

BLOOMFIELD TOWNSHIP OTHER POST-EMPLOYMENT BENEFITS PROGRAM

Actuarial Valuation as of April 1, 2020 To Determine Funding for Fiscal Year 2021-2022

Prepared by

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April 1, 2020 Actuarial Valuation

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Certification

We have performed an actuarial valuation of the Plan as of April 1, 2020 to determine funding for fiscal year 2021-2022. This report presents the results of our valuation.

The ultimate cost of an Other Post-Employment Benefits (OPEB) plan is the total amount needed to provide benefits for plan members and beneficiaries and to pay the expenses of administering the plan. OPEB costs are met by contributions and by investment return on plan assets. The principal purpose of this report is to set forth an actuarial recommendation of the contribution, or range of contributions, which will properly fund the plan, in accordance with applicable actuarial standards of practice. In addition, this report provides:

- A valuation of plan assets and liabilities to review the year-to-year progress of funding.
- Review of plan experience since the previous valuation to ascertain whether the assumptions and methods employed for valuation purposes are reflective of actual events and remain appropriate for prospective application.
- Assessment of the relative funded position of the plan, i.e., through a comparison of plan assets and projected plan liabilities.
- Comments on any other matters which may be of assistance in the funding and operation of the plan.

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In preparing this report, we relied on employee census data and financial information as of the valuation date, furnished by the Township. We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have found them to be reasonably consistent and comparable with data used for other purposes. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete and our calculations may need to be revised. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

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Certification

The calculations reported herein have been made on a basis consistent with our understanding of the plan provisions. Additional determinations may be needed for purposes other than determining funding amounts, such as judging benefit security at plan termination or meeting employer accounting requirements. On the basis of the foregoing, we hereby certify that, to the best of our knowledge, this report is complete and accurate and all costs and liabilities were determined in conformance with generally accepted actuarial principles and practices.

We further certify that, in our opinion, each actuarial assumption, method and technique used is reasonable taking into account the experience of the Plan and reasonable expectations. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of such future measurement.

The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

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

Michell J. Boyles

Michelle L. Boyles, FSA Consulting Actuary

Section I - Executive Summary Changes Since the Prior Valuation

Demographic Changes and Plan Experience

From April 1, 2018 to April 1, 2020, the overall membership decreased from 537 to 506. The number of active members decreased from 166 to 144, and the total number of members and spouses/dependents receiving benefits decreased from 371 to 362.

The average age of active members increased from 46.1 to 47.2, and the average age of members receiving benefits increased from 67.8 to 69.4.

We updated expected claims costs based on our analysis of the claims experience and premium information that was provided to us for this valuation. Per capita healthcare costs did not increase as much as expected, which decreased liabilities by about \$27.8 million.

Plan Changes

None.

Changes in Actuarial Methods and Assumptions

We have made the following assumption changes to better represent future expections.

We updated the medical trend rate to an initial inflation rate of 6.30%, grading down to an ultimate inflation rate of 4.20%, over a period of 55 years. This assumption no longer includes a provision for the excise tax which was eliminated as part of the SECURE Act.

We updated the mortality assumption from the RP-2000 Mortality Table with generational projection per Scale BB to the Pub-2010 Mortality Table with generational projection per scale MP-2019, with employee rates before benefit commencement and healthy or disabled annuitant rates after benefit commencement. We used PubS-2010 tables for public safety groups and PubG-2010 tables for all others.

The Township has adopted a formal funding policy to contribute \$2 million in excess of the total payouts each year, beginning with the fiscal year ended March 31, 2020. Based on this policy change, we increased the discount rate from 4.50% for Water & Sewer and 4.00% for All Others to 6.00% for all groups to align with the expected return on assets supported by the investment policy.

The combined effect of these changes was a decrease in the Unfunded Accrued Liability of about \$50.1 million.

Other Significant Changes

None.

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Section I - Executive Summary Assets

The Market Value is a snapshot of the plan's investments as of the valuation date.

/alue as of April 1, 2018	\$11,719,780
Township Contributions	5,796,653
Investment Income	203,550
Benefit Payments and Administrative Expenses	(5,077,210
/alue as of April 1, 2019	12,642,773
Township Contributions	7,107,238
Investment Income	(1,309,957
Benefit Payments and Administrative Expenses	(4,899,962
/alue as of April 1, 2020	13,540,092

For fiscal year 2018-19, the plan's assets earned 1.69%, which is an asset loss of about \$0.3 million. For fiscal year 2019-20, the plan's assets earned -9.53%, which is an asset loss of about \$1.9 million. Historical rates of return are shown in the graph below.



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Section I - Executive Summary Assets (continued)

The graph below shows how this year's asset values compare to where the plan's assets have been over the past several years and how they are projected to change over the next 20 years. For purposes of this projection, we have assumed that the Township contributes \$2 million in excess of the benefit payments, in accordance with the funding policy, and the investments always earn the assumed interest rate each year.

Market Value (\$ millions)



In 2019-20, the plan paid out \$4.9 million in benefits to members. Over the next 20 years, the plan is projected to pay out a total of \$135 million in benefits to members.



Benefit Payments (\$ millions)

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Section I - Executive Summary Membership

There are four basic categories of plan members included in the valuation: (1) terminated members who are no longer active, but have satisfied the service requirements to receive benefits in the future, (2) spouses and beneficiaries of members who are receiving benefits, (3) members who are receiving benefits and (4) active employees who have met the eligibility requirements for membership.



Members Receiving Benefits on April 1, 2020

Fire	63
Police	67
Town	59
Cable Studio	2
Building Inspection Fund	6
Water & Sewer	<u>14</u>
Total	211

Average Age 69.4

As of April 1, 2020, there were 211 members receiving benefits and 172 spouses/dependents receiving benefits. The members receiving benefits fall across a wide distribution of ages:



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Section I - Executive Summary Membership (continued)

Active Members on April 1, 2020

Fire	35	Average Age	47.2
Police	45	Average Service	18.8
Town	47	Payroll	\$11,397,160
Cable Studio	3	Average Payroll	79,147
Building Inspection Fund	5		
Water & Sewer	<u>9</u>		
Total	144		

The table below illustrates the age and years of service of the active membership:

				Years of S	Service			
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	То
< 25								
25-29								
30-34			6					
35-39		1	10	8	1			
40-44		1	8	25	7			
45-49			1	5	20	4		
50-54			1	5	9	6		
55-59			2	2	8	1	2	
60-64		1	3	1	1			
65+			2	2	1			
Total	0	3	33	48	47	11	2	1

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Section I - Executive Summary Accrued Liability

The Accrued Liability as of April 1, 2020 is \$97,542,654, which consists of the following pieces:



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Section I - Executive Summary Funded Status

The Accrued Liability grows over time as active members earn additional benefits, and goes down over time as members receive benefits; it may also change when there are changes to the plan provisions or changes in the actuarial assumptions. The Unfunded Accrued Liability is the dollar difference between the Accrued Liability and the Actuarial Value of Assets; the Funded Ratio is the ratio of the two. Between the 2018 and 2020 valuations, the Township updated its funding policy. Based on this change, the discount rate was increased to the current funded rate of 6.00%.



Accrued Liability (\$ millions)



Unfunded Accrued Liability (\$ millions)

Funded Ratio



April 1, 2020 Actuarial Valuation

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Section I - Executive Summary Long-Range Forecast

If the Township contributes \$2 million in excess of the benefit payments in accordance with the funding policy each year, the investments earn exactly the assumed interest rate each year, and there are no changes in the plan provisions or in the actuarial methods and assumptions, then we project the following changes in the plan's funded status:



To the extent that there are future investment or liability gains or losses, changes in the actuarial assumptions or methods, or plan changes, the actual valuation results will differ from these forecasts. Please see Section III C for more details of the long range forecast.

Section I - Executive Summary Long-Range Forecast (continued)

Benefits are paid for through a combination of contributions from the Township and from employees, and from investment income. If the Township pays less than the Actuarially Determined Contribution each year, or if the investments persistently earn less than the assumed interest rate, then the plan's funded status would suffer, and to compensate, the Township's contribution levels would be pushed higher. The risks of underfunding and underearning are illustrated in the hypothetical scenarios below:



The scenarios illustrated above are based on deterministic projections that assume emerging plan experience always exactly matches the actuarial assumptions; in particular that actual asset returns will be constant in every year of the projection period. Variation in asset returns, contribution amounts, and many other factors may have a significant impact on the long-term financial health of the plan, the liquidity constraints on plan assets, and the Township's future contribution levels. Stochastic projections could be prepared that would enable the Township to understand the potential range of future results based on the expected variability in asset returns and other factors. Such analysis was beyond the scope of this engagement.

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Section I - Executive Summary Summary of Principal Results

Membership as of	April 1, 2018	April 1, 2020
Active Members	166	144
Members Receiving Benefits	203	211
Total Count	369	355
Payroll	\$12,481,668	\$11,397,160
Assets and Liabilities as of	April 1, 2018	April 1, 2020
Market Value of Assets	\$11,719,780	\$13,540,092
Accrued Liabiilty for Active Members	77,467,526	39,277,994
Accrued Liabiilty for Members Receiving Benefits	<u>86,533,698</u>	<u>58,264,660</u>
Total Accrued Liability	164,001,224	97,542,654
Unfunded Accrued Liability	152,281,444	84,002,562
Funded Ratio	7.1%	13.9%
Actuarially Determined Contribution for Fiscal Year	2019-2020	2021-2022
Normal Cost	\$3,952,057	\$1,531,428
Past Service Cost	10,790,697	7,319,043
Interest	<u>592,747</u>	<u>531,028</u>
Actuarially Determined Contribution	15,335,501	9,381,499
Allocated to Fire	\$4,793,932	\$3,078,820
Allocated to Police	5,890,383	3,637,691
Allocated to Town	3,812,094	2,387,538
Allocated to Cable Studio	51,018	(22,858)
Allocated to Building Inspection Fund	153,148	55,940
Allocated to Water & Sewer	<u>634,926</u>	<u>244,368</u>
Total	15,335,501	9,381,499

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Section II - Plan Assets Summary of Fund Transactions

	Building Inspection							
	Town	Cable Studio	Fund	Water & Sewer	Total			
Market Value on April 1, 2018	\$4,634,744	\$1,376,073	\$1,905,345	\$3,803,618	\$11,719,780			
Township Contributions	5,040,930	13,112	74,173	668,438	5,796,653			
Net Investment Income	79,344	23,322	32,318	68,566	203,550			
Benefit Payments	(4,540,930)	(13,112)	(74,173)	(423,573)	(5,051,788)			
Administrative Expenses	(10,055)	(4,200)	(4,135)	(7,032)	(25,422)			
Market Value on March 31, 2019	5,204,033	1,395,195	1,933,528	4,110,017	12,642,773			
Market Value (Gain)/Loss, 2018-19	115,365	31,553	43,724	107,747	298,389			
Approximate Rate of Return, 2018-19	1.63%	1.70%	1.70%	1.75%	1.69%			
Market Value on April 1, 2019	5,204,033	1,395,195	1,933,528	4,110,017	12,642,773			
Township Contributions	6,397,222	15,749	59,341	634,926	7,107,238			
Net Investment Income	(721,054)	(102,905)	(141,338)	(344,660)	(1,309,957)			
Benefit Payments	(4,397,222)	(15,749)	(59,341)	(391,582)	(4,863,894)			
Administrative Expenses	(14,028)	(4,256)	(5,886)	(11,898)	(36,068)			
Market Value on March 31, 2020	6,468,951	1,288,034	1,786,304	3,996,803	13,540,092			
Market Value (Gain)/Loss, 2019-20	968,839	158,605	218,572	534,730	1,880,746			
Approximate Rate of Return, 2019-20	-11.64%	-7.39%	-7.32%	-8.16%	-9.53%			

The rates shown here are not the dollar or time weighted investment yield rate which measures investment performance. They are an approximate net return assuming all activity occurred on average midway through the fiscal year.

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Section III - Development of Contribution A. Summary of Liabilities

We have calculated the Accrued Liability separately for 6 groups, who are eligible for different OPEB benefits. We have broken the accrued liability into several pieces: benefits that are expected to be paid prior to age 65 (i.e. prior to Medicare) and after age 65 (i.e. after Medicare) to current active members and their covered dependents after retirement, and the same figures for members who have already retired and are currently receiving benefits. In all cases, the Accrued Liability only reflects benefits that are paid for by the Township, taking into account any implicit rate subsidies.

					Building		
	Fire	Police	Town	Cable Studio	Inspection Fund	Water & Sewer	Total
Current active members							
Members Under Age 65	\$2,851,891	\$4,753,364	\$2,426,297	\$160,250	\$155,746	\$596,113	\$10,943,661
Members Over Age 65	2,424,066	3,262,036	3,554,299	275,744	413,976	584,686	10,514,807
Spouses/Dependents Under Age 65	3,225,502	4,713,919	1,453,867	126,172	62,621	422,019	10,004,100
Spouses/Dependents Over Age 65	<u>2,109,362</u>	<u>2,824,924</u>	<u>2,074,410</u>	<u>165,870</u>	<u>262,618</u>	<u>378,242</u>	<u>7,815,426</u>
Total	10,610,821	15,554,243	9,508,873	728,036	894,961	1,981,060	39,277,994
Current members receiving benefits							
Members Under Age 65	2,237,583	2,226,694	1,646,143	0	178,417	303,169	6,592,006
Members Over Age 65	7,453,249	7,924,142	5,850,709	130,018	397,305	1,588,953	23,344,376
Spouses/Dependents Under Age 65	2,720,614	2,596,704	1,813,155	0	201,580	356,744	7,688,797
Spouses/Dependents Over Age 65	7,629,504	<u>6,873,565</u>	<u>4,321,583</u>	<u>0</u>	<u>267,239</u>	<u>1,547,590</u>	<u>20,639,481</u>
Total	20,040,950	19,621,105	13,631,590	130,018	1,044,541	3,796,456	58,264,660
Total Accrued Liability	30,651,771	35,175,348	23,140,463	858,054	1,939,502	5,777,516	97,542,654
Accrued Liability Sensitivity							
		1% Decrease		Baseline	•	1% Increase	
Discount Rate		111,836,294		97,542,654		85,940,009	
Trend Rate		85,756,145		97,542,654		112,275,011	

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This work product was prepared solely for the Township for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

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Section III - Development of Contribution B. Actuarially Determined Contribution

The Actuarially Determined Contribution (ADC) for the OPEB program consists of three pieces: a **Normal Cost** (the cost of benefits earned each year should be accrued in that year) plus a **Past Service Cost** (a catch-up accrual to amortize the Unfunded Accrued Liability) plus **Interest** to reflect the timing lag between the valuation date and the fiscal year.

The amortization period is 20 years starting in 2018. The amortization method produces level annual payments. The ADC is assumed to be paid at the beginning of the Fiscal Year. On this basis, the ADC is determined as follows:

	Fire	Police	Town	Cable Studio	Building Inspection Fund	Water & Sewer	Total
Accrued Liability	\$30,651,771	\$35,175,348	\$23,140,463	\$858,054	\$1,939,502	\$5,777,516	\$97,542,654
Market Value of Assets*	2,228,731	2,557,646	1,682,573	1,288,034	1,786,304	3,996,803	13,540,092
Unfunded Accrued Liability	28,423,040	32,617,702	21,457,890	(429,980)	153,198	1,780,713	84,002,562
Funded Ratio	7.3%	7.3%	7.3%	150.1%	92.1%	69.2%	13.9%
Amortization Period	18	18	18	18	18	18	18
Amortization Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Past Service Cost	2,476,466	2,841,942	1,869,600	(37,464)	13,348	155,151	7,319,043
Normal Cost	428,081	589,842	382,794	15,900	39,426	75,385	1,531,428
Interest	174,273	205,907	135,144	(1,294)	3,166	13,832	531,028
ADC for FY 2021-2022	3,078,820	3,637,691	2,387,538	(22,858)	55,940	244,368	9,381,499
Expected Benefit Payouts	(1,529,787)	(1,423,707)	(1,145,223)	(25,106)	(73,209)	(301,691)	(4,498,723)

*The Town trust fund contains funds for Fire, Police and all other Town employees not included in a separate enterprise fund. This trust's assets are allocated to the individual groups based on their respective Accrued Liability in order to calculate the Actuarially Determined Contribution.

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Bloomfield Township Other Post-Employment Benefits Program

Section III - Development of Contribution C. Valuation Results Using Uniform Actuarial Assumptions

The state of Michigan released Uniform Actuarial Assumptions that must be used in reporting liabilities for public Retiree Health Care plans. The below results were determined using the Pub-2010 Mortality Table with generational mortality improvement in accordance with Scale MP-2018. Separate medical trend tables are assumed for Pre/Post Medicare, beginning with 8.25% for Pre-Medicare and 6.50% for Post-Medicare. Both trend rates are assumed to decrease by 0.25% per year, until the ultimate rate of 4.50%. All other assumptions match those disclosed in Appendix B.

The amortization period is 20 years starting in 2018. The amortization method produces level annual payments. The ADC is assumed to be paid at the beginning of the Fiscal Year. On this basis, the ADC is determined as follows:

					Building		
	Fire	Police	Town	Cable Studio	Inspection Fund	Water & Sewer	Total
Accrued Liability	\$31,752,696	\$36,874,343	\$23,795,727	\$893,268	\$1,999,746	\$5,937,096	\$101,252,876
Market Value of Assets	2,222,468	2,580,948	1,665,534	1,288,034	1,786,304	3,996,803	13,540,092
Unfunded Accrued Liability	29,530,228	34,293,395	22,130,193	(394,766)	213,442	1,940,293	87,712,784
Funded Ratio	7.0%	7.0%	7.0%	144.2%	89.3%	67.3%	13.4%
Amortization Period	18	18	18	18	18	18	18
Amortization Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Past Service Cost	2,572,934	2,987,943	1,928,177	(34,395)	18,597	169,055	7,642,311
Normal Cost	455,090	633,061	396,994	16,833	40,084	79,365	1,621,427
Interest	181,681	217,260	139,510	(1,054)	3,521	14,905	555,823
ADC for FY 2021-2022	3,209,705	3,838,264	2,464,681	(18,616)	62,202	263,325	9,819,561

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Section III - Development of Contribution D. Long Range Forecast

This forecast is based on the results of the April 1, 2020 actuarial valuation and assumes that the Township contributes \$2 million in excess of the benefit payments, in accordance with the funding policy, each year, the assets will return the assumed interest rate on a market value basis each year, and there are no future changes in the actuarial methods or assumptions or in the plan provisions. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

Values as of the Valuation Date					Cash Flows Projected to the Following Fiscal Year				
Valuation Date	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio	Fiscal Year	Township Contributions	Member Contributions	Benefit Payments	Net Cash Flows
4/1/2020	\$97,542,654	\$13,540,092	\$84,002,562	13.9%	2021-22	\$6,272,525	\$0	(\$4,272,525)	\$2,000,000
4/1/2021	100,586,000	16,374,000	84,212,000	16.3%	2022-23	6,493,000	0	(4,493,000)	2,000,000
4/1/2022	103,538,000	19,377,000	84,161,000	18.7%	2023-24	6,749,000	0	(4,749,000)	2,000,000
4/1/2023	106,358,000	22,559,000	83,799,000	21.2%	2024-25	6,940,000	0	(4,940,000)	2,000,000
4/1/2024	109,106,000	25,931,000	83,175,000	23.8%	2025-26	7,235,000	0	(5,235,000)	2,000,000
4/1/2025	111,663,000	29,504,000	82,159,000	26.4%	2026-27	7,524,000	0	(5,524,000)	2,000,000
4/1/2026	114,032,000	33,290,000	80,742,000	29.2%	2027-28	7,804,000	0	(5,804,000)	2,000,000
4/1/2027	116,190,000	37,301,000	78,889,000	32.1%	2028-29	7,936,000	0	(5,936,000)	2,000,000
4/1/2028	118,281,000	41,552,000	76,729,000	35.1%	2029-30	8,177,000	0	(6,177,000)	2,000,000
4/1/2029	120,186,000	46,057,000	74,129,000	38.3%	2030-31	8,429,000	0	(6,429,000)	2,000,000
4/1/2030	121,887,000	50,831,000	71,056,000	41.7%	2031-32	8,686,000	0	(6,686,000)	2,000,000
4/1/2031	123,348,000	55,889,000	67,459,000	45.3%	2032-33	8,920,000	0	(6,920,000)	2,000,000
4/1/2032	124,579,000	61,249,000	63,330,000	49.2%	2033-34	9,256,000	0	(7,256,000)	2,000,000
4/1/2033	125,459,000	66,930,000	58,529,000	53.3%	2034-35	9,598,000	0	(7,598,000)	2,000,000
4/1/2034	125,933,000	72,949,000	52,984,000	57.9%	2035-36	10,003,000	0	(8,003,000)	2,000,000
4/1/2035	125,921,000	79,328,000	46,593,000	63.0%	2036-37	10,456,000	0	(8,456,000)	2,000,000
4/1/2036	125,346,000	86,089,000	39,257,000	68.7%	2037-38	10,817,000	0	(8,817,000)	2,000,000
4/1/2037	124,270,000	93,253,000	31,017,000	75.0%	2038-39	11,116,000	0	(9,116,000)	2,000,000
4/1/2038	122,743,000	100,844,000	21,899,000	82.2%	2039-40	11,376,000	0	(9,376,000)	2,000,000
4/1/2039	120,783,000	108,890,000	11,893,000	90.2%	2040-41	11,559,000	0	(9,559,000)	2,000,000

April 1, 2020 Actuarial Valuation

Bloomfield Township Other Post-Employment Benefits Program

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Section III - Development of Contribution E. Allocation of Contribution by Department

Contributions for the three enterprise funds (Cable Studio, Building Inspection Fund, and Water & Sewer) are shown on the preceding pages. Contributions for all other Township groups are allocated to each department on the basis of the Accrued Liability for members of the department relative to the total Accrued Liability. These percentages are shown below.

Department	Members	Vested	Pay Status	Total
Accounting	0.17%	0.00%	0.65%	0.82%
Assessing	0.86%	0.00%	1.49%	2.35%
Building Inspection	0.52%	0.00%	1.23%	1.74%
Buildings & Grounds	1.16%	0.00%	0.99%	2.15%
Cable Studio	0.75%	0.00%	0.13%	0.88%
Clerk	0.35%	0.00%	0.12%	0.48%
Dispatch	0.75%	0.00%	1.60%	2.35%
Elections	0.18%	0.00%	0.12%	0.30%
Fire	10.88%	0.34%	19.82%	31.04%
Information Technology	1.05%	0.00%	0.00%	1.05%
Motor Pool	0.72%	0.00%	2.55%	3.27%
Ordinance	0.30%	0.00%	0.13%	0.43%
Planning	0.09%	0.00%	0.45%	0.54%
Police	17.34%	0.53%	20.38%	38.24%
Road	2.12%	0.00%	3.69%	5.81%
Senior Services	0.42%	0.00%	0.00%	0.42%
Supervisor	0.17%	0.00%	0.94%	1.11%
Treasurer	0.17%	0.00%	0.36%	0.53%
Village Police	0.00%	0.00%	0.01%	0.01%
Water & Sewer	<u>2.27%</u>	<u>0.00%</u>	<u>4.20%</u>	<u>6.47%</u>
Total	40.27%	0.87%	58.86%	100.00%

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

	Actuarial		Unfunded	
Valuation	Value of	Accrued	Accrued	Funded
Date	Assets	Liability	Liability	Ratio
July 1, 2013	\$1,608,647	\$145,072,520	\$143,463,873	1.1%
July 1, 2015	5,437,023	152,132,955	146,695,932	3.6%
July 1, 2016	6,339,197	159,793,469	153,454,272	4.0%
April 1, 2018	11,719,780	164,001,224	152,281,444	7.1%
April 1, 2020	13,540,092	97,542,654	84,002,562	13.9%

Section III - Development of Contribution F. History of Funded Status

Fiscal	Actuarially Determined	Actual Township	Contribution Deficiency
Year	Contribution	Contribution	(Excess)
2017-18	14,694,136	5,202,228	9,491,908
2018-19	14,979,038	5,796,653	9,182,385
2019-20	15,335,501	7,107,238	8,228,263
2020-21	15,335,501	TBD	TBD
2021-22	9,381,499	TBD	TBD

Section III - Development of Contribution G. History of Township Contributions

		As of	As of
		April 1, 2018	April 1, 2020
Number of Active Members	Fire	41	35
	Police	52	45
	Town	54	47
	Cable Studio	3	3
	Building Inspection Fund	6	5
	Water & Sewer	<u>10</u>	<u>9</u>
	Total	166	144
Average Age	Fire	44.5	44.6
	Police	43.6	45.1
	Town	49.5	50.1
	Cable Studio	53.6	55.6
	Building Inspection Fund	54.8	57.6
	Water & Sewer	<u>40.8</u>	<u>44.0</u>
	Total	46.1	47.2
Average Service	Fire	18.4	18.4
	Police	18.1	19.4
	Town	17.3	18.7
	Cable Studio	19.8	21.8
	Building Inspection Fund	16.5	16.1
	Water & Sewer	<u>15.8</u>	<u>18.3</u>
	Total	17.7	18.8

Section IV - Membership Data A. Statistics of Active Membership

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program



Section IV - Membership Data B. Distribution of Active Members as of April 1, 2020

Years of Service 0-4 5-9 10-14 15-19 25-29 30+ 20-24 Total Age < 25 0 25-29 0 0 30-34 35-39 3 2 6 1 2 6 12 40-44 4 1 7 45-49 4 2 1 2 3 6 50-54 2 9 55-59 2 4 1 5 60-64 2 1 1 1 2 65+ 1 1 **Total** 0 1 11 14 18 2 1 47

April 1, 2020 Actuarial Valuation

Bloomfield Township Other Post-Employment Benefits Program

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Section IV - Membership Data B. Distribution of Active Members as of April 1, 2020

Building Inspection Fund

				Years of S	Service			
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
< 25								0
25-29								0
30-34								0
35-39				1				1
40-44								0
45-49								0
50-54					1			1
55-59								0
60-64			1					1
65+			2					2
Total	0	0	3	1	1	0	0	5



April 1, 2020 Actuarial Valuation

Bloomfield Township Other Post-Employment Benefits Program

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Section IV - Membership Data
C. Information on Members Receiving Benefits

	As of	As of
	April 1, 2018	April 1, 2020
Members Receiving Benefits		
Fire	56	63
Police	66	67
Town	57	59
Cable Studio	2	2
Building Inspection Fund	6	6
Water & Sewer		
Total	<u>16</u> 203	<u>14</u> 211
Average Age		
Fire	66.3	68.3
Police	67.1	69.6
Town	68.0	69.4
Cable Studio	70.3	72.3
Building Inspection Fund	77.9	74.5
Water & Sewer	<u>70.7</u>	<u>71.5</u>
Total	67.8	69.4
Spouses/Dependents Receiving Benefits		
Fire	45	50
Police	49	51
Town	33	33
Cable Studio	0	0
Building Inspection Fund	1	2
Water & Sewer	<u>15</u>	<u>13</u>
Total	143	149
Average Age		
Fire	63.5	64.2
Police	64.2	64.9
Town	63.7	64.1
Cable Studio	N/A	N/A
Building Inspection Fund	64.0	58.0
Water & Sewer	<u>68.9</u>	<u>69.1</u>
Total	64.3	64.8

April 1, 2020 Actuarial Valuation

Bloomfield Township Other Post-Employment Benefits Program

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Section V - Healthcare Information A. Introduction

In many cases, the cost sharing premium is lower than the true cost of providing the medical benefits, for two reasons:

• The cost sharing premium is usually a fixed amount such as a COBRA premium that does not take into account the age of the retiree and his/her dependents. Since medical costs generally increase with age, the cost sharing premium is often lower than the true cost of the medical benefits:



• The cost sharing premium is usually a blended rate that takes into account the cost of medical benefits for active employees as well as retirees. Medical costs are generally higher for retirees than for active employees of the same age. This means that, again, the cost sharing premium is often lower than the true cost of the medical benefits.

Because of these two factors, a retiree who is paying 100% of the cost sharing premium is most likely not paying 100% of the true cost of the medical benefits. This situation is known as an "implicit rate subsidy." GASB 74 and 75 require the plan sponsor to measure the liability for this subsidy; that is, the difference between the true cost of the medical benefits and the cost sharing premiums paid by the retiree. To do this, our valuation consists of several steps:

First, we calculate the liability for the true cost of medical benefits expected to be received by retirees and their dependents. This liability is based on factors developed by Milliman's health actuaries that reflect how the cost of medical benefits varies by age and gender, as well as the other assumptions discussed in Appendix B. We term this amount the "gross liability."

Next, we calculate the liability for the future premiums expected to be paid by the retiree for their own and their dependents' coverage. This liability is based on the current premium rates without adjustment for age or gender. It also is based on the terms of the Other Post-Employment Benefits Program – different retirees pay different percentages based on their union, date of retirement, age at retirement, and other factors. We term this amount the "offset liability."

Finally, the net liability for the Township is calculated as the difference between the gross liability and the offset liability.

April 1, 2020 Actuarial Valuation

Bloomfield Township Other Post-Employment Benefits Program

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Section V - Healthcare Information B. Current Premiums

The annual medical premiums are shown below.

Pre-65 Medical Plan	Employee	Spouse	Effective Date
HRA	\$7,681.32	\$15,815.64	4/1/2020
Post-65 Medical Plan			
HRA	5,528.16	11,181.24	4/1/2020
PPO	8,608.56	9,434.64	4/1/2020
Dental Plan			
Dental	533.88	881.64	4/1/2020

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Section V - Healthcare Information C. Expected Healthcare Costs

Milliman's Health Cost Guidelines were used to develop the expected true cost of healthcare benefits by age and gender, separately for employees and spouses. Representative healthcare cost factors are shown in the tables below. These factors were then applied to the plan's healthcare rates for the year beginning April 1, 2020 to arrive at the expected annual per capita claims costs for a 65-year-old, which are also shown below.

HRA

	Emp	loyee	Spo	ouse
Age	Male	Female	Male	Female
45	0.5754	0.9390	0.5273	0.6703
55	0.6852	0.8229	0.6829	0.8140
65	1.0000	1.0000	1.0000	1.0000
75	1.2167	1.1298	1.2167	1.1298
85	1.2363	1.1025	1.2363	1.1025
Age 65 per capita c	laims cost			
Pre-Medicare	\$19,234.86	\$17,124.16	\$17,080.21	\$15,844.27
Medicare	4,919.57	4,725.27	4,919.57	4,725.27
PPO				
		loyee		ouse
Age	Male	Female	Male	Female
45	0.5754	0.9390	0.4703	0.6268
55	0.6852	0.8229	0.6449	0.7896
65	1.0000	1.0000	1.0000	1.0000
75	1.2167	1.1298	1.2167	1.1298
85	1.2363	1.1025	1.2363	1.1025
Age 65 per capita c	laims cost			
Medicare	\$7,579.62	\$7,280.26	\$7,579.62	\$7,280.26
Dental				
		loyee	Spouse	
Age	Male	Female	Male	Female
45	0.6001	0.6932	0.6348	0.7198
55	0.7579	0.8363	0.7791	0.8505
65	1.0000	1.0000	1.0000	1.0000
75	1.1241	1.0629	1.1125	1.0572
Age 65 per capita c	laims cost			

Age 65 per capita claims cost

Dental	\$655.34	\$660.21	\$717.99	\$722.76

April 1, 2020 Actuarial Valuation

Bloomfield Township Other Post-Employment Benefits Program

Appendix A - Actuarial Funding Method

The actuarial funding method used in the valuation of this Plan is known as the Entry Age Normal Method. The Actuarially Determined Contribution consists of three pieces: Normal Cost plus a Past Service Cost payment to gradually eliminate the Unfunded Accrued Liability plus Interest to reflect the timing of the contribution relative to the valuation date.

The Normal Cost is determined by calculating the present value of future benefits for present active Members that will become payable as the result of death, disability, retirement or termination. This cost is then spread as a level percentage of earnings from entry age to termination as an Active Member. If Normal Costs had been paid at this level for all prior years, a fund would have accumulated. Because this fund represents the portion of benefits that would have been funded to date, it is termed the Accrued Liability. In fact, it is calculated by adding the present value of benefits for Retired Members and Terminated Vested Members to the present value of benefits for Active Members and subtracting the present value of future Normal Cost contributions.

The funding cost of the Plan is derived by making certain specific assumptions as to rates of interest, mortality, turnover, etc. which are assumed to hold for many years into the future. Since actual experience may differ somewhat from the assumptions, the costs determined by the valuation must be regarded as estimates of the true costs of the Plan.

The Unfunded Accrued Liability is the excess of the Accrued Liability over the assets which have been accumulated for the plan. This Unfunded Accrued Liability is amortized as a level dollar amount over a closed 20 year period staring April 1, 2018. The amortization period will not be less than 10 years in order to shield the Township from contribution volatility.

The long-range forecasts included in this report have been developed by assuming that members will terminate, retire, become disabled, and die according to the actuarial assumptions with respect to these causes of decrement, and that pay increases, cost of living adjustments, and so forth will likewise occur according to the actuarial assumptions.

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Each of the assumptions used in this valuation was set based on industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

Discount Rate	6.00% (Prior: 4.50% for Water & Sewer and 4.00% for All Others)
Medical Inflation Rate	6.30% - 4.20% over 55 years (Prior: 5.50% - 4.60% over 66 years)
Inflation Rate	2.50%
Dental Inflation Rate	3.00%
Salary Increases	3.50%
Amortization Growth Rate	0.00%
Mortality	Police and Fire:
	PubS-2010 Mortality Table with generational projection per the MP-

PubS-2010 Mortality Table with generational projection per the MP-2019 scale, with employee rates before benefit commencement and healthy or disabled annuitant rates after benefit commencement. This assumption includes a margin for improvements in longevity beyond the valuation date.

Others:

PubG-2010 Mortality Table with generational projection per the MP-2019 scale, with employee rates before benefit commencement and healthy or disabled annuitant rates after benefit commencement. This assumption includes a margin for improvements in longevity beyond the valuation date.

Prior: RP-2000 Mortality Table with generational projection per Scale BB.

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Turnover	50% of Prudential Scale 1/2 A				
	Age	Male	Female		
	20	2.500%	3.750%		
	25	2.500%	3.750%		
	30	1.875%	2.500%		
	35	1.250%	1.875%		
	40	0.750%	1.250%		
	45	0.375%	0.625%		
	50 & Over	0.000%	0.000%		
Disability	Table C-4 of TSA Vo	olume XXXIX, 100%	6 of the 6-month rates:		
	Age	Male	Female		
	20	0.080%	0.100%		
	30	0.099%	0.140%		
	40	0.176%	0.276%		
	50	0.540%	0.622%		
	60	1.477%	1.179%		

All disabilities are assumed to be Service-Connected.

The turnover and disability assumptions are based on the January 1, 2020 Actuarial Valuation Report of the Township of Bloomfield Retirement Income Plan.

Retirement

Fire:

For members hired after March 31, 1999 who retire with less than 25 Years of Service:

Age	Rate
52-64	5%
65	100%

Otherwise:

Age	Rate
52	20%
53-54	10%
55-56	30%
57-64	50%
65	100%

Police:

For members hired after March 31, 1999 who retire with less than 25 Years of Service:

Age	Rate
50-62	5%
63	100%

Otherwise:

Age	Rate
50-51	35%
52-54	10%
55-56	30%
57-62	50%
63	100%

April 1, 2020 Actuarial Valuation

Bloomfield Township Other Post-Employment Benefits Program

Retirement	Others: 25% at the earlier of age 52 with 25 years of service or 30 years of service; at all other ages (with at least 15 years of service):		
	Age	Rate	
	< 53	5%	
	54	7%	
	55	10%	
	56-59	15%	
	60-61	25%	
	62	30%	
	63-64	15%	
	65-69	50%	
	70	100%	
Future Retiree Coverage	All active and former retirement.	vested members a	re assumed to elect coverage at
Future Dependent Coverage			to elect dependent coverage at ses are assumed to be 3 years
		Male	Female
	Fire	95%	95%
	Police	90%	90%
	Town	80%	50%
Future Post-65 Coverage	All current actives and at age 65.	l pre-65 retirees ar	e assumed to continue coverage

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

This exhibit summarizes the major provisions of the Plan. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Eligibility

Fire

Members who retire from active service at age 52 or older, can elect to continue medical and dental coverage for self and spouse.

Members who terminate before age 52 with 15 or more years of service are eligible for post-retirement medical and dental benefits upon the attainment of age 52.

Normal Retirement for pension purposes is age 52 with 8 years of service.

Effective with hire date after May 1, 2011, employees shall have their retiree healthcare provided through a Retirement Health Savings Plan.

Police / Police Command

Hire date prior to April 1, 1999:

Members who retire from active service on or after Normal Retirement, can elect to continue medical and dental coverage for self and spouse.

Members who terminate before Normal Retirement with 25 or more years of service are eligible for post-retirement medical and dental benefits upon the attainment of Normal Retirement Date (age 50).

Members who terminate before Normal Retirement with between 15 and 25 years of service are eligible for post-retirement medical and dental benefits upon the attainment of age 52.

Effective for retirement from active service on or after June 7, 2006, eligibility for retiree health insurance is the earlier of age 50 with 25 years of service, or age 52 with 10 years of service, as long as the member has satisfied the minimum requirements to retire as defined in the Township defined benefit pension plan.

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Eligibility

Police / Police Command

Hire date after March 31, 1999:

Members who retire from active service at age 50 or older and with 25 or more years of service, can elect to continue medical and dental coverage for self and spouse.

Members who terminate before age 50, but who have 25 years of service, are eligible for post-retirement medical and dental benefits upon the attainment of age 50.

Members who terminate with between 15 and 25 years of service are eligible for post-retirement medical and dental benefits upon the attainment of age 52.

Effective with hire date after May 1, 2011, employees shall have their retiree healthcare provided through a Retirement Health Savings Plan.

Town

Hire date prior to April 1, 1999:

Members who retire from active service at age 55 or older, can elect to continue medical and dental coverage for self and spouse, as long as the member has satisfied the minimum requirements to retire as defined in the Township defined benefit pension plan.

Members who retire from active service at age 52 with 15 years of service, or 30 years of service regardless of age, can elect to continue medical and dental coverage for self and spouse.

Members who terminate before normal retirement with 15 or more years of service, are eligible for post-retirement medical and dental benefits upon the attainment of normal retirement date.

Normal Retirement for Library is age 55 with 8 years of service.

Normal Retirement for Town Others is the earlier of age 52 with 8 years of service, or completion of 30 years of service regardless of age.

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Eligibility	Town		
	Hire date after Mar	ch 31, 1999:	
			al retirement with 15 or more years cal and dental coverage for self and
		ble for post-retire	al retirement with 15 or more years ment medical and dental benefits ent date.
		-	2011, employees shall have their Retirement Health Savings Plan.
Cost Sharing	Fire		
	Hire date prior to A	April 1, 1999:	
	satisfied the minimu	um requirements t	service at age 52 or older who has o retire as defined in the Township ent health insurance at no cost.
		alifies for post-reti	o Normal Retirement Date with 25 rement health insurance at Normal
	between 15 and 25	years of service	o Normal Retirement Date and has qualifies for post-retirement health ree's contributions are based on the
	0	Retiree's %	
	Years of Service	of Premium	
	Less than 15	No Coverage	
	15	40%	
	16	36%	
	17	32%	
	18	28%	
	19	24%	
	20	20%	
	21	16%	
	22	12%	
	23	8%	
	24	4%	
	25	0%	

April 1, 2020 Actuarial Valuation

Bloomfield Township Other Post-Employment Benefits Program

Cost Sharing

Fire

Hire date after March 31, 1999:

An employee who retires on or after Normal Retirement with 25 years of service qualifies for post-retirement health insurance at no cost.

An employee who terminates prior to Normal Retirement with 25 years of Service qualifies for post-retirement health insurance at Normal Retirement at no cost.

An employee who retires on or after Normal Retirement or terminates prior to Normal Retirement and has between 15 and 25 Years of Service qualifies for post-retirement health insurance at Normal Retirement. Retiree's contributions are based on the following schedule:

Years of Service Less than 15 15 16 17 18 19 20 21 22 23	Retiree's % of Premium No Coverage 40% 36% 32% 28% 24% 20% 16% 12% 8%
23 24 25	8% 4% 0%

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Cost Sharing

Police / Police Command

Hire date prior to April 1, 1999:

An employee who retires from active service on or after Normal Retirement and who has satisfied the minimum requirements to retire as defined in the Township pension plan qualifies for post-retirement health insurance at no cost.

An employee who terminates prior to Normal Retirement Date with 25 years of service qualifies for post-retirement health insurance at Normal Retirement (age 50) at no cost.

An employee who terminates prior to Normal Retirement Date and has between 15 and 25 years of service qualifies for post-retirement health insurance at age 52. Retiree's contributions are based on the following schedule:

	Retiree's %
Years of Service	of Premium
Less than 15	No Coverage
15	40%
16	36%
17	32%
18	28%
19	24%
20	20%
21	16%
22	12%
23	8%
24	4%
25	0%

Retiree's contributions for employees who retire on or after July 1, 2009 are the greater of:

- \$100 per year for single (\$200 per year for family), or

- The above schedule

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Cost Sharing

Police / Police Command

Hire date after March 31, 1999:

An employee who retires directly from the Township at age 50 or older with 25 years of service qualifies for post-retirement health insurance at no cost.

An employee who terminates prior to age 50 with 25 years of service qualifies for post-retirement health insurance at age 50 at no cost.

An employee who retires at age 52 or terminates prior to age 52, and who has between 15 and 25 years of service, qualifies for post-retirement health insurance at age 52. Retiree's contributions are based on the following schedule:

Years of Service	Retiree's % of Premium No Coverage
15	40%
16	36%
17	32%
18	28%
19	24%
20	20%
21	16%
22	12%
23	8%
24	4%
25	0%

Retiree's contributions for employees who retire on or after July 1, 2009 are the greater of:

- \$100 per year for single (\$200 per year for family), or

- The above schedule

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Cost Sharing

Town

Hire date prior to April 1, 1999:

An employee who retires from active service at the earlier of age 55 or 30 years of service regardless of age, and who has satisfied the minimum requirements to retire as defined in the Township pension plan, qualifies for post-retirement health insurance at no cost.

An employee who retires from active service between age 52 and 55 with 25 years of service qualifies for post-retirement health insurance at no cost.

An employee who retires between age 52 and 55 and has between 15 and 25 years of service qualifies for post-retirement health insurance. Retiree's contributions are based on the following schedule (contribution will stop when retiree reaches age 55):

Retiree's %
of Premium
No Coverage
40%
36%
32%
28%
24%
20%
16%
12%
8%
4%
0%

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Cost Sharing

Town

Hire date prior to April 1, 1999:

An employee who terminates prior to Normal Retirement Date with 25 years of service qualifies for post-retirement health insurance at Normal Retirement at no cost.

An employee who terminates prior to Normal Retirement Date and has between 15 and 25 years of service qualifies for post-retirement health insurance at Normal Retirement. Retiree's contributions are based on the following schedule:

-	Retiree's %
Years of Service	of Premium
Less than 15	No Coverage
15	40%
16	36%
17	32%
18	28%
19	24%
20	20%
21	16%
22	12%
23	8%
24	4%
25	0%

April 1, 2020 Actuarial Valuation Bloomfield Township Other Post-Employment Benefits Program

Cost Sharing

Town

Hire date after March 31, 1999:

An employee who retires from active service on or after Normal Retirement with 25 years of service qualifies for post-retirement health insurance at no cost.

An employee who terminates prior to Normal Retirement with 25 years of service qualifies for post-retirement health insurance at Normal Retirement at no cost.

An employee who retires on or after Normal Retirement, or terminates prior to Normal Retirement, and has between 15 and 25 years of service qualifies for post-retirement health insurance at Normal Retirement. Retiree's contributions are based on the following schedule:

	Retiree's %
Years of Service	of Premium
Less than 15	No Coverage
15	40%
16	36%
17	32%
18	28%
19	24%
20	20%
21	16%
22	12%
23	8%
24	4%
25	0%

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Disability	Fire
	An employee who is eligible for early retirement and suffers a service- connected disability shall receive the same post-retirement health and dental insurance benefits that are available to an employee who retires on or after their Normal Retirement Date. An employee who is not eligible for early retirement and suffers a service-connected disability shall receive post-retirement health and dental insurance benefits for 54 months only.
	Police / Police Command
	An employee who suffers a service-connected disability shall receive post- retirement health benefits for 54 months only. An employee who suffers a non service-connected disability shall receive post-retirement health benefits for 30 months only.
Life Insurance	Fire / Police: \$6,000
	Police Command: \$8,000
	Town: \$8,000

Appendix D - Glossary

Actuarial Cost Method - This is a procedure for determining the Actuarial Present Value of Benefits and allocating it to time periods to produce the Actuarial Accrued Liability and the Normal Cost.

Accrued Liability - This is the portion of the Actuarial Present Value of Benefits attributable to periods prior to the valuation date by the Actuarial Cost Method (i.e., that portion not provided by future Normal Costs).

Actuarial Assumptions - With any valuation of future benefits, assumptions of anticipated future events are required. If actual events differ from the assumptions made, the actual cost of the plan will vary as well. Some examples of key assumptions include the interest rate, salary scale, and rates of mortality, turnover and retirement.

Actuarial Present Value of Benefits - This is the present value, as of the valuation date, of future payments for benefits and expenses under the Plan, where each payment is: a) multiplied by the probability of the event occurring on which the payment is conditioned, such as the probability of survival, death, disability, termination of employment, etc.; and b) discounted at the assumed interest rate.

Actuarial Value of Assets - This is the value of cash, investments and other property belonging to the plan, typically adjusted to recognize investment gains or losses over a period of years to dampen the impact of market volatility on the Actuarially Determined Contribution.

Actuarially Determined Contribution ("ADC") - This is the employer's periodic contributions to a defined benefit plan, calculated in accordance with actuarial standards of practice.

Attribution Period - The period of an employee's service to which the expected benefit obligation for that employee is assigned. The beginning of the attribution period is the employee's date of hire and costs are spread across all employment.

Interest Rate - This is the long-term expected rate of return on any investments set aside to pay for the benefits. In a financial reporting context (e.g., GASB 68) this is termed the Discount Rate.

Normal Cost - This is the portion of the Actuarial Present Value of Benefits allocated to a valuation year by the Actuarial Cost Method.

Past Service Cost - This is a catch-up payment to fund the Unfunded Accrued Liability over time (generally 10 to 30 years). A closed amortization period is a specific number of years counted from one date and reducing to zero with the passage of time; an open amortization period is one that begins again or is recalculated at each valuation date. Also known as the Amortization Payment.

Return on Plan Assets - This is the actual investment return on plan assets during the fiscal year.

Unfunded Accrued Liability - This is the excess of the Accrued Liability over the Actuarial Value of Assets.

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