

GASB Statements No. 74 and 75
Report for Fiscal Year 2019

Town of Andover

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TABLE OF CONTENTS

	PAGE
Actuarial Certification	
SECTION I – ACTUARIAL RESULTS.....	1
Summary of Results.....	1
GASB Statement No. 74 – Net OPEB Liability.....	3
Changes from Prior Report	4
Distribution of the Member Population	4
Development of Exhibits.....	5
Discount Sensitivity.....	6
Trend Sensitivity.....	6
Long-Term Expected Real Rate of Return.....	7
Schedule of Changes in the Town of Andover’s Net OPEB Liability and Related Ratios – GASB 74.....	8
Schedule of Plan Contributions - GASB 74.....	9
Funding Schedule.....	10
GASB Statement No. 74, Paragraph 34 b. (3) - Money-Weighted Rate of Return.....	11
Changes in the Net OPEB Liability [GASB 75, Paragraph 55].....	12
Projection of the Net OPEB Liability.....	13
OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB [GASB 75, Paragraph 56 h.].....	14
Components of the Town of Andover’s OPEB Expense.....	15
Increase / (Decrease) in OPEB Expense Arising from the Recognition of Gains and Losses – GASB 75 ...	17
Deferred Outflows and Deferred Inflows of Resources Arising from Gains and Losses.....	18
Results by Employer.....	19
SECTION II - ACTUARIAL VALUATION DETAILS.....	20
Population Data	20
SECTION III – APPENDICES.....	23
Actuarial Methods.....	23
Actuarial Assumptions	23
Principal Plan Provisions Recognized in Valuation.....	31
Glossary.....	31

November 14, 2019

Ms. Donna Walsh
Finance Director
Town of Andover
36 Bartlet Street
Andover, MA 01810

Dear Ms. Walsh:

For the purpose of satisfying the requirements of the Government Accounting Standards Board (GASB) Statements No. 74 and No. 75, Stone Consulting, Inc. has prepared a set of illustrative tables and other Required Supplementary Information (RSI) based on the July 1, 2017 actuarial valuation of the Town of Andover Other Post-employment Benefits (OPEB) plan performed by Stone Consulting, Inc. The valuation and this report were prepared using generally accepted actuarial principles and practices and meet the parameters set by the Governmental Accounting Standards Board (GASB).

For GASB 74, the results are as of a valuation date of July 1, 2017, and an OPEB plan fiscal year-end of June 30, 2019. For GASB 75, the results are as of a valuation date of July 1, 2017, a measurement date of June 30, 2019, and a reporting date of June 30, 2019. To the best of our knowledge, this report is complete and accurate, and the assumptions used represent our best estimate of anticipated experience of the system unless required by statute or by the GASB standard.

We are pleased to present these exhibits. If the Town of Andover or the Town of Andover OPEB Trust has any questions on the content of this report, we would be glad to respond. Please note that this report is meant to be used in its entirety. Use of excerpts of this report may result in a misleading or inaccurate understanding of the results.

Stone Consulting, Inc. is completely independent of the Town of Andover or the Town of Andover OPEB Trust, including any of their officers and key personnel. Neither we or anyone else closely associated with us has any relationship with the Town of Andover or the Town of Andover OPEB Trust which would impair our independence, other than this or related assignments.

The undersigned are consultants for Stone Consulting, Inc. and members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,
STONE CONSULTING, INC.



Lawrence B. Stone
Member, American Academy of Actuaries



Kevin K. Gabriel, FSA
Member, American Academy of Actuaries

SECTION I – ACTUARIAL RESULTS

Summary of Results

The most recent actuarial OPEB valuation performed by Stone Consulting for the Town of Andover was on July 1, 2017. Participant census data as of July 1, 2017 was supplied by the Town of Andover and liabilities were first determined as of that date. Update procedures were used to roll the Total OPEB Liability from the valuation date to June 30, 2019, the OPEB plan's fiscal year-end (GASB 74) and the measurement date (GASB 75).

The key results as of June 30, 2019 were:

Total OPEB Liability (TOL)	\$ 140,266,084
Plan Fiduciary Net Position	<u>12,492,284</u>
Net OPEB Liability	\$ 127,773,800

- "Total OPEB Liability" is the total liability for all benefits as of the reporting date and is based on a projection of future liabilities based on the Town of Andover's actuarial assumptions and the current amount of service of the members.
- "Plan Fiduciary Net Position" is the amount of assets available and in the OPEB trust as of the end of the 2019 Fiscal Year, 06/30/2019.
- "Net OPEB Liability" is the difference between the above two figures and is the amount of the future liability not funded as of the reporting date.

These amounts are calculated by using what is referred to as the "Entry Age Normal" actuarial cost method, which is the method required by GASB. Note, also, that these figures are intended for financial reporting and are not intended to be used to determine funding of the OPEB plan.

Normal Cost

Normal Cost for FY 2019	\$ 4,451,354
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The "Normal" (or "Service") Cost is the cost of benefits accruing in each year. This figure is based on the prior year interest rate of 5.36%, while the end-of-year TOL shown above is based on a 6.00% interest rate and the other assumptions used in the valuation using the Entry Age Normal Cost Method.

These results use a fully funded rate of 6.00%. The 6.00% is based on an assessment of the Town of Andover's investment strategy and should be thought of as the expected net long-term rate of return on the Town of Andover's invested assets. The rate is determined based on a projection of future cash flows and assumes that Town of Andover makes additional contributions of 0.06% of revenue, increasing at 2.5% per year, plus savings from OPEB reforms and the Actuarially Required Contributions for water and sewer. Should the future contribution amount schedule change or the target asset allocation change, the valuation discount rate could change.

Funding

Valuations performed for GASB74/75 purposes are not intended to be funding valuations. Rather, they are intended for use by accountants in developing financial statements. The rules set forth by GASB are designed to ensure that all entities report on a comparable basis. Development of a funding schedule requires additional assumptions and a separate actuarial valuation. Should an entity such as the Town of Andover wish to develop a plan to fund its liability on an actuarial basis in total or in part, it is free to choose:

- The actuarial cost method used in determining the liability (EAN for Water and Sewer)
- The length and amortization of the funding schedule, including establishment of various bases (29-year closed from 7/1/2019, increasing at 3% per year for Water and Sewer)
- Actuarial assumptions, such as the discount rate (this rate would not need to tie into a cash flow analysis such as in Statements 74 and 75)

In general, the funding amount is an amount to cover the Normal Cost for the year plus an amount to amortize the unfunded liability over a period of time. Using the Entry Age Normal Method and a 6.00% discount rate, the Normal Cost for FY 2020, including interest to the expected contribution date of December 31, would be \$3,559,757.

The amortization amount, using the same actuarial cost method and discount rate, would be the amount required to pay off the unfunded liability of \$127,773,800 over a given period of time and using a particular pattern (level, increasing, etc.). The Town of Andover has chosen to contribute, on an annual basis, .06% of revenue increasing at 2.5% per year plus savings from OPEB reforms and the Actuarially Required Contributions for the Water and Sewer Enterprise Funds. This plan became effective as of 7/1/16.

Use of a different cost method, discount rate, or other assumptions would give a different number for the Normal Cost, the unfunded OPEB Liability, and amortization amount.

The Town of Andover has asked Stone Consulting to prepare a funding schedule, and it is included on page 10 of this report. Breakdowns by Water and Sewer are included on the Schedule of Plan Contributions page.

Sensitivity of Current Valuation to Funding Level

To give the Town of Andover some idea of the sensitivity of the discount rate employed in the GASB valuation to the assumed funding level, Stone Consulting has performed depletion analysis under various funding scenarios. If the Town of Andover were to cease making contributions to the OPEB trust, the discount rate employed would be lowered by 228 basis points from 6.00% to 3.72%. Lower returns than 6.00% per annum will increase the number of years the Town of Andover needs to contribute in order to use the fully funded discount rate for GASB 74 and 75. We have not calculated liabilities at the 3.72% rate; however, as required by GASB 74 and shown on page 6 of this report, a 5.00% discount rate increases the Net OPEB Liability from \$127,773,800 to \$147,792,236.

The sensitivity calculations shown of page 6 assume the same assumptions and methods as used in the original valuation with only a change in the discount rate. They also assume no change in the Town of Andover investment strategy. A change in such strategy would also impact the discount rate determined.

GASB Statement No. 74 – Net OPEB Liability

The components of the Net OPEB Liability for the Town of Andover as of an OPEB plan fiscal year-end of June 30, 2019 were as follows:

	FY 2019	FY 2018
Total OPEB Liability		
Service Cost	\$ 4,451,354	\$ 4,186,467
Interest	8,448,402	7,514,930
Changes in Benefit Terms	(10,540,194)	0
Differences between expected and actual experience	0	10,865,917
Changes of assumptions	(12,768,804)	1,599,726
Benefit payments	(4,985,511)	(4,923,643)
Net change in Total OPEB liability	\$ (15,394,753)	\$ 19,243,396
Total OPEB Liability – beginning (5.36%)	<u>155,660,837</u>	<u>136,417,441</u>
Total OPEB Liability – ending (6.00%) (a)	\$ 140,266,084	\$ 155,660,837
Plan Fiduciary Net Position		
Contributions – employer*	\$ 6,804,459	\$ 6,572,364
Net Investment Income	720,255	636,085
Benefit payments	(4,985,511)	(4,923,643)
Administrative expenses	<u>0</u>	<u>0</u>
Net change in Plan Fiduciary Net Position	\$ 2,539,203	\$ 2,284,806
Plan Fiduciary Net Position – beginning	<u>9,953,081</u>	<u>7,668,276</u>
Plan Fiduciary Net Position – ending (b)	\$ 12,492,284	\$ 9,953,081
Net OPEB Liability – ending (a) – (b)	\$ 127,773,800	\$ 145,707,756
Plan fiduciary net position as a percentage of total OPEB liability	8.9%	6.4%

*Employer contribution of \$4,985,511 of Pay-As-You-Go and a \$1,818,948 cash contribution, including receivables of \$7,060 as of June 30, 2019 for FY2019.

Update procedures were used to roll the Total OPEB Liability from the valuation date (07/01/2017) to the beginning of the plan's fiscal year (07/01/2018) and to the OPEB plan's fiscal year-end (06/30/2019). [GASB Statement No. 74, Paragraph 35(c)]

Note: Charts in this report may not total due to rounding.

Changes from Prior Report

Changes in Benefit Terms: The Town of Andover instituted a change in contribution split for commercial retirees in Fiscal 2017 (60% employer/40% retiree for FY17 and 55% employer/45% retiree for FY18). This was overturned by the court in April 2019, and the retirees will be reimbursed the amount over-contributed for FY17 and FY18 plus interest. The Fiscal 2020 split of 50.01% for employer/49.99% retirees will continue going forward. Total OPEB Liability (TOL) as of July 1, 2018 reflects the 55%/45% split and has not been adjusted to reflect the outcome of the court case. TOL as of June 30, 2019 reflects the 50.01%/49.99% split. This change in contribution split changed liabilities by \$(10,540,194).

The amount to be reimbursed to the retirees mentioned above was over \$600,000. The Town of Andover has decided that this amount is immaterial in the context of the OPEB valuation and the Town of Andover's financial statement. Therefore, we have not considered it in this report and assumed that it will be reflected elsewhere in the Town's financial statement.

Changes of assumptions: The assumption change of \$(12,768,804) is due to the change in discount rate from 5.36% to 6.00%.

Distribution of the Member Population

Town of Andover OPEB Trust – Membership as of June 30, 2019

	2019
Retired, Disabled, Survivors and Beneficiaries receiving benefits	759
Inactive plan members entitled to but not yet receiving benefit payments *	140
Active plan members	1,357
Total	2,256

These numbers are based on the data supplied by the Town of Andover as of June 30, 2019. Note that these membership numbers count a retiree and a spouse as only one member, even if they have separate policies.

* The number of inactive plan members was not available from the MTRS as of June 30, 2019. The inactive count shown here represents inactives for the Town of Andover only. MTRS inactive data is unavailable, but we believe it is immaterial.

Development of Exhibits

DISCOUNT RATE

Total OPEB Liability as of the plan’s fiscal year-end (June 30, 2019) is calculated using a discount rate assumption of 6.00%. To calculate this rate, Stone Consulting has conducted a cash flow study of the Trust assets and liabilities. Using a rate consistent with the Town of Andover’s investment strategy (6.00%), we determine the length of time for which the assets would support OPEB benefit payments for current and projected new employees. For the Town of Andover, there is no depletion point. The present value of OPEB benefits is then calculated using a rate consistent with the Town of Andover’s investment strategy (6.00%) before the depletion point and a rate based on 20-year Municipal General Obligation bonds as shown in the Bond Buyer 20 Bond Index (3.50% as of June, 2019) after the depletion point. Finally, a single rate producing an equivalent present value of benefits is calculated. This is the 6.00% rate we have used for the Town of Andover. One of the objectives of the provisions introduced by GASB 74 and 75 is to examine how benefit payments and plan contributions and investment earnings interact on a cash flow basis. GASB 74 and 75 require that these amounts be calculated with the Fair Value of Assets and using the Entry Age Normal cost method.

Projected contributions for each year are the sum of cash payments and the pay-as-you-go funding of the retirees. Consistent with the requirements of GASB Statement No. 74 and 75, we have first assigned the contribution to the cost of projected new entrants prior to allocating the remainder to cover existing actives and inactive employees.

As of June 30, 2019, the Town of Andover’s Fiduciary Net Position was projected to be available to make all future benefit payments of current active and inactive employees per the methodology contained in GASB 75. Thus, the long-term expected rate of return on investments was applied for all benefit periods when calculating the Net OPEB Liability.

The long-term rate of return which was used to develop the discount rate of 6.00% includes the effect of inflation (not subtracted out as in the real rates of return). It is based on a combination of expected rates of return on the mix of current and expected investments over a long-term period. These expectations are based on current market conditions, historical experience and future expectations. It assumes a rebalancing of assets on an ongoing basis as well as a constant monitoring of asset allocation and manager performance.

GASB Statement No. 74, Paragraph 34(b)(3) requires that an annual money-weighted rate of return be developed using the market value of assets at the beginning of the Plan Year, along with monthly cash flows. This has been done for the 2019 Fiscal Year, and is shown below:

Fiscal Year	2019
Money-Weighted Rate of Return	6.48%

For detailed calculations of this amount, see the schedule on page 11.

Discount Sensitivity

The following presents the Town of Andover’s Net OPEB Liability calculated at the valuation discount rate of 6.00%, as well as at discount rates one percent higher (7.00%) and one percent lower (5.00%).

OPEB Plan Fiscal Year-End	1% Decrease (5.00%)	Current Discount Rate (6.00%)	1% Increase (7.00%)
06/30/2019	\$ 147,792,236	\$ 127,773,800	\$ 111,469,929

Trend Sensitivity

For postretirement medical plans in particular, the calculated actuarial values are highly sensitive to the assumed rate of health care cost trend. This is due to the compounding effect of the annual trend rates assumed for medical costs, as opposed to pension valuations where benefit levels typically remain fixed.

The following table illustrates the effect on our valuation results of a 1% increase or decrease in the assumed rates of health care cost trend in each year.

OPEB Plan Fiscal Year-End	1% Decrease	Base Trend *	1% Increase
06/30/2019	\$ 107,146,822	\$ 127,773,800	\$ 153,835,977

* Base trend rates are found in Actuarial Assumptions and Methods, page 29.

Long-Term Expected Real Rate of Return

The long-term expected real rate of return reflects the expected rate of return on plan assets adjusted for the expected rate of inflation. Note that the discount rate includes the effect of inflation. The long-term real rate of return removes the effect of inflation on the return amounts. It is a long-term assumption and is meant to reflect a best estimate of future experience, based on the expected asset allocation. The allocation percentages are based on information provided by the Town of Andover and the Plan’s asset consultant, ICMA-RC. The real rates of return below are based on long-term real return estimates provided by ICMA-RC.

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (Geometric)
U.S. Short Duration Government/Credit	10.50%	0.88%
U.S. Aggregate Bonds	15.55%	0.98%
U.S. TIPS	3.40%	0.69%
U.S. High Yield Bonds	5.00%	2.74%
Multi-Strategy	7.00%	2.62%
U.S. Large Cap Equity	42.12%	3.72%
U.S. Mid Cap Equity	2.14%	5.09%
U.S. Small Cap Equity	0.83%	3.72%
International Equity	11.04%	3.23%
Emerging Markets Equity	2.42%	6.66%

Schedule of Changes in the Town of Andover's Net OPEB Liability and Related Ratios – GASB 74

(Amounts in Thousands)

Fiscal Year *	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
TOTAL OPEB LIABILITY										
Service cost	4,451	4,186	5,605							
Interest	8,448	7,515	9,299							
Change of benefit terms	(10,540)	0	(42,080)							
Differences between expected and actual experience	0	10,866	-							
Change of assumptions	(12,769)	1,600	(6,595)							
Benefit payments, including refunds of employee contributions	(4,986)	(4,924)	(4,648)							
Net change in total OPEB liability	(15,395)	19,243	(38,418)							
Total OPEB liability - beginning	155,661	136,417	174,836							
Total OPEB liability - ending	140,266	155,661	136,417							
PLAN FIDUCIARY NET POSITION										
Contributions - employer	6,804	6,572	6,150							
Contributions - employee	0	0	0							
Net Investment Income	720	636	731							
Benefit payments, including refunds of employee contributions	(4,986)	(4,924)	(4,648)							
Administrative expense	0	0	0							
Other	0	0	0							
Net change in plan fiduciary net position	2,539	2,285	2,233							
Plan fiduciary net position - beginning	9,953	7,668	5,435							
Plan fiduciary net position - end	12,492	9,953	7,668							
Town of Andover Net OPEB Liability – ending	127,774	145,708	128,749							
Plan fiduciary net position as a percentage of the total OPEB liability	8.9%	6.4%	5.6%							
Money-Weighted Rate of Return	6.48%	7.21%	NA							

Schedule of Plan Contributions - GASB 74

Plan Year-End of June 30,	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Actuarially Determined Contribution	\$10,148	\$9,968	\$9,438							
Contributions in relation to the Actuarially Determined Contribution	(6,804)	(6,572)	(6,150)							
Contribution deficiency / (excess)	\$3,344	\$3,396	\$3,283							

The Town of Andover's plan to fund OPEB is to contribute, on an annual basis, .06% of revenue increasing at 2.5% per year plus savings from OPEB reforms and the Actuarially Determined Contributions for water and sewer. This plan became effective as of 7/1/16.

Fiscal Year 2020	Actuarially Determined Contribution	Premiums + Implicit Subsidy (PAYGO) ¹	Cash Contribution
General Fund	\$ 9,936,956	\$ 5,234,233	\$ 4,702,723
Water	159,502	93,252	66,250
Sewer	<u>52,007</u>	<u>28,213</u>	<u>23,794</u>
Total	\$ 10,148,465	\$ 5,355,698	\$ 4,792,767

¹ Assumes Enterprise Funds are paying both active and retiree premiums for members.

Funding Schedule

EAN Funding Schedule; 29 Years from 07/01/2019 (FY 2020) at 6.00%

Fiscal Year	Normal Cost ¹	Amortization ²	Actuarially Determined Contribution	Year-End UAAL	Premiums + Implicit Subsidy ³	Cash Contribution
2020	\$ 3,559,757	\$ 6,588,708	\$10,148,465	\$128,656,738	\$5,355,698	\$ 4,792,767
2021	\$3,773,343	\$6,786,369	\$10,559,712	\$129,389,148	\$5,760,589	\$4,799,122
2022	\$3,999,743	\$6,989,960	\$10,989,703	\$129,955,893	\$6,141,482	\$4,848,221
2023	\$4,239,728	\$7,199,659	\$11,439,387	\$130,340,745	\$7,066,839	\$4,372,547
2024	\$4,494,112	\$7,415,648	\$11,909,760	\$130,526,312	\$7,533,258	\$4,376,502
2025	\$4,763,758	\$7,638,118	\$12,401,876	\$130,493,967	\$8,092,496	\$4,309,381
2026	\$5,049,584	\$7,867,261	\$12,916,845	\$130,223,764	\$8,607,593	\$4,309,253
2027	\$5,352,559	\$8,103,279	\$13,455,838	\$129,694,353	\$9,098,004	\$4,357,834
2028	\$5,673,713	\$8,346,378	\$14,020,090	\$128,882,892	\$9,440,712	\$4,579,378
2029	\$6,014,135	\$8,596,769	\$14,610,904	\$127,764,951	\$9,959,690	\$4,651,214
2030	\$6,374,983	\$8,854,672	\$15,229,655	\$126,314,405	\$10,341,804	\$4,887,852
2031	\$6,757,482	\$9,120,312	\$15,877,795	\$124,503,333	\$10,788,438	\$5,089,356
2032	\$7,162,931	\$9,393,922	\$16,556,853	\$122,301,899	\$11,230,361	\$5,326,492
2033	\$7,592,707	\$9,675,739	\$17,268,446	\$119,678,230	\$11,607,667	\$5,660,779
2034	\$8,048,270	\$9,966,011	\$18,014,281	\$116,598,287	\$11,958,820	\$6,055,461
2035	\$8,531,166	\$10,264,992	\$18,796,157	\$113,025,728	\$12,251,624	\$6,544,533
2036	\$9,043,036	\$10,572,941	\$19,615,977	\$108,921,763	\$12,432,091	\$7,183,886
2037	\$9,585,618	\$10,890,130	\$20,475,748	\$104,244,994	\$12,719,523	\$7,756,225
2038	\$10,160,755	\$11,216,834	\$21,377,589	\$98,951,256	\$13,110,304	\$8,267,285
2039	\$10,770,400	\$11,553,339	\$22,323,739	\$92,993,442	\$13,214,754	\$9,108,985
2040	\$11,416,624	\$11,899,939	\$23,316,563	\$86,321,311	\$13,472,487	\$9,844,076
2041	\$12,101,622	\$12,256,937	\$24,358,559	\$78,881,301	\$13,697,537	\$10,661,021
2042	\$12,827,719	\$12,624,645	\$25,452,364	\$70,616,312	\$13,951,196	\$11,501,169
2043	\$13,597,382	\$13,003,384	\$26,600,767	\$61,465,487	\$14,078,355	\$12,522,411
2044	\$14,413,225	\$13,393,486	\$27,806,711	\$51,363,978	\$14,084,099	\$13,722,612
2045	\$15,278,019	\$13,795,290	\$29,073,309	\$40,242,696	\$14,048,510	\$15,024,799
2046	\$16,194,700	\$14,209,149	\$30,403,849	\$28,028,044	\$14,229,806	\$16,174,043
2047	\$17,166,382	\$14,635,424	\$31,801,805	\$14,641,635	\$14,282,135	\$17,519,671
2048	\$18,196,365	\$15,074,486	\$33,270,851	\$0	\$14,273,212	\$18,997,639

Notes:

Assumes middle-of-the-fiscal-year payment.

¹ Assumes 6.00% annual increase in normal cost and a static group of actives.

² Assumes 3.00% annual increase in amortization payment.

³ The Premiums + Implicit subsidy, or Pay-As-You-Go (PAYGO), amount is for the current group of retirees and future retirees and is shown for the fiscal year. It does not include any future hires. Because premiums are paid outside the OPEB trust, the PAYGO is considered to be a contribution to the plan and reduces the cash contribution. The retiree amount is expected to grow as new employees retire or become disabled.

GASB Statement No. 74, Paragraph 34 b. (3) - Money-Weighted Rate of Return

NET EXTERNAL CASH FLOW					
	Beginning of month	Middle of Month	End of Month	Periods Invested**	Cash Flow with Return
Starting Value* (7/1/2018)	\$9,953,081.14			12	\$ 10,598,384.63
<u>Cash Flows:</u>					
July				11	0.00
August				10	0.00
September				9	0.00
October				8	0.00
November				7	0.00
December	1,818,948.22			6	1,886,839.30
January				5	0.00
February				4	0.00
March				3	0.00
April				2	0.00
May				1	0.00
June				0	<u>0.00</u>
Ending Value* (6/30/2019)	\$12,485,223.93			Sum:	\$ 12,485,223.93

* Value shown does not include any payables or receivables, except those related to investments.
 End of year includes receivables of \$7,060.22.

** Middle of period cash flows are given an additional half period of interest, and beginning of period cash flows are given an additional full period.

Return Rate:	6.48%
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Changes in the Net OPEB Liability [GASB 75, Paragraph 55]

	Total OPEB Liability at 5.36% (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (a) - (b)
Balances at beginning of Measurement Period (07/01/2018)	\$ 155,660,837	\$ 9,953,081	\$ 145,707,756
Changes for the Year:			
Service Cost	4,451,354		4,451,354
Interest	8,448,402		8,448,402
Change in benefit terms	(10,540,194)		(10,540,194)
Differences between expected and actual experience	0		0
Change in assumptions	(12,768,804)		(12,768,804)
Contributions - employer		6,804,459	(6,804,459)
Contributions - employee		0	0
Net investment income		720,255	(720,255)
Benefit payments, including refunds of employee contributions	(4,985,511)	(4,985,511)	0
Administrative expense		0	0
Other changes		0	0
Net Changes	<u>(15,394,753)</u>	<u>2,539,203</u>	<u>(17,933,956)</u>
Balances at end of Measurement Period (06/30/2019)	\$ 140,266,084	\$ 12,492,284	\$ 127,773,800

NOTE: Amounts shown in this report may not total due to rounding

Update procedures were used to roll the Total OPEB Liability from the valuation date (07/01/2017) to the beginning of the measurement period (07/01/2018) and to the measurement date (06/30/2019). [GASB Statement No. 75, Paragraph 28]

Plan Fiduciary Net Position as a percentage of Net OPEB Liability	8.9%
Covered Employee Payroll *	\$99,671,199
Net OPEB Liability as a percentage of payroll	128.2%

* Covered Employee Payroll is based on information from MUNIS and reflects actual wages paid for all employees who are eligible for health insurance.

Projection of the Net OPEB Liability

TOTAL OPEB LIABILITY (TOL)

The Total OPEB Liability at the beginning of the measurement period (07/01/2018) is equal to the Actuarial Accrued Liability (AAL) rolled from 07/01/2017. Any differences between the projected amount and the actual value that are not the result of changes in assumptions or plan provisions are recognized as “Differences between expected and actual experience.” GASB Statement No. 75, Paragraph 42 requires that the AAL be calculated under the Entry Age Normal Cost Method. The components of the AAL (calculated as of 07/01/2017 at a discount rate of 5.36%) are as follows:

Actives	\$ 57,048,872
Retirees, Disabled, Beneficiaries, and Vested terminated	<u>70,294,978</u>
Total	\$ 127,343,850

The TOL is projected to the end of the measurement period (06/30/2019) by adding the changes resulting from experience, assumption changes, and changes to plan provisions. Interest is given to the TOL, Service Cost, and paid benefits, and added to the total, less the projected benefit payments for the year. Changes due to expected and actual gains on plan assets will be recognized over a five-year period [GASB Statement No. 75, Paragraph 43b], and liabilities arising from changes in plan structure or assumptions will be spread over the average of the expected remaining service lives of all employees that are provided with OPEB through the OPEB plan (active employees and inactive employees) [GASB Statement No. 75, Paragraph 43a]. Changes in Plan provisions are recognized immediately.

PLAN FIDUCIARY NET POSITION (FNP)

GASB Statement No. 75 requires that the Fair Value of Assets be used for the Fiduciary Net Position. We have used the Market Value of Assets, adjusted for payables and receivables. Net investment income is the portion of the change in assets during the measurement period that is not attributed to employee/employer contributions, benefits payments, administrative expense, or other changes.

The projected Net OPEB Liability (NOL) for the end of the year is the portion of the TOL not covered by the FNP.

**OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB
 [GASB 75, Paragraph 56 h.]**

	Deferred Outflows Of Resources	Deferred Inflows Of Resources
Differences between expected and actual experience	\$ 6,957,314	\$ 0
Changes of assumptions	1,024,285	(10,472,257)
Net difference between projected and actual earnings on plan investments	<u>0</u>	<u>(214,869)</u>
Total	\$ 7,981,599	\$ (10,687,125)

Year Ending June 30, *	Recognition
2020	\$ (116,947)
2020	(116,947)
2021	(116,947)
2022	(1,068,620)
2023	(1,286,067)
Thereafter	0

*The years are based on measurement date of June 30, 2019. For GASB 75, the reporting date is the same as the measurement date, so the year ending June 30, 2020 is Fiscal 2020.

Components of the Town of Andover's OPEB Expense

Components of the Town of Andover's OPEB Expense for the Fiscal Year ended June 30, 2019 [GASB 75, Paragraph 43] are shown below.

NOTE*	Description	Fiscal 2019
A	Service Cost at 5.36%	\$ 4,451,354
A, B	Interest at 5.36%	8,448,402
C	Differences between Expected and Actual Experience	1,954,302
D	Changes of Assumptions	(2,008,827)
D	Changes to Benefit Provisions	(10,540,194)
A	Employee Contributions	0
E	Projected Earnings on Plan Investments	(582,233)
F	Differences between Projected and Actual Earnings on Plan Investments	(62,421)
A	Administrative Expense	0
A	Other Changes in Fiduciary Net Position	<u>0</u>
	Total OPEB Expense	\$ 1,660,382

* Notes shown on page 16. Amounts are based on the following dates:

- Valuation date: July 1, 2017
- Measurement date: June 30, 2019
- Reporting date: June 30, 2019

CHANGES IN METHODS, ASSUMPTIONS, AND PLAN PROVISIONS

There was a change in discount rate from 5.36% to 6.00% based on depletion analysis at the measurement date.

The contribution split for commercial retiree plans was changed from 55% employer/45% employee to 50.01% employer/49.99% employee effective 7/1/2019.

NOTES

- A. See the RSI schedule of changes to the Net OPEB Liability, on page 12.
- B. Events that impact the Total OPEB Liability are assumed to happen evenly throughout the period. In addition, the amount of interest is calculated using an interest rate equal to the discount rate that was used to determine the service cost. The amount is determined as follows:

Description	Amount for Period (a)	Portion of Period (b)	Interest Rate (c)	Interest on the Total OPEB Liability (a) x (b) x (c)
Beginning Total OPEB Liability	\$ 155,660,837	100%	5.36%	\$ 8,343,421
Service cost	4,451,354	100%	5.36%	238,593
Benefit payments	\$ (4,985,511)	50%	5.36%	(133,612)
Interest				\$ 8,448,402

- C. Differences between expected and actual experience recognized in the current period in accordance with paragraph 43a of Statement 75. For the detailed calculation of this amount, see the schedule on page 17.
- D. Assumption and plan provision changes recognized in OPEB Expense in the current period in accordance with paragraph 43a of Statement 75. For detailed calculations of these amounts, see the schedule on page 17.
- E. Changes in the amounts invested are assumed to occur evenly throughout the period. In addition, the amount of projected earnings on plan investments is calculated using the assumed rate of return on plan investments as of the beginning of the period. The amount is determined as follows:

Description	Amount for Period (a)	Portion of Period (b)	Projected Rate of Return (c)	Projected Earnings (a) x (b) x (c)
Beginning plan Fiduciary Net Position	\$ 9,953,081	100%	5.36%	\$ 533,485
Employer contributions	6,804,459	50%	5.36%	182,360
Employee contributions	0	50%	5.36%	0
Benefit payments	(4,985,511)	50%	5.36%	(133,612)
Administrative expense	\$ 0	50%	5.36%	0
Total projected earnings				\$ 582,233

- F. Differences between projected and actual earnings recognized in the current period in accordance with paragraph 43b of Statement 75. For detailed calculation of this amount, see the schedule on page 17.

■ Town of Andover

GASB Statements No. 74 and No. 75

Increase / (Decrease) in OPEB Expense Arising from the Recognition of Gains and Losses – GASB 75

Increase / (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Fiscal Year	Differences between actual and expected experience	Recognition period (years)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	\$ 10,865,917	5.56		\$ 1,954,302	\$ 1,954,302	\$ 1,954,302	\$ 1,954,302	\$ 1,094,409	\$ -	\$ -	\$ -	\$ -
2019	\$ -	5.56		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net increase (decrease) in OPEB expense			\$ 1,954,302	\$ 1,954,302	\$ 1,954,302	\$ 1,954,302	\$ 1,954,302	\$ 1,094,409	\$ -	\$ -	\$ -	\$ -

Increase / (Decrease) in OPEB Expense Arising from the Recognition of the Effects of Changes of Assumptions

Fiscal Year	Change of assumptions	Recognition period (years)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	\$ 1,599,726	5.56		\$ 287,721	\$ 287,721	\$ 287,721	\$ 287,721	\$ 161,123	\$ -	\$ -	\$ -	\$ -
2019	\$ (12,768,804)	5.56		\$ (2,296,548)	\$ (2,296,548)	\$ (2,296,548)	\$ (2,296,548)	\$ (2,296,548)	\$ (1,286,067)	\$ -	\$ -	\$ -
Net increase (decrease) in OPEB expense			\$ 287,721	\$ (2,008,827)	\$ (2,008,827)	\$ (2,008,827)	\$ (2,008,827)	\$ (2,135,424)	\$ (1,286,067)	\$ -	\$ -	\$ -

Increase/ (Decrease) in OPEB Expense Arising from the Recognition of Differences between Expected and Actual Earnings on OPEB Plan Investments

Fiscal Year	Differences between projected and actual earnings on OPEB plan investments	Recognition period (years)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	\$ (174,085)	5	\$ (34,817)	\$ (34,817)	\$ (34,817)	\$ (34,817)	\$ (34,817)	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ (138,022)	5		\$ (27,604)	\$ (27,604)	\$ (27,604)	\$ (27,604)	\$ (27,604)	\$ -	\$ -	\$ -	\$ -
Net increase (decrease) in OPEB expense			\$ (34,817)	\$ (62,421)	\$ (62,421)	\$ (62,421)	\$ (62,421)	\$ (27,604)	\$ -	\$ -	\$ -	\$ -

Deferred Outflows and Deferred Inflows of Resources Arising from Gains and Losses

Deferred Outflows and Deferred Inflows of Resources Arising from Differences between Expected and Actual Experience

Fiscal Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in OPEB Expense through June 30, 2019 (c)	BALANCES AT JUNE 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2018	\$ 10,865,917	\$ -	\$ 3,908,603	\$ 6,957,314	\$ -
2019	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL				\$ 6,957,314	\$ -

Deferred Outflows and Deferred Inflows of Resources Arising from Changes of Assumptions

Fiscal Year	Increases in the Total OPEB Liability (a)	Decreases in the Total OPEB Liability (b)	Amounts Recognized in OPEB Expense through June 30, 2019 (c)	BALANCES AT JUNE 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2018	\$ 1,599,726	\$ -	\$ 575,441	\$ 1,024,285	\$ -
2019	\$ -	\$ (12,768,804)	\$ (2,296,548)	\$ -	\$ (10,472,257)
TOTAL				\$ 1,024,285	\$ (10,472,257)

Deferred Outflows and Deferred Inflows of Resources
 Arising from Differences between Expected and Actual Earnings on OPEB Plan Investments

Fiscal Year	Investment Earnings Less than Projected (a)	Investment Earnings More than Projected (b)	Amounts Recognized in OPEB Expense through June 30, 2019 (c)	BALANCES AT JUNE 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2018	\$ -	\$ (174,085)	\$ (69,634)	\$ -	\$ (104,451)
2019	\$ -	\$ (138,022)	\$ (27,604)	\$ -	\$ (110,417)
TOTAL				\$ -	\$ (214,869)
			NET TOTAL		\$ (214,869)

Results by Employer

Employer	Proportion	Contributions made FY 2019 *
General Fund	92.20%	\$ 6,273,711
Water	6.41%	\$ 436,166
Sewer	1.39%	\$ 94,582
TOTAL	100.00%	\$ 6,804,459

Employer	Proportionate Share of NOL	Proportionate share of NPL Discount Sensitivity (in 1,000's)	
		1% Increase (7%)	1% Decrease (5%)
General Fund	\$ 118,973,806	\$ 102,776	\$ 136,265
Water	\$ 7,322,311	\$ 7,145	\$ 9,473
Sewer	\$ 1,477,683	\$ 1,549	\$ 2,054
TOTAL	\$ 127,773,800	\$ 111,470	\$ 147,792

Employer	Proportionate Share of Pension Expense	Proportionate Share of Deferred Outflows of Resources	Proportionate Share of Deferred Inflows of Resources
General Fund	\$ 1,530,872	\$ 7,359,035	\$ (9,853,529)
Water	\$ 106,431	\$ 511,620	\$ (685,045)
Sewer	\$ 23,079	\$ 110,944	\$ (148,551)
TOTAL	\$ 1,660,382	\$ 7,981,599	\$ (10,687,125)

* Cash contributions made to OPEB trust plus a share of the implicit subsidy. The implicit subsidy is allocated since the General Fund and the Water and Sewer entities have made premium payments for active members.

SECTION II - ACTUARIAL VALUATION DETAILS

Population Data

A. DISTRIBUTION BY AGE: RETIREES, BENEFICIARIES, AND SURVIVORS
 (Includes retirees with life only or no coverage)

Age	Total
0-19	0
20-24	1
25-29	1
30-34	0
35-39	3
40-44	4
45-49	7
50-54	17
55-59	35
60-64	134
65-69	294
70-74	273
75-79	183
80-84	131
85-89	93
90-94	24
95-99	7
100+	1
TOTAL	1,208

Includes retirees who are eligible for medical or with life coverage in addition to terminated vesteds, beneficiaries, and survivors with medical coverage.

B. ACTIVE PARTICIPANTS

OF PARTICIPANTS*

Current Plan	Mandatory Medicare Eligible	Pre-Mandatory Medicare Eligible	Total
No Medical/ Unknown	351	2	353
Indemnity	0	0	0
Managed Care	862	23	885
TOTAL	1,213	25	1,238

* "Pre-Mandatory Medicare eligible" means hired March 31, 1986 or before. "Mandatory Medicare eligible" means hired after March 31, 1986. Employees hired March 31, 1986 or before do not contribute to Medicare.

C. PLAN DEFINITION TABLE⁽¹⁾

Name of Plan	Type of Plan	Ind Rate	Retirees Enrolled	Fam Rate	Retirees Enrolled	EE Cont % ⁽²⁾
Blue Care Elect PPO	Commercial Managed Care	\$790.67	29	\$2,119.01	13	40.00%
Network Blue New England	Commercial Managed Care	\$650.45	106	\$1,753.48	40	40.00%
Medex	Medicare Indemnity	\$323.29	782	\$323.29	NA	35.00%
Medex Low Income	Medicare Indemnity	\$224.43	6	\$224.43	NA	35.00%
Life Insurance	Life Insurance	\$1.16	374	NA	NA	50.00%

⁽¹⁾ Rates at 07/01/2017. Only plans with retiree enrollment shown.

⁽²⁾ Contribution rates for Commercial plans will increase to 45% on July 1, 2018. This increase has been reflected in trend rate increases.

C. DISTRIBUTION BY AGE AND SERVICE: ACTIVE PARTICIPANTS

Age Group	0-4	5-9	10-15	15-19	20-24	25-29	30-34	35-39	40+	Total
0-19	1	0	0	0	0	0	0	0	0	1
20-24	17	1	0	0	0	0	0	0	0	18
25-29	53	6	0	0	0	0	0	0	0	59
30-34	66	42	9	0	0	0	0	0	0	117
35-39	41	32	37	7	0	0	0	0	0	117
40-44	55	19	37	37	6	0	0	0	0	154
45-49	56	33	29	42	30	1	1	0	0	192
50-54	40	49	40	37	14	17	9	0	0	206
55-59	36	34	53	39	25	16	10	1	0	214
60-64	21	19	27	22	13	3	4	4	1	114
65-69	7	5	5	7	2	3	1	0	1	31
70-74	2	1	0	3	0	0	2	0	1	9
75-79	0	1	0	1	1	0	2	1	0	6
80-84	0	0	0	0	0	0	0	0	0	0
85-89	0	0	0	0	0	0	0	0	0	0
90-94	0	0	0	0	0	0	0	0	0	0
95-99	0	0	0	0	0	0	0	0	0	0
100+	0	0	0	0	0	0	0	0	0	0
TOTAL	395	242	237	195	91	40	29	6	3	1,238

SECTION III – APPENDICES

Actuarial methods and assumptions were selected by the Town of Andover, other than those required by statute or by GASB statements, with guidance from Stone Consulting, Inc.

Actuarial Methods

Actuarial Cost Method

Costs are attributed between past and future service using the Entry Age Normal cost method. For attribution purposes, benefits are assumed to accrue over all employee service until decrement.

Asset Valuation Method

Market value of assets with payables and receivables.

Actuarial Assumptions

Valuation Date

July 1, 2017

Interest Rate / Discount Rate

- 6.00% per year net of investment expenses as of 06/30/2019. In the calculation of the discount rate, the 20-year Municipal General Obligation bonds as shown in the Bond Buyer 20 Bond Index (3.50%) was used.
- 5.36% per year as of 07/01/2018.

Salary Scale

- Groups 1, 2, and 4: 4.25%
- Teachers: 4.00%
- Overall payroll increase rate, including new entrants of 3.00% per year and 2.75% CPI-U.

Mortality

- **Actives:** The RP-2014 Mortality Tables at 2006, sex-distinct, for Employees projected using MP-2016.
- **Retirees:** The RP-2014 Mortality Tables at 2006, sex-distinct, for Healthy Annuitants projected using MP-2016.
- **Disabled:** The RP-2014 Mortality Tables at 2006, sex-distinct, for Healthy Annuitants projected using MP-2016. Set forward 2 years.

No additional mortality projection is assumed other than as described above.

Actuarial Assumptions (Continued)

Eligibility for Vested Post-Retirement Medical Benefits upon Withdrawal

10 years of Service; assumed that individuals who withdraw prior to age 40 will elect a return of pension contributions and therefore be ineligible for retiree medical coverage.

Withdrawal Prior to Retirement, Non-Teachers

Based on years of service. Same for both pre- and post-April 1, 2012 (Tier 1 and Tier 2) hires.

Years of Service	Groups 1,2	Group 4
0	15.00%	1.50%
1	12.00%	1.50%
2	10.00%	1.50%
3	9.00%	1.50%
4	8.00%	1.50%
5	7.60%	1.50%
6	7.50%	1.50%
7	6.70%	1.50%
8	6.30%	1.50%
9	5.90%	1.50%
10	5.40%	1.50%
11	5.00%	0.00%
12	4.60%	0.00%
13	4.10%	0.00%
14	3.70%	0.00%
15	3.30%	0.00%
16	2.00%	0.00%
17	2.00%	0.00%
18	2.00%	0.00%
19	2.00%	0.00%
20	2.00%	0.00%
21	1.00%	0.00%
22	1.00%	0.00%
23	1.00%	0.00%
24	1.00%	0.00%
25	1.00%	0.00%
26	1.00%	0.00%
27	1.00%	0.00%
28	1.00%	0.00%
29	1.00%	0.00%
30+	0.00%	0.00%

Actuarial Assumptions (Continued)

Withdrawal Prior to Retirement, Teachers

Same for both pre and post-April 1, 2012 hires.

		Service			
		Age	0	5	10
Male Teachers	25		12.00%	4.50%	1.00%
	35		11.00	5.00	1.50
	45		9.50	5.00	2.00
	55		7.50	4.50	2.50
Female Teachers	25		10.00%	9.00%	5.00%
	35		12.00	8.40	4.10
	45		8.90	4.70	2.40
	55		8.00	3.20	2.00

Disability Prior to Retirement

The rates shown at the following sample ages illustrate the assumption regarding the incidence of disability. Disability is assumed to be 55% ordinary and 45% accidental for Groups 1 and 2, 10% ordinary and 90% accidental for Group 4, and 55% ordinary and 45% accidental for Teachers.

Rate of Disability			
Age	Groups 1 and 2	Group 4	Teachers
20	0.01%	0.10%	0.004%
25	0.02%	0.20%	0.005%
30	0.03%	0.30%	0.006%
35	0.06%	0.30%	0.006%
40	0.10%	0.30%	0.010%
45	0.15%	1.00%	0.030%
50	0.19%	1.25%	0.050%
55	0.24%	1.20%	0.080%
60	0.28%	0.85%	0.100%

Medicare Eligibility

- **Employees:** 100% if hired March 31, 1986 or after; 85% if hired pre-March 31, 1986.
- **Spouses:** 100%

Actuarial Assumptions (Continued)

Rates of Retirement, Non-Teachers

Based on gender, group, and hire date.

Age	Hired Pre-April 2, 2012			Hired Post-April 1, 2012		
	Groups 1 and 2 Male	Groups 1 and 2 Female	Group 4	Groups 1 and 2 Male	Groups 1 and 2 Female	Group 4
50	1.00%	1.50%	2.00%	-	-	-
51	1.00%	1.50%	2.00%	-	-	-
52	1.00%	2.00%	2.00%	-	-	-
53	1.00%	2.50%	5.00%	-	-	-
54	2.00%	2.50%	7.50%	-	-	-
55	2.00%	5.50%	15.00%	-	-	10.00%
56	2.50%	6.50%	10.00%	-	-	7.00%
57	2.50%	6.50%	10.00%	-	-	20.00%
58	5.00%	6.50%	10.00%	-	-	10.00%
59	6.50%	6.50%	15.00%	-	-	15.00%
60	12.00%	5.00%	20.00%	25.00%	30.00%	20.00%
61	20.00%	13.00%	20.00%	20.00%	13.00%	20.00%
62	30.00%	15.00%	25.00%	30.00%	15.00%	25.00%
63	25.00%	12.50%	25.00%	25.00%	12.50%	25.00%
64	22.00%	18.00%	30.00%	22.00%	18.00%	30.00%
65	40.00%	15.00%	100.00%	40.00%	15.00%	100.00%
66	25.00%	20.00%	NA	25.00%	20.00%	NA
67	25.00%	20.00%	NA	25.00%	20.00%	NA
68	30.00%	25.00%	NA	30.00%	25.00%	NA
69	30.00%	20.00%	NA	30.00%	20.00%	NA
70	100.00%	100.00%	NA	100.00%	100.00%	NA

Actuarial Assumptions (Continued)

Rates of Retirement, Teachers

Based on gender, years of service, and hire date.

Age	Hired Pre-April 2, 2102						Hired Post-April 1, 2012					
	<20 years service		20-29 years service		>29 years service		<20 years service		20-29 years service		>29 years service	
	M	F	M	F	M	F	M	F	M	F	M	F
50	N/A	N/A	1%	1.5%	2%	2%	N/A	N/A	N/A	N/A	N/A	N/A
51	N/A	N/A	1	1.5	2	2	N/A	N/A	N/A	N/A	N/A	N/A
52	N/A	N/A	1	1.5	2	2	N/A	N/A	N/A	N/A	N/A	N/A
53	N/A	N/A	1	1.5	2	2	N/A	N/A	N/A	N/A	N/A	N/A
54	N/A	N/A	1	1.5	2	2	N/A	N/A	N/A	N/A	N/A	N/A
55	3%	2%	3	3	6	6	3%	0%	0%	0%	0%	0%
56	8	2	5	3	20	15	8	0	0	0	0	0
57	15	8	8	7	35	30	15	0	0	0	0	0
58	15	10	10	7	50	35	15	0	0	0	0	0
59	20	15	20	11	50	35	20	0	0	0	0	0
60	15	20	20	16	50	35	25	25	35	23	45	45
61	30	20	25	20	50	35	35	30	35	30	45	45
62	20	25	30	30	40	40	30	25	30	25	45	45
63	30	24	30	30	40	30	35	25	30	25	45	45
64	40	20	30	30	40	35	40	30	35	30	45	45
65	40	30	40	30	50	35	40	30	35	30	45	45
66	40	30	30	30	50	35	40	30	40	30	45	45
67	40	30	30	30	50	30	50	35	45	35	55	45
68	40	30	30	30	50	30	50	35	45	35	55	45
69	40	30	30	30	50	30	55	35	45	35	55	45
70	100	100	100	100	100	100	100	100	100	100	100	100

Actuarial Assumptions (Continued)

Plan Enrollment Rates

These are the rates which retirees select medical plans, given that they enroll in a medical plan. The selection patterns follow the table below.

Participant Behavior at Key Ages

Status	Age	Pre-65 Retirement	65+ Retirement
Active	Under 65	Commercial Managed Care: 100% Commercial Indemnity: 0%	Medicare Managed Care: 0% Medicare Indemnity: 99% Commercial Managed Care: <1%
Active	65+	NA	Medicare Managed Care: 0% Medicare Indemnity: 99% Commercial Managed Care: <1%
Retired	Under 65	Current Plan	Medicare Managed Care: 0% Medicare Indemnity: 99% Commercial Managed Care: <1% Or Actual Plan if already in Medicare
Retired	65+	NA	Current Plan

Sample Claim Costs

Age	Commercial Managed Care Individual	Commercial Managed Care Blended ⁽¹⁾	Commercial Indemnity Individual	Commercial Indemnity Blended ⁽¹⁾	Medicare Managed Care	Medicare Indemnity
55	\$8,191.76	\$14,674.99	NA	NA	NA	\$3,343.38
60	\$10,074.55	\$18,060.61	NA	NA	NA	\$3,343.38
65	\$12,632.43	\$16,760.15	NA	NA	NA	\$3,343.38
70	\$15,253.57	\$20,237.78	NA	NA	NA	\$3,698.31
75	\$18,243.95	\$24,205.44	NA	NA	NA	\$3,994.73
80	\$21,716.70	\$28,812.94	NA	NA	NA	\$4,208.71
85	\$21,716.70	\$28,812.94	NA	NA	NA	\$4,319.01

⁽¹⁾ Blended rates below 65 are 42.5% Family and 57.5% Individual. Blended rates 65 and higher are 17.5% Family and 82.5% Individual. Individual rates are used for all participants 81 and higher.

Actuarial Assumptions (Continued)

Trend Rates by Plan

Year	Commercial Managed Care	Commercial Indemnity	Medicare Indemnity	Medicare Managed Care
2017	-1.13%	9.50%	7.50%	4.02%
2018	8.00%	9.00%	7.00%	8.00%
2019	7.50%	8.50%	6.50%	7.50%
2020	7.00%	8.00%	6.00%	7.00%
2021	6.50%	7.50%	5.50%	6.50%
2022	6.00%	7.00%	5.00%	6.00%
2023	5.50%	6.50%	5.00%	6.00%
2024	5.00%	6.00%	5.00%	6.00%
2025	5.00%	6.00%	5.00%	6.00%
2026	5.00%	6.00%	5.00%	6.00%
2027	5.00%	6.00%	5.00%	5.75%
2028	5.00%	6.00%	5.00%	5.75%
2029	5.00%	5.75%	5.00%	5.75%
2030	5.00%	5.75%	5.00%	5.50%
2031	5.00%	5.75%	5.00%	5.50%
2032	5.00%	5.75%	5.00%	5.50%
2033	5.00%	5.75%	5.00%	5.25%
2034	5.00%	5.50%	5.00%	5.25%
2035	5.00%	5.50%	5.00%	5.00%
2036	5.00%	5.50%	5.00%	5.00%
2037	5.00%	5.50%	5.00%	5.00%
2038	5.00%	5.50%	5.00%	5.00%
2039	5.00%	5.25%	5.00%	5.00%
2040	5.00%	5.25%	5.00%	5.00%
2041	5.00%	5.25%	5.00%	5.00%
2042	5.00%	5.25%	5.00%	5.00%
2043	5.00%	5.25%	5.00%	5.00%
2044	5.00%	5.00%	5.00%	5.00%

Expenses

Administrative expenses are included in the per capita medical cost assumption.

Actuarial Assumptions (Continued)

Participation Rates

Current retirees and spouses are assumed to continue the same coverage they have as of the valuation date. No future election of coverage is assumed for those retirees and spouses who currently have not elected coverage.

Medical All Retirees: 80% of the active Town of Andover employees eligible for post-employment medical benefits are assumed to elect Medical Coverage immediately upon retirement.

Life All Retirees: 50% of active Town of Andover employees eligible for post-employment medical benefits are assumed to elect Life Insurance coverage immediately upon retirement.

For all Retirees: For the Town of Andover plans 55% of spouses are assumed to participate.

Participants with no or unknown current coverage (e.g. active employees who do not currently participate in Town of Andover's medical plans) are assumed to elect retiree coverage at the same rates as currently covered active employees. Medicare-eligible retirees currently under age 65 are assumed to elect a Medicare plan option at age 65.

PPACA

OPEB liabilities as of June 30, 2019 include an estimate of the impact from the Patient Protection and Affordable Care Act (PPACA) as it is written as of the valuation date, including the so-called "Cadillac Tax" on high-cost health plans. The Cadillac Tax on plans whose richness exceeds set levels will begin in 2022 and the valuation reflects such implementation beginning in 2022. Prior to this time, the law may be amended or changes may be made in the benefit plan such that the law will not be applicable.

Principal Plan Provisions Recognized in Valuation

ELIGIBILITY FOR BENEFITS

Current retirees, beneficiaries and spouses of the Town of Andover are eligible for medical benefits, as are current employees or spouses who retire with a benefit from the Town of Andover. Survivors of Town of Andover employees and retirees are also eligible for medical benefits.

MEDICAL BENEFITS

Various medical plans offered by the Town of Andover to its own employees.

LIFE INSURANCE

Town of Andover retirees are eligible for a \$2,000 life insurance benefit offered by the Town of Andover. Retirees pay 50% of the \$1.16 cost.

RETIREE CONTRIBUTIONS

Based on data provided by Town of Andover.

Glossary

- **Actuarial Accrued Liability:** The portion, as determined by a particular Actuarial Cost Method, of the present value of benefits which is not provided for by future Normal Costs.
- **Actuarial Assumptions:** Assumptions as to the occurrence of future events affecting Other Post-employment Benefits such as: mortality rates, disability rates, withdrawal rates, and retirement rates, the discount assumption, and the trend rates.
- **Actuarial Cost Method:** A procedure for determining the Actuarial Present Value of Total Projected benefits and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal and an Actuarial Accrued Liability.
- **Amortization Payment:** The portion of the OPEB contribution designed to pay interest and to amortize the Unfunded Actuarial Accrued Liability.
- **Actuarially Determined Contribution (ADC):** The employer's periodic contributions to a defined benefit OPEB plan, calculated in accordance with the Actuarial Standards of Practice.

■ **Town of Andover**
GASB Statements No. 74 and No. 75

- **Cadillac Tax:** Under the Affordable Care Act and starting in 2022, a 40% excise tax on the value of employer-sponsored health benefits exceeding specified thresholds.
- **Commercial Plans:** Plans designed to cover the medical expenses of those not otherwise covered by Medicare.
- **GASB:** The Governmental Accounting Standards Board is the organization that establishes financial reporting standards for state and local governments.
- **Investment return Assumptions (Discount Rate):** The rate used to adjust a series of future benefit payments to reflect the time value of money.
- **Healthcare Cost Trend Rate:** The rate of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, the intensity of the delivery of services, technological developments, and cost-shifting.
- **Medicare Plans:** Medical plans sold to those over 65 who are also covered by Medicare. These plans are supplemental to the Medicare plan, which is considered primary.
- **Normal Cost:** The portion of the Actuarial Present value of plan benefits that is allocated to a valuation year by the Actuarial Cost Method.
- **OPEB:** Other Post-Employment Benefits, other than pensions. This does not include plans such as severance plans or sick-time buyouts.
- **Pay-As-You-Go:** The amount of benefits (claims) paid out to plan participants during the year.
- **Per Capita Claims Cost:** The current average annual cost of providing postretirement health care benefits per individual.
- **Unfunded Actuarial Accrued Liability:** The portion of the Actuarial Accrued Liability that is not covered by plan assets. For a plan that is completely unfunded, this amount is equivalent to the Actuarial Accrued Liability.
- **Valuation Date:** The point from which all future plan experience is projected and as of which all present values are calculated.