

CITY OF STAMFORD OTHER POST-EMPLOYMENT BENEFITS PLAN

Actuarial Valuation as of July 1, 2019
To Determine Funding for Fiscal Year 2020-21

Prepared by

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Certification

We have performed an actuarial valuation of the Plan as of July 1, 2019 to determine funding for fiscal year 2020-21. 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 City. 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.

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. Figures for periods prior to July 1, 2018 have been obtained from actuarial valuation reports prepared by Hooker & Holcombe and from the City's Comprehensive Annual Financial Reports.

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 consultantss 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 are members of the American Academy of Actuaries and meetss the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Rebecca A. Sielman, FSA

Consulting Actuary

Yelena Felletier, ASA Consulting Actuary

Section I - Executive Summary Changes Since the Prior Valuation

Demographic Changes

From July 1, 2018 to July 1, 2019, the overall membership decreased from 2,248 to 2,235. The number of active members decreased from 1,275 to 1,199, and the number of members receiving benefits increased from 973 to 1,036.

The average age of active members decreased slightly from 49.9 to 49.7, and the average age of members receiving benefits increased from 74.0 to 75.0.

Changes in Actuarial Methods and Assumptions

We updated our mortality assumption as follows:

CERF & WPCA: We changed the mortality assumption from RP-2000 Combined Mortality Table with 50% blue collar adjustment and 50% no collar adjustment with generational projection per Scale BB to the PubG-2010 Mortality Table with generational projection per the Ultimate MP Scale.

Custodians, **Police & Fire**: We changed the mortality assumption from RP-2000 Combined Mortality Table with blue collar adjustment with generational projection per Scale BB to the PubS-2010 Mortality Table with generational projection per the Ultimate MP Scale.

We lowered the interest rate assumption from 7.10% to 7.05%.

We also modified the calculation of the timing adjustment, which previously added one month of interest to the net normal cost and past service cost. The new calculation adds one year of interest to these amounts.

The above changes increased the Accrued Liability by approximately \$12.0 million and increased the Actuarially Determined Contribution by approximately \$2.1 million.

Plan Changes

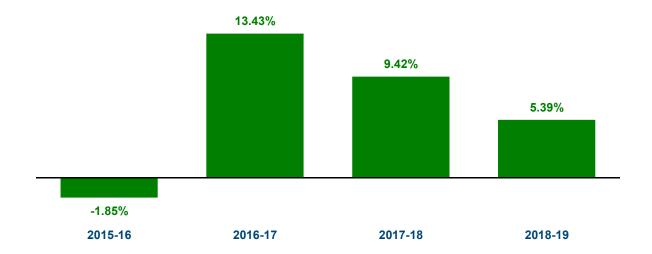
We have reflected that the City funds a portion of the deductible for some retirees in High Deductible plans. This change increased the Accrued Liability by approximately \$2.6 million and increased the Actuarially Determined Contribution by approximately \$0.4 million.

Section I - Executive Summary Assets

The City maintains an OPEB Trust for prefunding OPEB benefits that are provided to both City and Board of Education Members. This valuation pertains to the portion of the OPEB Trust that covers CERF City, CERF BOE, CERF WPCA, Custodians, Fire and Police members. The asset figures shown below and throughout this report exclude the portion of the OPEB Trust that covers other Board of Education members.

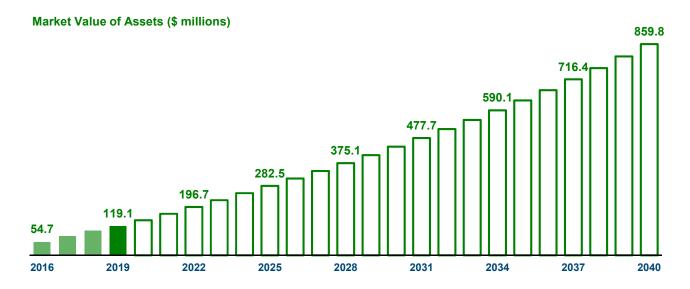
Market Value as of July 1, 2018	\$99,596,457
City Contributions and Member Contributions	24,431,609
Investment Income	5,736,523
Benefit Payments and Administrative Expenses	(10,665,735)
Market Value as of July 1, 2019	119,098,854

For fiscal year 2018-19, the plan's assets earned 5.39%. The actuarial assumption for this period was 7.10%; the result is an asset loss of about \$1.8 million. Historical rates of return are shown in the graph below.



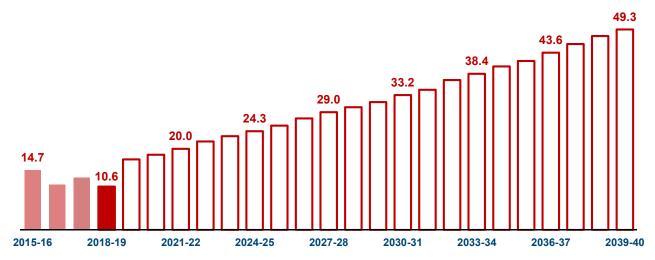
Section I - Executive Summary Assets (continued)

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 City always contributes the Actuarially Determined Contribution and the investments always earn the assumed interest rate each year.



In 2018-19, the plan paid out \$10.6 million in benefits to members. Over the next 20 years, the plan is projected to pay out a total of \$630 million in benefits to members.

Benefit Payments (\$ millions)



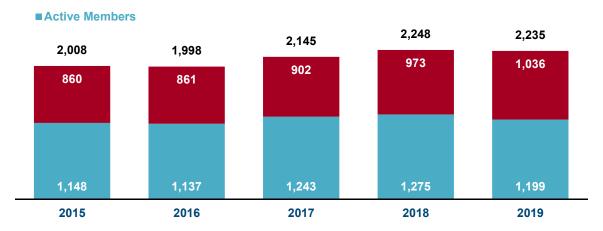
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Section I - Executive Summary Membership

There are two basic categories of plan members included in the valuation: (1) members who are receiving benefits and (2) active employees who have met the eligibility requirements for membership.



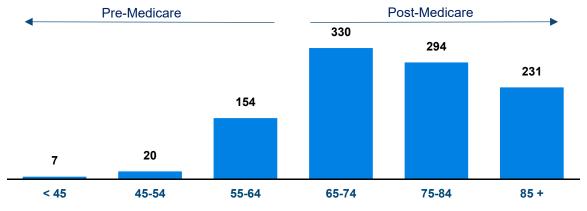


Members Receiving Benefits on July 1, 2019

CERF City	391	Average Age 75.0
CERF BOE	68	
CERF WPCA	14	
Custodians	90	
Fire	224	
Police	249_	
Total	1,036	

As of July 1, 2019, there were 1,036 members receiving benefits. In addition, 384 spouses/dependents are currently 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 July 1, 2019

CERF City	457	Average Age	49.7
CERF BOE	85	Average Service	16.1
CERF WPCA	26		
Custodians	118		
Fire	243		
Police	270		
Total	1,199		

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

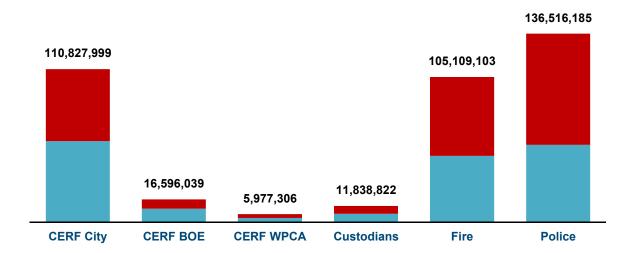
				Years of	f Service			
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
< 25	11							11
25-29	60	5	1					66
30-34	46	30	8					84
35-39	28	29	36	6				99
40-44	19	21	40	28	9			117
45-49	19	14	30	42	55		1	161
50-54	15	20	22	46	67	17	19	206
55-59	15	13	20	44	44	18	54	208
60-64	9	11	23	21	28	9	45	146
65+	9	6	11	11	30	6	28	101
Total	231	149	191	198	233	50	147	1,199

Section I - Executive Summary Accrued Liability

The Accrued Liability as of July 1, 2019 equals \$386,865,454 and consists of the following pieces:

■ Members Receiving Benefits (including dependents) = \$204,707,707

■ Active Members = \$182,157,747

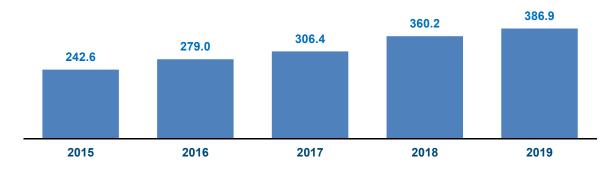


For purposes of determining the City's contribution, the Accrued Liability is measured using the Projected Unit Credit actuarial cost method. A different actuarial cost method, Entry Age Normal, is required to be used to measure liability for financial reporting purposes per GASB 74/75. As of July 1, 2019, the Entry Age Normal Accrued Liability is \$406,881,999.

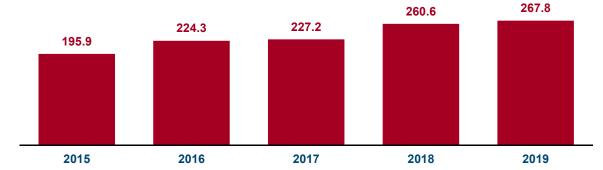
Section I - Executive Summary Funded Status

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.

Accrued Liability (\$ millions)



Unfunded Accrued Liability (\$ millions)



Funded Ratio



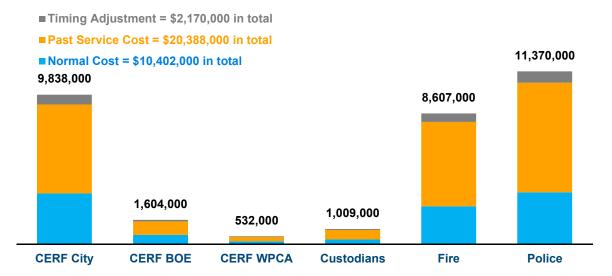
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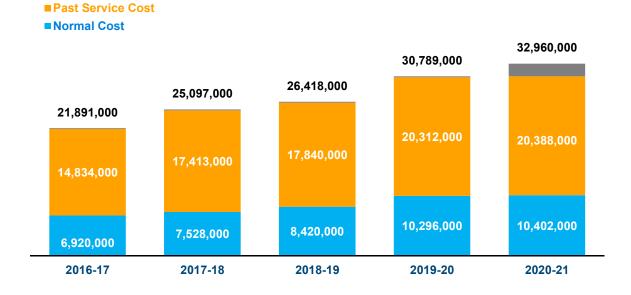
Section I - Executive Summary Actuarially Determined Contribution

The Actuarially Determined Contribution consists of three pieces: a Normal Cost payment to fund the benefits earned each year, a Past Service Cost to gradually reduce any unfunded or surplus liability, and a Timing Adjustment to reflect the timing of the contribution relative to the valuation date.

The Actuarially Determined Contribution for fiscal year 2020-21 is equal to \$32,960,000 and is shown graphically below.



The chart below shows the Actuarially Determined Contribution for the past four fiscal years. Note that the Normal Cost is relatively consistent from year to year, whereas the Past Service Cost tends to be more volatile since it reflects the impact of asset performance.



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■Timing Adjustment

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Section I - Executive Summary Long-Range Forecast

If the City pays the Actuarially Determined Contribution 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 and the long-range contribution levels:

Funded Ratio



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.

2030-31

2035-36

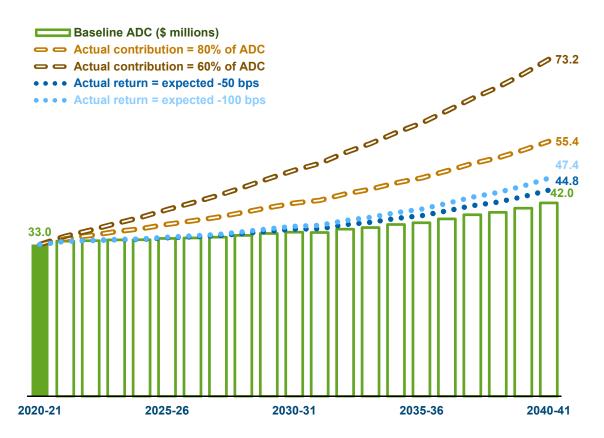
2025-26

2020-21

2040-41

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

Benefits are paid for through a combination of contributions from the City and from employees, and from investment income. If the City 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 City'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 City's future contribution levels. Stochastic projections could be prepared that would enable the City 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.

Section I - Executive Summary Summary of Principal Results

Membership as of	July 1, 2019	July 1, 2018
	• •	•
Active Members	1,199	1,275
Members Receiving Benefits	1,036	973
Total Count	2,235	2,248
Assets and Liabilities as of	July 1, 2019	July 1, 2018
Market Value of Assets	\$119,098,854	\$99,596,457
Accrued Liability for Active Members	182,157,747	183,713,812
Accrued Liability for Members Receiving Benefits	204,707,707	176,455,724
Total Accrued Liability	386,865,454	360,169,536
Unfunded Accrued Liability	267,766,600	260,573,079
Funded Ratio	30.8%	27.7%
Actuarially Determined Contribution for Fiscal Year	2020-21	2019-20
Normal Cost	\$10,402,000	\$10,296,000
Past Service Cost	20,388,000	20,312,000
Timing Adjustment	2,170,000	181,000
Actuarially Determined Contribution	32,960,000	30,789,000
Allocated to CERF City	\$9,838,000	\$9,231,000
Allocated to CERF BOE	1,604,000	1,473,000
Allocated to CERF WPCA	532,000	482,000
Allocated to Custodians	1,009,000	1,273,000
Allocated to Fire	8,607,000	7,999,000
Allocated to Police	11,370,000	10,331,000
Total	32,960,000	30,789,000

Section II - Plan Assets

The City maintains an OPEB Trust for prefunding OPEB benefits that are provided to both City and Board of Education Members. This valuation pertains to the portion of the OPEB Trust that covers CERF City, CERF BOE, CERF WPCA, Custodians, Fire and Police members. OPEB Trust assets are allocated first to WPCA based on the GASB 75 total OPEB liability as of the prior fiscal year end. The remaining OPEB Trust assets are then allocated to the remainder of the City groups and to the Board of Education based on their respective GASB 75 total OPEB liability as of the prior fiscal year end; the City assets are then allocated further to the respective groups included in this valuation in proportion to each group's Accrued Liability.

		Non-WPCA	Board of	Entire
	WPCA	City Groups	Education	OPEB Trust
Market Value on July 1, 2018	\$1,747,964	\$97,848,493	\$16,720,330	\$116,316,787
City Contributions	463,000	23,780,000	3,422,000	27,665,000
Member Contributions	0	188,609	0	188,609
Net Investment Income	82,168	5,654,355	957,045	6,693,568
Benefit Payments	(172,569)	(10,470,714)	(709,926)	(11,353,209)
Administrative Expenses	(364)	(22,088)	(1,498)	(23,950)
Market Value on July 1, 2019	2,120,199	116,978,655	20,387,951	139,486,805
Approximate Rate of Return *				5.37%

^{*} The rate shown here is not the dollar or time weighted investment yield rate which measures investment performance. It is an approximate net return assuming all activity occurred on average midway through the fiscal year.

Allocation of July 1, 2019 assets to groups in proportion to Accrued Liability

	Accrued	Allocated
	Liability	Assets
CERF City	\$110,827,999	\$34,037,578
CERF BOE	16,596,039	5,096,988
Custodians	11,838,822	3,635,948
Fire	105,109,103	32,281,187
Police	136,516,185	41,926,954
Total, non-WPCA City groups	380,888,148	116,978,655
CERF WPCA		2,120,199
Total		119,098,854

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Section III - Development of Contribution A. Past Service Cost

In determining the Past Service Cost, the Unfunded Accrued Liability is amortized as a level percent over 20 years on an open basis.

	CERF City	CERF BOE	CERF WPCA	Custodians	Fire	Police	Total
1. Accrued Liability							
Active Members	\$58,772,849	\$9,871,395	\$3,211,747	\$6,161,446	\$48,058,503	\$56,081,807	\$182,157,747
Terminated Members	0	0	0	0	0	0	0
Retirees	52,055,150	6,724,644	2,765,559	5,677,376	57,050,600	80,434,378	204,707,707
Disabled Retirees	0	0	0	0	0	0	0
Beneficiaries	0	0	0	0	0	0	0
Total Accrued Liability	110,827,999	16,596,039	5,977,306	11,838,822	105,109,103	136,516,185	386,865,454
2. Market Value of Assets (see Section II)	34,037,578	5,096,988	2,120,199	3,635,948	32,281,187	41,926,954	119,098,854
3. Unfunded Accrued Liability: (1) - (2)	76,790,421	11,499,051	3,857,107	8,202,874	72,827,916	94,589,231	267,766,600
4. Funded Ratio: (2) / (1)	30.7%	30.7%	35.5%	30.7%	30.7%	30.7%	30.8%
5. Amortization Period	20	20	20	20	20	20	20
6. Amortization Growth Rate	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
7. Past Service Cost: (3) amortized over (5)	5,846,802	875,535	293,679	624,565	5,545,099	7,202,000	20,387,680

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Section III - Development of Contribution B. Actuarially Determined Contribution for FY 2020-21

The Actuarially Determined Contribution is developed below.

	CERF City	CERF BOE	CERF WPCA	Custodians	Fire	Police	Total
Total Normal Cost	\$3,343,675	\$622,586	\$203,212	\$318,210	\$2,494,904	\$3,621,483	\$10,604,070
2. Expected Member Contributions	0	0	0	0	0	201,986	201,986
3. Expected Administrative Expenses	0	0	0	0	0	0	0
4. Net Normal Cost: (1) - (2) + (3)	3,343,675	622,586	203,212	318,210	2,494,904	3,419,497	10,402,084
5. Past Service Cost (see Section IIIA)	5,846,802	875,535	293,679	624,565	5,545,099	7,202,000	20,387,680
6. Interest on (4) + (5) to start of the fiscal year	647,927	105,618	35,031	66,466	566,820	748,816	2,170,678
7. Actuarially Determined Contribution for FY 2020-21: (4) + (5) + (6)	9,838,404	1,603,739	531,922	1,009,241	8,606,823	11,370,313	32,960,442
Actuarially Determined Contribution rounded to \$1,000	9,838,000	1,604,000	532,000	1,009,000	8,607,000	11,370,000	32,960,000

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Section III - Development of Contribution C. Long Range Forecast

This forecast is based on the results of the July 1, 2019 actuarial valuation and assumes that the City will pay the Actuarially Determined Contribution 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. For purposes of this forecast the amortization period declines to 1 year to illustrate the progress of the plan towards becoming fully funded; in actual practice the amortization period will not be less than 10 years in order to shield the City from contribution volatility. Actual results at each point in time will yield different values, reflecting the actual experience of the plan membership and assets.

·	V	alues as of the \	/aluation Date			Cash Flows Projected to the Following Fiscal Year			
•		Actuarial	Unfunded						
Valuation	Accrued	Value of	Accrued	Funded	Fiscal	City	Member	Benefit	Net
Date	Liability	Assets	Liability	Ratio	Year	Contributions	Contributions	Payments	Cash Flows
7/1/2019	\$386,865,454	\$119,098,854	\$267,766,600	30.8%	2020-21	\$32,960,000	\$208,046	(\$18,490,583)	\$14,677,463
7/1/2020	407,394,000	142,697,000	264,697,000	35.0%	2021-22	33,708,000	214,000	(19,960,000)	13,962,000
7/1/2021	429,225,000	169,125,000	260,100,000	39.4%	2022-23	33,825,000	221,000	(21,759,000)	12,287,000
7/1/2022	451,643,000	196,703,000	254,940,000	43.6%	2023-24	34,000,000	227,000	(23,045,000)	11,182,000
7/1/2023	474,328,000	224,496,000	249,832,000	47.3%	2024-25	34,018,000	234,000	(24,276,000)	9,976,000
7/1/2024	497,729,000	253,111,000	244,618,000	50.9%	2025-26	34,308,000	241,000	(25,673,000)	8,876,000
7/1/2025	522,263,000	282,497,000	239,766,000	54.1%	2026-27	34,422,000	248,000	(27,449,000)	7,221,000
7/1/2026	547,594,000	312,827,000	234,767,000	57.1%	2027-28	34,586,000	256,000	(28,966,000)	5,876,000
7/1/2027	573,434,000	343,586,000	229,848,000	59.9%	2028-29	34,964,000	264,000	(30,190,000)	5,038,000
7/1/2028	600,298,000	375,129,000	225,169,000	62.5%	2029-30	35,365,000	271,000	(31,451,000)	4,185,000
7/1/2029	628,535,000	408,041,000	220,494,000	64.9%	2030-31	35,663,000	280,000	(33,194,000)	2,749,000
7/1/2030	658,224,000	442,406,000	215,818,000	67.2%	2031-32	35,602,000	288,000	(34,500,000)	1,390,000
7/1/2031	688,520,000	477,718,000	210,802,000	69.4%	2032-33	36,327,000	297,000	(36,871,000)	(247,000
7/1/2032	720,754,000	514,112,000	206,642,000	71.3%	2033-34	36,682,000	306,000	(38,438,000)	(1,450,000
7/1/2033	753,495,000	551,404,000	202,091,000	73.2%	2034-35	37,332,000	315,000	(40,244,000)	(2,597,000
7/1/2034	787,954,000	590,092,000	197,862,000	74.9%	2035-36	37,716,000	324,000	(41,558,000)	(3,518,000
7/1/2035	823,707,000	630,344,000	193,363,000	76.5%	2036-37	38,545,000	334,000	(43,627,000)	(4,748,000
7/1/2036	861,882,000	672,496,000	189,386,000	78.0%	2037-38	39,441,000	344,000	(45,731,000)	(5,946,000
7/1/2037	901,732,000	716,376,000	185,356,000	79.4%	2038-39	39,960,000	354,000	(47,704,000)	(7,390,000
7/1/2038	943,126,000	762,142,000	180,984,000	80.8%	2039-40	40,870,000	365,000	(49,342,000)	(8,107,000

July 1, 2019 Actuarial Valuation

City of Stamford Other Post-Employment Benefits Plan

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

	Actuarial		Unfunded	
Valuation	Value of	Accrued	Accrued	Funded
Date	Assets	Liability	Liability	Ratio
July 1, 2019	\$119,098,854	\$386,865,454	\$267,766,600	30.8%
July 1, 2018	99,596,457	360,169,536	260,573,079	27.7%
July 1, 2017	79,181,012	306,365,000	227,183,988	25.8%
July 1, 2016	54,664,000	279,009,000	224,345,000	19.6%
July 1, 2015	46,738,000	242,622,000	195,884,000	19.3%
July 1, 2014	38,031,000	233,041,000	195,010,000	16.3%

Section III - Development of Contribution E. History of City Contributions

Fiscal Year	Actuarially Determined Contribution	Actual City Contribution	Contribution (Deficiency) Excess
2020-21	\$32,960,000	TBD	TBD
2019-20	30,789,000	TBD	TBD
2018-19	26,418,000	\$24,243,000	(\$2,175,000)
2017-18	25,097,000	25,097,000	(
2016-17	21,891,000	21,891,000	(
2015-16	22,047,000	19,795,106	(2,251,894

Section IV - Membership Data A. Statistics of Active Membership

	As of July 1, 2019	As of July 1, 2018
Number of Active Members	1,199	1,275
Average Age	49.7	49.9
Average Service	16.1	16.2

Section IV - Membership Data B. Distribution of Active Members as of July 1, 2019

CERF City								
CERF City				Years of S	Service			
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Tota
< 25	4							
25-29	21	1						2
30-34	12	6	2					2
35-39	9	10	8	2				2
40-44	9	8	13	9	1			4
45-49	14	9	8	12	12		1	5
50-54	9	11	8	11	21	3	7	7
55-59	9	8	12	22	12	5	20	8
60-64	7	9	13	10	16	1	17	7
65+	9	4	5	7	16	3	11	5
Total	103	66	69	73	78	12	56	45
CERF BOE								
,				Years of S				
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Tota
< 25								
25-29	1							
30-34	4							
35-39	9	3						1
40-44	3		3	1				
45-49	3	2	1	2	1			
50-54	5	2	1	4	1	1		1
55-59	3	4		1	5	2	1	1
60-64		1	2	2	3			
65+		2	2	1	5		4	1
Total	28	14	9	11	15	3	5	8
CERF WPCA								
				Years of S	Service			
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Tota
< 25								
25-29								
30-34		1						
35-39			2					
40-44			1					
45-49								
50-54		4	1			1		
55-59	2			1	1	1		
	2	1		1	1		1	
60-64	_	-						
60-64 65+	2		1		1		3	

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City of Stamford Other Post-Employment Benefits Plan

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Section IV - Membership Data B. Distribution of Active Members as of July 1, 2019

Custodians								
				Years of				
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Tota
< 25								C
25-29			1					1
30-34								0
35-39			4	1				5
40-44			3	2				5
45-49			4	2	3			9
50-54		1	5	7	6	4		23
55-59		1	7	12	2	2	6	30
60-64			7	8	4	4	1	24
65+			3	3	7	3	5	21
	0	2	34	35	22	13	12	118
Total	U	2	34	33	22	13	12	110
Fire								
				Years of	Service			
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
< 25	2							2
25-29	8	1						9
30-34	9	6	3					18
35-39	5	7	9	3				24
40-44	4	7	11	10	4			36
45-49	1	1	9	13	18			42
50-54	1	2	4	17	15	2	7	48
55-59	•	_	1	5	17	4	16	43
60-64				3	3	1	16	20
65+					3	' -	1	1
Total	30	24	37	48	57	7	40	243
TOtal	30	24	31	40	31	Į	40	243
Police								
				Years of				
Age	0-4	5-9	10-14	15-19	20-24	25-29	30+	Total
< 25	5							5
25-29	30	3						33
30-34	21	17	3					41
35-39	5	9	13					27
40-44	3	6	9	6	4			28
45-49	1	2	8	13	21			45
50-54		_	3	7	24	6	5	45
55-59	1		3	3	7	4	11	26
60-64			1	3	1	3	10	15
			I			3		
65+					1		4	5
Total	66	37	37	29	58	13	30	270

July 1, 2019 Actuarial Valuation

City of Stamford Other Post-Employment Benefits Plan

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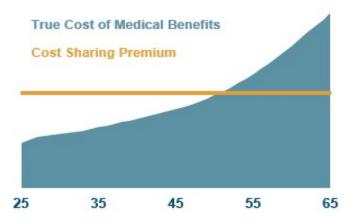
Section IV - Membership Data C. Information on Members Receiving Benefits

	As of	As of
	July 1, 2019	July 1, 2018
Members Receiving Benefits		
Number	1,036	973
Average Age	75.0	74.0
Spouses / dependents receiving benefits		
Number	384	366
Average Age	71.0	69.0
Distribution of Members Receiving Benefits as of July 1, 2019	Age	Number
	< 50	7
	50 - 59	20
	60 - 69	154
	70 - 79	330
	10 10	
	80 - 89	
		294 <u>231</u>

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 on the prior page. 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 City is calculated as the difference between the gross liability and the offset liability.

July 1, 2019 Actuarial Valuation

City of Stamford Other Post-Employment Benefits Plan

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Section V - Healthcare Information B. Current Premiums

The annual medical premiums are shown below.

Employee	Spouse	Effective Date
\$14,616.00	\$14,616.00	7/1/2019
8,946.00	8,945.40	7/1/2019
19,638.60	19,638.72	7/1/2019
10,788.12	10,788.12	7/1/2019
7,991.04	7,991.04	7/1/2019
5,301.12	5,301.12	7/1/2019
	\$14,616.00 8,946.00 19,638.60 10,788.12 7,991.04	\$14,616.00 \$14,616.00 8,946.00 8,945.40 19,638.60 19,638.72 10,788.12 10,788.12 7,991.04 7,991.04

^{*}Active rates were blended based on actual plan enrollment.

Section V - Healthcare Information C. Expected Healthcare Costs

Milliman's Health Cost Guidelines were used to develop the expected true cost of health care benefits by age. Representative health care cost factors are shown below.

Cigna

	Empl	oyee	Spo	use
Age	Male	Female	Male	Female
45	0.32710	0.52550	0.32710	0.52550
50	0.43690	0.61240	0.43690	0.61240
55	0.57440	0.71320	0.57440	0.71320
60	0.74180	0.83660	0.74180	0.83660
65	1.00000	1.00000	1.00000	1.00000
70	1.15710	1.10740	1.15710	1.10740
75	1.30980	1.20840	1.30980	1.20840
80	1.41800	1.28080	1.41800	1.28080

IPI

	Emp	loyee	Spouse		
Age	Male	Female	Male	Female	
65	1.00000	1.00000	1.00000	1.00000	
70	1.13770	1.09540	1.13770	1.09540	
75	1.26940	1.18220	1.26940	1.18220	
80	1.35780	1.23910	1.35780	1.23910	

Aetna - Same expected cost for all ages.

The expected age 65 per capita claim costs, based on the factors in the table above, are:

	Employee		Spo	ouse
	Male	Female	Male	Female
Active Pre-65	\$25,788.69	\$22,981.46	\$22,981.46	\$25,788.69
Active Post-65	8,029.48	7,900.63	7,900.63	8,029.48
Cigna Retiree Pre-65	35,157.70	31,330.62	31,330.62	35,157.70
Cigna Retiree Post-65	9,015.25	8,870.58	8,870.58	9,015.25
IPI Post-65	6,268.54	6,062.99	6,062.99	6,268.54

Appendix A - Actuarial Funding Method

The actuarial funding method used in the valuation of this Plan is known as the Projected Unit Credit 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 a Timing Adjustment to reflect the timing of the contribution relative to the valuation date.

Under this cost method a projected retirement benefit at assumed retirement age is computed for each member. The Normal Cost for each member is computed as the present value of the pro-rata portion of the member's projected benefit which is accrued or earned during the plan year being valued. The normal cost of the plan is the total of the individually computed normal costs for all members. The Accrued Liability at any point in time for an active member is the present value of that portion of the projected benefit which has been accrued up to the valuation date. For members receiving benefits or entitled to a deferred benefit, the accrued liability is equal to the present value of their future benefit payments. The accrued liability for the plan is the total of individually computed accrued liability amounts for all members.

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 percent over 20 years on an open basis.

The Actuarial Value of Assets is equal to the Market Values of Assets.

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. For those unions whose new employees are eligible to participate in this plan, members who are projected to leave active employment are assumed to be replaced by new active members with the same age, service, gender, and pay characteristics as those hired in the past few years.

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. In addition, the assumptions for the Fire and Police groups reflect the formal experience studies performed for those groups as of the following dates: July 1, 2013 for Fire and July 1, 2008 - June 30, 2015 for Police. 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.

Interest Rate 7.05% (prior: 7.10%)

Inflation 2.60%

Amortization Growth Rate 2.00%

Salary Scale 2.60%

Medical Trend Pre-65: 5.50% - 4.20% over 54 years

Post-65: 4.60% - 4.20% over 66 years

Rate of Increase for Part B Reimbursements: 2.60%

Turnover Annual rates of withdrawal are as follows:

	Classified and	Custodians and	
Age	WPCA Employees	Firefighters*	Police
20	0.1060	0.0544	0.0181
25	0.0790	0.0489	0.0163
30	0.0580	0.0370	0.0123
35	0.0420	0.0235	0.0078
40	0.0310	0.0113	0.0000
45	0.0210	0.0000	0.0000
50	0.1300	0.0000	0.0000
55	0.0050	0.0000	0.0000
60	0.0000	0.0000	0.0000

^{*} No turnover for Firefighters after age 35

Disability		Classified, WPCA		
-	Age	and Custodians	Firefighters	Police
	20	0.0005	0.0005	0.0030
	25	0.0005	0.0005	0.0030
	30	0.0005	0.0005	0.0030
	35	0.0006	0.0006	0.0036
	40	0.0009	0.0009	0.0054
	45	0.0018	0.0018	0.0108
	50	0.0040	0.0040	0.0240
	55	0.0085	0.0085	0.0510
	60	0.0085*	0.0174	0.1044
	* 0 for Cu	stodians only		

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City of Stamford Other Post-Employment Benefits Plan

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Retirement CERF & WPCA

Age	Rate
50-61	5%
62-65	100%

Police

Service	Deta
	Rate
20	13%
21	11%
22	8%
23	7%
24	7%
25	7%
26	7%
27	8%
28	8%
29	8%
30	11%
31	13%
32	14%
33	13%
34	19%
35	20%
36	21%
37	17%
38	16%
39	18%
40	24%
41	24%
42	27%
43	21%
44	25%
45	22%
46	35%
47	50%
• •	3370

100% are assumed to retire at age 65

Retirement

Firefighters

Service	Rate
25	4%
26	0%
27	4%
28	4%
29	4%
30	4%
31	4%
32	18%
33	11%
34	38%
35	10%
36	22%
37	0%
38	29%
39	20%
40	100%

100% are assumed to retire at age 65

Custodians

Age	Rate*
60	20%
61	5%
62	20%
63	20%
64	20%
65	20%
66	20%
67	20%
68	20%
69	20%
70+	100%

^{*} Custodians receive a one-time rate of 50% at 25 years of service

Mortality

CERF, Custodians* & WPCA

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

(Prior: RP-2000 Mortality Table with separate male and female rates, with 50% blue collar adjustment and 50% no collar adjustment, combined table for non-annuitants and annuitants, projected to the valuation date with Scale BB.)

Police & Fire

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

(Prior: RP-2000 Mortality Table with separate male and female rates, with blue collar adjustment, combined table for non-annuitants and annuitants, projected to the valuation date with Scale BB.)

*Custodians were previously using the same mortality assumption as Police & Fire.

Future Retiree Coverage

95% of active participants are assumed to elect coverage at retirement.

Future Dependent Coverage

60% of active participants are assumed to be married. Female spouses are assumed to be 4 years younger than male spouses.

Retiree Contribution

Some current retirees pay flat amounts with no future increases assumed. Other retirees and future retirees percentage contributions, which are assumed to increase periodically with the Medical Trend.

Medicare Coordination

For those participants who are eligible for Medicare, Medicare is assumed to remain the primary payor of medical benefits for retirees and spouses over age 65.

Medicare Plan Enrollment

Reported data was used to identify current covered retirees, spouses and surviving spouses. All active employees were assumed to elect coverage under the CIGNA Plans and be eligible for Medicare upon attainment of age 65.

Valuation of Benefits for Children

Benefits attributed to children have been excluded from this valuation as they were determined to be de minimus.

July 1, 2019 Actuarial Valuation City of Stamford Other Post-Employment Benefits Plan

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.

Police

Eligibility Completion of 20 years of service

Cost Sharing Date of hire prior to April 11, 2016:

	Pre-65 Benefits	Post-65 Benefits
Age at Retirement	City Pays	City Pays
Prior to 55	66.66%	66.66%
After 55	100%	100%

Date of hire after April 11, 2016:

	Pre-65 Benefits	Post-65 Benefits
Age at Retirement	City Pays	City Pays
Prior to 55	55%	55%
55-60	55%	100%
60-65	60%	100%
After 65	N/A	100%

Medicare Part B The City reimburses retirees for their Medicare Part B premiums, in the amounts

provided on the census data.

Employee Effective July 1, 2016, all active employees contribute 1% of the Top Step Patrol Rate into an OPEB Trust each payroll period. Employees are not be required to contribute

after 30 years of service.

HSA/HRA The City reimburses the retiree for 75% of the deductible before age 65 and 50% after

Contribution age 65.

Fire

Eligibility Hired prior to January 1, 1981: the completion of 20 years of service.

Hired after January 1, 1981: the later of age 48 or the completion of 20 years of

service.

Cost Sharing Retired prior to December 1, 2016:

Pre-65 Benefits Post-65 Benefits

Age at Retirement Employee Pays
Prior to 55 33.33% 33.33%

After 55 \$21.66 \$21.66

Retired after December 1, 2016:

Pre-65 Benefits Post-65 Benefits

Age at Retirement Employee Pays
Prior to 55 33.33% 33.33%

After 55 \$85.00 \$85.00

Hired after July 1, 2016:

Retiree Age Retiree Percent

Prior to 55	50%
55	50%
56	48%
57	46%
58	44%
59	42%
60	40%
61	39%
62	38%
63	37%
64	36%
0.5	

65 retiree pays for Medicare Part B, City pays for supplemental plan

Disability Retirement after July 1, 2016: retiree pays \$85.00 per month.

Medicare Part B The City reimburses retirees for their Medicare Part B premiums, in the

amounts provided on the census data.

Life Insurance \$4,000

HSA/HRA The City reimburses the retiree for 75% of the deductible until age 65. Post 65, the City will fund the same percent as paid for active employees but not less than 50%.

July 1, 2019 Actuarial Valuation

City of Stamford Other Post-Employment Benefits Plan

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CERF

Union DEN

Eligibility The earliest of:

Age 50 and completion of 25 years of service Age 58 and completion of 15 years of service Age 60 and completion of 10 years of service

Employees hired after July 1, 2002 are not entitled to retiree medical benefits.

Cost Sharing Employees eligible for normal retirement prior to June 30, 2014:

 Age at Retirement
 City Pays
 City Pays

 Prior to 65
 66.66%
 66.66%

 After 65
 N/A
 66.66%

Employees eligible for normal retirement after June 30, 2014:

Pre-65 Benefits Post-65 Benefits

Age at Retirement City Pays City Pays
Prior to 65 50% 50%
After 65 N/A 50%

Medicare Part B The City reimburses retirees for their Medicare Part B premiums, in the amounts

provided on the census data.

Life Insurance In general, for those current and future retirees still eligible for retiree life insurance, the

liability has been transferred to the CERF pension plan.

HSA/HRA The City reimburses the retiree for 50% of the deductible (same as HSA funding for

active employees).

Contribution

CERF

Union MAA

Eligibility The earliest of:

> The completion of 25 years of service Age 58 and completion of 15 years of service

Age 60 and completion of 10 years of service

Employees hired after April 3, 2012 are not entitled to retiree medical benefits.

Cost Sharing Employees eligible for normal retirement prior to June 30, 2014:

> Pre-65 Benefits Post-65 Benefits Age at Retirement **City Pays City Pays** Prior to 65 66.66% 66.66% After 65 N/A 66.66%

Employees eligible for normal retirement after June 30, 2014:

Pre-65 Benefits Post-65 Benefits Age at Retirement **City Pays City Pays** 50% Prior to 65 50% After 65 N/A 50%

Medicare Part B The City reimburses retirees for their Medicare Part B premiums, in the amounts

provided on the census data.

Life Insurance In general, for those current and future retirees still eligible for retiree life insurance, the

liability has been transferred to the CERF pension plan.

HSA/HRA The City reimburses the retiree for 50% of the deductible (same as HSA funding for Contribution

CERF

Contribution

Union NUR

Eligibility The earliest of:

Age 50 and completion of 25 years of service Age 58 and completion of 15 years of service Age 60 and completion of 10 years of service

Employees hired after June 30, 2012 are not entitled to retiree medical benefits.

Cost Sharing Employees eligible for normal retirement prior to June 30, 2014:

 Age at Retirement
 City Pays
 City Pays

 Prior to 65
 66.66%
 66.66%

 After 65
 N/A
 66.66%

Employees eligible for normal retirement after June 30, 2014:

Pre-65 Benefits Post-65 Benefits

Age at Retirement City Pays City Pays
Prior to 65 50% 50%

After 65 N/A 50%

Medicare Part B The City reimburses retirees for their Medicare Part B premiums, in the amounts

provided on the census data.

Life Insurance In general, for those current and future retirees still eligible for retiree life insurance, the

liability has been transferred to the CERF pension plan.

HSA/HRA The City reimburses the retiree for 50% of the deductible (same as HSA funding for

CERF

Union TEA (IUOE-WPCA)

Eligibility The earliest of:

Age 50 and completion of 25 years of service Age 58 and completion of 15 years of service Age 60 and completion of 10 years of service

Employees hired after July 1, 2011 are not entitled to post-65 retiree medical benefits.

Cost Sharing Employees eligible for normal retirement prior to June 30, 2014:

 Age at Retirement
 City Pays
 City Pays

 Prior to 65
 66.66%
 33.33%

 After 65
 N/A
 33.33%

Employees eligible for normal retirement after June 30, 2014:

	Pre-65 Benefits	Post-65 Benefits
Age at Retirement	City Pays	City Pays
Prior to 65	50%*	33.33%
After 65	N/A	33.33%

*The City pays 50% when age at retirement is 64 and 2% less for each year under age 64. However, the City pays 50% regardless of age if the employee retires as a result of an involuntary layoff.

Medicare Part B

The City reimburses retirees for their Medicare Part B premiums, in the amounts

provided on the census data.

Life Insurance

In general, for those current and future retirees still eligible for retiree life insurance, the liability has been transferred to the CERF pension plan.

HSA/HRA Contribution The City reimburses the retiree for 50% of the deductible (same as HSA funding for

CERF

Union UE (IUOE Operations)

Eligibility The earliest of:

Age 50 and completion of 25 years of service

Age 58 and completion of 15 years of service and date of hire prior to July 1,

2012

Age 60 and completion of 10 years of service

Employees hired after July 1, 2012 are not entitled to post-65 retiree medical benefits.

Cost Sharing Employees eligible for normal retirement prior to June 30, 2015:

 Age at Retirement
 City Pays
 City Pays

 Prior to 65
 66.66%
 33.33%

 After 65
 N/A
 33.33%

Employees eligible for normal retirement after June 30, 2015:

 Age at Retirement
 City Pays
 City Pays

 Prior to 65
 50%
 33.33%

 After 65
 N/A
 33.33%

Medicare Part B The City reimburses retirees for their Medicare Part B premiums, in the amounts

provided on the census data.

Life Insurance In general, for those current and future retirees still eligible for retiree life insurance, the

liability has been transferred to the CERF pension plan.

HSA/HRA The City reimburses the retiree for 50% of the deductible (same as HSA funding for

Contribution active employees).

CERF

Contribution

Union LAW

Eligibility The earliest of:

Age 50 and completion of 25 years of service Age 58 and completion of 15 years of service Age 60 and completion of 10 years of service

Employees hired after June 30, 2012 are not entitled to retiree medical benefits.

Cost Sharing Employees eligible for normal retirement prior to June 30, 2014:

 Age at Retirement
 City Pays
 City Pays

 Prior to 65
 66.66%*
 66.66%

 After 65
 N/A
 66.66%

*Effective July 1, 2014, the City pays 50%

Employees eligible for normal retirement after June 30, 2014:

Pre-65 Benefits Post-65 Benefits

Age at Retirement City Pays City Pays
Prior to 65 50% 50%

After 65 N/A 50%

Medicare Part B The City reimburses retirees for their Medicare Part B premiums, in the amounts

provided on the census data.

Life Insurance In general, for those current and future retirees still eligible for retiree life insurance, the

liability has been transferred to the CERF pension plan.

HSA/HRA The City reimburses the retiree for 50% of the deductible (same as HSA funding for

CERF

Union UAW

Eligibility The earliest of:

Age 50 and completion of 25 years of service

Age 58 and completion of 15 years of service and non-grandfathered UAW

before January 1, 2015

Age 60 and completion of 10 years of service

Cost Sharing Employees eligible for normal retirement prior to December 31, 2014:

 Age at Retirement
 City Pays
 City Pays

 Prior to 65
 66.66%
 66.66%

 After 65
 N/A
 66.66%

Employees eligible for normal retirement after December 31, 2014:

Retired prior to July 1, 2015:

	Pre-65 Benefits	Post-65 Benefits
Age at Retirement	City Pays	City Pays
Prior to 65	50%	66.66%
After 65	N/A	66.66%

Retired after July 1, 2015:

	Pre-65 Benefits	Post-65 Benefits
Age at Retirement	City Pays	City Pays
Prior to 65	50%*	66.66%
After 65	N/A	66.66%

*The City pays 50% when age at retirement is 64 and 2% less for each year under age 64. However, the City pays 50% regardless of age if the employee retires as a result of an involuntary layoff.

Medicare Part B The City reimburses retirees for their Medicare Part B premiums, in the amounts

provided on the census data.

Life Insurance In general, for those current and future retirees still eligible for retiree life insurance, the

liability has been transferred to the CERF pension plan.

HSA/HRA The City reimburses the retiree for 50% of the deductible. **Contribution**

July 1, 2019 Actuarial Valuation

Custodians

Eligibility The earlier of:

The completion of 25 years of service

Age 60 and completion of 10 years of service

Employees hired after July 1, 2011 are not entitled to retiree medical benefits.

Cost Sharing Retired prior to July 1, 2011:

 Age at Retirement
 City Pays
 City Pays

 Prior to 65
 66.66%
 33.33%

 After 65
 N/A
 33.33%

Retired after July 1, 2011:

 Age at Retirement
 City Pays
 City Pays

 Prior to 65
 50%
 0%

 After 65
 N/A
 0%

Medicare Part B The City reimburses retirees for their Medicare Part B premiums, in the amounts

provided on the census data.

Life Insurance \$6,000

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.