not audited it. To the extent that there are material inaccuracies in the data, our results may be accordingly affected.
- The date through which data or other information has been considered in developing the findings included in this report is June 30, 2020.
- We are not aware of any subsequent events that may have a material effect on the actuarial findings.
- The various documents comprising the actuarial report are contained within the document to which these disclosures are attached.

Actuarial Findings

The actuarial findings of the report can be found in the report to which these disclosures are attached.

Methods, Procedures, Assumptions, and Data

The methods, procedures, assumptions and data used by the actuary can be found in the report to which these disclosures are attached.

Assumptions or Methods Prescribed by Law

While not legally binding, our determinations were made in accordance with our understanding of Statement No. 75 of the Governmental Accounting Standards Board. Actuarial computations under GASB 75 are for purposes of fulfilling employer accounting requirements. Determinations for purposes other than meeting such requirements may be significantly different from these results. Accordingly, additional determinations may be needed for other purposes.

Responsibility for Assumptions and Methods

The actuary does not disclaim responsibility for any material assumption(s) or method(s).

Deviation from the Guidance of an ASOP

The actuary has not deviated materially from the guidance set forth in an applicable ASOP.