



Policemen and Firemen's Retirement Fund For The City of New Haven

2014-2020 Experience Study





Table of Contents

Executive Summary	1
Actuarial Certification	5
Exhibit A – Impact on Actuarial Valuation Results	6
Exhibit B – Supporting Analysis	
Section I - Retirement Rates	7
Section II - Turnover Rates	8
Section III - Salary Scale	9
Section IV – Mortality Assumption	10
Section V – Investment Return Assumption	12

Report Prepared By:

Richard Sych
President & Consulting Actuary
860.856.2112
RSych@hhconsultants.com

Dan McCarthy
Actuarial Specialist
860.856.2140
DMcCarthy@hhconsultants.com

David Mendel
Actuarial Associate
860.856.2132
DMendel@hhconsultants.com



Executive Summary

The following is an Executive Summary of our recommendations based on the results of the 2014-2020 Experience Study. Exhibit A shows the details of the impact by group on the actuarial valuation results. Exhibit B shows the data analysis used to develop the recommendations.

Impact on 2020 Actuarial Valuation Results

Current Basis: Accrued Liability = \$890.45 million
 City Normal Cost = \$5.98 million
 Annual Required Contribution = \$46.10

Recommended:

All Changes with 7.75% Investment Return

Basis: Accrued Liability = \$922.73 million **(\$32.28 million increase)**
 City Normal Cost = \$6.80 million **(\$0.82 million increase)**
 Annual Required Contribution = \$54.11 million **(\$8.01 million increase)**

Recommended:

All Changes with 7.00% Investment Return

Basis: Accrued Liability = \$996.12 million **(\$73.39 million increase)**
 City Normal Cost = \$9.06 million **(\$2.26 million increase)**
 Annual Required Contribution = \$59.13 million **(\$5.02 million increase)**

Estimated contribution using 7.50% is about \$55.8 million
Estimated contribution using 7.25% is about \$57.5 million

Mortality Basis

Current Basis: RP-2014 table with blue collar adjustment (for employees only) fully projected (to the year of assumed decrement), with separate male & female tables and separate rates for annuitants and non-annuitants. RP-2014 Disabled Retirees is used for disabled retirees. All mortality tables use mortality improvement MP-2018.

Comment: In 2019, The Society of Actuaries published mortality tables that measure mortality rates for public sector employees. Actual experience closely matches expectations based on the Pub-2010 Public Retirement Plans Mortality Tables for Public Safety Employees.

Recommendation: Pub-2010 Public Retirement Plans Amount-Weighted Mortality Tables for Public Safety Employees, projected to the valuation date with Scale MP-2020.



Termination

Current Basis: Rates are as follows: 20% Select and Ultimate Vaughn

Age	Years of Service			
	0	1	2	>=3
20	5.96%	5.00%	4.20%	3.72%
25	5.56%	4.50%	3.70%	2.72%
30	5.16%	4.00%	3.20%	2.02%
35	4.76%	3.56%	2.76%	1.58%
40	4.36%	3.16%	2.36%	1.30%
45	3.96%	2.82%	2.02%	1.10%
50	3.56%	2.52%	1.72%	0.90%
55	3.00%	2.00%	1.00%	0.00%

Comment: Experience from 2014-2020 suggests that no change is needed at this time.

Recommendation: We recommend no changes to this assumption.

Age at Retirement

Current Basis:

Years of Service	Rate*
10-20	3%
20	30%
21-29	25%
30	30%
31-39	20%
40	100%

Comment: Experience from 2014-2020 suggests that we should increase the retirement rate for employees with under 20 years of service.

Recommendation: Increase the retirement rate for under 20 years of service to 7%

Years of Service	Rate*
10-20	7%
20	30%
21-29	25%
30	30%
31-39	20%
40	100%

* 100% are assumed to retire at age 65 or greater.



Salary Scale:

Current Basis:

Age	Rate**
20	10.00%
25	10.00%
30	7.75%
35	3.65%
40	3.25%
45	3.20%
50	3.00%
>=55	2.75%

**Inflation assumption implicit in table = 2.50%.*

Comment: Experience from 2014-2020 suggests that no further changes are needed to this assumption.

Overtime and Longevity Pay

Current Basis: 32% load on budgeted pay for Police members and 35% load on budgeted pay for Fire members.

Comment: Experience from 2014-2020 suggests employees in both Unions retire with a final average earnings that is about 39% higher than budgeted pay. Police members hired after 11/1/2009 use budgeted pay for benefits (0% load). Fire members hired after 8/28/2013 use budgeted pay for benefits (0% load).

Recommendation: Increase load on budgeted pay for Police to 37% and increase load on budgeted pay for Fire to 37%. We will continue to monitor this assumption.

COLA Buyout

Current Basis: No current basis.

Comment: Experience from 2016-2020 suggests that about 40% of population request a COLA buyout.

Recommendation: Assume 40% of retiring population elects a COLA Buyout.

Rate of Amortization Payment Increase

Current Basis: Total annual payroll is assumed to increase at a rate of 2.5% per year for the purpose of amortizing the unfunded actuarial liability.

Comment: Common practice is trending toward level dollar amount.

Alternative: Total annual payroll is assumed to increase at a rate of 1.25% per year for purposes of amortizing the unfunded actuarial liability. Doing so results in the ADEC increasing by about \$4.9 million and covers the interest on the unfunded liability. This will be an interim step with the final step being level dollar.



Cost of Living Increases

Annual Cap	COLA	Police	Fire
4.00%	1.40%	Hired prior to 3/29/1997	Hired prior to 4/23/2004
3.00%	1.20%		Hired between 4/23/2004 and 8/27/2013
2.00%	0.90%	Hired between 3/29/1997 and 3/28/2012	
1.50%	0.70%	Hired after 3/28/2012	Hired after 8/27/2013

Current Basis:

Comment:

Based upon recent CPI-W statistics we recommend lowering the rates slightly.

Annual Cap	COLA	Police	Fire
4.00%	1.15%	Hired prior to 3/29/1997	Hired prior to 4/23/2004
3.00%	1.05%		Hired between 4/23/2004 and 8/27/2013
2.00%	0.85%	Hired between 3/29/1997 and 3/28/2012	
1.50%	0.65%	Hired after 3/28/2012	Hired after 8/27/2013

Recommendation:

Unused Sick time and impact on credited service

Current Basis:

Assume retiring participants receive 3 years of additional credited service.

Comment:

Experience from 2014-2020 suggests that retiring participants receive, on average, 3.8 years of additional credited service due to unused sick time and unused vacation time.

Recommendation:

We propose increasing this assumption to 3.5 years. We plan to monitor this assumption in future experience studies.

Investment Return

Current Basis:

7.75% per year, net of investment expenses.

Comment:

The Investment Return assumption should be supported by an expected return analysis performed by New Haven's investment advisor.

Alternative:

7.00% per year, net of investment expenses



Actuarial Certification

This report presents the results of the 2014-2020 Experience Study of the Policemen & Firemen's Retirement Fund of the City of New Haven and the impact our recommendations for changes in assumptions has on the June 30, 2020 Actuarial Valuation results. It also provides the support for our recommendations. This report may not be appropriate for any other purpose.

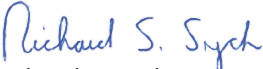
The valuation results present in this report have been calculated in accordance with generally accepted actuarial principles and practices. I certify that the actuarial assumptions and methods were selected by me and represent my best estimate of anticipated actuarial experience under the plan.

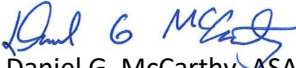
In preparing all related valuation results, I have relied on employee data provided by the City, and on asset and contribution information also provided by the City. I have not audited the employee data or the financial information, although I have reviewed them for reasonableness.

The results in this report are based on the Plan as summarized in the *Plan Provisions* section of the June 30, 2018 Actuarial Valuation Report and unless otherwise specified in this report the actuarial assumptions and methods detailed in the *Description of Actuarial Methods and Assumptions* section of the June 30, 2018 Actuarial Valuation Report. To incorporate the new CBAs that went into effect in 2019, we have included 2 matrices that show the plan provisions due to the new CBAs.

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.


Richard S. Sych, FSA, FCA, MAAA,
Enrolled Actuary 20-05065


Daniel G. McCarthy, ASA, MAAA,
Enrolled Actuary 20-08718

January 26, 2021



Exhibit A

Impact on Actuarial Valuation Results

	Current Assumptions- Baseline			All New Assumptions with 7.75% Investment Return			All New Assumptions with 7.00% Investment Return		
	Police	Fire	P&F Total	Police	Fire	P&F Total	Police	Fire	P&F Total
Actuarial Accrued Liability (EAN % Salary)									
Actives	\$88,600,733	\$101,480,819	\$190,081,552	\$95,360,721	\$104,387,863	\$199,748,584	\$106,204,231	\$115,670,372	\$221,874,603
Deferred Inactives	\$1,494,363	\$343,681	\$1,838,044	1,521,196	350,820	\$1,872,016	1,628,677	391,655	\$2,020,332
Retirees/Beneficiaries	\$379,593,835	\$318,938,594	\$698,532,429	390,044,794	331,067,374	\$721,112,168	418,257,846	353,971,621	\$772,229,467
Total:	\$469,688,931	\$420,763,094	\$890,452,025	\$486,926,711	\$435,806,057	\$922,732,768	\$526,090,754	\$470,033,648	\$996,124,402
Market Value of Assets (MVA)	\$185,834,588.00	\$140,156,128.00	\$325,990,716	\$185,834,588	\$140,156,128	\$325,990,716	\$185,834,588	\$140,156,128	\$325,990,716
Funded % on a MVA Basis	39.6%	33.3%	36.6%	38.2%	32.2%	35.3%	35.3%	29.8%	32.7%
Actuarial Value of Assets (AVA)	\$189,017,838	\$142,556,930.00	\$331,574,768	\$189,017,838	\$142,556,930	\$331,574,768	\$189,017,838	\$142,556,930	\$331,574,768
Funded % on an AVA Value Basis	40.2%	33.9%	37.2%	38.8%	32.7%	35.9%	35.9%	30.3%	33.3%
Unfunded Accrued Liability (UAL)	\$280,671,093	\$278,206,164	\$558,877,257	\$297,908,873	\$293,249,127	\$591,158,000	\$337,072,916	\$327,476,718	\$664,549,634
Gross City Normal Cost (Before EE Contributions)	\$5,746,436	\$6,542,727	\$12,289,163	\$6,357,790	\$6,849,317	\$13,207,107	\$7,438,285	\$8,024,981	\$15,463,266
Amortization of UAL	\$19,579,601	\$19,407,648	\$38,987,250	\$23,177,684	\$22,815,150	\$45,992,834	\$24,665,530	\$23,963,322	\$48,628,853
Expected Payroll for Valuation Year	\$30,100,910	\$29,138,707	\$59,239,617	\$30,746,999	\$29,366,648	\$60,113,647	\$30,746,999	\$29,366,648	\$60,113,647
Gross City Normal Cost (includes expenses)	\$6,002,563	\$6,798,854	\$12,801,417	\$6,613,917	\$7,105,444	\$13,719,361	\$7,694,412	\$8,281,108	\$15,975,520
Employee Contribution	\$3,612,109	\$3,205,258	\$6,817,367	\$3,689,640	\$3,230,331	\$6,919,971	\$3,689,640	\$3,230,331	\$6,919,971
Net City Normal Cost	\$2,390,454	\$3,593,596	\$5,984,050	\$2,924,277	\$3,875,113	\$6,799,390	\$4,004,772	\$5,050,777	\$9,055,549
A) City Contribution (Including Expenses) as of 6/30/2020	\$21,970,055	\$23,001,244	\$44,971,300	\$26,101,961	\$26,690,263	\$52,792,224	\$28,670,302	\$29,014,099	\$57,684,402
City Contribution (Including Expenses) as % of Payroll	72.99%	78.94%	75.91%	84.89%	90.89%	87.82%	93.25%	98.80%	95.96%
B) Expected Payroll for ADEC Year (2021-2022)	\$30,853,433	\$29,867,175	\$60,720,607	\$31,515,674	\$30,100,814	\$61,616,488	\$31,515,674	\$30,100,814	\$61,616,488
City Contribution for ADEC Year (2021-2022)	\$22,519,307	\$23,576,275	\$46,095,582	\$26,754,510	\$27,357,519	\$54,112,029	\$29,387,060	\$29,739,452	\$59,126,512
Increase Over 2020 Baseline Results			n/a			\$8,016,447			\$13,030,930

NOTE: The recommendations, if adopted, would first be reflected in the June 30, 2020 Actuarial Valuation which determines the 2021-2022 ADEC and has not yet been completed. The intent of the display is only to communicate the estimated impact of the proposed assumption changes.



Exhibit B – Section I

Retirement Rates - Actual 2014-2020 Experience Compared to Current Assumption

Years of Service	Exposed	Actual Retirements	Expected Retirements	Actual Experience	Current Assumption
<17	311	18	9.33	5.8%	3.0%
17-19	648	93	19.44	14.4%	3.0%
20-20	185	46	55.5	24.9%	30.0%
21-29	236	61	59	25.8%	25.0%
30-30	5	5	2.2	100.0%	44.0%
31-39	2	1	0.4	50.0%	20.0%
40+	3	1	3	33.3%	100.0%
<Total>	1390	225	149	16.2%	10.7%

Recommendation: Experience from 2014-2020 suggests that we should be increasing the retirement rate for employees with under 17 years of service from 3% to 7%

Retirement Rates – Actual 2014-2020 Experience Compared to Proposed Assumption

Years of Service	Exposed	Actual Retirements	Expected Retirements	Actual Experience	Current Assumption
<17	311	18	21.77	5.8%	7.0%
17-19	648	93	45.36	14.4%	7.0%
20-20	185	46	55.5	24.9%	30.0%
21-29	236	61	59	25.8%	25.0%
30-30	5	5	2.2	100.0%	44.0%
31-39	2	1	0.4	50.0%	20.0%
40+	3	1	3	33.3%	100.0%
<Total>	1390	225	187	16.2%	13.5%



Exhibit B – Section II

Turnover Rates - Actual 2014-2020 Experience Compared to Current Assumption

Service	Near age	Exposed	Actual Terminations	Expected Terminations	Actual Experience	Proposed Assumption
<1	<20	0	0	0	0.0%	0.0%
	20-24	48	3	2.74	6.3%	5.7%
	25-29	77	5	4.16	6.5%	5.4%
	30-34	38	2	1.9	5.3%	5.0%
	35-39	22	1	1.03	4.5%	4.7%
	40-44	8	0	0.34	0.0%	4.3%
	45-49	6	1	0.23	16.7%	3.8%
	50-54	4	0	0.14	0.0%	3.4%
	55+	0	0	0	0.0%	0.0%
	<Total>	203	12	10.53	5.9%	5.2%
1	<20	0	0	0	0.0%	0.0%
	20-24	37	0	1.72	0.0%	4.6%
	25-29	167	6	7.21	3.6%	4.3%
	30-34	73	2	2.8	2.7%	3.8%
	35-39	34	0	1.17	0.0%	3.4%
	40-44	16	1	0.48	6.3%	3.0%
	45-49	8	0	0.22	0.0%	2.7%
	50-54	4	1	0.1	25.0%	2.4%
	55+	1	0	0.02	0.0%	2.0%
	<Total>	340	10	13.71	2.9%	4.0%
2	<20	0	0	0	0.0%	0.0%
	20-24	14	1	0.54	7.1%	3.8%
	25-29	163	13	5.73	8.0%	3.5%
	30-34	76	4	2.32	5.3%	3.1%
	35-39	43	1	1.13	2.3%	2.6%
	40-44	18	0	0.4	0.0%	2.2%
	45-49	9	1	0.17	11.1%	1.9%
	50-54	4	2	0.06	50.0%	1.6%
	55+	2	0	0.02	0.0%	1.0%
	<Total>	329	22	10.37	6.7%	3.2%
3+	<20	0	0	0	0.0%	0.0%
	20-24	5	0	0.15	0.0%	2.9%
	25-29	328	21	7.44	6.4%	2.3%
	30-34	625	22	11.42	3.5%	1.8%
	35-39	473	5	6.91	1.1%	1.5%
	40-44	246	7	3.03	2.8%	1.2%
	45-49	136	0	1.39	0.0%	1.0%
	50-54	82	2	0.69	2.4%	0.8%
	55+	21	1	0	4.8%	0.0%
	<Total>	1916	58	31.01	3.0%	1.6%
<Total>	<20	0	0	0	0.0%	0.0%
	20-24	104	4	5.13	3.8%	4.9%
	25-29	735	45	24.53	6.1%	3.3%
	30-34	812	30	18.44	3.7%	2.3%
	35-39	572	7	10.23	1.2%	1.8%
	40-44	288	8	4.25	2.8%	1.5%
	45-49	159	2	2.01	1.3%	1.3%
	50-54	94	5	0.99	5.3%	1.0%
	55+	24	1	0.04	4.2%	0.2%
	<Total>	2788	102	66	3.7%	2.4%

Recommendation: Actual experience from 2014-2020 suggests that our assumption is reasonable and does not need to be changed at this time. We will continue to monitor this assumption.



Exhibit B – Section III

Salary Scale - Actual 2014-2020 Experience Compared to Current Assumption

Service	Near age	Exposed	Prior Year Salaries	Actual Salaries	Expected Salaries	Actual Increase	Expected Increase
<2	<25	82	3,041,242	4,118,148	3,343,275	35.4%	9.9%
	25-29	233	9,481,599	11,771,679	11,771,679	24.2%	9.7%
	30-34	107	4,003,144	5,460,236	5,460,236	36.4%	5.4%
	35-39	54	1,926,062	2,730,661	2,730,661	41.8%	3.3%
	40-44	23	968,805	1,251,251	1,251,251	29.2%	3.0%
	45-49	13	445,483	677,770	677,770	52.1%	2.9%
	50-54	7	214,860	314,293	314,293	46.3%	2.8%
	55-59	1	45,627	53,867	53,867	18.1%	2.5%
	60-64	-	-	-	-	0.0%	0.0%
	65+	-	-	-	-	0.0%	0.0%
	<Total>	520	20,126,821	26,377,904	26,377,904	31.1%	7.7%
2+	<25	18	1,031,217	1,305,039	1,305,039	26.6%	9.9%
	25-29	456	2,941,859	3,304,482	3,304,482	12.3%	9.5%
	30-34	672	4,730,058	5,044,406	5,044,406	6.6%	5.2%
	35-39	573	4,189,488	4,411,369	4,411,369	5.3%	3.2%
	40-44	594	4,527,686	4,717,539	4,717,539	4.2%	3.0%
	45-49	587	4,509,709	4,674,445	4,674,445	3.7%	2.9%
	50-54	316	2,468,281	2,541,408	2,541,408	3.0%	2.8%
	55-59	84	643,721	664,854	6,648,544	3.3%	2.5%
	60-64	12	1,016,302	1,036,540	1,036,540	2.0%	2.5%
	65+	1	76,840	76,840	76,840	0.0%	2.5%
	<Total>	3,313	242,232,226	256,003,395	256,003,395	5.7%	4.2%
<Total>	<25	100	4,072,459	5,423,187	5,423,187	33.2%	9.9%
	25-29	689	3,890,198	4,481,650	4,481,650	15.2%	9.6%
	30-34	779	5,130,372	5,590,429	5,590,429	9.0%	5.2%
	35-39	627	4,382,094	4,684,435	4,684,435	6.9%	3.2%
	40-44	617	4,624,591	4,842,665	4,842,665	4.7%	3.0%
	45-49	600	4,554,257	4,742,221	4,742,221	4.1%	2.9%
	50-54	323	2,489,769	2,572,830	2,572,830	3.3%	2.8%
	55-59	85	648,284	670,241	6,702,411	3.4%	2.5%
	60-64	12	1,016,302	1,036,540	1,036,540	2.0%	2.5%
	65+	1	76,840	76,840	76,840	0.0%	2.5%
	<Total>	3,833	262,359,047	282,381,300	282,381,300	7.6%	4.5%

Recommendation: Actual experience from 2014-2020 suggests that our assumption is reasonable and does not need to be changed at this time. We will continue to monitor this assumption.



Exhibit B – Section IV

Mortality Table

Actual 2014-2020 Experience Compared to Current Assumption:

Retiree Mortality: RP-2014 MP-2018 adjusted for blue collar

Near age	Exposed	Actual Deaths	Expected Deaths	Actual Experience	Current Assumption
< 50	549	5	0.85	0.9%	0.2%
50-59	1263	8	7.08	0.6%	0.6%
60-69	915	11	12.24	1.2%	1.3%
70-79	811	23	24.55	2.8%	3.0%
80-89	228	26	21.06	11.4%	9.2%
90-99	72	11	13.41	15.3%	18.6%
100+	1	1	0.39	100.0%	38.9%
<Total>	3839	85	127	2.2%	2.1%

Beneficiary Mortality: RP-2014 MP-2018 with a one year set forward

Near age	Exposed	Actual Deaths	Expected Deaths	Actual Experience	Current Assumption
< 50	114	3	0.12	2.6%	0.1%
50-59	225	1	0.94	0.4%	0.4%
60-69	371	0	3.7	0.0%	1.0%
70-79	440	14	10.64	3.2%	2.4%
80-89	495	36	37.52	7.3%	7.6%
90-99	222	32	39.99	14.4%	18.0%
100+	49	5	16.89	10.2%	34.5%
<Total>	1916	91	110	4.7%	5.7%



Exhibit B – Section IV

Mortality Table (continued)

Actual 2014-2020 Experience Compared to Proposed Assumption:

Retiree Mortality: PUB-2010 MP-2020 for Safety Employees

Near age	Exposed	Actual Deaths	Expected Deaths	Actual Experience	Current Assumption
< 50	549	5	0.72	0.9%	0.1%
50-59	1263	8	3.53	0.6%	0.3%
60-69	915	11	8.07	1.2%	0.9%
70-79	811	23	19.35	2.8%	2.4%
80-89	228	26	19.64	11.4%	8.6%
90-99	72	11	13.05	15.3%	18.1%
100+	1	1	0.38	100.0%	38.0%
<Total>	3839	85	127	2.2%	1.7%

Beneficiary Mortality: PUB-2010 MP-2020 for Safety Employees

Near age	Exposed	Actual Deaths	Expected Deaths	Actual Experience	Current Assumption
< 50	114	3	0.23	2.6%	0.2%
50-59	225	1	1.01	0.4%	0.5%
60-69	371	0	3.36	0.0%	0.9%
70-79	440	14	8.89	3.2%	2.0%
80-89	495	36	30.97	7.3%	6.3%
90-99	222	32	34.17	14.4%	15.4%
100+	49	5	15.51	10.2%	31.7%
<Total>	1916	91	94	4.7%	4.9%

Recommendation: Actual experience from 2014-2020 suggests that the PUB mortality table with MP 2020 closely matches mortality experience.



Exhibit B – Section V

Investment Return Assumption

25-Year Asset Return History

Effective Rate* of Return on Market Value of Plan Assets	
Period Ending June 30	P&F
2020	7.21%
2019	7.04%
2018	2.21%
2017	14.62%
2016	-1.77%
2015	1.83%
2014	19.93%
2013	15.62%
2012	-1.29%
2011	19.03%
2010	12.64%
2009	-16.05%
2008	-5.04%
2007	16.31%
2006	7.24%
2005	9.28%
2004	13.14%
2003	2.86%
2002	-6.14%
2001	-3.13%
2000	7.30%
1999	10.50%
1998	22.10%
1997	21.40%
1996	16.00%

* Net of investment related expenses.

Annualized 25-year Return 7.27%

Police Tier Matrix Updated to Incorporate Most Recent CBA

Tier	Tier Dates	Service Requirement for Age Retirement	Age Limit	Benefit Calculation	Benefit Max	Years to Reach Max	Benefit Calculation Based On	Cumulative Buyback Cap	Sick Buyback Cap	Sick Buyback Calculation	COLA Annual Cap*	COLA Lifetime Cap*
I a	Hired Before 3/29/1997	20 Years (inclusive of buyback combination)	67	2.5% first 20 years 3% After	80% (83% if has 30 YOS and cash in 30 sick days from sick leave payout)	30	The higher of Budgeted Pay or Average 4 Highest Years incl. OT & 1/2 Extra Duty	9 Years	5 Years	30 Days = 1 Year	4%	25%
I b	3/29/1997 - 7/1/2001	20 Years (inclusive of buyback combination)	67	2.5% first 20 years 3% After	80% (83% if has 30 YOS and cash in 30 sick days from sick leave payout)	30	The higher of Budgeted Pay or Average 4 Highest Years incl. OT & 1/2 Extra Duty	9 Years	5 Years	30 Days = 1 Year	2%	10%
I c	7/2/2001 - 11/1/2009	20 Years (inclusive of buyback combination)	67	2.5% first 20 years 3% After	80%	30	The higher of Budgeted Pay or Average 4 Highest Years incl. OT & 1/2 Extra Duty	9 Years	5 Years	30 Days = 1 Year	2%	10%
I d	11/2/2009 - 3/28/2012	20 Years (inclusive of buyback combination)	67	2.5% first 20 years 3% After	80%	30	The higher of Budgeted Pay or Average 4 Highest Years Budgeted Pay	9 Years	5 Years	30 Days = 1 Year	2%	10%
1f	3/29/2012 - 5/28/2012	20 Years (inclusive of buyback combination)	67	2% first 20 years 2.5% After	80%	36	The higher of Budgeted Pay or Average 4 Highest Years Budgeted Pay	8 Years	5 Years	30 Days = 1 Year	1.50%	10%
II	Hired after 5/28/2012 and 9/16/2019	25 Years (inclusive of buyback combination) OR attainment of age 52	67	2% first 20 years 2.5% After	70%	32	The higher of Budgeted Pay or Average 4 Highest Years Budgeted Pay	8 Years	5 Years	30 Days = 1 Year	1.50%	10%
III	Hired after 9/16/2019	25 Years (exclusive of buyback combination) OR attainment of age 52	67	2% first 20 years 2.5% After	70%	32	The higher of Budgeted Pay or Average 4 Highest Years Budgeted Pay	6 Years	5 Years	30 Days = 1 Year	1.50%	10%

*N/A If elect the one-time lump sum COLA buyout worth 40% the actuarial value of the total COLA benefit

Fire Tier Matrix Updated to Incorporate Most Recent CBA

Proval Tier	Tier	Tier Dates	Service Requirement for Age Retirement	Age Limit	Benefit Calculation	Benefit Max	Benefit Calculation Based On	Sick Buyback Cap	Total Cap	COLA Annual Cap*	COLA Lifetime Cap*	Survivor:
1	1a	Hired Before 4/23/2004	20 Years (includes service buyback)	65	2.5% first 20 years 3% After	80%	The higher of Budgeted Pay or Average 4 Highest Years incl. OT & 1/2 Extra Duty	5 Years	9 Years	4%	25%	50% for widow, 70% for widow and one child, 90% for widow and 2 or more children
2	1b	Hired 4/23/04-8/27/13	20 Years (includes servicebuyback)	65	2.5% first 20 years 3% After	80%	The higher of Budgeted Pay or Average 4 Highest Years incl. OT & 1/2 Extra Duty	5 Years	9 Years	3%	15%	50% for widow, 70% for widow and one child, 90% for widow and 2 or more children
3	2	Hired 8/28/2013-10/6/2019	25 Years or Age 52 (includes service buyback)	65	2% first 20 years 3% next 10 years, 2% next 5 years	80%	Earnings Exclusive of O.T. and 1/2 Extra Duty	5 Years (applies to first 30 years only)	8 years (applies to first 30 years only)	1.5%	10%	50% for widow, 70% for widow and one child, 90% for widow and 2 or more children
4	3	Hired on or After 10/7/2019	25 Years or Age 52 (excludes service buyback)	65	2% first 20 years 3% next 10 years, 2% next 5 years	80%	Earnings Exclusive of O.T. and 1/2 Extra Duty	5 Years (applies to first 30 years only)	6 years (applies to first 30 years only)	1.5%	10%	50% for widow, 70% for widow and one child, 90% for widow and 2 or more children

*N/A If elect the one-time lump sum COLA buyout worth 40% the actuarial value of the total COLA benefit

10 Years of Service Required for a Non-Service Connected Disability

Vested Retirement Payable on Date Would Have Completed 25 Years of Service With Minimum Age of 46