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**CONNECTICUT MUNICIPAL EMPLOYEES
RETIREMENT SYSTEM**

**REPORT OF THE ACTUARY ON THE VALUATION
PREPARED AS OF JUNE 30, 2021**





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

February 8, 2022

State of Connecticut
State Employees Retirement Commission
55 Elm Street
Hartford, CT 06106

Members of the Commission:

Connecticut General Statutes Section 5-155a governs the operation of the Connecticut Municipal Employees Retirement System (MERS). The actuary makes periodic valuations of the contingent assets and liabilities of the Retirement System at the direction of the Commission. We are pleased to submit the report giving the results of the actuarial valuation of the Retirement System prepared as of June 30, 2021.

In preparing the valuation, the actuary relied on data provided by the Comptroller's Office. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. The extent to which the data may contain inaccuracies, the future actuarial measures may vary.

The System is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Commission are reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System. The funding objective of the plan is that contribution rates over time will remain level as a percent of payroll and will be sufficient to fully fund the liabilities of the System over a reasonable funding period. The valuation method used is the entry age normal method. Gains and losses are reflected in the unfunded actuarial accrued liability which is being amortized as a level dollar within a 18-year period. This period is based on the funding policy of MERS that amortizes the unfunded actuarial accrued liability over a declining period of years, starting with 30 years as of July 1, 2009.

There were no changes in the actuarial assumptions or methods from the previous valuation. The valuation results do reflect the legislation that was adopted in 2019 to increase the employee contribution rate by 0.50% of compensation each year for six years beginning July 1, 2019.



Members of the Commission
February 8, 2022
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This is to certify that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; data inaccuracies; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information, but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions prior to the upcoming experience study.

The actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sincerely yours,

A handwritten signature in blue ink that reads 'John J. Garrett'.

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink that reads 'Edward J. Koebel'.

Edward J. Koebel, FCA, MAAA, EA
Chief Executive Officer



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Section I – Summary of Principal Results

1. For convenience of reference, the principal results of the current and preceding valuations are summarized below:

Valuation Date	June 30, 2021	June 30, 2020
Number of active members	9,612	9,459
Annual compensation	\$ 643,203,254	\$ 604,611,056
Retired members and beneficiaries:		
Number	8,227	7,933
Annual allowances	\$ 208,822,738	\$ 192,947,894
Assets:		
Market Value	\$ 3,354,417,556	\$ 2,734,354,911
Actuarial Value	\$ 3,154,059,106	\$ 2,951,955,488
Unfunded actuarial accrued liability	\$ 923,744,431	\$ 909,645,015
Present Value of Remaining Prior Service Amortization Payments	\$ 7,682,114	\$ 8,207,870
Net unfunded actuarial accrued liability	\$ 916,062,317	\$ 901,437,145
Amortization Period in Years	18	19
Funded Ratio	77.3%	76.4%
For Fiscal Years Ending	June 30, 2023*	June 30, 2022
Employer Contribution Rates		
General Employees		
With Social Security	17.55%	16.44%
Without Social Security	21.58%	19.02%
Police and Fire		
With Social Security	23.11%	22.45%
Without Social Security	24.82%	23.59%

* Employer Contribution Rates for fiscal year ending June 30, 2023 shown above reflect the 4th year of the 5-year contribution rate smoothing and are anticipated to increase as a percentage of payroll each year until the full funding rates are achieved by FYE 2024.





Section I – Summary of Principal Results

2. All amounts shown that are prior to June 30, 2013 were developed and/or reported by the prior actuarial firm. The results of the valuation are given in Schedule A.
3. Comments on the valuation results are given in Section IV, comments on the experience and actuarial gains and losses during the valuation year are given in Section IX and the rates of contribution payable by employers are given in Section VII.
4. Schedule D of the report presents the development of the actuarial assumptions and methods employed. There have been no changes since the previous valuation.
5. Schedule F of this report presents the summary of main benefits and contribution provisions. There were no changes in benefit provisions since the last valuation.
6. Administrative expenses continuing at \$130 for each active and retired member are required to be contributed for each fiscal year.
7. The Governmental Accounting Standards Board issued Statement No. 67 (GASB 67) in June 2012 and is effective for plan years beginning after June 15, 2013. GASB 67 replaced GASB 25 for plans and separate GASB 67 reports will be prepared for the Commission. We have provided some supplemental disclosure information and tables in Section VI.
8. As shown in the Summary of Principal Results, the funded ratio is the ratio of the actuarial value of assets to the accrued liability. The funded ratio is an indication of progress in funding the promised benefits using a long-term, stable funding approach. Since the ratio is less than 100%, there is a need for contributions in addition to the plan's normal cost. The funded ratio based on the market value of assets is also provided for informational purposes.
9. The table on the following page provides a history of some pertinent figures.





Section I – Summary of Principal Results

Comparative Schedule*

Valuation Date June 30	Active Members				Retired Lives				Valuation Results (\$ millions)		
	Number	Payroll (\$ millions)	Average Salary	% increase from previous year	Number	Active/ Retired Ratio	Annual Benefits (\$ millions)	Benefits as % of Payroll	Accrued Liability	Valuation Assets	UAAL
2012	8,711	\$458.7	\$52,653	3.4%	6,095	1.4	\$106.5	23.2%	\$2,150.8	\$1,828.8	\$322.0
2014	8,477	485.7	57,301	4.4	6,511	1.3	122.7	25.3	2,500.8	2,196.1	304.7
2016	9,373	566.2	60,412	2.7	7,102	1.3	145.6	25.7	2,840.3	2,445.4	394.9
2018	10,096	628.0	62,198	1.5	7,448	1.4	170.3	27.1	3,622.7	2,779.6	843.1
2019	9,759	606.9	62,193	0.0	7,824	1.2	187.6	30.9	3,780.8	2,867.8	913.0
2020	9,459	604.6	63,919	2.8	7,933	1.2	192.9	31.9	3,861.6	2,952.0	909.6
2021	9,612	643.2	66,917	4.7	8,227	1.2	208.8	32.5	4,077.8	3,154.1	923.7

*All amounts prior 2013 were reported by the prior actuarial firm.

*Results for 2013, 2015 and 2017 were based on roll-forward methodology and not shown in the above table.

*The percent increase represent the increases on an annualized basis over a two-year period for years prior to 2019.





Section II – Membership

Data regarding the membership of the System for use as a basis for the valuation were furnished by the Comptroller's office. The following tables summarize the membership of the Retirement System as of June 30, 2021 upon which the valuation was based. Detailed tabulations of the data are given in Schedule G.

Active Members

Group	Number of Employers	Number	Payroll	Group Averages		
				Salary	Age*	Service*
General Employees						
With Social Security						
Men		2,175	\$141,000,205	\$64,828	48.8	10.7
Women		<u>2,874</u>	<u>129,781,875</u>	45,157	50.3	9.4
Total	137	5,049	\$270,782,080	\$53,631	49.6	10.0
Without Social Security						
Men		1,065	\$74,323,118	\$69,787	48.1	11.3
Women		<u>1,364</u>	<u>68,664,507</u>	50,341	50.8	13.2
Total	9	2,429	\$142,987,625	\$58,867	49.6	12.3
Police and Fire						
With Social Security						
Men		410	\$44,612,201	\$108,810	43.0	11.2
Women		<u>33</u>	<u>3,077,209</u>	93,249	39.1	11.4
Total	22	443	\$47,689,410	\$107,651	42.7	11.2
Without Social Security						
Men		1,524	\$165,066,647	\$108,311	41.6	12.7
Women		<u>167</u>	<u>16,677,492</u>	99,865	39.0	9.8
Total	19	1,691	\$181,744,139	\$107,477	41.3	12.4
Total	187	9,612	\$643,203,254	\$66,917	47.8	11.1

*Years

Of the 9,612 active members, 6,253 are vested and 3,359 are non-vested.

The valuation also includes 3,781 inactive non-vested members who are owed refunds of their accumulated contributions.





Section II – Membership

Retired Lives

Group	Number	Total Annual Benefits	Average Annual Benefit	Average Age at Valuation Date*	Average Age at Retirement*
General Employees					
With Social Security					
Service	3,832	\$68,885,000	\$17,976	71.4	60.3
Disability	170	4,475,790	26,328	69.0	53.2
Beneficiary	<u>431</u>	<u>5,924,207</u>	13,745	72.7	54.8
Total	4,433	\$79,284,997	\$17,885	71.5	59.5
Without Social Security					
Service	2,177	\$55,088,111	\$25,305	71.7	58.9
Disability	100	2,964,219	29,642	69.5	52.7
Beneficiary	<u>315</u>	<u>5,505,477</u>	17,478	74.3	53.5
Total	2,592	\$63,557,807	\$24,521	71.9	58.0
Police and Fire					
With Social Security					
Service	266	\$12,902,659	\$48,506	65.1	53.9
Disability	53	2,497,319	47,119	62.5	44.2
Beneficiary	<u>37</u>	<u>1,101,908</u>	29,781	68.9	49.7
Total	356	\$16,501,886	\$46,354	65.1	52.1
Without Social Security					
Service	648	\$39,981,660	\$61,700	63.1	55.0
Disability	132	7,363,093	55,781	61.8	47.0
Beneficiary	<u>66</u>	<u>2,133,295</u>	32,323	66.3	48.7
Total	846	\$49,478,048	\$58,485	63.1	53.3
Total	8,227	\$208,822,738	\$25,383	70.5	58.1

*Years

This valuation also includes 1,546 deferred vested members with estimated annual benefits of \$15,516,381.





Section III – Assets

1. As of June 30, 2021, the total market value of assets amounted to \$3,354,417,556 as reported by the Comptroller's Office. The actuarial value of assets used for the current valuation was \$3,154,059,106. Schedule B shows the development of the actuarial value of assets as of June 30, 2021.
2. In addition, the plan has future payments due from certain employers that established an initial liability upon entering MERS for prior earned service. This present value of the remaining prior service amortization payments is \$7,682,114 as of June 30, 2021.
3. Schedule C shows receipts and disbursements of the System for the year preceding the valuation date and a reconciliation of the fund balances at market value.





Section IV – Comments on Valuation

1. Schedule A of this report outlines the results of the valuation of the Retirement System as of June 30, 2021. The valuation was prepared in accordance with the actuarial assumptions and methods set forth in Schedule D and the actuarial cost method which is described in Schedule E.
2. The valuation balance sheet shows that the System has total prospective liabilities of \$4,890,130,479, of which \$2,584,204,961 is for the benefits payable on account of present retired members, beneficiaries of deceased members, and inactive members entitled to deferred vested benefits, and \$2,305,925,518 is for the benefits expected to be payable on account of present active members. Against these liabilities, the System has total present assets for valuation purposes of \$3,154,059,106 as of June 30, 2021. When this amount is deducted from the total liabilities of \$4,890,130,479 there remains \$1,736,071,373 as the present value contributions to be made in the future.
3. Prospective normal employer and employee contributions have a present value of \$812,326,942. When this amount is subtracted from \$1,736,071,373, which is the present value of the total future contributions to be made by the employer, there remains \$923,744,431 as the amount of future unfunded actuarial accrued liability contributions. A breakdown of unfunded accrued liabilities by group is provided in Section V on the next page.
4. Employer contribution rates apply a contribution rate smoothing method for the employer contributions and are anticipated to increase per year until the full funding rates are achieved by fiscal year ending (FYE) 2024. The experience of the System for this valuation year has resulted in small changes in the contribution requirements for the FYE 2023 and the forecast of future expected employer contribution rates compared to the previous valuation. The contribution rates for FYE 2023 and the expected rates for years FYE 2024 through 2025 are provided on page 12 of this report.





Section V – Summary of Net Unfunded Actuarial Accrued Liability

The table below presents the unfunded actuarial accrued liability of the Retirement System as of July 1, 2021, along with comparative results from the previous year's measurement. The valuation results were based on the data and financial information provided by the Retirement System staff, and the actuarial assumptions and methods outlined in Schedule D.

	General Employees with Social Security		General Employees without Social Security		Police and Fire with Social Security		Police and Fire without Social Security		Total	
	July 1, 2021	July 1, 2020	July 1, 2021	July 1, 2020	July 1, 2021	July 1, 2020	July 1, 2021	July 1, 2020	July 1, 2021	July 1, 2020
Accrued Liabilities:										
Active Members	\$471,426,144	\$464,120,378	\$382,252,455	\$364,117,264	\$98,579,314	\$94,526,206	\$541,340,663	\$520,477,363	\$1,493,598,576	\$1,443,241,211
Non-Vested Inactive Members	3,413,913	3,277,821	2,533,840	2,538,037	134,734	145,775	462,631	456,986	6,545,118	6,418,619
Vested Inactive Members	73,742,932	83,346,210	48,352,044	46,513,692	5,000,484	6,540,040	12,594,620	22,239,427	139,690,080	158,639,369
Retired Members	<u>868,720,463</u>	<u>812,570,389</u>	<u>696,129,428</u>	<u>668,238,744</u>	<u>206,199,717</u>	<u>192,260,103</u>	<u>666,920,155</u>	<u>580,232,068</u>	<u>2,437,969,763</u>	<u>2,253,301,304</u>
Total Accrued Liability	\$1,417,303,452	\$1,363,314,798	\$1,129,267,767	\$1,081,407,737	\$309,914,249	\$293,472,124	\$1,221,318,069	\$1,123,405,844	\$4,077,803,537	\$3,861,600,503
Actuarial Value of Assets	\$1,105,534,278	\$1,043,082,144	\$884,909,770	\$844,424,272	\$243,634,992	\$226,655,687	\$919,980,066	\$837,793,385	\$3,154,059,106	\$2,951,955,488
Unfunded Actuarial Accrued Liability	\$311,769,174	\$320,232,654	\$244,357,997	\$236,983,465	\$66,279,257	\$66,816,437	\$301,338,003	\$285,612,459	\$923,744,431	\$909,645,015
Present Value of Remaining Prior Service Amortization Payments	\$3,114,283	\$2,898,980	\$505,258	\$536,781	\$268,348	\$697,456	\$3,794,225	\$4,074,653	\$7,682,114	\$8,207,870
Net Unfunded Actuarial Accrued Liability	\$308,654,891	\$317,333,674	\$243,852,739	\$236,446,684	\$66,010,909	\$66,118,981	\$297,543,778	\$281,537,806	\$916,062,317	\$901,437,145





Section VI – Prior Amortization Payments

The unfunded prior service liability for each participating municipality was re-established for the July 1, 1989 valuation so as to recognize actuarial gains and losses in the current service contribution rates instead of the future amortization payment for prior service. These amounts were then frozen, and an amortization payment schedule was calculated for their funding.

In addition, the prior service liability was adjusted for each municipality as of July 1, 1991 to reflect the additional liability generated by the granting of a cost-of-living adjustment on that date. This adjustment had been made whenever a COLA was granted and the investment return on assets was not at least 9%. In that event, a 3% COLA was provided to eligible retirees, and the prior service liability of each municipality was increased to reflect the liability for that portion of the COLA that was not covered by investment returns above 6%. This adjustment has been eliminated under the revised funding method, for all COLA's effective July 1, 1992 and later.

For most municipalities, this re-established liability is to be amortized over 2-10 years from July 1, 2012. For recently enrolled municipalities, the period is that remaining of their original 30-year amortization period. The prior policy requirement that payments be adjusted to reflect any additional liability due to the purchase of military service under PA 83-16 was eliminated beginning with the July 1, 1992 valuation.

The present value of future prior service amortization payments as of July 1, 2021 is the present value of the payment schedule established on July 1, 1991 plus the amounts for municipalities enrolling after that date, as shown below. These amounts were frozen, and their present value will be reflected in each succeeding valuation.





Section VI – Prior Amortization Payments

The following table shows the present values of the remaining prior service amortization payments for each group in MERS:

Group	Present Value of Remaining Prior Service Amortization Payments
General Employees:	
With Social Security	\$ 3,114,283
Without Social Security	<u>505,258</u>
Subtotal	\$ 3,619,541
Police and Fire:	
With Social Security	\$ 268,348
Without Social Security	<u>3,794,225</u>
Subtotal	\$ 4,062,573
Total	\$ 7,682,114

There were no new entities joining MERS during this plan year that joined with prior service accruals.





Section VII – Contributions Payable By Employer

The actuarial funding method utilized beginning with the July 1, 1992 valuation is the Entry Age Normal (EAN) method. Under EAN, a normal contribution rate is developed for each active member as a percent of payroll that would be sufficient, if paid from the age at which the member entered the System, to fully fund the member's benefits when due. The EAN normal contribution rate is calculated to remain level over the member's working lifetime and is the true future cost of the System. This normal rate is comprised of both employer and employee contributions. Pages 13 and 14 show the derivation of the required employer contribution rates for the General Employee and Police and Fire subgroups, respectively. In addition, the applicable rates for both employers and employees are shown.

EAN requires separate treatment of actuarial gains and losses. These gains and losses are amortized over a closed 30-year period on a level dollar basis effective July 1, 2009. Changes in the unfunded actuarial accrued liability are highly dependent upon annually recognized investment gains and losses, which are smoothed into the Actuarial Value of Assets over a period of years. Using a smoothed asset value results in much more consistent contribution rates from year to year compared to the use of the System's market value of assets in determining required contributions.





Section VII – Contributions Payable By Employer

The net unfunded actuarial accrued liability (UAAL) of the System is \$916.1 million as of June 30, 2021 and is to be amortized on a level dollar basis over 18 years.

The table below summarizes the 2022-2023 fiscal year required employer contribution rates.

Group	Employer Normal Cost Rate	Amortization of Unfunded Accrued Liability	Total Employer Contribution Rate*	Employer Contribution Rate for FYE 2023 Using Rate Smoothing*
General Employees:				
With Social Security	7.25%	11.00%	18.25%	17.55%
Without Social Security	7.32%	16.46%	23.78%	21.58%
Police and Fire:				
With Social Security	10.60%	13.36%	23.96%	23.11%
Without Social Security	10.33%	15.80%	26.13%	24.82%

* Note that the Total Employer Contribution Rates shown in the table above do not reflect future increases in member contribution rates nor include the annual prior service amortization payments required.

Smoothing into the higher ultimate contribution requirements through FYE 2024 will result in additional future amortization costs. The forecast of future expected employer contributions rates, which reflect future increases in member contribution rates, are as follows:

	2021 Valuation Rates for FYE 2023	Expected Rates for FYE 2024*	Expected Rates for FYE 2025
General Employees with Social Security	17.55%	18.02%	17.57%
General Employees without Social Security	21.58%	23.69%	23.24%
Police and Fire with Social Security	23.11%	23.32%	22.87%
Police and Fire without Social Security	24.82%	25.61%	25.16%

* End of Rate Smoothing





Section VII – Contributions Payable By Employer

Development of Total Employer Contribution Rates

General Employees

Effective July 1, 2022

Contributions for	Contributions Expressed as a Percent of Payroll	
	Members with Social Security	Members without Social Security
Normal Cost:		
Service Retirement benefits	10.97%	13.42%
Disability benefits	0.03	0.04
Survivor benefits	<u>0.22</u>	<u>0.28</u>
Total	11.22%	13.74%
Member Contributions	4.25%	7.00%
Less future refunds	<u>(0.28)</u>	<u>(0.58)</u>
Available for benefits	3.97%	6.42%
Employer Normal Cost	7.25%	7.32%
18-Year Amortization of Unfunded Actuarial Accrued Liability (percentage of payroll under level dollar method)	11.00%	16.46%
Total Employer Contribution Rate*	18.25%	23.78%
Employer Contribution Rate for FYE 2023 Using Rate Smoothing*	17.55%	21.58%

* Note that the Total Employer Contribution Rates shown in the table above do not include the annual prior service amortization payments required, if any.





Section VII – Contributions Payable By Employer

Development of Total Employer Contribution Rates

Police and Fire

Effective July 1, 2022

Contributions for	Contributions Expressed as a Percent of Payroll	
	Members with Social Security	Members without Social Security
Normal Cost:		
Service Retirement benefits	12.58%	15.16%
Disability benefits	1.88	1.65
Survivor benefits	<u>0.29</u>	<u>0.36</u>
Total	14.75%	17.17%
Member Contributions	4.25%	7.00%
Less future refunds	<u>(0.10)</u>	<u>(0.16)</u>
Available for benefits	4.15%	6.84%
Employer Normal Cost	10.60%	10.33%
18-Year Amortization of Unfunded Actuarial Accrued Liability (percentage of payroll under level dollar method)	13.36%	15.80%
Total Employer Contribution Rate*	23.96%	26.13%
Employer Contribution Rate for FYE 2023 Using Rate Smoothing*	23.11%	24.82%

* Note that the Total Employer Contribution Rates shown in the table above do not include the annual prior service amortization payments required, if any.





Section VIII – Accounting Information

The information required under Government Accounting Standards Board (GASB) Statements No. 67 and 68 will be issued in separate reports. The following information is provided for informational purposes only.

1. The following is a distribution of the number of employees by type of membership.

**NUMBER OF ACTIVE AND RETIRED MEMBERS
AS OF JUNE 30, 2021**

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	8,227
Terminated employees entitled to benefits but not yet receiving benefits	
Vested	1,546
Non-vested	3,781
Active plan members	<u>9,612</u>
Total	23,166





Section VIII – Accounting Information

2. Additional information as of July 1, 2021 follows.

ASSUMPTIONS AND METHODS

Valuation date	7/1/2021
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar, closed
Remaining amortization period	18 years
Asset valuation method	Smoothed market with 20% recognition of investment gains and losses
Actuarial assumptions:	
Investment rate return*	7.00%, net of investment related expenses
Projected salary increases*	3.50-10.00%
Cost-of-living adjustments	2.5% for those retiring on or after January 1, 2002; for retirements prior to January 1, 2002 2.5% up to age 65, 3.25% afterwards
Social Security Wage Base	3.00%
* Includes inflation at	2.50%

3. The actuarial accrued liability of the System as of July 1, 2021 is as follows:

ACTUARIAL ACCRUED LIABILITY

Actuarial Accrued Liability:	
Actives	\$ 1,493,598,576
Retirees and beneficiaries currently receiving benefits	2,437,969,763
Terminated members not yet receiving benefits	
Vested	139,690,080
Non-vested	<u>6,545,118</u>
Total actuarial accrued liability	\$ 4,077,803,537
Actuarial Value of Assets	<u>3,154,059,106</u>
Unfunded Actuarial Accrued Liability	<u>\$ 923,744,431</u>





Section IX – Experience

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain (loss) for the year ended June 30, 2021 is shown below.

	<u>\$ millions</u>
(1) Unfunded actuarial accrued liability (UAAL) as of 6/30/2020:	\$ 909.6
(2) Total Normal Cost for fiscal year 2020-2021:	81.9
(3) Total contributions for fiscal year 2020-2021:	148.9
(4) Interest accrual: $[(1) + (2)] \times .07 - (3) \times .0344$	<u>64.2</u>
(5) Expected UAAL as of 6/30/2021: (1) + (2) - (3) + (4)	\$906.9
(6) UAAL of new entities as of 6/30/2021:	0.0
(7) Changes in assumptions:	<u>0.0</u>
(8) Expected UAAL as of 6/30/2021: (5) + (6) + (7)	\$906.9
(9) Actual UAAL as of 6/30/2021:	\$923.7
(10) Gain/(loss): (8) - (9)	\$(16.8)
(11) Gain/(loss) as percent of actuarial accrued liabilities as of July 1, 2020: (\$3,861.6 million)	(0.4)%

Gain/(Loss) by primary source (\$ millions)

Investment Return	\$50.1
Post-Retirement Mortality	5.9
Cost-of-Living Adjustments	(29.9)
Salary Increases	(13.1)
Other Demographic Experience	(6.6)
<u>New Entrants</u>	<u>(23.2)</u>
Net Experience Gain/(Loss)	\$(16.8)





Section X – Risk Assessment

Overview

Actuarial Standards of Practice (ASOP) No. 51, issued by the Actuarial Standards Board, provides guidance on assessing and disclosing risks related to pension plan funding. This guidance is binding on all credentialed actuaries practicing in the United States. This standard was issued as final in September 2017 with application to measurement dates on or after November 1, 2018.

The term “risk” frequently has a negative connotation, but from an actuarial perspective, it may be thought of as simply the fact that what actually happens in the real world will not always match what was expected, based on actuarial assumptions. Of course, when actual experience is better than expected, the favorable risk is easily absorbed. The risk of unfavorable experience will likely be unpleasant, and so there is an understandable focus on aspects of risk that are negative.

Risk usually can be reduced or eliminated at some cost. Consumers, for example, buy auto and home insurance to reduce the risk of accidents or catastrophes. Another way to express this concept, however, is that there is generally some reward for assuming risk. Thus, retirement plans invest not just in US Treasury bonds which have almost no risk, but also in equities which are considerably riskier – because they have an expected reward of a higher return that justifies the risk.

Under ASOP 51, the actuary is called on to identify the significant risks to the pension plan and provide information to help those sponsoring and administering the plan understand the implications of these risks. In this section, we identify some of the key risks for the System and provide information to help interested parties better understand these risks.





Section X – Risk Assessment

Investment Risk

The investment return on assets is the most obvious risk – and usually the largest risk – to funding a pension plan. To illustrate the magnitude of this risk, please review the following chart showing the Asset Volatility Ratio (AVR), defined as the market value of assets divided by covered payroll.

(\$ in thousands)

Valuation Date June 30	Market Value of Assets	Covered Payroll	Asset Volatility Ratio
2018	\$2,646,912	\$627,953	4.22
2019	2,731,182	606,943	4.50
2020	2,734,355	604,611	4.52
2021	3,354,418	643,203	5.22

The asset volatility ratio is especially useful to compare across plans or through time. It is also frequently useful to consider how the AVR translates into changes in the Required Contribution Rate (actuarially determined employer contribution rate). For example, the following table demonstrates that with an AVR of 5.00, if the market value return is 10% below assumed for the 2022 fiscal year, or -3.00% for the System, there will be an increase in the Required Contribution Rate of 0.99% payroll in the first year. Without asset smoothing or without returns above the expected return in the next five years, the impact on the Required Contribution Rate would be 4.95%. A higher AVR would produce more volatility in the Required Contribution Rate.

AVR	Unsmoothed Amortization	Smoothed Amortization
4.00	3.96%	0.79%
5.00	4.95%	0.99%
6.00	5.94%	1.19%





Section X – Risk Assessment

Sensitivity Measures

Valuations are generally performed with a single set of assumptions that reflects the best estimate of future conditions, in the opinion of the actuary and typically the governing board. Note that under actuarial standards of practice, the set of economic assumptions used for funding must be consistent. To enhance the understanding of the importance of an assumption, a sensitivity test can be performed where the valuation results are recalculated using a different assumption or set of assumptions.

The following tables contains the key measures for the System using the valuation assumption for investment return of 7.00%, along with the results if the assumption were 6.00% or 8.00%. In this analysis, only the investment return assumption is changed. Consequently, there may be inconsistencies between the investment return and other economic assumptions such as inflation or payroll increases. In addition, simply because the valuation results under alternative assumptions are shown here, it should not be implied that CMC believes that either assumption (6.00% or 8.00%) would comply with actuarial standards of practice.

(\$ in thousands)

As of June 30, 2023	-1% Discount Rate (6.00%)	Current Discount Rate (7.00%)	+1 Discount Rate (8.00%)
Accrued Liability	\$4,565,073	\$4,077,804	\$3,655,599
Unfunded Liability	\$1,411,014	\$923,744	\$501,540
Funded Ratio (AVA)	69.1%	77.3%	86.3%





Section X – Risk Assessment

Mortality Risk

The mortality assumption is a significant assumption for valuation results, second only to the investment assumption in most situations. The System's mortality assumption utilizes a mortality table (with separate rates for males and females, as well as different rates by status) and a projection scale for how the mortality table is expected to improve through time.

The future, however, is not known, and actual mortality improvements may occur at a faster rate than expected, or at a slower rate than expected (or even decline). Although changes in mortality will affect the benefits paid, this assumption is carefully studied during the regular experience studies that the System conducts so that incremental changes can be made to smoothly reflect unfolding experience.

Contribution Risk

The System is primarily funded by member and employer contributions to the trust fund, together with the earnings on those accumulated contributions. Each year in the valuation, the Required Contribution Rate is determined, based on the System's funding policy. This rate is the sum of the rates for the normal cost for the plan, the amortization of the UAAL, and the administrative expenses. Since the System is obligated to make 100% of the Required Contribution Rate by statute, there is no contribution risk.





Schedule A – Valuation Balance Sheet

The following valuation balance sheet shows the assets and liabilities of the retirement system as of the current valuation date of July 1, 2021 and, for comparison purposes, as of the immediately preceding valuation date of July 1, 2020. The items shown in the balance sheet are present values actuarially determined as of the relevant valuation date. The development of the actuarial value of assets is presented in Schedule B.

	June 30, 2021	June 30, 2020
ASSETS		
Current actuarial value of assets	\$ 3,154,059,106	\$ 2,951,955,488
Future member contributions	\$ 326,592,562	\$ 272,231,582
Prospective employer contributions:		
Normal contributions	\$ 485,734,380	\$ 446,295,475
Unfunded actuarial accrued liability contributions	<u>923,744,431</u>	<u>909,645,015</u>
Total prospective contributions	\$ 1,409,478,811	\$ 1,355,940,490
Total assets	\$ 4,890,130,479	\$ 4,580,127,560
LIABILITIES		
Present value of benefits payable on account of present retired members and beneficiaries	\$ 2,437,969,763	\$ 2,253,301,304
Present value of benefits payable on account of active members	\$ 2,305,925,518	\$ 2,161,768,268
Present value of benefits payable on account of inactive members for service rendered before the valuation date		
Vested	\$ 139,690,080	\$ 158,639,369
Non-vested	<u>6,545,118</u>	<u>6,418,619</u>
Total liabilities	\$ 4,890,130,479	\$ 4,580,127,560





Schedule B – Development of Actuarial Value of Assets

	June 30, 2021	June 30, 2020
(1) Actuarial Value Beginning of Year*	\$2,951,955,488	\$2,867,837,999
(2) Market Value End of Year*	3,354,417,556	2,734,354,911
(3) Market Value Beginning of Year	2,734,354,911	2,731,182,007
(4) Cash Flow		
(a) Contributions	148,925,780	130,094,392
(b) Disbursements	(206,235,825)	(190,797,811)
(c) Other	<u>4,534,317</u>	<u>576,823</u>
(d) Net: (4)(a) + (4)(b) + (4)(c)	(52,775,728)	(60,126,596)
(5) Investment Income		
(a) Market Total: (2) – (3) – (4)(d)	672,838,373	63,299,500
(b) Assumed Rate	7.00%	7.00%
(c) Amount for Immediate Recognition: [(1) x (5)(b)] + [(4)(d)] x (5)(b) x 0.5	204,789,734	198,644,229
(6) Expected Actuarial Value End of Year: (1) + (4)(d) + (5)(c)	\$3,103,969,494	\$3,006,355,632
(7) Phased-In Recognition of Investment Income		
(a) Difference between Market & Expected Actuarial Value: (2) – (6)	250,448,062	(272,000,721)
(b) 20% of Difference: 0.2 x (7)(a)	50,089,612	(54,400,144)
(8) Preliminary Actuarial Value End of Year: (6) + (7)(b)	3,154,059,106	2,951,955,488
(9) Final Actuarial Value End of Year Using 20% Corridor: Greater of [(8) and .8 x (2)], but no more than 1.2 x (2)	3,154,059,106	2,951,955,488
(10) Difference Between Market & Actuarial Value: (2) – (9)	\$200,358,450	\$(217,600,577)
(11) Rate of Return on Actuarial Value	8.71%	5.08%

* Before corridor constraints, if applicable.





Schedule C – Summary of Receipts and Disbursements

(Market Value)

	YEAR ENDING	
	June 30, 2021	June 30, 2020
<u>Receipts for the Year</u>		
Contributions:		
Members	\$ 32,661,758	\$ 27,415,851
Municipal	<u>116,264,022</u>	<u>102,678,541</u>
Subtotal	\$ 148,925,780	\$ 130,094,392
Investment Earnings (net of expenses)	672,838,373	63,299,500
Other	<u>4,534,317</u>	<u>576,823</u>
TOTAL	\$ 826,298,470	\$ 193,970,715
<u>Disbursements for the Year</u>		
Benefit Payments	\$ 200,471,330	\$ 188,550,062
Refunds to Members	1,520,498	1,515,640
Other	<u>4,243,997</u>	<u>732,109</u>
Total	\$ 206,235,825	\$ 190,797,811
<u>Excess of Receipts over Disbursements</u>	\$ 620,062,645	\$ 3,172,904
<u>Reconciliation of Asset Balances</u>		
Asset Balance as of the Beginning of Year	\$ 2,734,354,911	\$ 2,731,182,007
Beginning of Year Audit Adjustment	0	0
Excess of Receipts over Disbursements	<u>620,062,645</u>	<u>3,172,904</u>
Asset Balance as of the End of Year	\$ 3,354,417,556	\$ 2,734,354,911
Rate of Return	24.85%	2.34%





Schedule D – Outline of Actuarial Assumptions and Methods

Adopted or reaffirmed by the Commission for the June 30, 2018 and later valuations based on the experience investigation report for the five-year period ending June 30, 2017 which can be found at on the Office of the State Comptroller - Retirement Services Division website.

VALUATION INTEREST RATE: 7.00% per annum, compounded annually, net of expenses.

SALARY INCREASES: Representative values of assumed annual rates of salary increase are as follows:

Service	Annual Rates of				
	Merit & Seniority		Base (Economy)	Increase Next Year	
	General Employees	Firemen & Policemen		General Employees	Firemen & Policemen
0	3.50%	7.00%	3.00%	6.50%	10.00%
5	2.40%	3.50%	3.00%	5.40%	6.50%
10	1.70%	1.90%	3.00%	4.70%	4.90%
15	1.35%	1.50%	3.00%	4.35%	4.50%
20	1.10%	1.38%	3.00%	4.10%	4.38%
25	0.85%	1.12%	3.00%	3.85%	4.12%
30	0.60%	0.70%	3.00%	3.60%	3.70%
35	0.50%	0.50%	3.00%	3.50%	3.50%
40	0.50%	0.50%	3.00%	3.50%	3.50%

COST OF LIVING ADJUSTMENTS: Annually compounded increases are applied to disabled and non-disabled retirement benefits and vary based upon member age and date of retirement. For members that retired prior to January 1, 2002, increases of 3.25% are assumed for those who have reached age 65 and (effective January 1, 2002) increases of 2.50% are assumed for those who have not yet reached age 65. For members that retire after December 31, 2001, increases of 2.50% are assumed, regardless of age.

SOCIAL SECURITY WAGE BASE INCREASES: 3.50% per annum.





Schedule D – Outline of Actuarial Assumptions and Methods

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed annual rates of separation before service retirement are as follows:

GENERAL EMPLOYEES

Age	Withdrawal and Vesting				Non-Service Related Disability*	Death		Service Retirement
	Male		Female			Male	Female	
	0 – 4 years	5 – 24 years	0 – 4 years	5 – 24 years				
20	16.00%	12.00%	24.00%	18.00%	0.02%	0.05%	0.02%	
25	16.00	12.00	19.00	18.00	0.02	0.06	0.02	
30	12.50	10.00	16.00	12.00	0.02	0.06	0.03	
35	10.00	8.00	12.00	10.00	0.03	0.07	0.04	
40	9.50	5.75	10.00	8.00	0.04	0.09	0.05	
45	8.50	5.00	9.00	6.00	0.06	0.12	0.08	13.00%
50	8.50	4.50	9.00	4.50	0.09	0.21	0.14	13.00
55	6.50	0.00	8.00	0.00	0.40	0.35	0.21	7.50
60	6.50	0.00	8.00	0.00	1.00	0.56	0.31	9.50
65	6.00	0.00	8.00	0.00	1.60	0.95	0.44	18.00
70	6.00	0.00	8.00	0.00	2.50	1.50	0.71	18.00
75								100.00

POLICEMEN AND FIREMEN

Age	Withdrawal and Vesting		Service Related Disability*	Death		Service Retirement
	0 – 4 years	5 – 24 years		Male	Female	
20	6.50%	5.00%	0.10%	0.06%	0.02%	
25	6.50	5.00	0.10	0.08	0.03	
30	5.75	4.00	0.10	0.08	0.03	
35	3.50	2.50	0.14	0.09	0.04	
40	3.50	2.00	0.22	0.10	0.06	
45	3.50	1.50	0.30	0.15	0.09	25.00%
50	3.50	0.00	0.64	0.25	0.14	15.00
55	3.50	0.00	2.40	0.41	0.24	13.00
60	3.50	0.00	4.80	0.67	0.34	15.00
65	0.00	0.00				100.00

* Service related disability rates for General Employees and Non-Service related disability rates for Policemen and Firemen are assumed to be zero at all ages.





Schedule D – Outline of Actuarial Assumptions and Methods

DEATHS AFTER RETIREMENT: The RP-2014 Combined Mortality Table adjusted to 2006 and projected to 2015 with Scale MP-2017 and projected to 2022 with Scale BB is used by General Employees for the period after retirement and for dependent beneficiaries. The RP-2014 Blue Collar Mortality Table adjusted to 2006 and projected to 2015 with Scale MP-2017 and projected to 2022 with Scale BB is used by Police and Fire for the period after retirement and for dependent beneficiaries. Representative values of the assumed annual rates of mortality are as follows:

Age	General Employees		Policemen and Firemen	
	Male	Female	Male	Female
40	0.085%	0.054%	0.101%	0.060%
45	0.124	0.083	0.148	0.092
50	0.541	0.398	0.568	0.406
55	0.710	0.472	0.745	0.505
60	0.922	0.604	0.987	0.657
65	1.238	0.835	1.370	0.908
70	1.789	1.302	1.996	1.405
75	2.841	2.155	3.149	2.316
80	4.720	3.623	5.174	3.862
85	8.058	6.323	8.632	6.650

For disabled retirees, the RP-2014 Disabled Retiree Mortality Table projected to 2020 by Scale BB is used.

ASSET METHOD: Actuarial Value, as developed in Schedule B. The actuarial value of assets recognizes 20% of any difference between actual and expected investment income (gain/loss) in the valuation year and 20% of any previous years' unrecognized investment gains/losses. In addition, the actuarial value of assets cannot be less than 80% or more than 120% of the market value of assets.

VALUATION METHOD: Entry Age Normal Cost method. See Schedule E for a brief description of this method.

SPOUSES: For members who have elected spouse coverage, husbands are assumed to be three years older than their wives.

PERCENT MARRIED: 80% of active members are assumed to be married.

LOAD: For those members who retired under and joint & survivor option and have no reported information for a prospective beneficiary, a probabilistic factor was applied to the reversionary portion of the liability. The factor measures the survivorship of the assumed spouse (with men three years older than women) from the date of retirement to the valuation date, based on the assumptions for death after retirement.





Schedule E – Actuarial Cost Method

The valuation is prepared on the projected benefit basis, which is used to determine the present value of each member's expected benefit payable at retirement, disability or death. The calculations are based on the member's age, years of service, sex, compensation, expected future salary increases, and an assumed future investment rate of return (currently 7.00%). The calculations consider the probability of a member's death or termination of employment prior to becoming eligible for a benefit and the probability of the member terminating with a service, disability, or survivor's benefit. The present value of the expected benefits payable to active members is added to the present value of the expected future payments to current benefit recipients to obtain the present value of all expected benefits payable to the present group of members and survivors.

The employer contributions required to support the benefits of MERS are determined following a level funding approach and consist of a normal contribution and an unfunded actuarial accrued liability contribution.

The normal contribution is determined using the "entry age normal" method. Under this method, a calculation is made for pension benefits to determine the uniform and constant percentage rate of employer contribution which, if applied to the compensation of the average new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.

The unfunded actuarial accrued liability is determined by subtracting the current assets and the present value of prospective employer normal contributions and member contributions from the present value of expected benefits to be paid from the MERS. The unfunded actuarial accrued liability contribution amortizes the balance of the unfunded actuarial accrued liability over a period of years from the valuation date.

Direct rate smoothing has been utilized to grade-in the impact of higher UAAL amortization rates attributable to the decrease in the assumed rate of investment return from 8.0% to 7.0% in the 2018 valuation. Amortization rates are increased by at least 1% per year until the amortization rates required to fully amortize the UAAL within the remainder of the amortization period is achieved but not more than 3 years.





Schedule F – Summary of Main Benefit and Contribution Provision

MEMBERSHIP

Municipalities may designate which departments (including elective officers if so specified) are to be covered under the Municipal Employees Retirement System. This designation may be the result of collective bargaining. Only employees covered under the State Teachers Retirement System may not be included. There are no minimum age or service requirements. Membership is mandatory for all regular full-time employees of participating departments except Police and Fire hired after age 60.

DEFINITIONS

Average Final Compensation	Average of the three highest paid years of service.
Normal Form of Benefit	Life annuity.
Year's Breakpoint	With respect to the calendar year in which a member terminates service, \$10,700 increased by 6.0% each year after 1982, rounded to the nearest multiple of \$100. For 2020 valuation, the breakpoint is \$104,300.

BENEFITS

Service Retirement Allowance

Condition for Allowance	Age 55 and 5 years of continuous service, or 15 years of active aggregate service, or 25 years of aggregate service. Compulsory retirement at age 65 for police and fire members.
Amount of Allowance	For members not covered by Social Security: 2% of average final compensation times years of service. For members covered by Social Security: 1-1/2% of the average final compensation not in excess of the year's breakpoint plus 2% of average final compensation in excess of the year's breakpoint, times years of service. The maximum benefit is 100% of average final compensation and the minimum benefit is \$1,000 annually. Both the minimum and the maximum include Workers Compensation and Social Security benefits. If any member covered by Social Security retires before age 62, his/her benefit until he/she reaches age 62 or receives a Social Security disability award is computed as if he/she were not under Social Security.





Schedule F – Summary of Main Benefit and Contribution Provision

Non-Service Connected Disability Retirement Allowance

Condition for Allowance 10 years of service and permanently and totally disabled from engaging in any gainful employment in the service of the Municipality.

Amount of Allowance Calculated as a service retirement allowance based on compensation and service to the date of the disability.

Service Connected Disability

Condition for Allowance Totally and permanently disabled from engaging in any gainful employment in the service of the Municipality provided such disability has arisen out of and in the course of his/her employment with the Municipality. Disability due to hypertension or heart disease, in the case of firemen and policemen, is presumed to have been suffered in the line of duty.

Amount of Allowance Calculated as a service retirement allowance based on compensation and service to the date of the disability with a minimum benefit (including Worker's Compensation benefits) of 50% of compensation at the time of the disability.

Vesting Retirement Allowance

Condition for Allowance 5 years of continuous or 15 years of active aggregate service.

Amount of Allowance Calculated as a service retirement allowance on the basis of average final compensation and service to the date of termination. Deferred to normal retirement age, or an actuarially reduced allowance may begin at the time of separation.

Death Benefit

Condition for Benefit Eligible for service, disability retirement, or vested allowance, and married for at least 12 months preceding death.

Amount of Benefit Computed on the basis of the member's average final compensation and creditable service at date of death, payable to the spouse. Benefit is equal to 50% of the average of the life annuity allowance and the reduced 50% joint and survivor allowance.

Return of Deductions

Upon the withdrawal of a member the amount of his accumulated deductions is payable to him/her on demand, with 5% interest from July 1, 1983.





Schedule F – Summary of Main Benefit and Contribution Provision

Optional Benefits

Prior to the retirement, a member may elect to convert his retirement allowance into a benefit of equivalent actuarial value in accordance with one of the optional forms described below:

1. A reduced retirement allowance payable during his life with the provision that after his death the beneficiary designated by him at the time of his retirement; or
2. A reduced retirement allowance payable during his life with the provision that after his death an allowance of one half of his reduced allowance will be continued for life to the beneficiary designated by him at the time of his retirement;
3. A reduced retirement allowance payable during his life with a guarantee of 120 or 240 monthly payments to the member or his designated beneficiary.

Cost-of-Living Adjustment

For those retired prior to January 1, 2002:

- (i) The benefits of disabled retirees, service retirees who have reached age 65, and beneficiaries of deceased retirees who would have reached age 65 are adjusted each July 1. The difference between the actual annual yield of the actuarial value of assets on a calendar year basis to a 6% yield is calculated. This difference is the adjustment applied the following July 1. The minimum adjustment is 3% and the maximum is 5%.
- (ii) The benefits for all others on the roll are adjusted on January 1, 2002 and on each subsequent July 1. The amount of each adjustment is 2.5%.

For those retiring in or after January 1, 2002, benefits are adjusted each July 1. The adjustment is 60% of the annual increase in the CPI up to 6%. The minimum annual COLA is 2.5%; the maximum is 6%.





Schedule F – Summary of Main Benefit and Contribution Provision

CONTRIBUTIONS

By Members

For members not covered by Social Security: 5% of compensation.

For members covered by the Social Security: 2-1/4% of compensation up to the Social Security taxable wage base plus 5% of compensation, if any, in excess of such base.

Effective July 1, 2019, member contribution rates are set to increase by 0.50% of compensation each year for six years.

By Municipalities

Participating Municipalities make annual contributions consisting of a normal cost contribution, a contribution for the amortization of the net unfunded actuarial accrued liability and a prior service amortization payment which covers the liabilities of the System not met by member contributions.

Employer Contribution Rates for fiscal year ending June 30, 2020 apply a 5-year contribution rate smoothing and are anticipated to increase by at least 1.0% of payroll per year until the full funding rates are achieved in fiscal year 2024.





Schedule G – Detailed Tabulation of the Data

Total Active Members as of June 30, 2021 Tabulated by Attained Ages and Years of Service

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	208	5						213	\$ 9,193,379
25 to 29	573	102	2					677	40,597,500
30 to 34	496	355	62	1				914	65,000,214
35 to 39	412	291	235	47				985	69,981,022
40 to 44	335	216	195	176	53	1		976	70,152,641
45 to 49	358	209	162	152	172	21	1	1,075	75,927,980
50 to 54	396	268	209	187	245	113	42	1,460	103,121,109
55 to 59	303	269	216	206	211	102	109	1,416	93,980,292
60 to 64	190	177	155	187	198	97	132	1,136	70,338,060
65 to 69	58	81	80	107	74	40	81	521	30,714,275
70 & Up	30	27	28	44	32	32	46	239	14,196,782
Total	3,359	2,000	1,344	1,107	985	406	411	9,612	\$ 643,203,254

Average Age: 47.8 years
Average Service: 11.1 years

Average Pay: \$66,917





Schedule G – Detailed Tabulation of the Data

Active Members as of June 30, 2021
Tabulated by Attained Ages and Years of Service

General Employees with Social Security

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	110	2						112	\$ 3,653,297
25 to 29	261	30	2					293	12,238,351
30 to 34	239	101	18	1				359	18,129,688
35 to 39	230	105	55	13				403	21,810,923
40 to 44	218	117	46	49	18	1		449	24,860,698
45 to 49	265	137	65	67	33	11	1	579	31,117,989
50 to 54	295	189	139	91	66	25	15	820	45,053,349
55 to 59	221	192	124	124	97	36	46	840	47,021,721
60 to 64	151	129	103	119	130	49	61	742	42,415,800
65 to 69	43	60	45	62	41	21	43	315	16,763,933
70 & Up	19	17	11	25	19	16	30	137	7,716,331
Total	2,052	1,079	608	551	404	159	196	5,049	\$ 270,782,080

Average Age: 49.6 years

Average Service: 10.0 years

Average Pay: \$53,631





Schedule G – Detailed Tabulation of the Data

Active Members as of June 30, 2021
Tabulated by Attained Ages and Years of Service

General Employees without Social Security

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	38	2						40	\$ 1,604,102
25 to 29	103	29						132	6,225,154
30 to 34	105	67	13					185	9,641,608
35 to 39	98	89	63	9				259	14,209,468
40 to 44	79	60	66	48	16			269	15,474,724
45 to 49	67	53	47	27	39	3		236	14,478,398
50 to 54	60	52	48	54	62	36	14	326	20,746,225
55 to 59	64	57	72	61	63	33	19	369	22,850,581
60 to 64	37	48	48	63	59	43	32	330	20,428,721
65 to 69	15	20	33	42	30	18	24	182	10,999,599
70 & Up	11	9	17	19	13	16	16	101	6,329,045
Total	677	486	407	323	282	149	105	2,429	\$ 142,987,625

:
Average Age: 49.6 years
Average Service: 12.3 years

Average Pay: \$58,867





Schedule G – Detailed Tabulation of the Data

Active Members as of June 30, 2021
Tabulated by Attained Ages and Years of Service

Police and Firemen with Social Security

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	8							8	\$ 532,283
25 to 29	42	12						54	4,810,574
30 to 34	17	33	4					54	5,276,778
35 to 39	19	22	28	6				75	7,822,155
40 to 44	5	9	10	20	4			48	5,620,360
45 to 49	9	5	9	16	20	1		60	6,745,080
50 to 54	21	11	3	10	14	10	3	72	8,468,464
55 to 59	10	13	8	7	6	6	6	56	6,520,724
60 to 64	1		1	2	3		5	12	1,492,938
65 to 69			1	1			2	4	400,054
70 & Up								0	0
Total	132	105	64	62	47	17	16	443	\$ 47,689,410

Average Age: 42.7 years

Average Service: 11.2 years

Average Pay: \$107,651





Schedule G – Detailed Tabulation of the Data

Active Members as of June 30, 2021
Tabulated by Attained Ages and Years of Service

Police and Firemen without Social Security

Age	Years of Service							Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	52	1						53	\$ 3,403,697
25 to 29	167	31						198	17,323,421
30 to 34	135	154	27					316	31,952,140
35 to 39	65	75	89	19				248	26,138,476
40 to 44	33	30	73	59	15			210	24,196,859
45 to 49	17	14	41	42	80	6		200	23,586,513
50 to 54	20	16	19	32	103	42	10	242	28,853,071
55 to 59	8	7	12	14	45	27	38	151	17,587,266
60 to 64	1		3	3	6	5	34	52	6,000,601
65 to 69		1	1	2	3	1	12	20	2,550,689
70 & Up		1						1	151,406
Total	498	330	265	171	252	81	94	1,691	\$ 181,744,139

Average Age: 41.3 years

Average Service: 12.4 years

Average Pay: \$107,477





Schedule G – Detailed Tabulation of the Data

Retirants & Beneficiaries as of June 30, 2021

Tabulated by Year of Retirement

Year of Retirement	No.	Total Annual Benefits	Average Monthly Benefit
2021	190	\$ 5,242,924	\$ 2,300
2020	436	12,741,299	2,435
2019	412	10,419,812	2,108
2018	470	14,140,669	2,507
2017	410	11,696,131	2,377
2016	491	13,165,467	2,234
2015	434	12,233,167	2,349
2014	380	11,376,948	2,495
2013	346	9,539,600	2,298
2012	415	9,781,358	1,964
2011	354	8,402,018	1,978
2010	239	5,588,658	1,949
2009	256	6,459,936	2,103
2008	225	5,539,271	2,052
2007	234	5,709,389	2,033
2006	267	6,645,874	2,074
2005	237	5,696,238	2,003
2004	198	4,772,735	2,009
2003	213	5,163,317	2,020
2002	222	5,070,596	1,903
2001	157	4,076,759	2,164
2000	175	4,451,988	2,120
1999	150	3,510,328	1,950
1998	136	3,199,701	1,961
1997	161	4,005,921	2,073
1996	126	3,181,985	2,104
1995	89	2,344,665	2,195
1994	85	1,921,031	1,883
1993	83	1,925,710	1,933
1992	80	1,812,813	1,888
1991	79	1,866,450	1,969
1990	117	2,198,594	1,566
1989	58	1,115,656	1,603
1988	54	1,012,735	1,563
1987	43	534,597	1,036
1986	35	420,024	1,000
1985	24	392,802	1,364
1984	19	245,332	1,076
1983 & Prior	127	1,220,240	801
Total	8,227	\$ 208,822,738	\$ 2,115





Schedule G – Detailed Tabulation of the Data

Schedule of Retired Members by Type of Benefit

Benefits Payable June 30, 2021

Amount of Monthly Benefits	Number of Rets.	Ret. Type 1*	Ret. Type 2*	Ret Type 3*	Life	Option 1**	Option 2**	Option 3**
\$1 – \$300	484	411	0	73	353	44	66	21
301 – 600	1,011	865	8	138	763	116	98	34
601 – 900	1,014	845	21	148	710	116	144	44
901 – 1,200	837	703	26	108	562	115	126	34
1,201 – 1,500	722	613	19	90	478	102	113	29
1,501 – 1,800	632	530	28	74	403	97	109	23
1,801 – 2,100	483	405	33	45	302	58	107	16
2,101 – 2,400	495	419	32	44	292	66	124	13
2,401 – 2,700	362	301	36	25	203	63	85	11
2,701 – 3,000	314	253	42	19	176	45	80	13
Over \$3,000	1,873	1,578	210	85	840	401	578	54
Totals	8,227	6,923	455	849	5,082	1,223	1,630	292

* Type of Retirement

- 1 – Retirement for Age & Service
- 2 – Disability Retirement
- 3 – Survivor Payment

**Option Selected

- Life – with return of contributions
- Opt. 1 – 100% Survivorship
- Opt. 2 – 50% Survivorship
- Opt. 3 – Years Certain & Life





Schedule G – Detailed Tabulation of the Data

Total Retirants and Beneficiary Information June 30, 2021

Tabulated by Attained Age

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Totals	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20					3	\$ 65,986	3	\$ 65,986
20-24					5	71,232	5	71,232
25-29					8	137,096	8	137,096
30-34			3	\$ 93,748	5	44,435	8	138,183
35-39			4	182,668	9	100,199	13	282,867
40-44	66	\$ 390,450	11	371,757	13	170,323	90	932,530
45-49	65	1,030,715	17	743,502	13	234,123	95	2,008,340
50-54	229	8,362,834	37	1,655,273	24	448,470	290	10,466,577
55-59	552	18,552,571	55	2,185,250	42	652,853	649	21,390,674
60-64	1,013	29,485,394	74	2,622,504	79	1,397,546	1,166	33,505,444
65-69	1,342	35,740,824	65	2,574,210	99	1,788,561	1,506	40,103,595
70-74	1,350	34,127,638	67	2,758,628	134	2,363,746	1,551	39,250,012
75-79	1,012	23,009,010	64	2,261,175	132	2,571,480	1,208	27,841,665
80-84	643	12,588,485	34	1,222,289	103	1,717,352	780	15,528,126
85-89	392	7,922,543	16	425,535	99	1,772,658	507	10,120,736
90-94	188	4,235,185	7	181,753	56	812,530	251	5,229,468
95-99	65	1,229,846	1	22,129	23	288,840	89	1,540,815
100 & Over	6	181,935			2	27,457	8	209,392
Totals	6,923	\$176,857,430	455	\$17,300,421	849	\$14,664,887	8,227	\$208,822,738

Average Age: 70.5 years





Schedule G – Detailed Tabulation of the Data

Retirants and Beneficiary Information June 30, 2021

Tabulated by Attained Ages

General Employees with Social Security

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Totals	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20								
20-24					1	\$ 2,425	1	\$ 2,425
25-29					3	31,513	3	31,513
30-34					3	8,838	3	8,838
35-39					5	59,044	5	59,044
40-44	14	\$ 73,367	3	\$ 75,368	9	78,675	26	227,410
45-49	24	292,095	3	70,754	3	10,774	30	373,623
50-54	71	1,483,457	8	271,938	9	107,507	88	1,862,902
55-59	263	5,556,815	15	386,184	22	265,575	300	6,208,574
60-64	517	9,566,125	31	837,313	46	530,888	594	10,934,326
65-69	773	14,122,354	29	701,920	48	739,111	850	15,563,385
70-74	806	15,267,652	24	650,943	76	1,119,493	906	17,038,088
75-79	602	10,507,638	31	878,498	68	1,075,670	701	12,461,806
80-84	396	5,963,071	14	346,457	58	809,795	468	7,119,323
85-89	227	3,756,494	8	183,501	46	652,311	281	4,592,306
90-94	102	1,765,532	3	50,785	23	334,155	128	2,150,472
95-99	37	530,400	1	22,129	10	88,303	48	640,832
100 & Over					1	10,130	1	10,130
Totals	3,832	\$68,885,000	170	\$4,475,790	431	\$5,924,207	4,433	\$79,284,997

Average Age: 71.5 years





Schedule G – Detailed Tabulation of the Data

Retirants and Beneficiary Information June 30, 2021

Tabulated by Attained Ages

General Employees without Social Security

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Totals	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20								
20-24					2	\$ 28,240	2	\$ 28,240
25-29					3	47,993	3	47,993
30-34					2	35,597	2	35,597
35-39					4	41,155	4	41,155
40-44	27	\$ 100,158	2	\$ 62,712	1	19,706	30	182,576
45-49	22	178,838	1	42,251	8	177,876	31	398,965
50-54	54	1,047,286	4	77,066	7	154,023	65	1,278,375
55-59	121	2,962,653	15	391,647	15	226,127	151	3,580,427
60-64	296	7,710,217	18	515,804	19	285,605	333	8,511,626
65-69	406	10,587,753	10	321,106	42	755,678	458	11,664,537
70-74	438	12,389,669	11	375,478	44	740,886	493	13,506,033
75-79	333	8,331,399	17	513,884	45	811,056	395	9,656,339
80-84	212	5,040,387	13	433,276	36	662,957	261	6,136,620
85-89	153	3,604,710	5	100,027	46	908,423	204	4,613,160
90-94	83	2,344,952	4	130,968	28	400,901	115	2,876,821
95-99	26	608,154			12	191,927	38	800,081
100 & Over	6	181,935			1	17,327	7	199,262
Totals	2,177	\$55,088,111	100	\$2,964,219	315	\$5,505,477	2,592	\$63,557,807

Average Age: 71.9 years





Schedule G – Detailed Tabulation of the Data

Retirants and Beneficiary Information June 30, 2021

Tabulated by Attained Ages

Policeman and Firemen with Social Security

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Totals	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20								
20-24								
25-29					1	\$ 7,573	1	\$ 7,573
30-34			1	\$ 4,915			1	4,915
35-39			1	60,759			1	60,759
40-44	4	\$ 25,020	1	23,777	1	27,475	6	76,272
45-49	4	180,588	3	154,169			7	334,757
50-54	24	1,154,947	8	421,524	3	33,865	35	1,610,336
55-59	46	2,359,617	7	325,789	2	72,720	55	2,758,126
60-64	58	2,769,857	6	275,875	6	210,697	70	3,256,429
65-69	48	2,592,445	9	418,671	3	119,779	60	3,130,895
70-74	37	1,826,101	10	467,976	9	277,959	56	2,572,036
75-79	25	1,355,977	5	272,514	5	200,298	35	1,828,789
80-84	15	508,585	1	34,624	4	83,685	20	626,894
85-89	5	129,522	1	36,726	1	32,936	7	199,184
90-94					2	34,921	2	34,921
95-99								
100 & Over								
Totals	266	\$12,902,659	53	\$2,497,319	37	\$1,101,908	356	\$16,501,886

Average Age: 65.1 years





Schedule G – Detailed Tabulation of the Data

Retirants and Beneficiary Information June 30, 2021

Tabulated by Attained Ages

Policemen and Firemen without Social Security

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Totals	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20					3	\$ 65,986	3	\$ 65,986
20-24					2	40,567	2	40,567
25-29					1	50,017	1	50,017
30-34			2	\$ 88,833			2	88,833
35-39			3	121,909			3	121,909
40-44	21	\$ 191,905	5	209,900	2	44,467	28	446,272
45-49	15	379,194	10	476,328	2	45,473	27	900,995
50-54	80	4,677,144	17	884,745	5	153,075	102	5,714,964
55-59	122	7,673,486	18	1,081,630	3	88,431	143	8,843,547
60-64	142	9,439,195	19	993,512	8	370,356	169	10,803,063
65-69	115	8,438,272	17	1,132,513	6	173,993	138	9,744,778
70-74	69	4,644,216	22	1,264,231	5	225,408	96	6,133,855
75-79	52	2,813,996	11	596,279	14	484,456	77	3,894,731
80-84	20	1,076,442	6	407,932	5	160,915	31	1,645,289
85-89	7	431,817	2	105,281	6	178,988	15	716,086
90-94	3	124,701			3	42,553	6	167,254
95-99	2	91,292			1	8,610	3	99,902
100 & Over								
Totals	648	\$39,981,660	132	\$7,363,093	66	\$2,133,295	846	\$49,478,048

Average Age: 63.1 years

