



CITY OF HARTFORD
MUNICIPAL EMPLOYEES' RETIREMENT FUND (MERF)

Actuarial Valuation as of July 1, 2020





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Section I

Valuation Report

A. Purpose of the Valuation

The purpose of the valuation is to determine the funded status of the plan as well as the recommended cash contribution for the plan year. The information found in Section II of the report has been developed for this purpose.

The ultimate cost of a pension plan is based primarily on the level of benefits promised by the plan. The pension fund's investment earnings serve to reduce the cost of plan benefits and expenses. Thus,

<i>City's ultimate</i>	=	<i>benefits</i>	+	<i>expenses</i>	-	<i>investment</i>	-	<i>employee</i>
<i>cost</i>		<i>paid</i>		<i>incurred</i>		<i>return</i>		<i>contributions</i>

B. Contribution for 2021-2022 Fiscal Year

The City's recommended contribution for the 2021-2022 fiscal year, determined from the July 1, 2020 actuarial valuation, is shown below. We have shown the recommended contribution for the 2021-2022 fiscal year as a percentage of payroll, as well as a dollar amount. Also shown are last year's figures for comparison.

	Recommended 2021-2022 Fiscal Year Net Contribution (July 1, 2020 Valuation)		Recommended 2020-2021 Fiscal Year Net Contribution (July 1, 2019 Valuation)	
	% of payroll	\$ in millions	% of payroll	\$ in millions
Police	47.51%	\$18.99	44.10%	\$17.41
Firefighters	45.68%	\$15.78	37.96%	\$14.05
Board of Education	14.61%	\$7.26	13.12%	\$6.24
Municipal Services	55.74%	\$12.47	52.14%	\$12.19
Library	25.47%	<u>\$1.10</u>	26.53%	<u>\$1.03</u>
Total		\$55.60		\$50.92

Please see Section II, Exhibit A for the development of these figures.



Section I Valuation Report (continued)

C. Funded Status

The funded status of the plan as of July 1, 2020 is summarized below. The figures are useful in assessing the health of the plan overall.

Specifically, the funded status is based on the smoothed (actuarial) value of assets used in the valuation, as well as a measure of the plan’s liability known as the Actuarial Accrued Liability. The Actuarial Accrued Liability is the liability for benefits expected to be paid from the plan for inactive participants, as well as the liability for future expected benefit payments for active participants. For actives, the liability measure includes the impact of assumed future salary increases on projected benefits, but includes only that portion of their overall liability attributable to services rendered as of the valuation date.

	July 1, 2020
Actuarial Accrued Liability	\$1,593,662,000
Actuarial Value of Assets	<u>1,059,232,000</u>
Unfunded Status	534,430,000
Funded Percentage	66.5%

During the 2019-2020 fiscal year, the plan’s funded status decreased from 71.1% as of July 1, 2019 to 66.5% as of July 1, 2020, as detailed above. This was mostly due to decreasing the expected rate of return and continued recognition of past asset losses.

Even with a funded status of less than 100%, the plan is still in a healthy position with the ability to pay benefits due at the current 66.5% level. It is not the intent of the plan’s funding method to fully fund such shortfalls in just one year. Absent of other significant changes, such underfunding will be reduced over a period of years as it is spread into future contribution requirements.

D. Plan Experience During Period Under Review

The recommended City contribution for the 2021-2022 fiscal year has increased from last year by approximately \$4.68 million. This increase is the net impact of plan asset and liability experience, and assumption and method changes.

The July 1, 2019 Valuation produced a net City contribution of \$50.92 million for the 2020-2021 fiscal year. Based on July 1, 2020 participant data and assets, the 2021-2022 net City contribution is \$55.6 million.

During 2019-2020, the market value of assets decreased from \$1,049.3 million to \$1,010.7 million, resulting in an asset return of approximately 2.1% over the period. In order to avoid dramatic fluctuations in contribution requirements with large swings in the market, a “smoothed” or “actuarial” value of assets is used to perform the valuation. This smoothed value recognizes the difference between the expected return on the market value of assets and the actual return over a 5-year period at 20% per year.

As of July 1, 2020, the actuarial value of assets used in the development of the contribution requirement was approximately \$1,059.2 million, \$48.5 million higher than the market value of assets of \$1,010.7 million at such date. The return for the year on the actuarial value was 4.8%. Since 4.8% is less than the MERF’s 7.25% return assumption for the 2019-2020 plan year, asset losses were generated that increased the fiscal year 2021-2022 contribution requirement. Specifically, the current year market loss, along with continued recognition of past losses increased the contribution by \$2.8 million.

Changes in the plan’s population and the resulting impact on plan liabilities and normal cost had the net effect of increasing the recommended City contribution by approximately \$0.4 million. While actual experience is reviewed each year and compared to expected, a full experience study is generally recommended every 5 years.



Section I

Valuation Report

(continued)

E. Changes Since The Last Valuation

A full experience study was completed this year taking into account participant data from 2015 through 2019. Changes were recommended to several assumptions, including updating the mortality improvement scale to MP-2020. The net impact of these changes was a \$1 million decrease in liability and \$622,000 decrease in ADEC.

Plan changes within the groups impacted the contributions as follows:

- MLA: Employee contributions increased 1% per year
- HMEA: Employee contributions increased by 1% per year

The investment return assumption was lowered from 7.25% to 6.75% resulting in a \$77.6 million increase in liability and \$8.93 million increase in contribution.

Finally, the unfunded liability as of July 1, 2020 was frozen and will be amortized over a closed 25 year period. This reduced the contribution by \$6.8 million.

F. Reconciliation of Contribution

As discussed above, the contribution increased from \$50.9 million at July 1, 2019 to \$55.6 million at July 1, 2020. Below shows a reconciliation of the contribution (in millions) from last year to this year:

July 1, 2019 Contribution	\$50.9
<u>Gains and Losses</u>	
Asset Losses	\$2.8
Changes in Demographics different than expected	\$0.4
<u>Assumption Changes</u>	
Mortality Update & Experience Study	\$(0.6)
Investment Return (7.25% to 6.75%) & Amort Reset to 25 years	\$2.1
July 1, 2020 Contribution	\$55.6



G. Future Contribution Requirements

The use of a smoothed (actuarial) value of assets is meant to produce a more level funding pattern, given asset volatility. With a large decrease (increase) in the market, asset losses (gains) are spread over a five-year period, leveling out the recommended funding rather than providing for a spike (drop) in contribution requirements in one year.

As of July 1, 2020, there were approximately \$48.5 million in net unrecognized asset losses that eventually will be recognized in future City contribution requirements because of the use of this smoothing method. Based on the market value of assets as of April 15, 2021, it is expected there will be significant asset gains for 2020/2021 which will more than offset the past losses. As a result of these anticipated asset gains, it is expected that the 2022-2023 contribution will be slightly lower than the 2021-2022 amount.

To provide a sense of the level of expected future contributions, an estimate for the 2022-2023 fiscal year has been calculated. Specifically, the City's net estimated recommended contribution for that fiscal year is currently **\$54.6 million**. This figure is based on a projected market value of assets at July 1, 2021 of \$1.171 million, determined by projecting the market value of assets as of April 15, 2021 to June 30, 2021. Projected plan liabilities inherent in this calculation were based on the results of the July 1, 2020 valuation, including the assumptions, methods, and census data as of such date. An interest rate of 6.25% was used in the development of the \$54.6 million estimated contribution figure.

The projected asset value and estimated contribution for the 2022-2023 fiscal year assume the City funds the recommended contribution for 2020-2021. If the City contributes an amount other than the annual recommended contribution, the estimated future contribution will vary from the amount shown here.

The final 2022-2023 recommended contribution will be based upon final liabilities, assets, and the investment return and other actuarial assumptions used in the July 1, 2021 Actuarial Valuation.



H. Risk Assessment

A new Actuarial Standard of Practice (ASOP 51) requires the actuary to provide certain measures to assess the risk of a pension plan. Additional pension contributions may be required at inopportune times for the plan sponsor. In general, a plan sponsor with assets or revenue that are much larger than the liabilities in its pension plans will be better able to withstand increases in required pension contributions.

Plan Maturity Measurements

	July 1, 2020	July 1, 2019
Actuarial accrued liability for members currently in pay status as a percentage of the total actuarial accrued liability	75.5%	76.9%
<ul style="list-style-type: none"> • A lower percentage results in greater volatility as the investment return assumption changes. • A higher percentage results in greater demand on cash due to a proportionately higher percentage of benefits being in pay status. 		

	July 1, 2020
Duration of benefit payments using an investment rate of return of 6.75%	12.5 years
<ul style="list-style-type: none"> • A higher duration will occur if the plan's percentage of members in pay status decreases. A plan with a higher duration will have a liability that is more sensitive to changes in the investment return assumption. 	

	July 1, 2020	July 1, 2019
Ratio of market value of assets to covered payroll	6.9	7.1
<ul style="list-style-type: none"> • A higher ratio is more typical of relatively mature plans with a larger percentage of inactive members and may cause more potential contribution volatility as pension fund assets fluctuate. 		

Historical Results

Valuation Year Beginning	Investment Return Assumption	Annual Effective Rate of Return on Market Value of Assets	Market Value of Assets as a % of Actuarial Accrued Liability	Benefit Payments as a % of Market Value of Assets
2020	6.750%	N/A	63.4%	N/A
2019	7.250%	2.1%	69.8%	11.1%
2018	7.375%	6.5%	70.7%	10.8%
2017	7.500%	5.9%	72.2%	10.8%
2016	7.500%	10.4%	70.1%	9.8%



Section I

Valuation Report (continued)

I. Certification

This report presents the results of the July 1, 2020 Actuarial Valuation for the City of Hartford Municipal Employees' Retirement Fund (MERF) (the Plan) for the purpose of estimating the funded status of the Plan and determining the Actuarial Determined Contribution (ADC) for the fiscal year ending June 30, 2022. This report is intended to satisfy the requirements of Connecticut General Statute 7-450a.

The valuation has been performed in accordance with generally accepted actuarial principles and practices. It is intended to comply with all applicable Actuarial Standards of Practice.

I certify that the actuarial assumptions and methods that were selected by me and represent my best estimate of anticipated actuarial experience under the Plan.

In preparing this valuation, I have relied on employee data and asset and contribution information provided by the Plan Sponsor. I have audited neither the employee data nor the financial information, although I have reviewed them for reasonableness.

The results in this valuation report are based on the Plan as summarized in the *Summary of Plan Provisions* section of this report and the actuarial assumptions and methods detailed in the *Description of Actuarial Methods and Assumptions* section of this report.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: 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 this report, an analysis of the potential range of such future measurements has not been performed.

I am a member of the American Academy of Actuaries and meet its Qualification Standards to render the actuarial opinion contained herein.

Ellen A. Kucenski, FSA, MAAA
Enrolled Actuary 20-07674

April 26, 2021



Section II

Supporting Exhibits

A. Entry Age Normal Actuarial Accrued Liability as of July 1, 2020

	Police	Firefighters	Board Of Education	Municipal Services	Library	Total Membership
A. Covered Payroll						
Annual Payroll (000)	\$39,056	\$33,741	\$48,549	\$21,845	\$4,214	\$147,405
B. Actuarial Accrued Liability (AAL)						
Entry Age Normal AAL (000)						
1. Active Members						
a. Active Members' MERF Liability	\$111,626	\$93,458	\$93,859	\$47,644	\$9,472	\$356,059
b. Local 566 Payment Present Value	0	0	0	0	0	0
c. Local 1716 Payment Present Value	0	0	0	0	0	0
d. Total for Active Members	111,626	93,458	93,859	47,644	9,472	356,059
2. Terminated Non-Vested Members [allocated by (1d)]	596	499	501	254	51	1,901
3. Terminated Vested Members	3,386	1,587	16,113	9,670	1,223	31,979
4. Retired Members	423,577	333,207	133,291	295,021	18,529	1,203,625
5. Old Plans Cola 1987/1990/1997/1999/2001/2005/2007	45	38	8	9	0	100
6. Total	539,229	428,789	243,771	352,598	29,275	1,593,662
C. Valuation Assets (Adjusted Value)						
1. Amount prior to Recognizing Receivable (000)	\$356,391	\$276,708	\$184,025	\$221,427	\$20,682	\$1,059,232
2. Contribution Receivable (000)	0	0	0	0	0	0
3. Valuation Assets after Recognition of Receivable (000)	356,391	276,708	184,025	221,427	20,682	1,059,232
D. Unfunded Actuarial Accrued Liability (000)	\$182,838	\$152,081	\$59,746	\$131,171	\$8,593	\$534,430
E. Funded Percent (C. / B.)	66.1%	64.5%	75.5%	62.8%	70.6%	66.5%



Section II
Supporting Exhibits (continued)
B. Cash Contributions
July 1, 2021 – June 30, 2022 Fiscal Year Contribution

	Police	Firefighters	Board Of Education	Municipal Services	Library	Total Membership
1. Development of Amortization						
a. Unfunded Actuarial Accrued Liability	\$182,838,434	\$152,080,389	\$59,746,883	\$131,171,591	\$8,592,990	\$534,430,287
b. Amortization of Unfunded AAL (25 year closed)	14,367,917	11,950,870	4,695,065	10,307,803	675,259	41,996,914
2. Normal Cost Development						
a. Normal Cost Beginning of Year prior to Expense Load	\$2,926,614	\$2,444,978	\$1,806,507	\$1,098,245	\$318,349	\$8,594,693
b. Normal Cost Projected One Year prior to Expense Load	\$3,124,160	\$2,610,014	\$1,928,446	\$1,172,377	\$339,838	9,174,835
c. Expense Load (Allocated by AAL)	897,820	713,935	405,880	587,078	48,742	2,653,455
3. Fiscal Year Contribution for 07/01/2021 - 06/30/2022						
I. Gross City Contribution						
a. Total Contribution Due as of Beginning of Year (1d+2b+	18,389,897	15,274,819	7,029,391	12,067,258	1,063,839	53,825,204
b. Total Interest Adjusted Gross City Contribution	19,000,422	15,781,926	7,262,759	12,467,878	1,099,157	55,612,142
II. Annual Adjusted Payroll as of 07/01/2020 w proj	39,993,826	34,550,628	49,713,958	22,369,086	4,314,776	150,942,274
III. Contribution as a % of Payroll prior to adjustments	47.51%	45.68%	14.61%	55.74%	25.47%	36.84%
IV. 07/01/2021 Payment for Local 566 (000)	0	0	0	0	0	0
V. 07/01/2021 Payment for Local 1716 (000)	0	0	0	0	0	0
VI. Old Plans COLA Annual Payment (000)	8,406	4,775	1,828	2,072	0	17,081
VII Net City Contribution [(I.) - (IV.) - (V.) - (VI.)]	18,992,016	15,777,151	7,260,931	12,465,806	1,099,157	55,595,061



Section II

Supporting Exhibits

(continued)

C. Actuarial Balance Sheet

	July 1, 2020	July 1, 2019
Actuarial Liabilities		
Present Value of Future Benefits for:		
Active Employees	\$538,373,443	\$487,954,849
Inactive Members		
• Regular Retirees	1,102,073,358	1,055,599,726
• Disability Retirees	82,206,194	80,102,488
• Survivors	19,345,053	19,438,287
• Terminated Non-Vesteds	1,900,000	1,900,000
• Terminated Vesteds	31,978,143	37,690,156
• Old Plans COLA	<u>99,974</u>	<u>173,899</u>
TOTAL	\$1,775,976,165	\$1,682,859,405
Source of Funds		
1. Actuarial Value of Assets	\$1,059,232,126	\$1,068,806,782
2. Present Value of Future Employee Contributions	110,953,303	117,528,554
3. Present Value of Future City Normal Cost Contributions	71,360,449	61,810,020
4. Unfunded Accrued Liability	<u>534,430,287</u>	<u>434,714,049</u>
5. TOTAL = (1) + (2) + (3) + (4)	\$1,775,976,165	\$1,682,859,405



Section II

Supporting Exhibits

(continued)

D. Value of Accrued Benefits as of July 1, 2020

	Police	Firefighters	Board Of Education	Municipal Services	Library	Total Membership
A. Covered Payroll						
Annual Payroll	\$39,056	\$33,741	\$48,549	\$21,845	\$4,214	\$147,405
B. Actuarial Accrued Liability (AAL)						
Unit Credit AAL						
1. Active Members						
a. Active Members' MERF Liability	\$72,324	\$77,127	\$70,137	\$39,708	\$7,692	\$266,988
b. Local 566 Payment Present Value	0	0	0	0	0	0
c. Local 1716 Payment Present Value	0	0	0	0	0	0
d. Total for Active Members	72,324	77,127	70,137	39,708	7,692	266,988
2. Terminated Non-Vested Members [allocated by (1d)]	596	499	501	254	51	1,902
3. Terminated Vested Members	3,386	1,587	16,113	9,670	1,223	31,979
4. Retired Members	423,577	333,207	133,291	295,021	18,529	1,203,625
5. Old Plans Cola 1987/1990/1997/1999/2001/2005/2007	45	38	8	9	0	100
6. Total	499,928	412,458	220,050	344,662	27,495	1,504,594



Section II
Supporting Exhibits
(continued)

E. Development of Asset Values

The Actuarial Value of assets is used in the determination of plan contributions. It phases in recognition of asset gains and losses. A method of smoothing is used because the Market Value can swing widely from one year to the next, resulting in undesirable fluctuations in pension contributions. The smoothing is accomplished by recognizing asset gains and losses over a five-year period at 20% per year.

Relationship of Actuarial Value to Market Value	
1. Market value 7/1/2020	\$ 1,010,726,836
2. Gain / (loss) not recognized in actuarial value 7/1/2020	(48,505,290)
3. Preliminary actuarial value 7/1/2020: (1)-(2)	1,059,232,126
4. Preliminary actuarial value as a percentage of market value: (3)÷(1)	104.8%
5. Gain / (loss) recognized for corridor min/max	N/A
6. Actuarial value 7/1/2020 after corridor min/max: (3)+(5)	1,059,232,126
7. Actuarial value as a percentage of market value: (6)÷(1)	104.8%

Development of Market Value Gain / (Loss) for 2019-2020 Plan Year	
1. Market value 7/1/2019	\$ 1,049,258,147
2. Contributions	60,249,323
3. Benefit payments	117,332,415
4. Administrative expenses	2,516,349
5. Expected return at 7.25%	73,954,454
6. Expected value 7/1/2020: (1)+(2)-(3)-(4)+(5)	1,063,613,160
7. Market value 7/1/2020	1,010,726,836
8. Market value gain / (loss) for -1 Plan Year: (7)-(6)	(52,886,324)

Recognition of Gain / (Loss) in Actuarial Value					
Year	(a) Gain / (loss)	(b) Recognized as of 7/1/2019	(c) Recognized in current year: 20% of (a)	(d) Total recognized as of 7/1/2020: (b)+(c)	(e) Not recognized as of 7/1/2020: (a)-(d)
2015-2016	\$(69,970,338)	\$(55,976,272)	\$(13,994,066)	\$ (69,970,338)	\$ 0
2016-2017	28,336,859	17,002,116	5,667,372	22,669,488	5,667,371
2017-2018	(16,067,628)	(6,427,052)	(3,213,526)	(9,640,578)	(6,427,050)
2018-2019	(9,060,920)	(1,812,184)	(1,812,184)	(3,624,368)	(5,436,552)
2019-2020	(52,886,324)	0	(10,577,265)	(10,577,265)	(42,309,059)
Total			(23,929,669)		(48,505,290)



Section II

Supporting Exhibits

(continued)

E. Development of Asset Values

Summary of Fund Activity		
	Market Value	Actuarial Value
1. Beginning value 7/1/2019		
a. Trust assets	\$ 1,049,258,147	\$ 1,068,806,782
b. Accrued contribution	0	0
c. Benefits payable	0	0
d. Administrative expenses payable	0	0
e. Net: (a)+(b)-(c)-(d)	1,049,258,147	1,068,806,782
2. Contributions		
a. Employer contributions during year	46,601,904	46,601,904
b. Employee contributions during year	13,647,419	13,647,419
c. Change in accrued contribution	0	0
d. Total for plan year	60,249,323	60,249,323
3. Disbursements		
a. Benefit payments during year	117,332,415	117,332,415
b. Administrative expenses during year	2,516,349	2,516,349
c. Change in benefits payable	0	0
d. Change in administrative expenses payable	0	0
e. Total for plan year	119,848,764	119,848,764
4. Net investment return		
a. Interest and dividends	12,488,893	N/A
b. Change in accrued income	0	N/A
c. Realized gain (loss)	44,465,165	N/A
d. Unrealized gain (loss)	(29,472,960)	N/A
e. Expected return	N/A	73,954,454
f. Recognized gain (loss)	N/A	(23,929,669)
g. Required adjustment due to corridor	N/A	0
h. Reversal of prior year required adjustment	N/A	0
i. Investment-related expenses	(6,412,968)	N/A
j. Total	21,068,130	50,024,785
5. Ending value 7/1/2020		
a. Trust assets: (1a)+(2a)-(3a)-(3b)+(4j)	1,010,726,836	1,059,232,126
b. Accrued contribution	0	0
c. Benefits payable	0	0
d. Administrative expenses payable	0	0
e. Net: (a)+(b)-(c)-(d)	1,010,726,836	1,059,232,126
6. Approximate rate of return 2019-2020	2.1%	4.8%



Section II

Supporting Exhibits

(continued)

E. Development of Asset Values

Rate of Return on Market Value of Assets					
Period Ending June 30	Average Annual Effective Rate of Return				
	1 Year	3 Years	5 Years	10 Years	20 Years
2010	10.6%	-2.0%	3.2%	3.7%	N/A
2011	17.8%	3.9%	5.0%	5.7%	N/A
2012	2.0%	9.9%	2.5%	6.3%	N/A
2013	8.3%	9.2%	4.4%	6.7%	7.6%
2014	14.1%	8.0%	10.4%	6.7%	8.2%
2015	2.0%	8.0%	8.6%	5.9%	7.5%
2016	0.9%	5.5%	5.3%	5.2%	6.8%
2017	10.4%	4.3%	7.0%	4.7%	6.4%
2018	6.0%	5.7%	6.5%	5.5%	5.8%
2019	6.5%	7.6%	5.1%	7.7%	5.6%
2020	2.1%	4.8%	5.1%	6.9%	5.3%



Section II

Supporting Exhibits

(continued)

F. Membership Data

Summary – Active Members as of July 1, 2020

	Number	Payroll*	Average Annual Pay*
Police	418	\$39,056,471	\$93,437
Firefighters	353	33,740,848	95,583
Board of Education	964	48,548,787	50,362
Municipal Services	319	21,844,811	68,479
Library	68	4,213,648	61,965
Total	2,122	\$147,404,565	\$69,465

*Basic salary plus overtime.

Summary – Pensioners as of July 1, 2020

	Service Pensions*		Disability Pensions		Survivor Benefits*		Total	
	Count	Total Monthly Annuities	Count	Total Monthly Annuities	Count	Total Monthly Annuities	Count	Total Monthly Annuities
Police	564	\$2,943,190	70	\$141,339	120	\$65,838	754	\$3,150,367
Firefighters	410	2,277,782	119	305,664	138	87,145	667	2,670,591
Board of Ed.	679	1,166,829	21	9,479	58	12,724	758	1,189,032
Municipal Svcs.	794	2,396,230	10	7,706	109	32,022	913	2,435,958
Library	81	172,938	3	1,867	5	930	89	175,735
Vested Deferred	273	353,021	--	--	--	--	273	353,021
TOTAL**	2,801	\$9,309,990	223	\$466,055	430	\$198,659	3,454	\$9,974,704

* 23 pensioners receiving benefits as retirees and as survivors are included in both groups.

** Additional monthly benefits for the July 1, 1987, July 1, 1990, July 1, 1997, July 1, 1999, July 1, 2001, July 1, 2005, and July 1, 2007 COLA's for the unfunded plans (PBF, FRF, and RAF) are also included in the total liabilities for MERF. Such participants are not included in the counts shown here.



Section II

Supporting Exhibits

(continued)

F. Membership Data

Data Reconciliation – Police

Participant Data				
	Active	Terminated Vested	Pensioners	Total
Total Participants 7/1/2019	431	15	760	1,206
Adjustments	-1	0	0	-1
Retirements	-5	-3	+8	0
Disabilities	-1	-1	+2	0
Terminations				
Vested	-5	+5	N/A	0
Non-vested	-7	N/A	N/A	-7
Deaths	0	0	-21	-21
New beneficiaries	N/A	0	+5	+5
Lump Sum Settlements	-8	0	0	-8
Transfer group	0	0	0	0
Rehires	0	0	0	0
New entrants	+14	N/A	N/A	+14
Total Participants 7/1/2020	418	16	754	1,188
Average Age				
7/1/2019	38.4			
7/1/2020	39.1			
Average Service				
7/1/2019	10.0			
7/1/2020	10.7			
Payroll**				
7/1/2019	\$38,411,535			
7/1/2020	39,056,471			
Total monthly benefits*				
7/1/2019		\$55,482	\$3,132,287	
7/1/2020		44,358	3,150,367	

* Excludes old plan COLA participants.



Section II

Supporting Exhibits

(continued)

F. Membership Data

Data Reconciliation – Firefighters

Participant Data				
	Active	Terminated Vested	Pensioners	Total
Total Participants 7/1/2019	356	7	672	1,035
Adjustments	+1	0	0	+1
Retirements	-4	-2	+6	0
Disabilities	0	0	0	0
Terminations				
Vested	-1	+1	N/A	0
Non-vested	-1	N/A	N/A	-1
Deaths	0	0	-18	-18
New beneficiaries	N/A	0	+7	+7
Lump Sum Settlements	0	0	0	0
Transfer group	0	0	0	0
Rehires	0	0	0	0
New entrants	<u>+2</u>	<u>N/A</u>	<u>N/A</u>	<u>+2</u>
Total Participants 7/1/2020	353	6	667	1,026
Average Age				
7/1/2019	36.9			
7/1/2020	37.7			
Average Service				
7/1/2019	9.3			
7/1/2020	10.0			
Payroll**				
7/1/2019	\$33,365,705			
7/1/2020	33,740,848			
Total monthly benefits*				
7/1/2019		\$16,157	\$2,667,609	
7/1/2020		12,987	2,670,591	

* Excludes old plan COLA participants.



Section II

Supporting Exhibits

(continued)

F. Membership Data

Data Reconciliation – Board of Education

Participant Data				
	Active	Terminated Vested	Pensioners	Total
Total Participants 7/1/2019	938	140	765	1,843
Adjustments	+3	+2	-1	+4
Retirements	-14	-22	+36	0
Disabilities	0	-1	+1	0
Terminations				
Vested	-38	+38	N/A	0
Non-vested	-35	N/A	N/A	-35
Deaths	-1	0	-51	-52
New beneficiaries	N/A	0	+8	+8
Lump Sum Settlements	-14	-5	0	-19
Transfer group	0	0	0	0
Rehires	+1	-1	0	0
New entrants	<u>+124</u>	<u>N/A</u>	<u>N/A</u>	<u>+124</u>
Total Participants 7/1/2020	964	151	758	1,873
Average Age				
7/1/2019	47.3			
7/1/2020	47.3			
Average Service				
7/1/2019	10.8			
7/1/2020	10.3			
Payroll**				
7/1/2019	\$44,654,007			
7/1/2020	48,548,787			
Total monthly benefits*				
7/1/2019		\$176,201	\$1,173,341	
7/1/2020		182,635	1,189,032	

* Excludes old plan COLA participants.



Section II

Supporting Exhibits

(continued)

F. Membership Data

Data Reconciliation – Municipal Services

Participant Data				
	Active	Terminated Vested	Pensioners	Total
Total Participants 7/1/2019	324	94	906	1,324
Adjustments	-1	+1	-2	-2
Retirements	-16	-19	+35	0
Disabilities	0	0	0	0
Terminations				
Vested	-15	+15	N/A	0
Non-vested	-12	N/A	N/A	-12
Deaths	-2	-1	-31	-34
New beneficiaries	N/A	0	+5	+5
Lump Sum Settlements	-10	-1	0	-11
Transfer group	0	0	0	0
Rehires	0	0	0	0
New entrants	<u>+51</u>	<u>N/A</u>	<u>N/A</u>	<u>+51</u>
Total Participants 7/1/2020	319	89	913	1,321
Average Age				
7/1/2019	49.2			
7/1/2020	48.3			
Average Service				
7/1/2019	11.0			
7/1/2020	10.4			
Payroll**				
7/1/2019	\$21,732,490			
7/1/2020	21,844,811			
Total monthly benefits*				
7/1/2019		\$131,819	\$2,378,133	
7/1/2020		99,182	2,435,958	

* Excludes old plan COLA participants.



Section II

Supporting Exhibits

(continued)

F. Membership Data

Data Reconciliation – Library

Participant Data				
	Active	Terminated Vested	Pensioners	Total
Total Participants 7/1/2019	61	8	90	159
Adjustments	0	+1	0	+1
Retirements	0	0	0	0
Disabilities	0	0	0	0
Terminations				
Vested	-2	+2	N/A	0
Non-vested	-2	N/A	N/A	-2
Deaths	0	0	-1	-1
New beneficiaries	N/A	0	0	0
Lump Sum Settlements	-1	0	0	-1
Transfer group	0	0	0	0
Rehires	0	0	0	0
New entrants	<u>+12</u>	<u>N/A</u>	<u>N/A</u>	<u>+12</u>
Total Participants 7/1/2020	68	11	89	168
Average Age				
7/1/2019	47.9			
7/1/2020	47.6			
Average Service				
7/1/2019	12.7			
7/1/2020	11.8			
Payroll**				
7/1/2019	\$3,721,167			
7/1/2020	4,213,648			
Total monthly benefits*				
7/1/2019		\$8,701	\$176,573	
7/1/2020		13,858	175,735	

* Excludes old plan COLA participants.



Section II

Supporting Exhibits

(continued)

F. Membership Data

Data Reconciliation – Total

Participant Data				
	Active	Terminated Vested	Pensioners	Total
Total Participants 7/1/2019	2,110	264	3,193	5,567
Adjustments	+2	+4	-3	+3
Retirements	-39	-46	+85	0
Disabilities	-1	-2	+3	0
Terminations				
Vested	-61	+61	N/A	0
Non-vested	-57	N/A	N/A	-57
Deaths	-3	-1	-122	-126
New beneficiaries	N/A	0	+25	+25
Lump Sum Settlements	-33	-6	0	-39
Transfer group	0	0	0	0
Rehires	+1	-1	0	0
New entrants	<u>+203</u>	<u>N/A</u>	<u>N/A</u>	<u>+203</u>
Total Participants 7/1/2020	2,122	273	3,181	5,576
Payroll				
7/1/2019	\$141,884,905			
7/1/2020	147,404,565			
Total monthly benefits*				
7/1/2019		\$388,359	\$9,527,944	
7/1/2020		353,021	9,621,683	

* Excludes old plan COLA participants.



Section II
Supporting Exhibits
(continued)

G. IRC Section 415(m) Valuation

The IRC Section 415(m) Fund* is an unfunded "excess benefit plan" to provide that portion of certain retirees' pension benefits that exceed the limits permitted under Section 415 of the Federal Internal Revenue Code (IRC).

	<u>July 1, 2020</u>	<u>July 1, 2019</u>
1. Number of retirees and beneficiaries receiving benefits	5	6
2. Annual benefits payable	\$35,000	\$41,000
3. Present value of benefits	\$139,000	\$159,000

The "actives" are funded through MERF. The City provides contributions for the retirees' benefits payable each year, as determined by the Pension Commission.

Actuarial Assumptions

The actuarial assumptions used in the 2020 Section 415(m) Fund valuation are as follows:

Mortality Basis

RP-2014, fully projected (projected to the year of decrement), with separate male & female tables and separate rates for annuitants and non-annuitants, with occupational adjustment. Mortality Improvement is based on the MP-2020 scale.

Mortality Improvement

Projected to date of decrement using Scale MP-2020 (generational mortality).

Termination

N/A.

Salary Scale

N/A.

Investment Return

6.75% per year, net of investment expenses. (Prior: 7.25%)

Assumed Retirement age

Immediate as all are retired.

Increases in dollar limit on benefits under IRC Section 415

2.40% per year. (Prior: 2.50%)

This assumption is based on long term historical inflation numbers. While near term averages have been lower, we do not believe this trend will continue indefinitely and expect that there will be a reversion to the long term average.

Benefits

Retiree pension amounts in excess of IRC Section 415 limits. Benefits which do not exceed such amounts are payable from the City's MERF Plan. IRC Section 415 limits are assumed to increase annually and thus decrease the benefits payable from this Plan and increase the portion of the benefits payable from the City's MERF Plan.

**Section 415(m) Fund adopted by the Court of Common Council on March 24, 1997.*



Section III

Actuarial Cost Methods and Assumptions

A. Actuarial Cost Methods

Asset Valuation Method – Actuarial Value of Assets

In order to smooth the year-to-year fluctuations in asset values, the asset values are adjusted by phasing in recognition of gains and losses over a five-year period. (Phase-in started July 1, 2003). Gains and losses are defined as the difference between the actual and the expected return on assets.

The July 1, 2009 valuation reflected a change in the asset valuation method from the use of a four-year smoothing period for gains and losses to the use of a five-year period. In the year of implementation of the change, the five-year smoothing methodology was retroactively applied to the gains and losses for previous years.

The assets held by the insurance companies include the funds on deposit for future purchase of annuities, as well as the reserves and contingency reserves for annuities already purchased which are subject to experience rating.

Actuarial Funding Method

The “Entry Age Normal Actuarial Cost Method” is used to determine plan liabilities. The Unfunded Actuarial Accrued Liability developed with the July 1, 2020 valuation is amortized over 25 years using a level dollar, closed period. Gains and losses after July 1, 2020 will be amortized over a 15 year level dollar, open period.



Section III Actuarial Cost Methods and Assumptions (continued)

B. Actuarial Assumptions

The actuarial assumptions used in the 2020 MERF valuation are as follows:

Mortality Basis

RP-2014, fully projected (projected to the year of decrement), with separate male & female tables and separate rates for annuitants and non-annuitants, with occupational adjustment. Mortality Improvement is based on the Scale MP-2020 scale.

Prior Valuation: RP-2014, fully projected (projected to the year of decrement), with separate male & female tables and separate rates for annuitants and non-annuitants, with occupational adjustment. Mortality Improvement is based on the Scale MP-2019 scale.

Mortality Improvement

Pre and Post-retirement: Projected to date of decrement using Scale MP-2020 (generational mortality).

Prior: Pre and Post-retirement: Projected to date of decrement using Scale MP-2019 (generational mortality).

We have selected this mortality assumption and mortality improvement scale because it is based on a recent published pension mortality study released by the Society of Actuaries. The mortality assumption was updated to the latest approved improvement scale. The change in assumption decreased liabilities by about 0.3%.

Termination

Police and Fire

Annual rates of termination are illustrated by the sample rates as follows:

Age	Police	Fire
20-22	2.25%	1.00%
25-27	4.50%	1.00%
30-32	3.45%	1.00%
35-37	2.80%	1.00%
40-42	2.20%	0.75%
45-47	2.20%	0.25%
50+	0.00%	0.00%

Bd of Ed

Annual rates of termination are illustrated by the sample rates as follows:

Age	All Years of Service
25	30.0%
35	12.0%
45	8.8%
50+	7.0%



Section III

Actuarial Cost Methods and Assumptions

(continued)

Termination (cont.)

Munic. Svc. & Lib.

Annual rates of termination are illustrated as follows:

Age	Years of Service					
	<1	1	2	3	4	5+
25	38.1%	35.4%	32.8%	23.6%	19.7%	15.8%
35	26.7%	22.2%	18.2%	16.0%	13.8%	8.6%
45	19.1%	14.2%	11.0%	9.7%	8.4%	6.6%
52	13.1%	10.5%	9.2%	7.9%	6.6%	5.3%
55+	10.5%	9.2%	7.9%	6.6%	5.3%	4.6%

The actuarial assumption in regards to rates of termination shown above is based on the results of an actuarial experience study for the period July 1, 2015 through June 30, 2019.

Investment Return

6.75% per year, net of investment expenses.

Prior valuation: 7.25% per year.

This rate is supported by the City's target asset allocation and long term expected rates of return by asset class provided by the investment advisor.

The change in assumption increased liabilities by 4.6%.

Inflation

2.40%. (Prior: 2.50%)

This assumption is consistent with the Social Security Administration's current best estimate of the ultimate long-term (75-year horizon) annual percentage increase in CPI, as published in the 2020 OASDI Trustees Report.



Section III

Actuarial Cost Methods and Assumptions

(continued)

Salary Scale

2.40% for inflationary salary increases plus a percentage for promotion or merit increases as follows.

Yearly Rates of Increases for Promotion or Merit

Age	Police	Fire	Bd of Ed	Munic. Svc. & Lib.
25	6.11%	4.00%	3.50%	4.76%
30	4.23%	2.25%	3.00%	4.00%
35	2.72%	1.75%	2.50%	2.56%
40	1.71%	1.25%	1.50%	1.80%
45	1.31%	0.75%	1.00%	1.49%
50	1.07%	0.50%	0.75%	1.12%
55+	0.97%	0.50%	0.50%	0.82%

Salaries are adjusted for Board of Education groups by 2.40% per year and 0% for City groups for the period of each open contract, for one full fiscal year from the measurement date. Any wage increases negotiated beyond the valuation date have been reflected in our projections.

For Police, final average pay is loaded by a percentage for assumed private duty and overtime as follows: Pre-7/1/1999 hires: 67%; Post 7/1/1999 hires: 19% for employees remaining in the pre 2012 plan; 27% for employees moving to the 7/1/2012 plan.

The salary scale assumptions above are based on the results of an actuarial experience study for the period July 1, 2015 through June 30, 2019.

Assumed Retirement Age

Retirement Rates: Police

Service	Hired<1999 Service>=20	Hired>1999 Service >=25
<55	60.0%	60.0%
55	75.0%	75.0%
>55	50.0%	50.0%
63+	100.0%	100.0%

100% retire at age 65, regardless of service. Minimum retirement age of 45.



Section III Actuarial Cost Methods and Assumptions (continued)

Assumed Retirement Age (cont.)

Retirement Rates: Fire

Normal Retirement Date = 20 Years			Normal Retirement Date = 25 years		
Age	Under 20	20+	Age	Under 25	25+
40-44	0.0%	5.0%	40-44	0.0%	0.0%
45-49	0.0%	10.0%	45-49	0.0%	10.0%
50-54	0.0%	25.0%	50-54	0.0%	25.0%
55-59	10.0%	50.0%	55-59	10.0%	50.0%
60-64	10.0%	100.0%	60-64	10.0%	100.0%
65+	100.0%	100.0%	65+	100.0%	100.0%

Retirement Rates: Board of Education

Age	Rate
55	15.0%
56-61	10.0%
62-63	15.0%
64	20.0%
65-66	30.0%
67-74	20.0%
75+	100.0%

Retirement Rates: Municipal Services and Library

Normal Retirement Service=20			Normal Retirement Service=25		
Age	<20 yrs svc @age	20+ yrs svc @age	Age	<25 yrs svc @age	25+ yrs svc @age
45-54	0.0%	20.0%	45-55	0.0%	20.0%
55	10.0%	37.5%	55	10.0%	37.5%
56-62	15.0%	25.0%	56-62	15.0%	25.0%
63-64	15.0%	40.0%	63-64	15.0%	40.0%
65	50.0%	50.0%	65	50.0%	50.0%
66-74	30.0%	30.0%	66-74	30.0%	30.0%
75+	100.0%	100.0%	75+	100.0%	100.0%

The actuarial assumption in regards to rates of retirement shown above is based on the results of an actuarial experience study for the period July 1, 2015 through June 30, 2019.



Section III

Actuarial Cost Methods and Assumptions

(continued)

Social Security

Future tax wage bases are developed by projecting the 2020 base of \$137,700 forward at 2.40% per year.

Marital Status at Retirement

Non-Uniformed:

Males - 80% married, spouse 3 years younger.

Females - 60% married, spouse same age.

Uniformed: All - 80% married, spouse 2 years younger.

Disability

DP-85 Class 3 Male and Female Disability Incidence Rate Table for Firefighters.

<u>Age</u>	<u>Male</u>	<u>Female</u>
15	0.106%	0.064%
20	0.151%	0.010%
25	0.219%	0.015%
30	0.309%	0.252%
35	0.431%	0.388%
40	0.597%	0.547%
45	0.829%	0.777%
50	1.22%	1.20%
55	2.12%	1.96%
60	3.24%	2.32%
65	4.37%	2.72%

DP-85 Class 1 Male and Female Disability Incidence Rate Table increased 150% for Police and 10% for other groups.



Section III

Actuarial Cost Methods and Assumptions

(continued)

Disability (cont.)

DP85 Class 1 Disability Incidence Table: Sample male and female rates

<u>Age</u>	<u>Male</u>	<u>Female</u>
15	0.021%	0.023%
20	0.029%	0.030%
25	0.038%	0.047%
30	0.048%	0.080%
35	0.069%	0.136%
40	0.117%	0.211%
45	0.202%	0.323%
50	0.358%	0.533%
55	0.722%	0.952%
60	1.256%	1.159%
65	1.753%	1.358%

The actuarial assumption in regards to disability rates shown above is based on the results of an actuarial experience study for the period July 1, 2015 through June 30, 2019.

Expenses other than Investment Expenses

An explicit dollar amount was included in the development of the normal cost equal to an estimate of expenses (other than investment expenses) for the upcoming year. The estimate was developed based on an average of actual expenses over the last four years. For the 2020 valuation, \$2,653,455 was used. Estimated expenses were then allocated to the various groups by the actuarial accrued liability.

Sick Exchange

Four years are exchanged by all actives if provision available. For Firefighters hired prior to July 1, 2003, six years are exchanged.

Military and Prior Service

Buy-backs: When a decision to buy-back service occurs, date of hire is adjusted accordingly.

Additional Liabilities

COLAs: Included in this valuation is the liability for the Cost of Living Adjustments (COLAs) effective July 1, 1987, July 1, 1990, July 1, 1997, July 1, 1999, July 1, 2001, July 1, 2005, and July 1, 2007 for both the MERF and the unfunded "Old Plans" (PBF, FRF, and RAF).

For a detailed description of the prior year assumptions and the impact of the changes on liability, see next page.



Section III

Actuarial Cost Methods and Assumptions

(continued)

Prior Year Assumptions

Mortality Basis

RP-2014, fully projected (projected to the year of decrement), with separate male & female tables and separate rates for annuitants and non-annuitants, with occupational adjustment. Mortality Improvement is based on the Scale MP-2019 scale.

Mortality Improvement

Pre and Post-retirement: Projected to date of decrement using Scale MP-2019 (generational mortality).

Termination

Police and Fire

Annual rates of termination are illustrated by the sample rates as follows:

Age	Police	Fire
20-24	4.50%	1.00%
25-29	3.25%	1.00%
30-34	2.50%	1.00%
35-39	2.00%	1.00%
40-44	1.25%	0.75%
45-49	0.75%	0.25%
50+	0.00%	0.00%

Bd of Ed

Annual rates of termination are illustrated by the sample rates as follows:

Age	Years of Service					
	<1	1	2	3	4	5+
20 -29	30.0%	30.0%	24.0%	22.5%	18.5%	14.5%
30 -39	23.0%	23.0%	18.0%	16.0%	12.5%	8.0%
40 -49	20.0%	20.0%	14.0%	13.0%	9.0%	7.0%
50 -54	18.0%	18.0%	11.0%	10.0%	7.0%	6.0%
55+	13.0%	13.0%	9.5%	8.0%	6.5%	5.5%



Section III

Actuarial Cost Methods and Assumptions

(continued)

Termination (cont.)

Munic. Svc. & Lib.

Annual rates of termination are illustrated as follows:

Age	Years of Service					
	<1	1	2	3	4	5+
20-29	29.00%	27.00%	25.00%	18.00%	15.00%	12.00%
30-39	22.00%	19.00%	16.00%	14.00%	12.00%	7.00%
40-49	16.50%	12.00%	9.00%	8.00%	7.00%	5.50%
50-54	10.00%	8.00%	7.00%	6.00%	5.00%	4.00%
55+	8.00%	7.00%	6.00%	5.00%	4.00%	3.50%

The actuarial assumption in regards to rates of termination shown above is based on the results of an actuarial experience study for the period July 1, 2010 through June 30, 2015.

Investment Return

7.25% per year, net of investment expenses.

Inflation

2.50%.

Salary Scale

2.50% for inflationary salary increases plus a percentage for promotion or merit increases as follows.

Yearly Rates of Increases for Promotion or Merit

Age	Police	Fire	Bd of Ed	Munic. Svc. & Lib.
25	5.25%	4.00%	3.50%	5.15%
30	4.35%	2.25%	3.00%	3.85%
35	2.79%	1.75%	2.50%	2.25%
40	1.76%	1.25%	1.50%	2.00%
45	1.35%	0.75%	1.00%	1.65%
50	1.10%	0.50%	0.75%	1.25%
55+	1.00%	0.50%	0.50%	1.00%

Salaries are adjusted for Board of Education groups by 2.50% per year and 0% for City groups for the period of each open contract, for one full fiscal year from the measurement date. Any wage increases negotiated beyond the valuation date have been reflected in our projections.

For Police, final average pay is loaded by a percentage for assumed private duty and overtime as follows:
Pre-7/1/1999 hires: 42%; Post 7/1/1999 hires: 19% for employees remaining in the pre 2012 plan; 27% for employees moving to the 7/1/2012 plan.

The salary scale assumptions above are based on the results of an actuarial experience study for the period July 1, 2010 through June 30, 2015.



Section III

Actuarial Cost Methods and Assumptions

(continued)

Assumed Retirement Age

Retirement Rates: Police

Service	Age <50	Age >50	Age >60
20	55.0%	32.5%	100.0%
21-24	30.0%	16.5%	100.0%
25-29	25.0%	12.5%	100.0%
30+	50.0%	50.0%	100.0%

100% retire at age 60, regardless of service; must be age 40 to retire.

Retirement Rates: Fire

Age	Years of Service	
	20-24	25-29
45-49	4.0%	7.5%
50-54	10.0%	25.0%
55-59	15.0%	40.0%
60-64	30.0%	50.0%
65+	100.0%	100.0%

100% retire at 30 years of service for all ages.

Retirement Rates: Board of Education

Age	Rate
55	8.0%
56-57	7.0%
58-61	9.0%
62-64	14.0%
65	35.0%
66-74	15.0%
75+	100.0%



Section III

Actuarial Cost Methods and Assumptions

(continued)

Assumed Retirement Age (cont.)

Retirement Rates: Municipal Services and Library

Age	<20 yrs svc or over age 65	Service	+20 on yrs svc and under age 65
55	12.0%	20	17.5%
56-59	9.0%	21	20.0%
60-62	12.5%	22	15.0%
63-64	20.0%	23-25	12.5%
65	25.0%	26-27	16.0%
66-74	17.5%	28	17.0%
75	100.0%	29	12.0%
		30	25.0%
		31-34	15.0%
		35	100.0%

The actuarial assumption in regards to rates of retirement shown above is based on the results of an actuarial experience study for the period July 1, 2010 through June 30, 2015.

Social Security

Future tax wage bases are developed by projecting the 2019 base of \$132,900 forward at 4% per year.

Marital Status at Retirement

Non-Uniformed:

Males - 80% married, spouse 3 years younger.

Females - 60% married, spouse same age.

Uniformed: All - 80% married, spouse 2 years younger.



Section III

Actuarial Cost Methods and Assumptions

(continued)

Disability

DP-85 Class 1 Male and Female Disability Incidence Rate Table increased 200% for Firefighter groups, 150% for Police and 10% for all other groups.

DP85 Class 1 Disability Incidence Table: Sample male and female rates

<u>Age</u>	<u>Male</u>	<u>Female</u>
15	0.021%	0.023%
20	0.029%	0.030%
25	0.038%	0.047%
30	0.048%	0.080%
35	0.069%	0.136%
40	0.117%	0.211%
45	0.202%	0.323%
50	0.358%	0.533%
55	0.722%	0.952%
60	1.256%	1.159%
65	1.753%	1.358%

The actuarial assumption in regards to disability rates shown above is based on the results of an actuarial experience study for the period July 1, 2010 through June 30, 2015.

Expenses other than Investment Expenses

An explicit dollar amount was included in the development of the normal cost equal to an estimate of expenses (other than investment expenses) for the upcoming year. The estimate was developed based on an average of actual expenses over the last four years. For the 2019 valuation, \$2,632,821 was used. Estimated expenses were then allocated to the various groups by the actuarial accrued liability.

Sick Exchange

Four years are exchanged by all actives if provision available. For Firefighters hired prior to July 1, 2003, six years are exchanged.

Military and Prior Service

Buy-backs: When a decision to buy-back service occurs, date of hire is adjusted accordingly.



Section IV
Hartford MERF - Summary of Principal Provisions of Pension Plan
July 1, 2020



PROVISIONS FOR:

Retirement Pensions:

POLICE OFFICERS AND FIREFIGHTERS

Firefighters hired before July 1, 2003: 2.80% of Final Average Pay (rate of weekly pay immediately preceding retirement times 52, plus for firefighters who work a 42 hour week, holiday pay) multiplied by years of service up to 25 plus 2.0% for years over 25.

Firefighters hired after June 30, 2003: 2.5% of Final Average Pay (rate of weekly pay immediately preceding retirement times 52, plus for firefighters who work a 42 hour week, holiday pay) multiplied by years of service up to 20 plus 2% of Final Average Pay for years of service over 20. Firefighters hired after December 2016: 2.0% of Final Average Pay (average of highest 2 of last 5 years of base pay plus holiday pay) multiplied by years of service up to 35.

Sworn Police Officers hired before July 1, 1999: 2.65% of Final Average Pay for highest 3 of last 5 years multiplied by years of service up to 20 plus 3% for year 21 plus a decreasing percentage for years over 21. Final Average Pay includes a provision for over-time and private duty pay.

Sworn Police Officers hired after June 30, 1999 not opting into 2013 plan: 2.5% of Final Average Pay for highest 3 of last 5 years times years of service up to 20 plus 2% for years of service- over 20. Final Average Pay includes a provision for over-time and private duty pay.

Sworn Police Officers hired after July 1, 2012 and officers hired after June 30, 1999 opting into new Plan: 2.8% of final rate of pay times years of service up to 25 years plus 2.5% for years of service over 25. Final Average Pay includes a provision for over-time.

BOARD OF EDUCATION MEMBERS

2% (2.5% for HFSHP, HSSSA and HESP) of Final Average Pay for highest 5 of last 10 years times years of service, with maximum benefit of 70% of Final Average Pay. Final Average Pay for HFSHP, HESP, HSSSA, and Local 2221, Hartford Federation of Paraprofessionals are based on highest 3 out of last 5 years. Benefit for Local 2221 is 2.5% of Final Average Pay multiplied by years of service up to 20 plus 2% of Final Average Pay for years of service over 20 (maximum of 10 years).

Effective July 1, 2008 for Local 818, employees hired prior to March 1, 2007 will get 2.5% of Final Average Pay (for each year of service) and employees hired after March 1, 2007 will get 2.0%. Final Average Pay is the highest 3 of the 7 years. Maximum benefit is 70% of pay.

Nonunion employees hired after September 30, 2010 no longer participate in the MERF.

MUNICIPAL SERVICES & LIBRARY MEMBERS

For Library and MLA hired on or after July 1, 2006, HMEA hired after July 1, 2003, CHPEA hired after June 23, 2003, 2% of Final Average Pay for highest 2 of last 5 years times years of service with a maximum benefit of 70% of Final Average Pay. For Library with 5-year option, Final Average Pay is highest 5 of last 10 years.

For CHPEA hired on or before June 23, 2003, MLA hired before July 1, 2006, and Non-bargaining, 2.5% of Final Average Pay for highest 2 of last 5 years times years of service. Maximum benefit of 70% of Final Average Pay for CHPEA, 80% for Non-bargaining and MLA. For Non-bargaining with 5-year option, Final Average Pay is highest 5 of last 10 years.

For Non-bargaining municipal employees hired after January 1, 2011, MLA employees hired after November 26, 2013, HMEA hired after May 21, 2017 and CHPEA hired after December 2017, retirement benefit multiplier is reduced to 1.75%.

For HMEA hired before July 1, 2003, 2.75% of Final Average Pay for highest 2 of last 5 years times years of service with a maximum benefit of 75% (was 70%) of Final Average Pay.

For SCGA, 2% of Final Average Pay for highest 5 of last 10 years reduced by 1% of average Social Security covered earnings for all years included in computation of Social Security primary benefits. Maximum benefit of 100% of Final Average Pay.



PROVISIONS FOR:

POLICE OFFICERS AND FIREFIGHTERS

BOARD OF EDUCATION MEMBERS

MUNICIPAL SERVICES & LIBRARY MEMBERS

Retirement Pensions:

Non-Sworn Police Officers: 2.5% of Final Average Pay for highest 3 of last 5 years times years of service, with maximum benefit of 80% of Final Average Pay.

Non-Sworn Police Officers hired after December 11, 2017: 1.5% of Final Average Pay for Highest 3 of last 5 years times years of service, with maximum benefit of 70 % of Final Average Pay.

Sworn Police Officers have a maximum benefit of 70% of Final Average Pay. For Sworn Police Officers hired before July 1, 1999 and after July 1, 2012 or hired between July 1, 1999 and June 30, 2012 opting into 2012 plan, increase maximum benefit to 80% of Final Average Pay with sick exchange provision for pre July 1, 1999 hires only. Firefighters have a maximum benefit of 80% of Final Average Pay (85% with sick exchange if hired prior to July 1, 2003, 70% if hired after December 2016).

Sworn Police Officers hired after December 11, 2017 have a maximum benefit of 70% of base pay with a 2% multiplier.

Assistant Police Chief, Police Chief, Assistant Fire Chief and Fire Chief: Same as Non-Bargaining.

Normal Form of Benefit:

For unmarried members: life annuity.
For married members: surviving spouse benefit of 25% of member's final year's earnings, if non-service connected death, and 50% of member's final year's earnings, if service connected death. Minimum of 50% of pension benefit for firefighters for non-service connected death.

For married Non-Sworn Police Officers: life annuity with 50% to survivor.

For unmarried members: life annuity.
For married members: life annuity with 50% to survivor.

For unmarried members: life annuity.
For married members: life annuity with 50% to survivor.



PROVISIONS FOR:

**Normal Retirement Age
and Service Requirement:**

POLICE OFFICERS AND FIREFIGHTERS

Firefighters and Sworn Police Officers hired before July 1, 1999: Full benefits after 20 years of continuous service.

Sworn Police Officers hired after June 30, 1999: Full benefits after 25 years of continuous service.

Sworn Police Officers hired after June 30, 2012, full benefits after 25 years of continuous service and age 55.

Non-Sworn Police Officers: Full benefits after 20 years of service, or age 60 plus 5 years of continuous service, or after 15 years of service, if contributions are left in the MERF until would have had 20 years of service.

Non-Sworn Police Officers hired after December 11, 2017, full benefits after 25 years of continuous service and age 62.

Post-2012 Sworn Police Officers who elected one-time option to lower age of retirement to 53 with additional 1% increase in contribution or lower age of retirement to 51 with additional 2.5% increase in contribution.

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Age 60 plus 10 (5 for non-bargaining – was 10) years of service (continuous service for Local 2221). Members are also eligible at age 55 with 25 years of service. Local 818 employees hired prior to March 1, 2007 may retire after 20 years of service, regardless of age. For HSSSA, age 55 and 5 (was 10) years of service.

MUNICIPAL SERVICES & LIBRARY MEMBERS

For SCGA and MLA hired on or after July 1, 2006, earlier of (1) age 60 plus 5 years of continuous service or (2) age 55 with 25 years of continuous service.

For Non-bargaining and MLA hired prior to July 1, 2006, earlier of (1) age 60 plus 5 years of continuous service or (2) 20 years of service, or (3) after 20 years of service if participant leaves after 15 years of service and contributions are left in the MERF until would have had 20 years of service.

For CHPEA, earlier of (1) age 60 plus 5 years of continuous service or (2) 20 years of aggregate service if hired on or before June 23, 2003, age 55 with 25 years of aggregate service if hired after June 23, 2003.

For those hired after the approval of the 2016-2020 agreement, age 65 with 5 years of service.

For HMEA earlier of (1) age 60 plus 5 years of continuous service or (2) 20 years of continuous service if hired before July 1, 2003, age 55 with 25 years of continuous service if hired after July 1, 2003. For employees hired on or after May 21, 2017, age 55 and 25 years of service or age 62 and 5 years of continuous service.

For Library non-union, earlier of (1) age 60 plus 5 years of continuous service or (2) 25 years of continuous service.

For Library union, (1) age 60 plus 10 years of continuous service or (2) 25 years of continuous service.

For Non-bargaining municipal employees hired after January 1, 2011, earlier of age 55 with 20 years of service and age 62 with 5 years of service.



PROVISIONS FOR:

POLICE OFFICERS AND FIREFIGHTERS

BOARD OF EDUCATION MEMBERS

MUNICIPAL SERVICES & LIBRARY MEMBERS

Optional Early Retirement:

Sworn Police Officers: Age 50 with 10 years of continuous service, actuarially reduced for years prior to Normal Retirement Age. Non-Sworn Police Officers: If hired before December 11, 2017: Age 55 with 5 years of continuous service, reduced at 4% per whole year prior to age 60.

At age 55 with 10 years (5 years for HESP) of service (continuous service for Local 2221), reduced at 4% per whole year prior to age 60. For Local 818, reduction is adjusted for partial years.

For Library union, age 55 with 10 years of continuous service. For all others, age 55 with 5 years of continuous service. Benefit reduced at 4% per whole year prior to age 60 (prorate for partial years for HMEA and CHPEA). For HMEA employees hired on or after May 21, 2017, the benefit is reduced a 4% for year year prior to age 62. For SCG members, reduction is 2% per whole year and fraction of a year prior to age 60. For CHPEA employees hired on or after the approval of the 2016-2020 agreement, Age 55 with 15 years of service, reduced at 6% per year.

Firefighters: Age 50 with 5 years of continuous service, actuarially reduced or reduced at 2% per year (prorated for fractional years) prior to Normal Retirement Age.

For Non-bargaining municipal employees hired after January 1, 2011, early retirement reduction is 4% per year prior to age 62.

Vesting of Earned Deferred Pension:

Sworn Police Officers: After 10 years of continuous service.

After 10 years (5 years for HESP, HSSSA and non-bargaining) of continuous service. Payments begin no earlier than age 55. (Was 10 years for HSSSA and non-bargaining).

For Library union, 10 years of continuous service. For all others, 5 years of continuous service. Payments begin no earlier than age 55.

Firefighters and Non-Sworn Police Officers: After 5 years of continuous service.

Benefits to Survivors: (Death of Active Member Prior to Retirement)

Surviving Spouse: 25% of final year's earnings (50% if service connected death), payable until death or remarriage. Minimum of 50% of pension benefit for Firefighters for non-service connected death. Surviving Child: \$100 per month for first child, \$50 for each additional child (10% of final year's earnings if service connected death, or 15% if no surviving spouse). Total benefit, including Worker's Compensation, cannot exceed 100% of current pay rate for Member's rank. Non-Sworn Police Officers: Same as General Government members.

Member must meet qualifications for vesting. Surviving Spouse: 50% of pension which Member is receiving or would be entitled to when retired, payments beginning no earlier than date of Member's 55th birthday. Surviving Spouse benefits are payable until death or remarriage.



PROVISIONS FOR:

POLICE OFFICERS AND FIREFIGHTERS

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Refund of Contributions upon Discontinuance of Employment or at Death (Non-Vested Members): (May be taken in lieu of earned deferred pension by vested members)

Refund of total contributions, without interest.

Termination: Refund of total contributions, with 3% interest compounded annually.
Death: Refund of total contributions with interest preretirement and without interest postretirement.

Pensions for Permanent, Total Disability - Service Requirements:

5 years of continuous service, but no requirement if disability is service connected as defined in Worker's Compensation Act.

10 years of continuous service, except no requirement if disability is service connected as defined in Worker's Compensation Act.

Amount of Total Disability Pension:
(Payable as long as total disability continues.)

Retirement Pension with minimum of 25% of "final average pay." If disability is service connected, the pension equals 100% of the Member's final annual pay less Worker's Compensation benefits.

Retirement Pension using Final Average Pay for last 10 years. If disability is service connected, amount not less than 50% of Member's final annual pay at time of disability. Maximum benefit of 2/3 of 10-year Final Average Pay less Social Security benefit. Minimum benefit of \$30 per month. All service connected disability benefits are offset by benefits payable by Worker's Compensation (exception: no offset for \$30 minimum).

Non-Sworn Police Officers: Same as General Government members.

If non service connected, same as above, but no 50% Final Average Pay minimum and minimum benefit equals \$10 per month instead of \$30 per month.

Pensions for Permanent Partial Disability:
(Where earnings capacity is reduced by at least 10%.)

Ten years of continuous service, but no service requirement if disability is service connected. Same as retirement pension with reduction for less than 15 years of service. If non-service connected, retirement pension, subject to a minimum equal to 25% of Final Average Pay. This minimum is reduced by earnings if less than 15 years of service at time of disability. If service connected, pension equals 50% of final annual pay (regular 20 year pension for Firefighters) if 15 years of service, with reductions for earnings if less than 15 years of service. If at least 20 years of service, pension equals retirement pension.

10 years of continuous service, except no requirement if disability is service connected as defined in Worker's Compensation Act. Retirement Pension using Final Average Pay for last 10 years (with offset for Worker's Compensation benefits if service-related disability), subject to a minimum pension of \$10 monthly (non-service connected), or \$30 (service connected). If the disability is service connected, benefit not less than 50% of the reduction in earnings with offset for Worker's Compensation benefits. For service connected disability, the maximum benefit is 2/3 of 10 year final average pay less Worker's Compensation and Social Security benefits. For non-service connected disability, the maximum is 2/3 of 10 year final average pay less Social Security benefits, or 1-2/3% of the reduction in income times years of service.

Non-Sworn Police Officers: Same as General Government members.



PROVISIONS FOR:

**Member's Contribution
Rate of Total Earnings:**
**(City pays full balance of
costs to fund MERF
benefits; also Members
and City pay taxes for
those covered by Social
Security.)**

POLICE OFFICERS AND FIREFIGHTERS

Firefighters and Sworn Police Officers hired before July 1, 1999: 8%.

Sworn Police Officers hired after June 30, 1999: 6.5%. If opt into 2012 plan, rate increases to 8.0%

Sworn Police Officers hired after June 30, 2012, 9.5%. Effective 12/11/2017, 12.5%.

Non-Sworn Police Officers: 4% on earnings taxed for Social Security and 7% on excess.

Sworn and Non-Sworn Police Officers hired prior to July 1, 2012 had the option to elect retiree health insurance. If such election was made, the employee contribution rate increases by 1.5%.

Assistant Police Chief, Police Chief, Assistant Fire Chief and Fire Chief: Same as Non-Bargaining.

Effective the pay period after the approval of the 2016-2020 Agreement, all Firefighters contribute 11% of gross wages.

Effective the pay period after the approval of the 2016-2022 agreement, all Police contribute additional 3% of gross wages

Sworn & Non-Sworn Police Officers hired after the approval of the 2016 - 2022 agreement contribute 11% of gross wages.

BOARD OF EDUCATION MEMBERS

4% on earnings taxed for Social Security and 7% on excess. For HESP, 9% and 12%, respectively. For HSSSA, 9.25% and 12.25%, respectively (was 8.75%/11.75%). For HFSHP 10.14% and 13.14%, respectively. For Non-bargaining 4.5% and 7.5%, respectively (was 4%/7%).

For Local 818, 5.2% up to Social Security Wage Base and 8.2% of the excess. If hired on or after March 1, 2007, 7.1% and 10.1%, respectively.

MUNICIPAL SERVICES & LIBRARY MEMBERS

For Non-bargaining, 6.5% on earnings taxed by Social Security and 9.5% on excess if 5 year Final Average Pay option elected (was 5%/8%). With 2 year option, 7.5% and 10.5%, respectively (was 6%/9%).

For Library, 4% on earnings taxed by Social Security and 7% on excess if 5 year Final Average Pay option elected. With 2 year option, 5% and 8%, respectively.

For MLA, HMEA hired after July 1, 2003, and CHPEA hired after June 30, 2003, 5% on earnings taxed by Social Security and 8% on excess. For CHPEA hired on or before June 30, 2003, 6.5% and 9.5%, respectively. CHPEA contributions increase 1.0% effective July 1, 2017, an additional 0.5% effective July 1, 2018, and an additional 1.0% July 1, 2019.

Effective March 17, 2019 MLA participants contribute 8% on social security earnings and 11% on excess earning, and additional 1.0% effective July 1, 2019 and an additional 1.0% effective July 1, 2020.

CHPEA employees hired after the approval of the 2016 - 2020 agreement contribute 7.5% on earnings taxed by Social Security and 10.5% on excess. Increase an additional 0.5% on July 1, 2018. For HMEA hired before July 1, 2003, 7.8% on all earnings. Effective the first pay check after May 21, 2017, all HMEA members' contributions increase 1%. New hires after May 21, 2017 contribute 7.5% on social security earnings and 10.5% on excess earnings. This increases 1% on 3/31/19 and another 1% on 7/1/2019. For members hired before 5/20/2017, a 1% increase is effective 3/31/19, 7/1/19 and 7/1/2020.

For SCGA, 4% on earnings taxed by Social Security and 7% on excess (was 3%/6%).



Note 1 Any Member (other than a Police Officer or Firefighter) who was a Member before January 1, 1958 is guaranteed a minimum total benefit, including Social Security based on earnings from the City, equal to the pension the Member would have received under the terms of the MERF plan in existence prior to the enactment of the 1957 Special Act No. 347. Also, several active Members who transferred to MERF on or after July 1, 1968 from the City's Retirement Allowance Fund are entitled to a pension determined by the RAF provisions if it is greater than that based on the MERF provisions.

Note 2 Section 2-166 of the Municipal Code provides a minimum benefit of \$155 monthly for all pensions granted by reason of service or for service-connected disability, and for joint annuitants under elected options, except members for whom Social Security taxes have been paid and anyone for whom more than half of the total pension is paid by the Metropolitan District.

Note 3 All members (other than SCG) may purchase up to 4 years of pension credit for military service. Pension credit is at the following rates of Final Average Pay per year purchased:

HMEA members hired before July 1, 2003	2.75%
Sworn Police Officers, Firefighters, CHPEA members hired on or before June 23, 2003, HFSHP, Local 818 hired prior to March 1, 2007, HSSSA, HESP, Non-bargaining (including Assistant Police Chief, Police Chief, Assistant Fire Chief, and Fire Chief), Non-Sworn Police Officers, and MLA hired prior to July 1, 2006	2.50%
Other (including CHPEA members hired after June 23, 2003, HMEA members hired prior to July 1, 2003, MLA hired on or after July 1, 2006, and Local 818 hired on or after March 1, 2007)	2.00%

Note 4 All members (other than Sworn Police Officers hired after July 1, 1999, all Board of Education members, CHPEA hired after June 23, 2003, HMEA hired on or after July 1, 2003, Library, SCG and MLA hired on or after July 1, 2006, Non-bargaining municipal members hired after January 1, 2011) may exchange accumulated sick leave upon retirement for up to 4 years (6 years for Firefighters hired prior to July 1, 2003) of pension service time. Additional pension service time may be purchased from accumulated sick leave at the rate of twenty days of accumulated sick leave for each year of pension service time.