



Cavanaugh Macdonald
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The experience and dedication you deserve

Employees' Retirement System of the City of Milwaukee

Actuarial Valuation Report
Prepared as of January 1, 2022

May 26, 2022





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May 26, 2022

Annuity and Pension Board
Employees' Retirement System of the City of Milwaukee
789 North Water Street, Suite 300
Milwaukee, WI 53202

Members of the Board:

At your request, we performed an actuarial valuation of the Employees' Retirement System of the City of Milwaukee (referred to as "ERS" or "System") as of January 1, 2022. The report has been prepared in accordance with Section 36-15-15 of the Milwaukee City Charter (MCC). The major findings of the valuation are contained in this report, which reflects the benefit and funding provisions in place on January 1, 2022. The benefit provisions, actuarial assumptions and actuarial methods remain unchanged from the prior valuation.

The valuation was based on the actuarial assumptions and methods adopted by the Annuity and Pension Board, as specified by the Charter. An amendment to the MCC was adopted by the Common Council on April 30, 2013 to establish the Stable Employer Contribution Policy. Under that Policy, an actuarial contribution rate is separately calculated for three groups: Policemen, Firemen, and General Employees of the Combined Fund, and is applicable for the subsequent five-year period. These rates are established every five years following the Experience Study, performed by the actuary. The actuarial determined employer contribution rates under the Stable Contribution Policy for Policemen, Firemen, and General Employees are 25.22%, 26.83% and 7.48% of covered payroll, respectively, through December 31, 2022.

The primary purposes of the valuation report are to determine the actuarial contribution rate, to describe the current financial condition of ERS, and to analyze changes in such condition. Use of this report for any other purposes, or by anyone other than ERS and its auditors, may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. Because of the risk of misinterpretation of actuarial results, you should ask Cavanaugh Macdonald Consulting (CMC) to review any statement you wish to make on the results contained in this report. CMC will not accept any liability for any such statement made without prior review.



In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by ERS staff. This information includes, but is not limited to, statutory provisions, member data and financial information. Although reviewed for reasonableness and consistency with the prior valuation, these elements have not been audited by CMC and we cannot certify as to the accuracy and completeness of the data supplied. The valuation results depend on the integrity of this information. If any of the information is inaccurate or incomplete, our results may be different and our calculations may need to be revised. Sometimes assumptions are made to interpret membership data that is imperfect. The valuation is also based on benefit and contribution provisions as presented in this report. If you have reason to believe that the plan provisions are incorrectly described, that important plan provisions relevant to this valuation are not described, or that conditions have changed since the calculations were made, you should contact the authors of this actuarial report prior to relying on this information.

The Board has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C. We believe that these assumptions are appropriate and reasonable and also comply with all applicable Actuarial Standards of Practice (ASOPs). We certify that all costs and liabilities have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the plan and reasonable expectations) and which, in combination, offer the best estimate of anticipated experience affecting the plan. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the necessary 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; 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) and changes in plan provisions or applicable law. Due to the limited scope of this assignment, CMC has not performed an analysis of the potential range of such future measurements.

Actuarial computations presented in this report are for purposes of evaluating the funding of the Plan and determining an actuarial contribution rate. Actuarial computations for purposes of fulfilling financial accounting requirements under Governmental Accounting Standard Number 67 and 68 are provided in separate reports. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Plan's funding requirements and goals. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

We note that as we prepare this report, the world is still recovering from the Covid-19 pandemic. We have considered all available information, but do not believe there is sufficient data yet to warrant the modification of any of our assumptions at this time. We will continue to monitor the situation and advise the Board in the future of any adjustments we believe would be appropriate.



On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualifications Standards to render the actuarial opinions contained in this report. In addition, this report has been prepared in accordance with all applicable Actuarial Standards of Practice. We are available to answer questions about it or to provide additional information, as needed.

Respectfully submitted,

A handwritten signature in blue ink, appearing to be 'LL' with a stylized flourish.

Larry Langer, ASA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, reading 'Patrice Beckham' in a cursive script.

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary





SECTION I: EXECUTIVE SUMMARY

Introduction and Background

The law governing the Employees' Retirement System (ERS) requires the Actuary and Pension Board to "...prepare an annual valuation of the assets and liabilities of the funds of the retirement system" (Section 36-15-15 of the Milwaukee City Charter (MCC)). Cavanaugh Macdonald Consulting, the Actuary, has completed the eighty-fourth annual actuarial valuation of the ERS as of January 1, 2022. The primary purposes of performing a valuation are to:

- estimate the liabilities for future benefits expected to be paid by the System;
- determine the employer contribution rate required to fund the System on an actuarial basis and compare that rate to the Stable Contribution Policy;
- disclose certain asset and liability measures, and the funded status, as of the valuation date;
- assess and disclose the key risks associated with funding the System;
- monitor any deviation between actual plan experience and experience projected by the actuarial assumptions, and
- analyze and report on any significant trends in contributions, assets and liabilities over the past several years.

Stable Contribution Policy

An amendment to the MCC was adopted by the Common Council on April 30, 2013 to establish the Stable Employer Contribution Policy. Under that Policy, an actuarial contribution rate is separately calculated for three groups: Policemen, Firemen, and General Employees of the Combined Fund, and is applicable for the subsequent five-year period. The Policy is designed to:

- (a) Fully fund all current costs for active members, determined under the funding method, which is irrespective of the funded status of the System. The result is that the Employer Normal Cost is always funded; and
- (b) Liquidate the unfunded actuarial accrued liability (UAAL), if any, over the amortization period adopted by the Board and based on methodology specified in the MCC. Effective with the January 1, 2019 actuarial valuation, the Board adopted a 25-year closed period to amortize the UAAL as of January 1, 2019. At each subsequent valuation date, any changes to the UAAL arising from actual experience that is different than assumed are amortized over a fixed 15-year period and any changes to the UAAL arising from changes in benefit provisions, actuarial assumptions or actuarial methods are amortized over a fixed 25-year period.

These rates are established every five years following the completion of the Experience Study performed by the actuary. The actuary establishes these contribution rates based on the most recent actuarial assumptions adopted by the Annuity and Pension Board of the ERS and the actuarial methods specified in the Charter. The rates are established in conformity with applicable Actuarial Standards of Practice and result in a funded status at the end of the five years that is at least actuarially equivalent to the expected funded status if contributions were based on the recalculation of the employer contribution rates annually under the same assumptions and methods. The current contribution rates under the Stable Employer Contribution Policy for calendar years 2018 through 2022 are:

- General Employees: 7.48%
- Policemen: 25.22%
- Firemen: 26.83%.

The results of the January 1, 2022 actuarial valuation are among the information used to monitor the impact of the Stable Employer Contribution Policy on the System's funding and anticipate possible adjustments when the rate is reset in 2023.



SECTION I: EXECUTIVE SUMMARY

Events Impacting the January 1, 2022 Valuation:

- **Investment Experience:** There was favorable investment experience on the market value of assets during calendar year 2021. This favorable experience, combined with the recognition of deferred asset gains, resulted in a return on the actuarial value of assets of 11.76%, which is above the assumed rate of return of 7.50%. This resulted in an actuarial gain on assets.
- **Liability Experience:** Liability gains (losses) result from actual experience that is more (less) favorable than anticipated based on the actuarial assumptions. Overall, there was favorable experience during 2021 for the System's liabilities, as expressed by a smaller actuarial accrued liability than expected. The largest source of favorable experience was lower salary increases than assumed during 2021.
- As part of Cavanaugh Macdonald Consulting's transition as the System's new retained actuary in 2019, a review of the actuarial assumptions used in the 2018 valuation was performed. In our professional judgment, a reduction to the investment return assumption was necessary in order to comply with applicable actuarial standards of practice. Our recommendation to lower the investment return assumption from 8.00% in calendar years 2018 through 2022 and 8.25% thereafter to 7.50% for all years was adopted by the Board and reflected in the January 1, 2019 valuation. This resulted in a significant increase in the actuarially determined contribution rate. The employer contribution rates, which are reset every five years under Stable Contribution Policy, had just been reset in 2018 in concurrence with the completion of the experience study and subsequent adoption of a new set of assumptions. The timing of the reduction to the investment return assumption in the January 1, 2019 valuation was "off cycle" from the regular experience study. As a result, the Stable Contribution Policy rate was much lower than the actuarially determined contribution rate for 2021 which impacted the System's funded ratio.
- In total, the size of the active membership declined from 10,567 to 10,094 (4.5%) during 2021, which also impacted the total covered payroll which declined by 1.2%. The actuarial assumption reflects an expectation that covered payroll will increase 2.0% per year. As a result, the dollar amount of the unfunded actuarial accrued liability payments increases by 2.0% each year. To the extent actual increases in the covered payroll do not occur as expected, it results in a higher unfunded actuarial accrued liability contribution rate.
- The Global Pension Settlement (GPS) provides that members enrolled through June 28, 2000, must provide written consent to the ERS in order to be eligible for the benefit enhancements of GPS. Members enrolled after June 28, 2000 are automatically participants in the Combined Fund. Since the January 1, 2021 valuation, eight individuals who were eligible for ERS benefits as of June 28, 2000 – and who had not previously consented to GPS – have now consented. As a result, assets will be transferred from the non-consenter funds in which these members previously participated to the Combined Fund.

Fiscal Impact of Events

Actual Rate of Return for 2021: There was favorable investment experience on the market value of assets during calendar year 2021. This favorable experience, combined with the recognition of deferred asset gains, resulted in a return on the actuarial value of assets of 11.76%, which is above the assumed rate of return of 7.50%. As a result, the unfunded actuarial accrued liability decreased by \$229.3 million, the funded ratio increased by 3.3% and the actuarial employer contribution rate decreased by 3.73% of pay for



SECTION I: EXECUTIVE SUMMARY

the Combined Fund. Due to the favorable investment experience on the market value of assets during 2021, the net deferred investment gain of \$209 million in last year's valuation has increased to \$696 million in the current valuation. Absent offsetting unfavorable experience in the future, this experience will increase the funded ratio and decrease the actuarial contribution rate as it flows through the asset smoothing method.

Liability Experience: The purpose of conducting an actuarial valuation of a retirement system is to estimate the costs and liabilities for the benefits provided by the system, to determine the annual level of contributions required to support these benefits and, finally, to analyze the system's actual experience as it compares with the actuarial assumptions used in the valuation. The costs and liabilities reported in the valuation depend not only upon the dollar amount of the benefits to be paid, but also upon factors such as mortality rates, termination rates, and retirement rates. The net liability experience for the System during 2021 was a small actuarial gain of \$13 million. The most significant source of the net favorable liability experience during 2021 was smaller salary increases than anticipated by the actuarial assumptions.

Stable Contribution Rate Policy: As discussed earlier, largely due to lowering the investment return assumption in the 2019 valuation, there was a significant difference between the stable policy contribution rate and the actuarial determined employer contribution rate for 2021 for all three membership groups. This difference resulted in employer contributions that were \$90.3 million less than the actuarially determined employer contribution. As a result, the unfunded actuarial accrued liability did not decline as scheduled in the amortization table (see Table 11).

Decline in Covered Payroll during 2021: Covered payroll in the current valuation decreased by 1.2% from the covered payroll in the January 1, 2021 valuation. The UAAL contribution rate is developed with an assumed increase of 2.0% in covered payroll each year. When the covered payroll does not increase, as assumed, it results in a higher unfunded actuarial accrued liability contribution rate.

GPS Consenters during 2021: There were eight individuals who elected to participate in the Combined Fund during 2021. They represent about 3% of the total non-consenters. Due to the small number of individuals who consented and the associated liability, this did not have a significant impact on the valuation results.

A summary of the changes to the unfunded actuarial accrued liability for the Combined Fund only from the January 1, 2021 valuation to the January 1, 2022 valuation is shown in the table below:

Combined Fund		(\$ in millions)
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2021	\$	1,343.1
- Expected Change in UAAL		(8.4)
- Actual Contributions Versus Actuarial Contributions		90.3
- Investment Experience		(229.3)
- Demographic Experience		(13.2)
- Other Experience		8.4
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2022	\$	1,190.9



SECTION I: EXECUTIVE SUMMARY

Due to the Stable Employer Contribution Policy, these events and the resulting increase in the unfunded actuarial accrued liability had no impact on the employer contribution rates for the 2022 plan year. However, their impact is reflected in the actuarially determined employer contribution rate for the Combined Fund as shown in the following table.

Combined Fund	Rate
Actuarial Determined Employer Rate as of 01/01/2021	28.73%
- Change in Employer Normal Cost Rate	(0.16%)
- Actual Contributions Versus Actuarial Contributions	1.47%
- Investment Experience	(3.73%)
- Demographic Experience	(0.21%)
- Payroll Growth Rate Lower than Expected	0.48%
- Other Experience	0.10%
Actuarial Determined Employer Rate as of 01/01/2022	26.68%

As a result of the decrease in the actuarially determined employer contribution rate in the 2022 valuation, the shortfall between the actuarially determined contribution and the Stable Contribution Policy has decreased. A summary of the employer contribution rates for all three groups is shown in the table below.

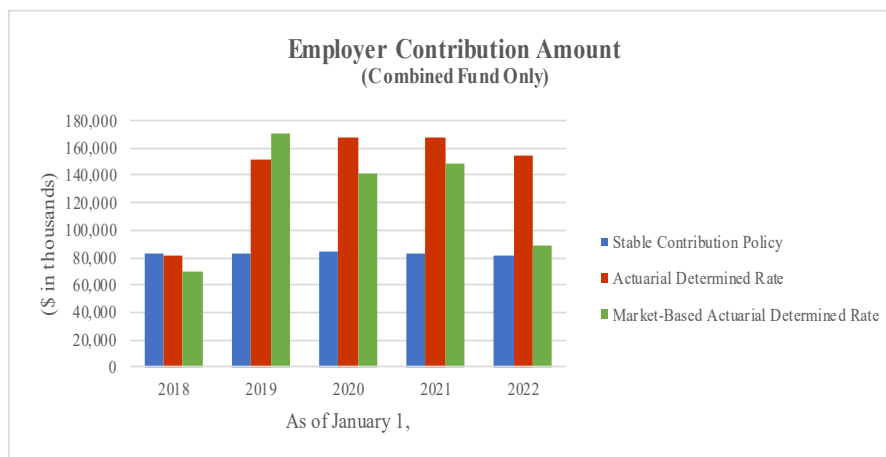
	1/1/2022	1/1/2021	1/1/2020	1/1/2019	1/1/2018
<u>General:</u>					
a. Actuarial Determined Rate	15.86%	17.22%	16.47%	15.57%	7.46%
b. Stable Contribution Policy	7.48%	7.48%	7.48%	7.48%	7.48%
c. Difference	8.38%	9.74%	8.99%	8.09%	(0.02%)
<u>Policemen:</u>					
a. Actuarial Determined Rate	44.70%	47.47%	46.63%	41.31%	25.13%
b. Stable Contribution Policy	25.22%	25.22%	25.22%	25.22%	25.22%
c. Difference	19.48%	22.25%	21.41%	16.09%	(0.09%)
<u>Firemen:</u>					
a. Actuarial Determined Rate	47.91%	51.44%	52.25%	48.71%	26.74%
b. Stable Contribution Policy	26.83%	26.83%	26.83%	26.83%	26.83%
c. Difference	21.08%	24.61%	25.42%	21.88%	(0.09%)

Under the Stable Contribution Policy, the employer contribution rate is reset every five years following the completion of the Experience Study and adoption of updated actuarial assumptions. The employer contribution rate was most recently set for calendar years 2018 through 2022, based on the actuarially determined contribution in the 2018 valuation. However, because of the significant reduction in the investment return assumption in the 2019 valuation (moving from 8.24% to 7.50%), the actuarially determined employer contribution rate was much higher than the Stable Contribution Policy rate in the 2021 valuation. That contribution shortfall (actuarially determined contribution less stable contribution policy amount) increased the unfunded actuarial accrued liability.



SECTION I: EXECUTIVE SUMMARY

The difference between the actuarially determined employer contribution rate and the Stable Contribution Policy rate decreased in the 2022 valuation, primarily due to favorable investment experience. The Stable Contribution Policy amount is expected to continue to be significantly less than the actuarially determined contribution amount until 2023, when the Stable Contribution Policy rate will be reset for another five years. The following graph illustrates the difference between the Stable Contribution Policy amounts and the actuarially determined contribution amounts over the past five years.



Although the recognition of the deferred investment experience is expected to reduce the actuarial contribution rate, the impact is more than offset by the shortfall in contributions from the Stable Contribution Policy. As a result, a significant increase is expected when the Stable Contribution Policy rate is reset in 2023.

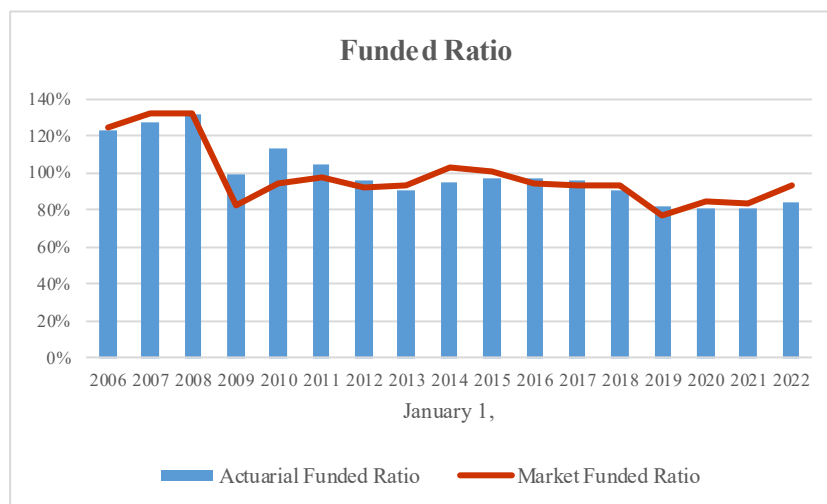
Given the magnitude of the difference between the actuarially determined employer contributions and the stable contribution policy contributions, we strongly encourage the City and other participating agencies to start preparing now for much higher contributions when the Stable Contribution Policy is reset for calendar year 2023. The City contributed an additional \$8.0 million during 2021 to the Reserve Fund, which when added to the initial balance of \$34.2 million and \$0.1 million in investment losses increased the balance to \$42.1 million. The Reserve Fund represents advance contributions, above the stable contribution policy, which can be used by employers to meet future contribution levels, if needed.

Funded Ratio

As was discussed earlier, the funded ratio (actuarial assets divided by actuarial liability) in the 2022 valuation was positively impacted by actual experience during 2021 that was favorable for both the System's actuarial assets and liabilities. The funded ratio increased from 80.7% in the 2021 valuation to 83.4% in the 2022 valuation. The funded ratio on a market value basis also improved, increasing from 83.8% in the prior valuation to 93.5% in the current valuation. The following graph shows the historical funded ratio using both the market value and actuarial value of assets.



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Note that the funded ratio does not necessarily indicate whether or not additional funding is needed, nor does it indicate whether or not the plan has sufficient funds to settle all current obligations.

A number of factors impact the funded ratio from year to year. The major drivers of the change in the funded ratio from the January 1, 2021 valuation to the January 1, 2022 valuation are shown in the following table on both an actuarial value and market value basis.

	Funded Ratio Based On	
	Actuarial Value of Assets	Market Value of Assets
January 1, 2021 Funded Ratio	80.7%	83.8%
- Expected Change	(0.1%)	0.1%
- Actual Contributions Versus Actuarial Contributions	(0.7%)	(0.7%)
- Investment Experience	3.3%	10.2%
- Demographic Experience	0.2%	0.1%
- Other Experience	<u>0.0%</u>	<u>0.0%</u>
- Total change	2.7%	9.7%
January 1, 2022 Funded Ratio	83.4%	93.5%



SECTION I: EXECUTIVE SUMMARY

Summary of Key Valuation Results

This report, prepared as of January 1, 2022, presents the results of the eighty-fourth annual valuation of the System. The principal results of the valuation, reflecting the Stable Contribution Funding Policy and contribution amounts as of January 31, 2023, are summarized below:

Fund	General			Total
	Employees	Policemen	Firemen	
Combined Fund	\$ 29,747,730	\$ 40,565,027	\$ 17,758,427	\$ 88,071,184
Retirement Fund	0	0	0	0
Duty Disability Fund	0	0	0	0
Heart & Lung Fund	N/A	N/A	0	0
Combined Retirement & Disability Fund	34,000	16,000	0	50,000
Total Contribution	\$ 29,781,730	\$ 40,581,027	\$ 17,758,427	\$ 88,121,184
Covered Compensation	\$ 369,306,000	\$ 148,844,000	\$ 61,201,000	\$ 579,351,000
Total Contribution as a Percentage of Covered Compensation	8.06%	27.26%	29.02%	15.21%

Key Takeaways

- Due to the favorable investment experience during 2021, the net deferred investment gain (market value of assets greater than actuarial value) of \$209 million in last year's valuation has increased to \$696 million in the current valuation. Absent offsetting unfavorable experience in the future, this experience will increase the funded ratio and decrease the actuarial contribution rate as it flows through the asset smoothing method. While this will have a positive impact on future valuation results, other actuarial experience may be unfavorable and offset the impact of the deferred investment gains.
- The shortfall between the actuarially determined contribution and the stable contribution policy for 2021 resulted in an increase in the unfunded actuarial accrued liability of \$90.3 million, which was then amortized over 15 years. This increased the UAAL contribution in the current valuation by 1.47%. A similar pattern is expected to occur until the employer contribution rate is reset in 2023.
- **Given the significant difference between the actuarially determined employer contribution and the stable contribution policy in this valuation, the City and participating agencies should give serious consideration to increasing contributions and planning for a major increase in the contribution rate when it is reset in 2023.**



SECTION I: EXECUTIVE SUMMARY

A typical retirement plan faces many different risks. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. Actuarial Standard of Practice Number 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions. Risk evaluation is an important part of managing a defined benefit plan. Please see the Risk Considerations section of this report for an in-depth discussion of the specific risks facing CMERS.

We conclude this executive summary by presenting comparative statistics and actuarial information from both the January 1, 2021 and January 1, 2022 valuations.



SECTION I: EXECUTIVE SUMMARY

Summary of Principal Results

	January 1, 2022	January 1, 2021	% Change
1. Membership Data			
a. Active Members			
(i) Count			
- General Employees	7,768	8,135	(4.5%)
- Policemen	1,631	1,735	(6.0%)
- Firemen	<u>695</u>	<u>697</u>	(0.3%)
- Total	10,094	10,567	(4.5%)
(ii) Total Estimated Payroll			
- General Employees	\$369,306,000	\$371,863,000	(0.7%)
- Policemen	148,844,000	154,607,000	(3.7%)
- Firemen	<u>61,201,000</u>	<u>59,899,000</u>	2.2%
- Total	\$579,351,000	\$586,369,000	(1.2%)
b. Retirees, Beneficiaries and Disabled Members			
(i) Number	13,758	13,647	0.8%
(ii) Total Annual Benefits	\$434,381,000	\$417,668,000	4.0%
(iii) Average Annual Benefit	\$31,573	\$30,605	3.2%
2. Assets and Liabilities			
a. Asset Values (includes contributions receivable)			
(i) Actuarial Value of Assets (AVA)	\$5,734,986,000	\$5,440,867,000	5.4%
(ii) Market Value of Assets (MVA)	\$6,431,356,000	\$5,649,734,000	13.8%
b. Actuarial Accrued Liability (AAL)	\$6,875,927,000	\$6,745,299,000	1.9%
c. Funded Status			
(i) Unfunded AAL (Based on AVA)	\$1,140,941,000	\$1,304,432,000	(12.5%)
(ii) Funded Ratio (Based on AVA)	83.41%	80.66%	3.4%
(iii) Unfunded AAL (Based on MVA)	\$444,571,000	\$1,095,565,000	(59.4%)
(iv) Funded Ratio (Based on MVA)	93.53%	83.76%	11.7%
3. Employer Contribution Rates (Combined Fund)			
a. General Employees			
(i) Stable Contribution Policy Rate	7.48%	7.48%	0.0%
(ii) Actuarial Determined Rate	15.86%	17.22%	(7.9%)
(iii) Market-Based Actuarial Determined Rate	8.28%	14.98%	(44.7%)
b. Policemen			
(i) Stable Contribution Policy Rate	25.22%	25.22%	0.0%
(ii) Actuarial Determined Rate	44.70%	47.47%	(5.8%)
(iii) Market-Based Actuarial Determined Rate	27.07%	42.28%	(36.0%)
c. Firemen			
(i) Stable Contribution Policy Rate	26.83%	26.83%	0.0%
(ii) Actuarial Determined Rate	47.91%	51.44%	(6.9%)
(iii) Market-Based Actuarial Determined Rate	29.82%	46.02%	(35.2%)
4. Total Employer Contribution (All Funds)	Due 01/31/2023	Due 01/31/2022	
(i) Annual Cost	\$88,121,000	\$89,651,000	(1.7%)
(ii) As a % of Covered Payroll	15.21%	15.29%	(0.5%)



SECTION I: EXECUTIVE SUMMARY

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SECTION II: SCOPE OF THE REPORT

This report presents the actuarial valuation of the Employees' Retirement System of the City of Milwaukee as of January 1, 2022. This valuation was prepared at the request of the System's Pension and Annuity Board. The report is based on the plan provisions, actuarial assumptions and actuarial methods in effect as of January 1, 2022.

Please pay particular attention to our cover letter, where the guidelines employed in the preparation of this report are outlined. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings are based. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the findings resulting from this valuation is presented in the previous section. Section III summarizes the membership data as of the valuation date. Section IV describes the assets and investment experience of the System. Section V discloses the obligations (liabilities) of the System and Section VI includes the calculation of contributions for the current fiscal year. Section VII discloses key maturity measurements and discusses the key risks facing the funding of the System.

This report includes several appendices:

- Appendix A Schedules of valuation data classified by various categories of members.
- Appendix B A summary of the current benefit structure, as determined by the provisions of governing law on the valuation date.
- Appendix C A summary of the actuarial methods and assumptions used to estimate liabilities and determine contribution rates.
- Appendix D A glossary of actuarial terms.



SECTION II: SCOPE OF THE REPORT

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SECTION III: MEMBER DATA SUMMARY

TABLE 1

Member Counts by Vested Status

Number of Members	1/1/2022			1/1/2021
	Vested	Non-Vested	Total	Total
Active				
- General Employees	5,216	2,552	7,768	8,135
- Policemen	1,364	267	1,631	1,735
- Firemen	<u>525</u>	<u>170</u>	<u>695</u>	<u>697</u>
- Total Active Members	7,105	2,989	10,094	10,567
Inactive				
- Deferred Retirees			3,363	3,188
- Refunds Payable			<u>2,149</u>	<u>1,796</u>
- Total Inactive Members			5,512	4,984
Benefit Recipients				
- Combined Fund				
General Employees			9,717	9,695
Policemen			2,615	2,539
Firemen			<u>1,415</u>	<u>1,402</u>
- Combined Fund Subtotal			13,747	13,636
- Retirement Fund			11	11
- Duty Disability Funds				
General Employees			0	0
Policemen			0	0
Firemen			<u>0</u>	<u>0</u>
- Duty Disability Funds Subtotal			0	0
- Firemen's Heart & Lung Fund			<u>0</u>	<u>0</u>
- Total Benefit Recipients			13,758	13,647
Total Membership			29,364	29,198

Note: Members are vested once they attain four years of service.



SECTION III: MEMBER DATA SUMMARY

TABLE 2

Member Counts by Consent Status

1/1/2022 Membership			
Number of Members	Consenters	Others	Total
Active			
- General Employees	7,729	39	7,768
- Policemen	1,630	1	1,631
- Firemen	<u>695</u>	<u>0</u>	<u>695</u>
- Total Active Members	10,054	40	10,094
Inactive			
- Deferred Retirees	3,168	195	3,363
- Refunds Due	<u>2,148</u>	<u>1</u>	<u>2,149</u>
- Total Inactive Members	5,316	196	5,512
Benefit Recipients			
- Combined Fund	13,747	NA	13,747
- Retirement Fund	NA	11	11
- Duty Disability Funds			
General Employees	0	0	0
Policemen	0	0	0
Firemen	<u>0</u>	<u>0</u>	<u>0</u>
- Duty Disability Funds Subtotal	0	0	0
- Firemen's Heart & Lung Fund	<u>0</u>	<u>0</u>	<u>0</u>
- Total Benefit Recipients	13,747	11	13,758
Total Membership	29,117	247	29,364

- Notes: (1) In addition to the above, there are members who have separated from service without vested rights to either a pension or a refund of accumulated contributions. There is no current actuarial liability for such individuals, and their membership will be terminated if they do not return to active service within five years of their date of separation from ERS covered employment.
- (2) Active members who worked fewer than 100 hours in the prior year, but who have not officially terminated employment are included in the count of inactives in Table 1 and Table 2. These members are not assumed to earn additional service in future years.



SECTION III: MEMBER DATA SUMMARY

TABLE 3

Member Data Summary

	1/1/2022	1/1/2021
Projected Annual Earnings		
- General Employees	\$ 369,306,000	\$ 371,863,000
- Policemen	148,844,000	154,607,000
- Firemen	<u>61,201,000</u>	<u>59,899,000</u>
- Total Projected Annual Earnings	\$ 579,351,000	\$ 586,369,000
Average Projected Earnings		
- General Employees	\$ 47,542	\$ 45,711
- Policemen	\$ 91,259	\$ 89,111
- Firemen	\$ 88,059	\$ 85,938
Annual Benefit Payments Currently Being Made		
- Combined Fund	\$ 434,137,398	\$ 417,456,609
- Retirement Fund	\$ 243,510	\$ 211,239
- Duty Disability Funds		
General Employees	\$ 0	\$ 0
Policemen	0	0
Firemen	<u>0</u>	<u>0</u>
- Duty Disability Funds Subtotal	\$ 0	\$ 0
- Firemen's Heart & Lung Fund	\$ <u>0</u>	\$ <u>0</u>
- Total Benefit Payments	\$ 434,380,908	\$ 417,667,848

- Notes: (1) "Projected Annual Earnings" represents the expected earnable compensation for the year following the valuation date.
- (2) "Annual Benefit Payments Currently Being Made" equals 12 times the full December monthly payment. The amounts shown include all amounts payable by the ERS and have been reduced by workers' compensation offsets for members who are currently repaying a workers' compensation award.



SECTION III: MEMBER DATA SUMMARY

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SECTION IV: ASSET DATA

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is January 1, 2022. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of assets. The actuarial process then leads to a method of determining the contributions needed by members and the employer in the future to balance the System's assets and liabilities.

Market Value of Assets

The current market value represents the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, the market value of assets provides a basis for measuring investment performance during the year. Table 4 summarizes the change in the market value of assets from January 1, 2021 to January 1, 2022.

Actuarial Value of Assets

Neither the market value of assets, representing a "cash-out" value of System assets, nor the book values of assets, representing the cost of investments, may be the best measure of the System's ongoing ability to meet its obligations.

To arrive at a suitable value of assets for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. Under the asset smoothing methodology, the difference between the actual and assumed investment return on the market value of assets is recognized evenly over a five-year period.

Table 5 shows the development of the actuarial value of assets (AVA) as of the valuation date.



SECTION IV: ASSET DATA

TABLE 4

Market Value of Assets
(Dollars in thousands)

	Global Combined Fund	Retirement Fund	Combined Retirement Fund	General Employees' Duty Disability Fund	Employers' Reserve Fund	Securities Lending Fund	Total
1. Market Value of Assets as of January 1, 2021	\$ 5,597,607	\$ 11,143	\$ 5,849	\$ 100	\$ 34,196	\$ 839	\$ 5,649,734
2. Contributions During Year							
a. Member	\$ 31,435	\$ 8	\$ 1	\$ 0	\$ 0	\$ 0	\$ 31,444
b. Employer	82,960	0	217	0	8,000	0	91,177
c. Total	\$ 114,395	\$ 8	\$ 218	\$ 0	\$ 8,000	\$ 0	\$ 122,621
3. Disbursements During Year							
a. Monthly Annuities	\$ 441,005	\$ 54	\$ 33	\$ 0	\$ 0	\$ 0	\$ 441,092
b. Refunds	4,116	36	12	0	0	0	4,164
c. Administrative Expenses	5,935	0	0	0	0	798	6,733
d. Total	\$ 451,056	\$ 90	\$ 45	\$ 0	\$ 0	\$ 798	\$ 451,989
4. Investment Return (net of Investment Expenses)	\$ 1,106,952	\$ 2,372	\$ 1,245	\$ 22	\$ (115)	\$ 514	\$ 1,110,990
5. Market Value of Assets as of December 31, 2021 (1) + (2c) - (3d) + (4)	\$ 6,367,898	\$ 13,433	\$ 7,267	\$ 122	\$ 42,081	\$ 555	\$ 6,431,356
6. Rate of Return, as Reported by Northern Trust (ERS' Custodian)							18.89%



SECTION IV: ASSET DATA

TABLE 5
Actuarial Value of Assets
(Dollars in thousands)

1. Preliminary Actuarial Value as of January 1, 2021	\$	5,439,598
2. Market Value January 1, 2021 (Unaudited)	\$	5,649,734
3. Market Value January 1, 2022 (Unaudited)	\$	6,431,356
4. Contributions		
a. Member	\$	31,444
b. Employer		91,177
c. Total	\$	<u>122,621</u>
5. Benefit Payments and Administrative Expenses	\$	451,989
6. Actual Market Return, Net of Investment Expenses	\$	1,110,990
7. Expected Market Return Based on 7.50%	\$	411,602
8. Excess of Actual over Expected Return		
a. 2021	\$	699,388
b. 2020		4,009
c. 2019		532,533
d. 2018		(580,714)
e. 2017	\$	387,130
9. Excess Recognized in the Current Valuation		
a. 2021	\$	139,878
b. 2020		802
c. 2019		106,507
d. 2018		(116,143)
e. 2017		77,426
f. Total	\$	<u>208,470</u>
10. Preliminary Value as of January 1, 2022 (1) + (4c) - (5) + (7) + (9f)	\$	5,730,302
11. Ratio of Preliminary Value to Market Value (10)/(3)		89.10%
12. Balance in Employers' Reserve Fund and Securities Lending Fund	\$	42,636
13. Market Value Excluding Employers' Reserve Fund and Securities Lending Fund (3) - (12)	\$	6,388,720
14. Actuarial Value as of January 1, 2022 (11) * (13) + (12)	\$	5,734,986
15. Estimated Rate of Return		11.76%



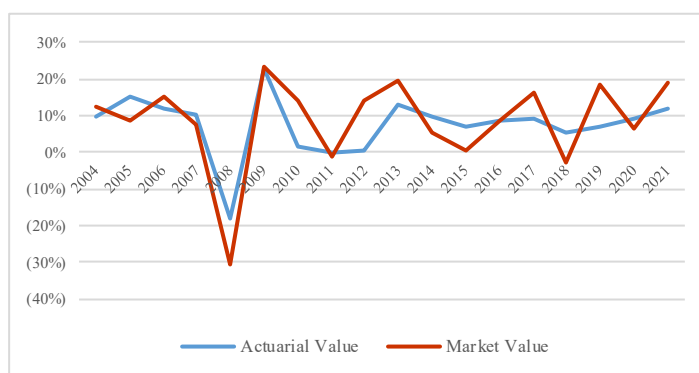
SECTION IV: ASSET DATA

**TABLE 6
Historical Asset Returns**

Beginning with the January 1, 2019 valuation, the investment return assumption is 7.50%. The table below provides a history of the rate of return on the actuarial value and market value of assets. Note that the System utilized a 10% asset corridor prior to 2009, which impacted the calculation of the actuarial value of assets and, therefore, the return on the actuarial value of assets. Rates of return on a market value basis are provided by the System’s custodian, Northern Trust.

Year	Actuarial Value of Assets	Market Value of Assets
2004	9.49%	12.61%
2005	15.34%	8.46%
2006	11.83%	15.13%
2007	10.17%	7.21%
2008	(17.88%)	(30.84%)
2009	22.62%	23.30%
2010	1.34%	13.86%
2011	(0.09%)	(1.43%)
2012	0.43%	13.88%
2013	12.85%	19.29%
2014	9.91%	5.09%
2015	7.00%	0.54%
2016	8.33%	8.83%
2017	9.09%	16.38%
2018	5.33%	(2.91%)
2019	6.94%	18.44%
2020	9.22%	6.62%
2021	11.76%	18.89%
Average*	7.10%	7.74%
Max	22.62%	23.30%
Min	(17.88%)	(30.84%)
Range	40.50%	54.14%

Note: Rates of return on Actuarial Value of Assets prior to 2018 were provided by the prior actuary.
* Average is calculated on a geometric basis.





SECTION IV: ASSET DATA

TABLE 7

Allocation of Assets Among Funds
(Dollars in thousands)

As part of the financial statements, the System provides a breakdown of the total market value of assets by Fund. The Employer Reserve Fund and Security Lending Fund are valued at market value for actuarial purposes and earmarked for specific purposes other than directly funding the benefits of the System’s members. The actuarial value of assets is determined in total and then adjusted by subtracting the Employer Reserve Fund and Security Lending Fund. The remaining actuarial value of assets is then allocated to each Fund based on its portion of the total market value.

Fund	Market Value	Actuarial Value
1. Combined Fund	\$ 6,367,898	\$ 5,673,797
2. Employers' Reserve Fund	\$ 42,081	\$ 42,081
3. Retirement Fund	\$ 13,433	\$ 11,969
4. General Employees' Duty Disability Fund	\$ 122	\$ 109
5. Fire & Police Duty Disability Fund	\$ 0	\$ 0
6. Firemen's Heart & Lung Fund	\$ 0	\$ 0
7. Combined Retirement & Disability Fund	\$ 7,267	\$ 6,475
8. Securities Lending Fund	\$ 555	\$ 555
9. Total All Funds	\$ 6,431,356	\$ 5,734,986

Note: Values shown include January 31, 2022 contributions receivable.



SECTION IV: ASSET DATA

TABLE 8
Allocations Between Non-Consenters Who Consented to GPS During 2021 and Those Who Did Not
(Dollars in thousands)

The Global Pension Settlement (GPS) provides that members enrolled through June 28, 2000 must provide written consent to the ERS in order to be eligible for the benefit enhancements of GPS. Members enrolled after June 28, 2000 are automatically participants in the Combined Fund. Since the January 1, 2021 valuation, eight individuals who were eligible for ERS benefits as of June 28, 2000 – and who had not previously consented to GPS – have now consented.

GPS provides that the market value of the assets in the funds for Non-Consenters be divided among Consenters and Non-Consenters. The division is based on the actuarial accrued liability covered by each fund under the pre-GPS plan provisions. The required division of assets for members who consented during 2021 was calculated as of January 1, 2021. As a result, assets will be transferred from the non-consenter Funds in which these members previously participated to the Global Combined Fund, as shown below.

Fund	Allocation of 1/1/2021 Market Value of Assets in Funds for Non-Consenters in Proportion to 1/1/2021 Actuarial Accrued Liability			Allocation of 1/31/2022 Employer Contribution to Funds for Non-Consenters in Proportion to 1/1/2021 Covered Compensation		
	Consenters in 2021	Others	Total (Audited)	Consenters in 2021	Others	Total
1. Retirement Fund	\$ 2,199	\$ 8,944	\$ 11,143	\$ 0	\$ 0	\$ 0
2. General Employees' Duty Disability Fund	12	88	100	0	0	0
3. Fire & Police Duty Disability Fund	0	0	0	0	0	0
4. Firemen's Heart & Lung Fund	0	0	0	0	0	0
5. Combined Retirement & Disability Fund	591	5,258	5,849	21	196	217
6. Total Funds for Non-Consenters	\$ 2,802	\$ 14,290	\$ 17,092	\$ 21	\$ 196	\$ 217

Notes: (i) January 1, 2021 assets allocated to members who consented to Global Settlement during 2021 are transferred to the Combined Fund as of January 1, 2021.
(ii) January 31, 2022 Employer Contributions allocated to members who consented to Global Settlement during 2021 are credited to the Combined Fund instead of to the funds for non-consenters.



SECTION V: SYSTEM LIABILITIES

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of the System's assets as of the valuation date, January 1, 2022. In this section, the discussion will focus on the commitments (future benefit payments) of the System, which are referred to as its liabilities.

Table 9 contains an analysis of the actuarial present value of all future benefits (PVFB) for contributing members, inactive members, retirees and their beneficiaries.

The liabilities summarized in Table 9 include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes the measurement of both benefits already earned and future benefits to be earned. For all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and for the lives of the surviving beneficiaries.

All liabilities reflect the benefit provisions in place as of January 1, 2022.

Actuarial Accrued Liability

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. An actuarial cost method is a mathematical technique that allocates the present value of future benefits into annual costs. In order to do this allocation, it is necessary for the funding method to "breakdown" the present value of future benefits into two components:

- (1) that which is attributable to the past and
- (2) that which is attributable to the future.

Actuarial terminology calls the part attributable to the past the "past service liability" or the "actuarial accrued liability." The portion allocated to the future is known as the present value of future normal costs, with the specific piece of it allocated to the current year being called the "normal cost." Table 9 contains the calculation of actuarial accrued liability for the System. The Entry Age Normal actuarial cost method is used to develop the actuarial accrued liability.

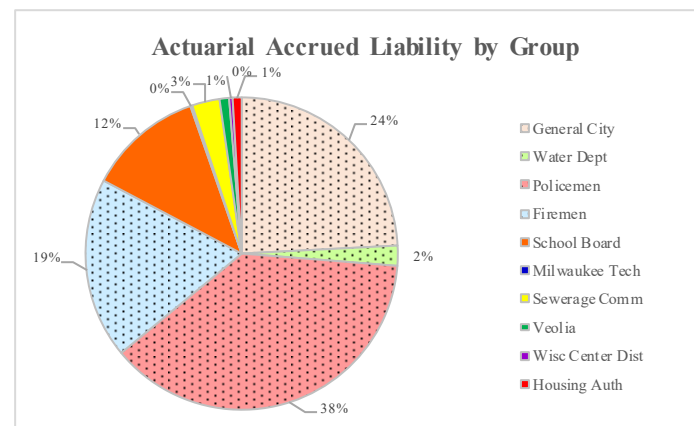


SECTION V: SYSTEM LIABILITIES

TABLE 9
Actuarial Accrued Liability by Agency
(Dollars in thousands)

	General City*	Water Department	School Board	Milwaukee Technical College	Sewerage Commission	Veolia	Wisconsin Center District	Housing Authority	Policemen	Firemen	Total
1. Present Value of Future Benefits for Active Members											
a. Retirement Benefits	424,113	42,192	259,919	0	46,005	5,861	8,555	19,422	931,326	359,270	2,096,663
b. Withdrawal Benefits	32,661	3,337	20,625	0	4,252	6	779	1,226	40,726	22,919	126,531
c. Disability Benefits	10,957	1,197	6,596	0	1,298	28	259	438	28,859	57,485	107,117
d. Death Benefits	5,478	651	3,313	0	644	60	137	245	6,110	3,071	19,709
Total	473,209	47,377	290,453	0	52,199	5,955	9,730	21,331	1,007,021	442,745	2,350,020
2. Present Value of Future Normal Costs	110,694	12,131	76,787	0	12,512	356	3,071	4,466	370,260	174,322	764,599
3. Actuarial Accrued Liability (AAL) for Active Members (1) - (2)	362,515	35,246	213,666	0	39,687	5,599	6,659	16,865	636,761	268,423	1,585,421
4. Present Value of Future Benefits for Inactive Members											
- Members with Deferred Benefits	57,291	4,042	49,116	0	3,570	374	1,821	3,152	52,287	8,871	180,524
- Members with Refunds Payable	1,405	97	2,046	0	40	0	35	30	201	10	3,864
- Retirees, Beneficiaries and Disabled Members	1,241,904	103,337	555,738	14,851	151,742	62,755	15,199	44,019	1,906,325	1,010,248	5,106,118
Total	1,300,600	107,476	606,900	14,851	155,352	63,129	17,055	47,201	1,958,813	1,019,129	5,290,506
5. Total Actuarial Accrued Liability (3) + (4)	1,663,115	142,722	820,566	14,851	195,039	68,728	23,714	64,066	2,595,574	1,287,552	6,875,927

* Includes Elected Officials and Redevelopment Authority





SECTION V: SYSTEM LIABILITIES

TABLE 10

Funded Status on Actuarial and Market Value by Fund
(Dollars in thousands)

Fund	Actuarial Accrued Liability (AAL)	Actuarial Value of Assets (AVA)	Market Value of Assets (MVA)	Unfunded Actuarial Accrued Liability Based on AVA (UAAL)	Unfunded Actuarial Accrued Liability Based on MVA (UAAL)	Percent Funded Based on AVA	Percent Funded Based on MVA
1. Combined Fund	\$ 6,864,666	\$ 5,673,797	\$ 6,367,898	\$ 1,190,869	\$ 496,768	82.7%	92.8%
2. Employers' Reserve Fund	0	42,081	42,081	(42,081)	(42,081)	N/A	N/A
3. Retirement Fund	4,841	11,969	13,433	(7,128)	(8,592)	247.2%	277.5%
4. General Employees' Duty Disability Fund	11	109	122	(98)	(111)	990.9%	1109.1%
5. Fire & Police Duty Disability Fund	0	0	0	0	0	N/A	N/A
6. Firemen's Heart & Lung Fund	0	0	0	0	0	N/A	N/A
7. Combined Retirement & Disability Fund	6,409	6,475	7,267	(66)	(858)	101.0%	113.4%
8. Securities Lending Fund	0	555	555	(555)	(555)	N/A	N/A
9. Total All Funds	\$ 6,875,927	\$ 5,734,986	\$ 6,431,356	\$ 1,140,941	\$ 444,571	83.4%	93.5%



SECTION V: SYSTEM LIABILITIES

TABLE 11

Reconciliation of Unfunded Actuarial Accrued Liability

The table below provides a reconciliation of the unfunded actuarial accrued liability in the prior valuation to the current valuation for the Combined Fund.

Combined Fund	(\$ in thousands)
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2021	\$ 1,343,102
- Expected Change in UAAL	(8,441)
- Actual Contributions Versus Actuarial Contributions	90,307
- Investment Experience	(229,274)
- Demographic Experience	(13,178)
- Other Experience	8,353
Unfunded Actuarial Accrued Liability (UAAL) as of 01/01/2022	\$ 1,190,869



SECTION V: SYSTEM LIABILITIES

TABLE 12

**Actuarial Balance Sheet
As of January 1, 2022**

The valuation balance sheet shows the assets and liabilities of ERS (in total, all groups and all Funds). The items shown in the balance sheet are present values actuarially determined as of the current valuation date.

ASSETS

Actuarial Value of Assets	\$	5,734,986,000
Unfunded Actuarial Accrued Liability		1,140,941,000
Present Value of Future Normal Costs	\$	<u>764,599,000</u>
Total Assets	\$	7,640,526,000

LIABILITIES

Present Value of Future Benefits			
Active members			
Retirement	\$	2,096,663,000	
Withdrawal		126,531,000	
Disability		107,117,000	
Death		<u>19,709,000</u>	
Total	\$	2,350,020,000	
Inactive members		184,388,000	
Retirees, disabilities and beneficiaries		<u>5,106,118,000</u>	
Total Liabilities	\$	7,640,526,000	



SECTION V: SYSTEM LIABILITIES

TABLE 13

Calculation of Actuarial Gain/(Loss)

The overall actuarial gain/(loss) is comprised of both a liability gain/(loss) and an actuarial asset gain/(loss). Each of these represents the difference between the expected and actual values as of January 1, 2022.

Liabilities

1. Actuarial Accrued Liability as of January 1, 2021	\$6,745,299,000
2. Normal Cost for Plan Year Ending December 31, 2021	92,637,000
3. Benefit Payments During December 31, 2021	(445,256,000)
4. Interest on (1), (2) and (3) at 7.50%	496,450,000
5. Expected Actuarial Accrued Liability as of January 1, 2022	<u>\$6,889,130,000</u>
6. Actuarial Accrued Liability as of January 1, 2022	\$6,875,927,000

Assets

7. Actuarial Value of Assets as of January 1, 2021	\$5,440,867,000
8. Contributions for Plan Year Ending December 31, 2021	122,621,000
9. Benefit Payments and Administrative Expenses During December 31, 2021	(451,989,000)
10. Interest on (7), (8) and (9) at 7.50%	395,937,000
11. Expected Actuarial Value of Assets as of January 1, 2022	<u>\$5,507,436,000</u>
12. Actuarial Value of Assets as of January 1, 2022	\$5,734,986,000

Gain / (Loss)

13. Liability Gain/(Loss) (5) - (6)	\$13,203,000
14. Asset Gain/(Loss) (12) - (11)	\$227,550,000
15. Total Gain/(Loss) (13) + (14)	\$240,753,000



SECTION V: SYSTEM LIABILITIES

TABLE 14

Expected Benefit Payments

<u>Year End</u>	<u>Current Inactives</u>	<u>Current Actives</u>	<u>Total</u>
2022	\$438,803,000	\$15,716,000	\$454,519,000
2023	441,296,000	25,913,000	467,209,000
2024	442,501,000	37,200,000	479,701,000
2025	443,399,000	48,037,000	491,436,000
2026	444,303,000	59,479,000	503,782,000
2027	444,496,000	71,938,000	516,434,000
2028	444,064,000	85,759,000	529,823,000
2029	443,474,000	100,065,000	543,539,000
2030	441,695,000	114,118,000	555,813,000
2031	439,475,000	128,768,000	568,243,000
2032	436,282,000	144,076,000	580,358,000
2033	432,628,000	160,487,000	593,115,000
2034	427,618,000	177,167,000	604,785,000
2035	422,101,000	192,969,000	615,070,000
2036	415,828,000	208,689,000	624,517,000
2037	409,008,000	224,308,000	633,316,000
2038	401,007,000	239,505,000	640,512,000
2039	392,236,000	254,706,000	646,942,000
2040	382,634,000	269,828,000	652,462,000
2041	372,088,000	284,524,000	656,612,000

Note: Cash flows are the expected future non-discounted payments to current members. These numbers exclude refund payouts to current non-vested inactive members and assume all actuarial assumptions are met in the future, including the retirement assumption.



SECTION V: SYSTEM LIABILITIES

TABLE 15

Schedule of Funding Progress
(Dollars in thousands)

Valuation as of January 1	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Liability (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
2008	\$ 5,192,000	\$ 3,958,061	\$ 0	131.2%	\$ 532,412	0.0%
2009	4,076,297	4,113,089	36,792	99.1%	536,558	6.9%
2010	4,814,402	4,269,324	0	112.8%	553,846	0.0%
2011	4,641,425	4,447,548	0	104.4%	538,218	0.0%
2012	4,404,635	4,587,915	183,280	96.0%	525,181	34.9%
2013	4,259,889	4,689,814	429,925	90.8%	523,738	82.1%
2014	4,580,729	4,831,689	250,960	94.8%	521,651	48.1%
2015	4,797,437	4,935,482	138,045	97.2%	529,939	26.0%
2016	4,899,155	5,065,141	165,986	96.7%	535,802	31.0%
2017	5,055,700	5,259,300	203,600	96.1%	583,950	34.9%
2018	5,233,486	5,819,762	586,276	89.9%	577,118	101.6%
2019	5,219,184	6,400,901	1,181,717	81.5%	581,663	203.2%
2020	5,285,205	6,597,457	1,312,252	80.1%	596,386	220.0%
2021	5,440,867	6,745,299	1,304,432	80.7%	586,369	222.5%
2022	5,734,986	6,875,927	1,140,941	83.4%	579,351	196.9%

Note: Information prior to 2019 is from the prior actuary.



SECTION VI: SYSTEM CONTRIBUTIONS

An amendment to the Milwaukee City Charter was adopted by the Common Council on April 30, 2013 to establish the Stable Employer Contribution Policy. Under that Policy, an actuarial contribution rate is separately calculated for three groups: Policemen, Fireman, and General Employees of the Combined Fund, and is applicable for the subsequent five-year period. The Policy is designed to:

- (a) Fully fund all current employer normal costs for active members, determined under the current funding method, which is irrespective of the funded status of the System. The result is that the Employer Normal Cost is always funded; and
- (b) Liquidate the unfunded actuarial accrued liability (UAAL), if any, over the amortization period adopted by the Board and based on methodology specified in the MCC. Effective with the January 1, 2019 actuarial valuation, the Board adopted a 25-year closed period to amortize the existing UAAL. At each subsequent valuation date, any changes to the UAAL arising from actual experience that is different than assumed will be amortized over a fixed 15-year period and any changes to the UAAL arising from changes in assumptions will be amortized over a fixed 25-year period.

These rates are established every five years following the Experience Study, performed by the actuary. The actuary establishes these rates based on the actuarial assumptions adopted by the Annuity and Pension Board of the ERS and the actuarial methods specified in the Charter. The rates are established in conformity with applicable Actuarial Standards of Practice and result in a funded status at the end of the five years that is at least actuarially equivalent to the expected funded status if contributions were based on the redevelopment of the employer contribution rates annually under the same assumptions and methods. The current stable contribution rates apply for calendar years 2018 through 2022.

The actuarially determined employer contribution consists of the employer portion of the normal cost, an allocation for administrative expense and a payment on the unfunded actuarial accrued liability. The employer normal cost is the employer's portion of the cost of benefits for active members, allocated to the current year, after reducing for the member contributions. The unfunded actuarial accrued liability payment is the contribution made in order to pay off the unfunded actuarial accrued liability over the scheduled amortization period.

Amortization methods determine the payment schedule for the unfunded actuarial accrued liability. ERS adopted a 25-year closed amortization period for the unfunded actuarial accrued liability as of January 1, 2019. A new amortization base will be created each year, based on the prior year's experience, and amortized over a closed 15-year period. Changes in the UAAL due to assumption changes, method changes or plan provision changes will be amortized over a closed 25-year period.

The exhibits in this Section show the calculation of the actuarially determined employer contribution for the current valuation. As discussed above, although the actuarial contribution rate is determined in the valuation, the actual employer contributions to ERS are derived from the Employer Stable Contribution Policy, set out in the Milwaukee City Charter.



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 16

Normal Cost by Group

Total – All Funds
(Dollars in thousands)

	General Employees	Policemen	Firemen	Total
1. Retirement Benefits	\$21,331	\$32,755	\$11,324	\$65,410
2. Withdrawal Benefits	11,517	2,767	1,373	15,657
3. Disability Benefits	1,364	2,466	4,461	8,291
4. Death Benefits	652	221	102	975
5. Total Normal Cost	\$34,864	\$38,209	\$17,260	\$90,333
6. Projected Payroll	\$369,306	\$148,844	\$61,201	\$579,351
7. Normal Cost Rate	9.44%	25.67%	28.20%	15.59%
8. Member Contribution Rate	(4.76%)	(7.00%)	(7.00%)	(5.57%)
9. Employer Normal Cost Rate	4.68%	18.67%	21.20%	10.02%



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 17A

Amortization of Unfunded Actuarial Accrued Liability (UAAL)

Combined Fund
(Dollars in thousands)

The tables below provide the calculation of the new amortization base and the amortization schedule for the current year’s valuation for the Combined Fund.

Calculation as of:	1/1/2022	1/1/2021
(a) Unfunded Actuarial Accrued Liability	\$ 1,190,869	\$ 1,343,102
(b) Prior Years' Outstanding Bases	\$ 1,334,661	\$ 1,341,288
(c) New Amortization Base: (a) - (b)	\$ (143,792)	\$ 1,814
(d) New Amortization Payment	\$ (13,495)	\$ 170

Amortization Base	Date Established	Original Amount	Outstanding Balance as of January 1, 2022	Remaining Amortization Period	Annual Payment*
2019 Initial UAAL Base	1/1/2019	\$ 1,204,699	\$ 1,198,147	22	\$ 89,481
2020 Experience Base	1/1/2020	142,702	134,747	13	13,934
2021 Experience Base	1/1/2021	1,814	1,767	14	174
2022 Experience Base	1/1/2022	(143,792)	(143,792)	15	(13,495)
Total			\$ 1,190,869		\$ 90,094

* Reflects beginning of year timing.



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 17B

Amortization of the Unfunded Actuarial Accrued Liability (UAAL)

Retirement Fund
(Dollars in thousands)

The tables below provide the calculation of the new amortization base and the amortization schedule for the current year’s valuation for the Retirement Fund.

Calculation as of:	1/1/2022	1/1/2021
(a) Unfunded Actuarial Accrued Liability	\$ (7,128)	\$ (5,002)
(b) Prior Years' Outstanding Bases	\$ (5,027)	\$ (5,688)
(c) New Amortization Base: (a) - (b)	\$ (2,101)	\$ 686
(d) New Amortization Payment	\$ (197)	\$ 64

Amortization Base	Date Established	Original Amount	Outstanding Balance as of January 1, 2022	Remaining Amortization Period	Annual Payment*
2019 Initial UAAL Base	1/1/2019	\$ (6,764)	\$ (6,727)	22	\$ (502)
2020 Experience Base	1/1/2020	1,091	1,031	13	107
2021 Experience Base	1/1/2021	686	669	14	66
2022 Experience Base	1/1/2022	(2,101)	(2,101)	15	(197)
Total			\$ (7,128)		\$ (526)

* Reflects beginning of year timing.



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 17C

Amortization of the Unfunded Actuarial Accrued Liability (UAAL)

General Employees Duty Disability Fund
(Dollars in thousands)

The tables below provide the calculation of the new amortization base and the amortization schedule for the current year's valuation for the General Employees Duty Disability Fund.

Calculation as of:	1/1/2022	1/1/2021
(a) Unfunded Actuarial Accrued Liability	\$ (98)	\$ (81)
(b) Prior Years' Outstanding Bases	\$ (80)	\$ (81)
(c) New Amortization Base: (a) - (b)	\$ (18)	\$ 0
(d) New Amortization Payment	\$ (2)	\$ 0

Amortization Base	Date Established	Original Amount	Outstanding Balance as of January 1, 2022	Remaining Amortization Period	Annual Payment*
2019 Initial UAAL Base	1/1/2019	\$ (93)	\$ (90)	22	\$ (7)
2020 Experience Base	1/1/2020	10	10	13	1
2021 Experience Base	1/1/2021	0	0	14	0
2022 Experience Base	1/1/2022	(18)	(18)	15	(2)
Total			\$ (98)		\$ (8)

* Reflects beginning of year timing.



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 17D

Amortization of the Unfunded Actuarial Accrued Liability (UAAL)

Combined Retirement & Disability Fund
(Dollars in thousands)

The tables below provide the calculation of the new amortization base and the amortization schedule for the current year's valuation for the Combined Retirement & Disability Fund.

Calculation as of:	1/1/2022	1/1/2021
(a) Unfunded Actuarial Accrued Liability	\$ (66)	\$ 1,448
(b) Prior Years' Outstanding Bases	\$ 1,449	\$ 2,105
(c) New Amortization Base: (a) - (b)	\$ (1,515)	\$ (657)
(d) New Amortization Payment	\$ (142)	\$ (62)

Amortization Base	Date Established	Original Amount	Outstanding Balance as of January 1, 2022	Remaining Amortization Period	Annual Payment*
2019 Initial UAAL Base	1/1/2019	\$ 1,836	\$ 1,825	22	\$ 136
2020 Experience Base	1/1/2020	280	264	13	27
2021 Experience Base	1/1/2021	(657)	(640)	14	(63)
2022 Experience Base	1/1/2022	(1,515)	(1,515)	15	(142)
Total			\$ (66)		\$ (42)

* Reflects beginning of year timing.



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 18

Comparison of Stable Contribution Policy to the Actuarial Determined Rate for Combined Fund
(Dollars in thousands)

	General Employees	Police	Fire	Total
1. Active Members	\$ 7,729	\$ 1,630	\$ 695	\$ 10,054
2. Covered Compensation	\$ 367,728	\$ 148,724	\$ 61,201	\$ 577,653
3. Normal Cost				
a. Total	\$ 34,685	\$ 38,178	\$ 17,260	\$ 90,123
b. Estimated Member Contributions	17,495	10,411	4,284	32,190
c. Employer Normal Cost (a) - (b), not less than zero	\$ 17,190	\$ 27,767	\$ 12,976	\$ 57,933
4. Projected Administrative Expenses	\$ 2,600	\$ 2,449	\$ 1,034	\$ 6,083
5. Active Actuarial Accrued Liability	\$ 675,264	\$ 635,856	\$ 268,423	\$ 1,579,543
6. Assets				
a. Actuarial Value	\$ 166,161	\$ 156,463	\$ 66,050	\$ 388,674
b. Market Value (Net of Inactive Liabilities)	\$ 462,892	\$ 435,879	\$ 184,004	\$ 1,082,775
7. Unfunded Actuarial Accrued Liability				
a. Actuarial Value	\$ 509,103	\$ 479,393	\$ 202,373	\$ 1,190,869
b. Market Value (5) - (6)	\$ 212,372	\$ 199,977	\$ 84,419	\$ 496,768
8. Amortization of UAAL				
a. Actuarial Value	\$ 38,516	\$ 36,268	\$ 15,310	\$ 90,094
b. Market Value	\$ 10,667	\$ 10,044	\$ 4,240	\$ 24,951
9. Annual Contribution Payable January 1, 2022				
a. Actuarial Value	\$ 58,306	\$ 66,484	\$ 29,320	\$ 154,110
b. Market Value (3c) + (4) + (8)	\$ 30,457	\$ 40,260	\$ 18,250	\$ 88,967
10. Employer Rate as of January 1, 2022 based on				
a. Stable Contribution Policy Rate	7.48%	25.22%	26.83%	14.35%
b. Actuarial Determined Rate	15.86%	44.70%	47.91%	26.68%
c. Market-Based Actuarial Determined Rate	8.28%	27.07%	29.82%	15.40%



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 19

Allocation of 2022 Contribution to Agencies for Combined Fund

Group	Active Members	Covered Compensation	Employer Rate**	Dollar Amount Payable***								
				Jan 1, 2022	June 1, 2022	July 1, 2022	Aug 1, 2022	Sept 1, 2022	Oct 1, 2022	Nov 1, 2022	Dec 1, 2022	Jan 31, 2023
General City*	3,112	\$177,898,040	7.48%	\$13,306,773	\$13,713,857	\$13,796,756	\$13,880,156	\$13,964,060	\$14,048,472	\$14,133,394	\$14,218,829	\$14,391,252
Water Department	328	18,947,273	7.48%	1,417,256	1,460,613	1,469,442	1,478,325	1,487,261	1,496,251	1,505,296	1,514,395	1,532,759
School Board****	3,844	136,366,235	7.48%	10,200,194	10,512,241	10,575,787	10,639,717	10,704,033	10,768,738	10,833,834	10,899,324	11,031,493
Milwaukee Technical College	0	0	7.48%	0	0	0	0	0	0	0	0	0
Sewerage Commission	229	20,811,504	7.48%	1,556,700	1,604,323	1,614,021	1,623,778	1,633,594	1,643,469	1,653,404	1,663,399	1,683,570
Veolia	11	940,467	7.48%	70,347	72,499	72,937	73,378	73,822	74,268	74,717	75,169	76,081
Wisconsin Center District	92	5,516,035	7.48%	412,599	425,221	427,791	430,377	432,979	435,596	438,229	440,878	446,224
Housing Authority	113	7,248,189	7.48%	542,165	558,751	562,129	565,527	568,946	572,385	575,845	579,326	586,351
Policemen	1,630	148,723,931	25.22%	37,508,175	38,655,633	38,889,303	39,124,386	39,360,890	39,598,823	39,838,195	40,079,014	40,565,027
Firemen	<u>695</u>	<u>61,200,923</u>	26.83%	<u>16,420,208</u>	<u>16,922,539</u>	<u>17,024,834</u>	<u>17,127,748</u>	<u>17,231,284</u>	<u>17,335,446</u>	<u>17,440,237</u>	<u>17,545,662</u>	<u>17,758,427</u>
Total	10,054	\$577,652,597		\$81,434,417	\$83,925,677	\$84,433,000	\$84,943,392	\$85,456,869	\$85,973,448	\$86,493,151	\$87,015,996	\$88,071,184

* Includes Elected Officials and Redevelopment Authority

** Rates apply to Covered Compensation as of the beginning of the year, then credited with interest to payable date.

*** Actual contribution requirement will be adjusted for the actual payment date of the contribution.

**** Breakdown of contributions for MPS by normal cost and past service portion as follow:

Payable at:	Jan 1, 2022	June 1, 2022	July 1, 2022	Aug 1, 2022	Sept 1, 2022	Oct 1, 2022	Nov 1, 2022	Dec 1, 2022	Jan 31, 2023
Normal Cost	6,012,472	6,196,407	6,233,864	6,271,547	6,309,458	6,347,598	6,385,969	6,424,572	6,502,479
Past Service Portion	<u>4,187,722</u>	<u>4,315,834</u>	<u>4,341,923</u>	<u>4,368,170</u>	<u>4,394,575</u>	<u>4,421,140</u>	<u>4,447,865</u>	<u>4,474,752</u>	<u>4,529,014</u>
Total	10,200,194	10,512,241	10,575,787	10,639,717	10,704,033	10,768,738	10,833,834	10,899,324	11,031,493



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 20

Allocation of 2023 Contribution to Agencies for Combined Fund

Group	Estimated Active Members	Estimated Covered Compensation	Employer Rate**	Dollar Amount Payable***								
				Jan 1, 2023	June 1, 2023	July 1, 2023	Aug 1, 2023	Sept 1, 2023	Oct 1, 2023	Nov 1, 2023	Dec 1, 2023	Jan 31, 2024
General City*	3,112	\$181,456,001	7.48%	\$13,572,909	\$13,988,134	\$14,072,691	\$14,157,759	\$14,243,342	\$14,329,442	\$14,416,062	\$14,503,206	\$14,679,077
Water Department	328	19,326,218	7.48%	1,445,601	1,489,825	1,498,831	1,507,891	1,517,006	1,526,176	1,535,402	1,544,683	1,563,414
School Board*****	3,844	139,093,560	7.48%	10,404,198	10,722,486	10,787,303	10,852,511	10,918,114	10,984,113	11,050,511	11,117,310	11,252,123
Milwaukee Technical College	0	0	7.48%	0	0	0	0	0	0	0	0	0
Sewerage Commission	229	21,227,734	7.48%	1,587,835	1,636,410	1,646,302	1,656,254	1,666,266	1,676,338	1,686,471	1,696,666	1,717,240
Veolia	11	959,276	7.48%	71,754	73,949	74,396	74,846	75,298	75,753	76,211	76,672	77,602
Wisconsin Center District	92	5,626,356	7.48%	420,851	433,726	436,348	438,986	441,640	444,310	446,996	449,698	455,151
Housing Authority	113	7,393,153	7.48%	553,008	569,926	573,371	576,837	580,324	583,832	587,361	590,912	598,078
Policemen	1,630	151,698,410	25.22%	38,258,339	39,428,747	39,667,091	39,906,875	40,148,109	40,390,801	40,634,960	40,880,595	41,376,329
Firemen	<u>695</u>	<u>62,424,941</u>	26.83%	<u>16,748,612</u>	<u>17,260,989</u>	<u>17,365,330</u>	<u>17,470,302</u>	<u>17,575,909</u>	<u>17,682,154</u>	<u>17,789,041</u>	<u>17,896,574</u>	<u>18,113,595</u>
Total	10,054	\$589,205,649		\$83,063,107	\$85,604,192	\$86,121,663	\$86,642,261	\$87,166,008	\$87,692,919	\$88,223,015	\$88,756,316	\$89,832,609

* Includes Elected Officials and Redevelopment Authority

** Rates apply to Covered Compensation as of the beginning of the year, then credited with interest to payable date.

*** Actual contribution requirement will be adjusted for the actual payment date of the contribution.

**** The amounts shown above are estimates of the employer contribution requirements due by January 31, 2024. The actual employer contribution requirements due by January 31, 2024 will be based on the results of the January 1, 2023 actuarial valuation, which is scheduled to be approved at the June 2023 Board meeting.

To the extent that an employer wishes to contribute before the report is approved, the amounts above can serve as a guide. To the extent that the amount contributed is less than the final contribution requirements, the employer will be billed for the remainder, which is to be paid by the end of the year. To the extent that the amount already contributed is more than the required contribution, the employer will receive a credit, with interest, to the contribution for next year.

***** Breakdown of contributions for MPS by normal cost and past service portion as follows:

Payable at:	Jan 1, 2023	June 1, 2023	July 1, 2023	Aug 1, 2023	Sept 1, 2023	Oct 1, 2023	Nov 1, 2023	Dec 1, 2023	Jan 31, 2024
Normal Cost	6,132,721	6,320,335	6,358,541	6,396,978	6,435,647	6,474,550	6,513,688	6,553,063	6,632,528
Past Service Portion	<u>4,271,477</u>	<u>4,402,151</u>	<u>4,428,762</u>	<u>4,455,533</u>	<u>4,482,467</u>	<u>4,509,563</u>	<u>4,536,823</u>	<u>4,564,247</u>	<u>4,619,595</u>
Total	10,404,198	10,722,486	10,787,303	10,852,511	10,918,114	10,984,113	11,050,511	11,117,310	11,252,123



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 21

Determination of Employer Contribution to Retirement Fund
(Dollars in thousands)

	General			
	Employees	Policemen	Firemen	Total
1. Active Members	11	0	0	11
2. Covered Compensation	\$ 341	\$ 0	\$ 0	\$ 341
3. Normal Cost				
a. Total	\$ 48	\$ 0	\$ 0	\$ 48
b. Estimated Member Contributions	19	0	0	19
c. Employer Normal Cost (a) - (b), not less than zero	\$ 29	\$ 0	\$ 0	\$ 29
4. Projected Administrative Expenses	\$ 0	\$ 0	\$ 0	\$ 0
5. Active Actuarial Accrued Liability	\$ 1,337	\$ 0	\$ 0	\$ 1,337
6. Assets				
a. Actuarial Value	\$ 8,465	\$ 0	\$ 0	\$ 8,465
b. Market Value (Net of Inactive Liabilities)	\$ 9,929	\$ 0	\$ 0	\$ 9,929
7. Unfunded Actuarial Accrued Liability				
a. Actuarial Value	\$ (7,128)	\$ 0	\$ 0	\$ (7,128)
b. Market Value (5) - (6)	\$ (8,592)	\$ 0	\$ 0	\$ (8,592)
8. Amortization of UAAL				
a. Actuarial Value	\$ (526)	\$ 0	\$ 0	\$ (526)
b. Market Value	\$ (663)	\$ 0	\$ 0	\$ (663)
9. Annual Contribution Payable January 31, 2023				
a. Actuarial Value	\$ 0	\$ 0	\$ 0	\$ 0
b. Market Value (3c) + (4) + (8), with interest to 01/31/2023	\$ 0	\$ 0	\$ 0	\$ 0



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 22

Determination of Employer Contribution to Duty Disability Fund
(Dollars in thousands)

	General			
	Employees	Policemen	Firemen	Total
1. Active Members	11	0	0	11
2. Covered Compensation	\$ 341	\$ 0	\$ 0	\$ 341
3. Normal Cost				
a. Total	\$ 0	\$ 0	\$ 0	\$ 0
b. Estimated Member Contributions	0	0	0	0
c. Employer Normal Cost	\$ 0	\$ 0	\$ 0	\$ 0
(a) - (b), not less than zero				
4. Projected Administrative Expenses	\$ 0	\$ 0	\$ 0	\$ 0
5. Active Actuarial Accrued Liability	\$ 11	\$ 0	\$ 0	\$ 11
6. Actuarial Value of Assets	\$ 109	\$ 0	\$ 0	\$ 109
7. Unfunded Actuarial Accrued Liability (5) - (6)	\$ (98)	\$ 0	\$ 0	\$ (98)
8. Amortization of UAAL	\$ (8)	\$ 0	\$ 0	\$ (8)
9. Annual Contribution Payable January 31, 2023 (3c) + (4) + (8), with interest to 01/31/2023	\$ 0	\$ 0	\$ 0	\$ 0



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 23

Determination of Employer Contribution to Heart and Lung Fund
(Dollars in thousands)

	Amount
1. Active Members	0
2. Covered Compensation	\$ 0
3. Normal Cost	
a. Total	\$ 0
b. Estimated Member Contributions	0
c. Employer Normal Cost	\$ 0
(a) - (b), not less than zero	
4. Projected Administrative Expenses	\$ 0
5. Active Actuarial Accrued Liability	\$ 0
6. Actuarial Value of Assets	\$ 0
7. Unfunded Actuarial Accrued Liability (5) - (6)	\$ 0
8. Full Funding Limit (3) + (4) + (7), not less than zero, with interest to 01/31/2023	\$ 0
9. Annual Contribution Payable January 31, 2023	\$ 0



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 24

Allocation of 2022 Contribution to Agencies for the Retirement, Duty Disability and Heart & Lung Funds

Group	Active Members	Covered Compensation	Fund			January 31, 2023	
			Retirement	Duty Disability	Heart & Lung	Total Due	% of Pay
General City	2	\$50,991	\$0	\$0	\$0	\$0	0.00%
Water Department	0	0	0	0	0	0	0.00%
School Board	9	290,376	0	0	0	0	0.00%
Milwaukee Technical College	0	0	0	0	0	0	0.00%
Sewerage Commission	0	0	0	0	0	0	0.00%
Veolia	0	0	0	0	0	0	0.00%
Wisconsin Center District	0	0	0	0	0	0	0.00%
Housing Authority	0	0	0	0	0	0	0.00%
Policemen	0	0	0	0	0	0	0.00%
Firemen	0	0	0	0	0	0	0.00%
Total	11	\$341,367	\$0	\$0	\$0	\$0	0.00%

Note: Redevelopment Authority members are included in the General City group.



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 25

Determination of Employer Contribution to Combined Retirement and Disability Fund
(Dollars in thousands)

	General			
	Employees	Policemen	Firemen	Total
1. Active Members	28	1	0	29
2. Covered Compensation	\$ 1,237	\$ 120	\$ 0	\$ 1,357
3. Normal Cost				
a. Total	\$ 131	\$ 31	\$ 0	\$ 162
b. Estimated Member Contributions	66	8	0	74
c. Employer Normal Cost (a) - (b), not less than zero	\$ 65	\$ 23	\$ 0	\$ 88
4. Projected Administrative Expenses	\$ 0	\$ 0	\$ 0	\$ 0
5. Active Actuarial Accrued Liability	\$ 3,624	\$ 906	\$ 0	\$ 4,530
6. Assets				
a. Actuarial Value	\$ 3,677	\$ 919	\$ 0	\$ 4,596
b. Market Value (Net of Inactive Liabilities)	\$ 4,310	\$ 1,078	\$ 0	\$ 5,388
7. Unfunded Actuarial Accrued Liability				
a. Actuarial Value	\$ (53)	\$ (13)	\$ 0	\$ (66)
b. Market Value (5) - (6)	\$ (686)	\$ (172)	\$ 0	\$ (858)
8. Amortization of UAAL				
a. Actuarial Value	\$ (34)	\$ (8)	\$ 0	\$ (42)
b. Market Value	\$ (93)	\$ (23)	\$ 0	\$ (116)
9. Annual Contribution Payable January 31, 2023				
a. Actuarial Value	\$ 34	\$ 16	\$ 0	\$ 50
b. Market Value (3c) + (4) + (8), with interest to 01/31/2023	\$ 0	\$ 0	\$ 0	\$ 0



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 26

Allocation of 2022 Contribution to Employee Groups for Combined Retirement and Disability Fund

Group	Active Members	Covered Compensation	Fund		January 31, 2023	
			Combined Retirement & Disability	Heart & Lung	Total Due	% of Pay
General City	7	\$414,599	\$11,395	\$0	\$11,395	2.75%
Water Department	0	0	0	0	0	0.00%
School Board*	18	703,427	19,333	0	19,333	2.75%
Milwaukee Technical College	0	0	0	0	0	0.00%
Sewerage Commission	0	0	0	0	0	0.00%
Veolia	0	0	0	0	0	0.00%
Wisconsin Center District	1	3,707	102	0	102	2.75%
Housing Authority	2	115,331	3,170	0	3,170	2.75%
Policemen	1	119,774	16,000	0	16,000	13.36%
Firemen	0	0	0	0	0	0.00%
Total	29	\$1,356,838	\$50,000	\$0	\$50,000	3.69%

Note: Redevelopment Authority members are included in the General City group.

* Breakdown of contributions for MPS by normal cost and past service portion are as follows:

Payable at:	January 31, 2023
Normal Cost	41,047
Past Service Portion	-21,714
Total	19,333



SECTION VI: SYSTEM CONTRIBUTIONS

TABLE 27

Contribution Requirements for FY 2022 by Group and Fund

Amounts shown are calculated as of January 31, 2023. Actual contribution requirements will be adjusted for the actual payment date of the contribution.

Fund	General Employees	Policemen	Firemen	Total
Combined Fund	\$ 29,747,730	\$ 40,565,027	\$ 17,758,427	\$ 88,071,184
Retirement Fund	0	0	0	0
Duty Disability Fund	0	0	0	0
Heart & Lung Fund	N/A	N/A	0	0
Combined Retirement & Disability Fund	34,000	16,000	0	50,000
Total Contribution	\$ 29,781,730	\$ 40,581,027	\$ 17,758,427	\$ 88,121,184
Covered Compensation	\$ 369,306,000	\$ 148,844,000	\$ 61,201,000	\$ 579,351,000
Total Contribution as a Percentage of Covered Compensation	8.06%	27.26%	29.02%	15.21%

Note: Reflects the Stable Contribution Policy for the Combined Fund.



SECTION VII: RISK CONSIDERATIONS

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the January 1, 2019 actuarial valuation for the Employees' Retirement System of the City of Milwaukee (System).

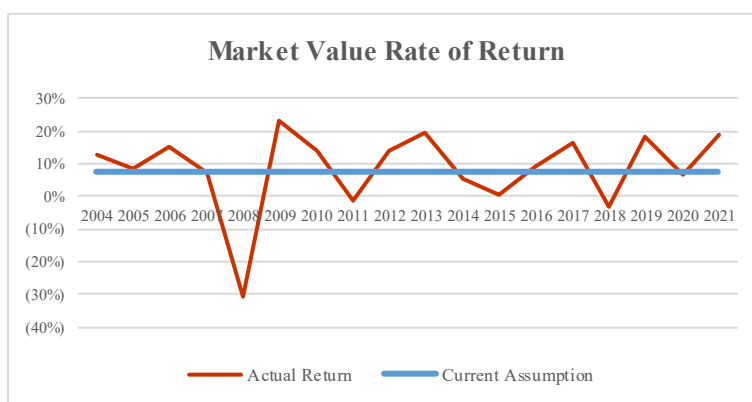
While actuarial assumptions allow for a projection of how future contributions and investment returns will meet the cash flow needs for future benefit payments, actual experience will not unfold exactly as anticipated by the assumptions. In this section, we discuss some of the risk factors that can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and inflation;
- demographic risks such as mortality, payroll growth, aging population, and retirement ages;
- contribution risk like volatility making it difficult for the plan sponsor to fund the plan; and
- external risks such as the regulatory and political environment (not included in ASOP 51).

The last two are not risks that the actuary must opine on under ASOP 51.

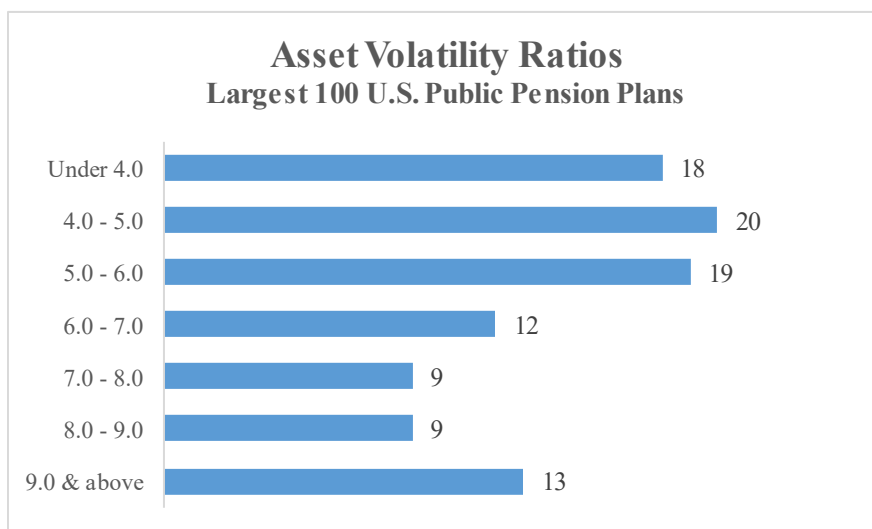
The most significant risk factor for most plans is investment return because of the volatility of the returns and the size of plan assets compared to payroll (see Table 28). A perusal of historical rates over 10-20 years reveals that the actual return each year is rarely close to the average return for the same period. This is an expected result given the underlying capital market assumptions and the asset allocation. However, the valuation is a measurement based on a single investment return, usually around the median of the distribution of returns. The magnitude of variations in investment returns and the short timeframe in which they occur makes the management of this risk very challenging. See the chart below for the historical rates of return over the past 18 years.





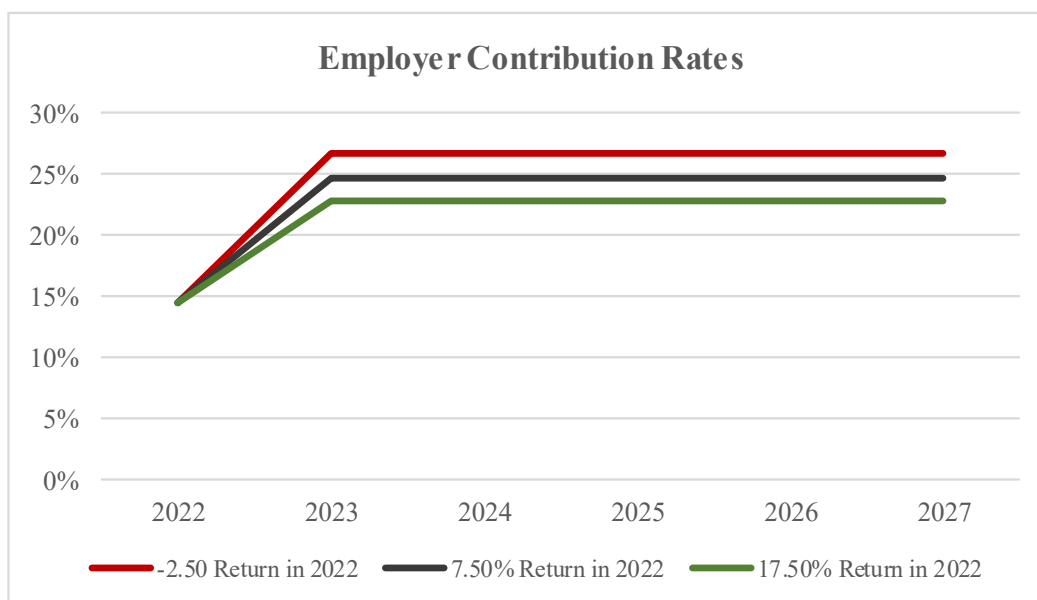
SECTION VII: RISK CONSIDERATIONS

The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions because of the magnitude of the increase. In the January 1, 2022 valuation, the asset volatility ratio was 11.10. Due to ERS' maturity, the asset volatility ratio is higher than the ratio for most large public plans, as shown in the following chart.



Note: Reflects most recent available data, compiled by the Center for Retirement Research at Boston College.

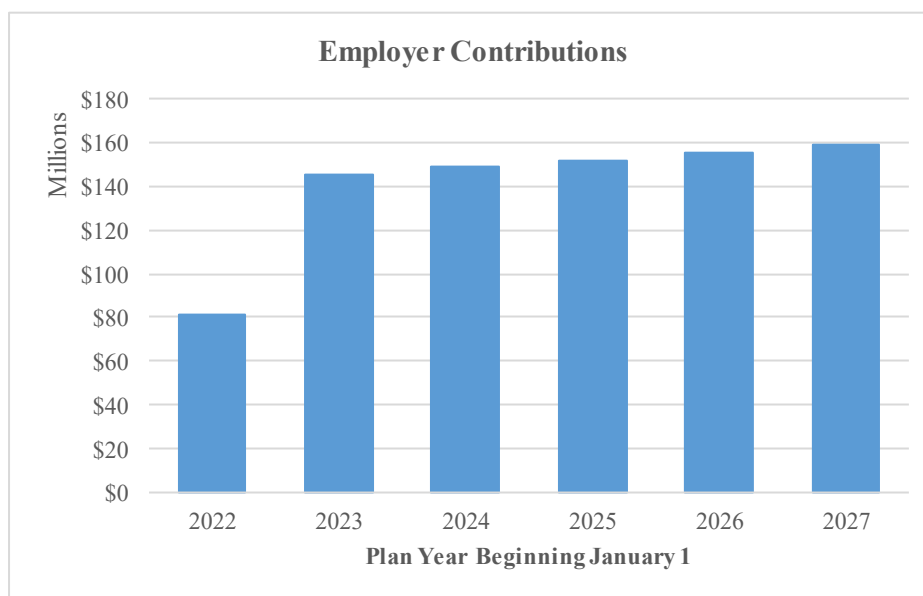
This metric means the same investment experience would move the actuarially determined contribution more significantly for CMERS as compared to most other public plans. For example, a return that is 10% lower than assumed (or -2.50%) equates to an actuarial loss of about \$643 million, or 111% of payroll. Given the asset volatility ratio and the amortization period of 15 years for actuarial gains and losses, an increase of 10.80% in the contribution rate, about \$63 million, over the next 15 years would be required to compensate for an investment return that is 10% below the assumed rate of return.





SECTION VII: RISK CONSIDERATIONS

The Stable Contribution Policy was designed to create stability in the actual employer contribution rates by avoiding annual adjustments that are the result of actuarial experience different than anticipated by the actuarial assumptions over the stable “five-year” period. The stable contribution rate is usually set after the regular Experience Study is performed every five years and is set at a rate that results in the System being at the same funded ratio as if the projected actuarial contribution rates were made. However, if changes to the actuarial assumptions are made “off cycle” or a significant decline in the financial markets were to occur without a subsequent rebound, it could create a situation where the actual contributions to the System under the Stable Contribution Policy are much lower than the actuarially determined amounts. If this were to occur, as happened in 2019, the System’s funded status could be negatively impacted for a number of years. The difference between the actuarial contribution rate and the stable contribution policy rate each year results in an increase in the unfunded actuarial accrued liability and a corresponding increase in the UAAL contribution rate and actuarial contribution rate. If this persists for a period of years, it can result in a large adjustment to the contribution rate under the Stable Contribution Policy when the reset occurs. The following graph illustrates the estimate increase in the employer contribution rate in 2023:



Although we would expect this to happen infrequently, it could be problematic if the employers’ resources are limited and such contribution increases cannot be managed.

A key demographic risk for all retirement systems, including CMERS, is improvements in mortality (longevity) greater than anticipated. While the mortality assumption used in the valuation reflects some improvement in mortality experience and this assumption is evaluated and refined in each experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could rapidly improve mortality rates and increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with the COVID-19 pandemic. This type of event is also significant, although more easily absorbed. While either of these events could happen, it represents a relatively small probability and thus represents much less risk than the volatility associated with investment returns.



SECTION VII: RISK CONSIDERATIONS

Finally, the unfunded actuarial accrued liability is amortized as a level percentage of payroll. The underlying assumption used in developing the payment schedule assumes an increasing payroll over time which is dependent on a stable employment level, i.e., active member count remains the same. When payroll does not grow as expected, the UAAL contribution rate will be higher than expected even if the dollar amount of the payment is the same as scheduled. The assumption for the anticipated increase in covered payroll has been declining and is currently 2.0%. A lower assumed growth in the covered payroll reduces this risk for the System's funding.

As plan demographics change over time, along with the funded status, the risk factors may also change. The following exhibits summarize certain historical information that provide an indication as to how key risk metrics have changed over time.



SECTION VII: RISK CONSIDERATIONS

TABLE 28

Historical Asset Volatility Ratios
(Dollars in thousands)

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the System is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses by increasing contributions. In the January 1, 2022 valuation, the asset volatility ratio was 11.10. Therefore, underperforming the investment return assumption by 10.00% (i.e., earn -2.50% for one year) is equivalent to about \$643 million, or 111% of payroll, and would ultimately result in a 10.80% increase to the ADC, or about \$63 million.

ERS is a very mature system as is evident by the fact this is the eighty-fourth valuation of the System. Therefore, this metric has held fairly stable over this entire period where often the trend is an increasing AVR as the System becomes more mature and its funding improves (assets grow more rapidly than covered payroll). However, favorable investment experience and a declining active membership over the last few years has caused the AVR to increase recently.

Actuarial Valuation Date	Market Value of Assets	Covered Payroll	Asset Volatility Ratio	Increase in ADC with a Return 10% Lower than Assumed*
1/1/2010	\$4,020,640	\$553,846	7.26	7.06%
1/1/2011	4,322,384	538,218	8.03	7.81%
1/1/2012	4,197,264	525,181	7.99	7.77%
1/1/2013	4,375,197	523,738	8.35	8.13%
1/1/2014	4,949,534	521,651	9.49	9.23%
1/1/2015	4,953,150	529,939	9.35	9.10%
1/1/2016	4,752,308	535,802	8.87	8.63%
1/1/2017	4,886,669	583,950	8.37	8.14%
1/1/2018	5,396,527	577,118	9.35	9.10%
1/1/2019	4,950,881	581,663	8.51	8.28%
1/1/2020	5,557,077	596,386	9.32	9.07%
1/1/2021	5,649,734	586,369	9.64	9.38%
1/1/2022	6,431,356	579,351	11.10	10.80%

* The impact on the Actuarial Determined Contribution (ADC) reflects a 15-year amortization of the actuarial gain/loss and no asset smoothing.



SECTION VII: RISK CONSIDERATIONS

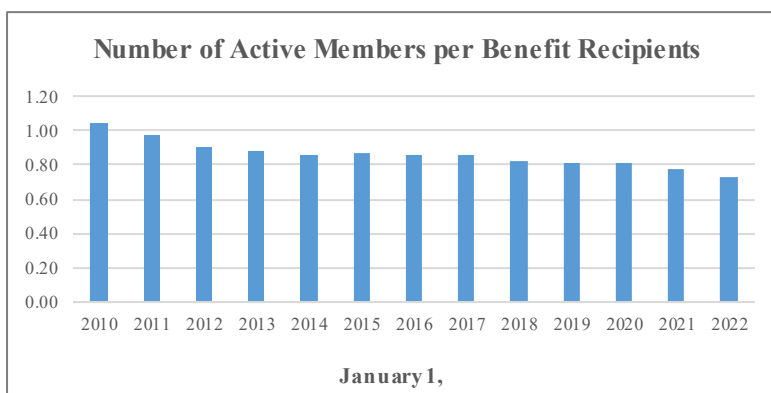
TABLE 29

RATIO OF ACTIVE TO RETIREE COUNT

The payment on the unfunded actuarial accrued liability is calculated anticipating covered payroll increases each year in the future. To the extent actual payroll does not meet the assumed rate of increase (currently 2.0%), a higher rate of pay is necessary to collect the same dollar amount of payment on the unfunded actuarial accrued liability. A reduction in the number of active members usually restricts the growth of covered payroll. ERS has experienced about a 13% decline in the active membership over the past 12 years which can create more volatility (risk) on the contributions to fund the System.

Valuation Date January 1	Active Count	In-Pay Count	Active/ In-Pay
2010	11,664	11,178	1.04
2011	11,247	11,542	0.97
2012	10,767	11,937	0.90
2013	10,714	12,109	0.88
2014	10,675	12,468	0.86
2015	10,964	12,580	0.87
2016	10,982	12,746	0.86
2017	11,083	12,872	0.86
2018	10,845	13,181	0.82
2019	10,851	13,355	0.81
2020	10,974	13,543	0.81
2021	10,567	13,636	0.77
2022	10,094	13,747	0.73

Note the ratio of active members to benefit recipients is not as critical for ERS as it is for, say, Social Security. The Plan has been funded, in advance, precisely for this reason and those assets exist to help pay the benefits of members. It is, however, a sign of the maturity of the System.





SECTION VII: RISK CONSIDERATIONS

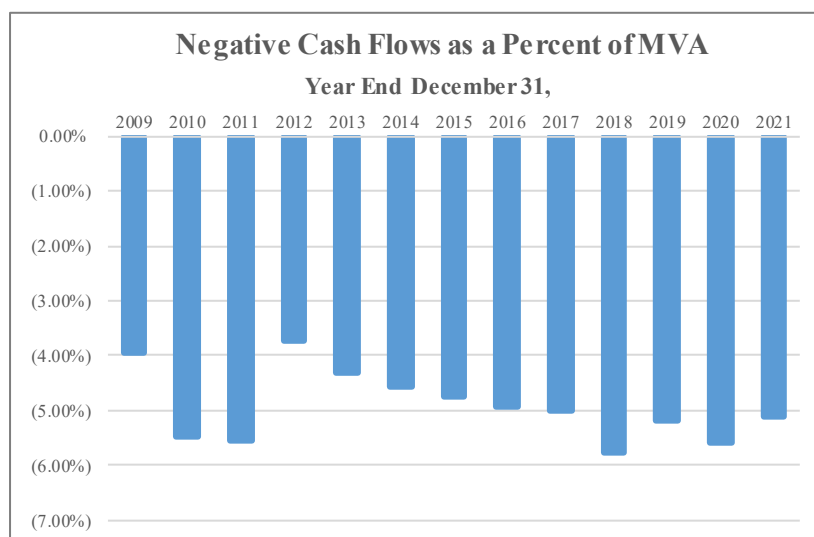
TABLE 30

HISTORICAL CASH FLOWS

(Dollars in thousands)

Plans with large negative cash flows generally experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions minus benefit payments. If the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that often follow. Negative cash flows can also impact the System’s asset allocation and is a consideration in setting the investment policy of the system. CMERS has a relatively high negative cash flow so this metric should be closely monitored. The higher the net cash flow is as a percent of the market value of assets, the greater the risk to the System’s funding.

Year End	Market Value of Assets (MVA)	Contributions	Benefit Payments and Expenses	Net Cash Flow	Net Cash Flow as a Percent of MVA
12/31/2009	\$4,020,640	\$95,992	\$255,014	(\$159,022)	(3.96%)
12/31/2010	4,322,384	35,699	271,710	(236,011)	(5.46%)
12/31/2011	4,197,264	52,675	285,565	(232,890)	(5.55%)
12/31/2012	4,375,197	138,968	302,439	(163,471)	(3.74%)
12/31/2013	4,949,534	122,157	334,858	(212,701)	(4.30%)
12/31/2014	4,953,150	116,507	342,569	(226,062)	(4.56%)
12/31/2015	4,752,308	121,751	347,888	(226,137)	(4.76%)
12/31/2016	4,886,669	110,013	351,303	(241,290)	(4.94%)
12/31/2017	5,396,527	116,018	385,331	(269,313)	(4.99%)
12/31/2018	4,950,881	115,251	400,707	(285,456)	(5.77%)
12/31/2019	5,557,077	129,022	416,104	(287,082)	(5.17%)
12/31/2020	5,649,734	119,852	436,331	(316,479)	(5.60%)
12/31/2021	6,431,356	122,621	451,989	(329,368)	(5.12%)





SECTION VII: RISK CONSIDERATIONS

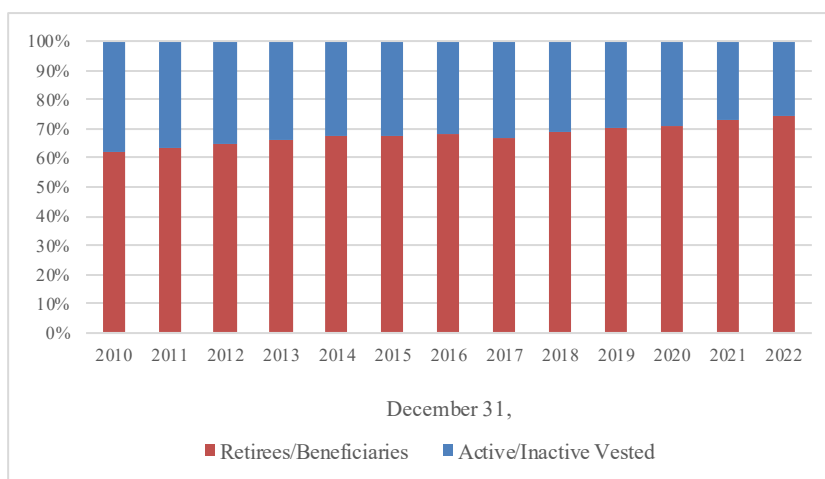
TABLE 31

LIABILITY MATURITY MEASUREMENTS

(Dollars in thousands)

Most public sector retirement systems have been in operation for many years. As a result, they have aging plan populations, and in some cases declining active populations, resulting in an increasing ratio of retirees to active members and a growing percentage of retiree liability. With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the system since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread the cost.

Actuarial Valuation Date	Retiree Liability (a)	Total Actuarial Accrued Liability (b)	Retiree Percentage (a / b)
1/1/2010	\$2,637,961	\$4,269,324	61.8%
1/1/2011	2,835,309	4,447,548	63.7%
1/1/2012	2,987,922	4,587,915	65.1%
1/1/2013	3,121,007	4,689,814	66.5%
1/1/2014	3,254,212	4,831,689	67.4%
1/1/2015	3,344,604	4,935,482	67.8%
1/1/2016	3,462,308	5,065,141	68.4%
1/1/2017	3,512,367	5,259,300	66.8%
1/1/2018	3,993,493	5,819,762	68.6%
1/1/2019	4,491,023	6,400,901	70.2%
1/1/2020	4,682,004	6,597,457	71.0%
1/1/2021	4,907,245	6,745,299	72.8%
1/1/2022	5,106,118	6,875,927	74.3%





SECTION VII: RISK CONSIDERATIONS

TABLE 32

Comparison of Valuation Results for the Combined Fund Under Alternate Investment Return Assumptions
(Dollars in thousands)

This exhibit compares the key January 1, 2022 valuation results for the Combined Fund under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below. All other assumptions are unchanged for purposes of this analysis.

Investment Return Assumption	6.50%	7.00%	7.50%	8.00%	8.50%
Contributions					
- Total Normal Cost	\$112,871	\$100,641	\$90,123	\$81,043	\$73,185
- Member Contributions	(32,190)	(32,190)	(32,190)	(32,190)	(32,190)
- Employer Normal Cost	\$80,681	\$68,451	\$57,933	\$48,853	\$40,995
- Projected Administrative Expenses	\$6,083	\$6,083	\$6,083	\$6,083	\$6,083
- Unfunded Actuarial Accrued Liability	\$135,422	\$112,648	\$90,094	\$67,730	\$45,534
Total Employer Contribution	\$222,186	\$187,182	\$154,110	\$122,666	\$92,612
Actuarial Determined Employer Rate	38.46%	32.40%	26.68%	21.24%	16.03%
Actuarial Value of Assets	\$5,673,797	\$5,673,797	\$5,673,797	\$5,673,797	\$5,673,797
Actuarial Accrued Liability	7,679,982	7,253,004	6,864,666	6,510,645	6,187,127
Unfunded Actuarial Accrued Liability	\$2,006,185	\$1,579,207	\$1,190,869	\$836,848	\$513,330
Funded Ratio	73.9%	78.2%	82.7%	87.1%	91.7%

Note: All other assumptions are unchanged for purposes of this sensitivity analysis.



SECTION VII: RISK CONSIDERATIONS

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APPENDIX A: MEMBERSHIP DATA

MEMBER DATA RECONCILIATION

January 1, 2021 to January 1, 2022

The number of members included in the valuation, as summarized in the table below, is in accordance with the data submitted by the System for members of the valuation date.

	Active Members	Refund Payable	Deferred Vested	Benefit Recipients			Total
				Disabled Members	Retirees	Beneficiaries	
Participants as of January 1, 2021	10,567	1,796	3,188	532	11,034	2,081	29,198
New Participants	943	131	44	0	0	158	1,276
Return to Work	62	(32)	(30)	0	0	0	0
Terminations							
- Refunded	(169)	(235)	(54)	0	0	0	(458)
- Refund Payable	(494)	494	0	0	0	0	0
- Deferred Vested	(414)	0	414	0	0	0	0
Service Retirements							
- Annuity	(370)	0	(168)	0	538	0	0
- Lump Sum	(7)	0	(14)	0	0	0	(21)
Disabilities							
- Duty-Related	0	0	(1)	1	0	0	0
- Non Duty-Related	(4)	0	(1)	5	0	0	0
Deaths	(20)	(2)	(18)	(18)	(381)	(185)	(624)
Benefit Payments Stopped	0	0	0	0	0	(7)	(7)
Reached Service Retirement Conversion Age*	0	0	0	(28)	28	0	0
Data Adjustments	0	(3)	3	1	(1)	0	0
Participants as of January 1, 2022	10,094	2,149	3,363	493	11,218	2,047	29,364

Notes: Duty disabled members who have reached their conversion age are included in the Retirees count.

Refund Payable counts include beneficiaries and estates that are owed a lump sum benefit as of January 1, 2022.

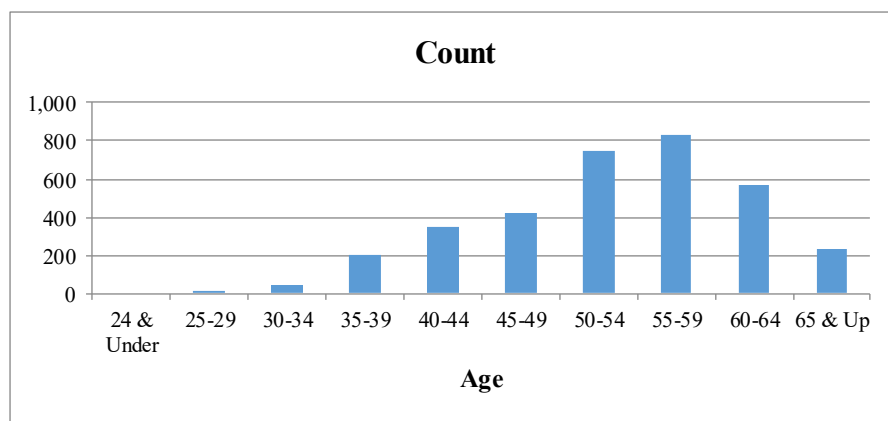
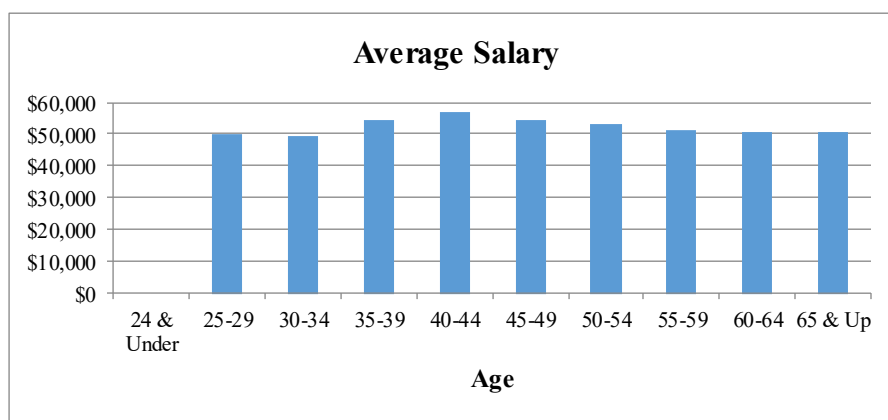


APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF ACTIVE MEMBERS
as of January 1, 2022**

General Employees – Tier 1

<u>Age</u>	<u>Count</u>			<u>Reported FY 2021 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
24 & Under	0	0	0	\$ 0	\$ 0	\$ 0
25-29	3	0	3	149,120	0	149,120
30-34	22	27	49	1,228,021	1,202,620	2,430,641
35-39	104	101	205	6,492,183	4,662,388	11,154,571
40-44	160	185	345	9,935,875	9,614,310	19,550,185
45-49	203	223	426	13,090,091	9,995,962	23,086,053
50-54	367	385	752	22,621,848	17,465,443	40,087,291
55-59	388	440	828	23,338,683	19,175,329	42,514,012
60-64	257	308	565	16,103,124	12,468,190	28,571,314
65 & Up	<u>105</u>	<u>133</u>	<u>238</u>	<u>6,617,578</u>	<u>5,406,889</u>	<u>12,024,467</u>
Total	1,609	1,802	3,411	\$ 99,576,523	\$ 79,991,131	\$ 179,567,654



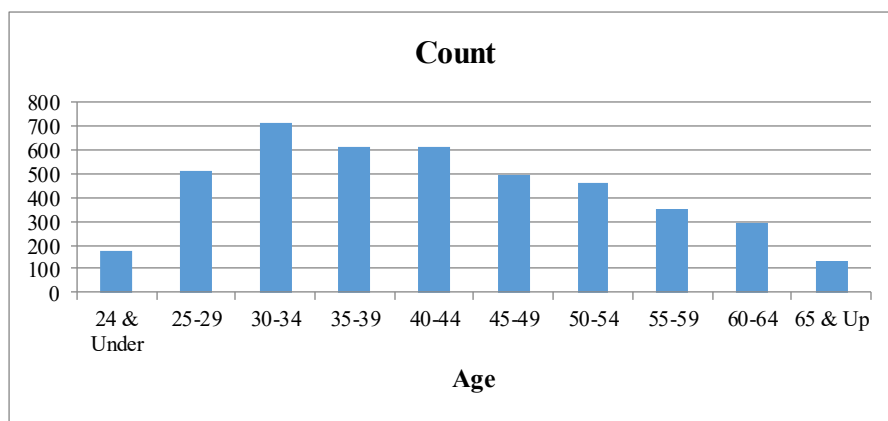
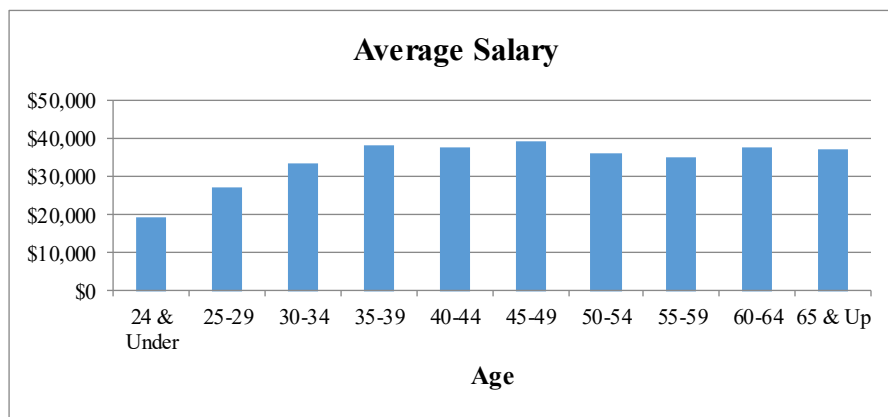


APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF ACTIVE MEMBERS
as of January 1, 2022**

General Employees – Tier 2

<u>Age</u>	<u>Count</u>			<u>Reported FY 2021 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
24 & Under	83	95	178	\$ 1,746,606	\$ 1,661,666	\$ 3,408,272
25-29	205	305	510	5,920,626	7,796,226	13,716,852
30-34	272	436	708	10,925,662	12,495,861	23,421,523
35-39	239	375	614	10,693,227	12,612,525	23,305,752
40-44	246	369	615	11,275,707	11,893,213	23,168,920
45-49	198	298	496	9,013,156	10,296,424	19,309,580
50-54	209	254	463	8,970,711	7,620,127	16,590,838
55-59	146	204	350	6,007,573	6,251,168	12,258,741
60-64	147	143	290	6,480,990	4,378,727	10,859,717
65 & Up	<u>60</u>	<u>73</u>	<u>133</u>	<u>2,798,432</u>	<u>2,134,284</u>	<u>4,932,716</u>
Total	1,805	2,552	4,357	\$ 73,832,690	\$ 77,140,221	\$ 150,972,911



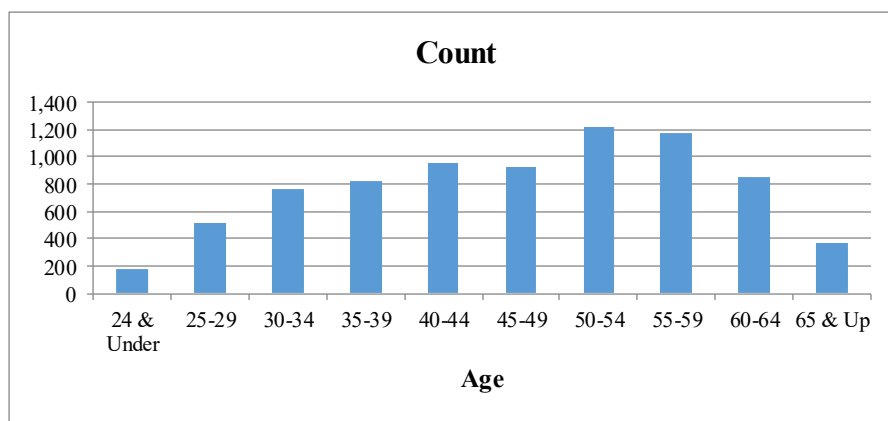
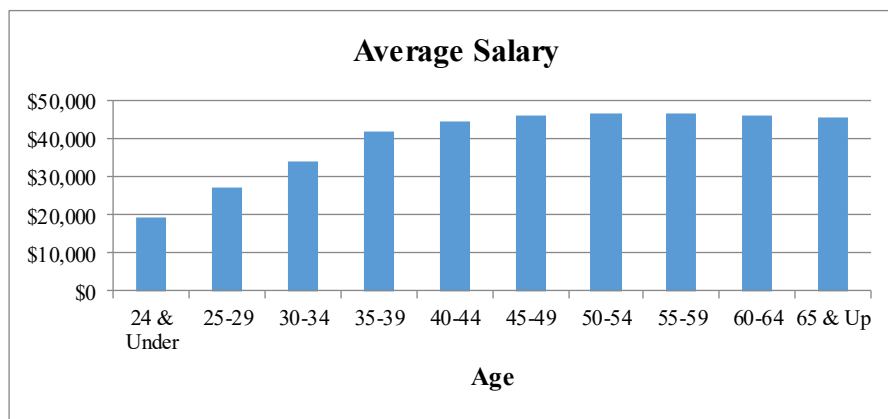


APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF ACTIVE MEMBERS
as of January 1, 2022**

General Employees – Total

<u>Age</u>	<u>Count</u>			<u>Reported FY 2021 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
24 & Under	83	95	178	\$ 1,746,606	\$ 1,661,666	\$ 3,408,272
25-29	208	305	513	6,069,746	7,796,226	13,865,972
30-34	294	463	757	12,153,683	13,698,481	25,852,164
35-39	343	476	819	17,185,410	17,274,913	34,460,323
40-44	406	554	960	21,211,582	21,507,523	42,719,105
45-49	401	521	922	22,103,247	20,292,386	42,395,633
50-54	576	639	1,215	31,592,559	25,085,570	56,678,129
55-59	534	644	1,178	29,346,256	25,426,497	54,772,753
60-64	404	451	855	22,584,114	16,846,917	39,431,031
65 & Up	<u>165</u>	<u>206</u>	<u>371</u>	<u>9,416,010</u>	<u>7,541,173</u>	<u>16,957,183</u>
Total	3,414	4,354	7,768	\$ 173,409,213	\$ 157,131,352	\$ 330,540,565



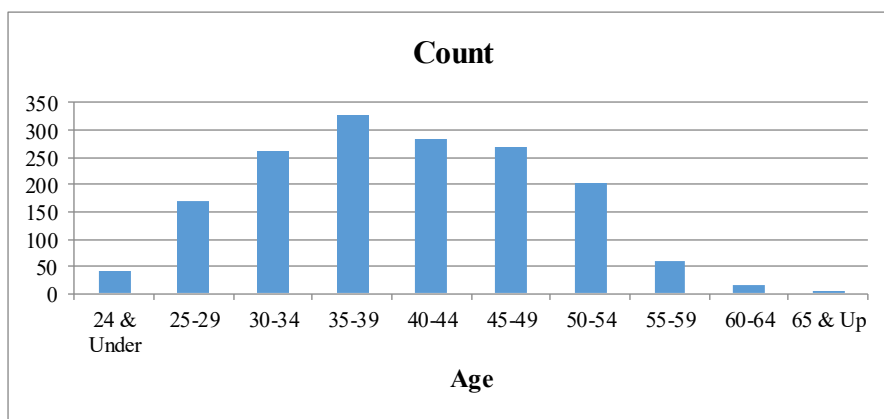


APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF ACTIVE MEMBERS
as of January 1, 2022**

Policemen

<u>Age</u>	<u>Count</u>			<u>Reported FY 2021 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
24 & Under	33	9	42	\$ 1,318,539	\$ 230,608	\$ 1,549,147
25-29	141	30	171	10,406,032	2,058,586	12,464,618
30-34	225	35	260	17,205,997	2,679,971	19,885,968
35-39	278	50	328	23,074,914	4,284,388	27,359,302
40-44	228	57	285	20,136,389	4,938,414	25,074,803
45-49	229	39	268	20,503,896	3,545,445	24,049,341
50-54	169	33	202	15,128,665	3,014,617	18,143,282
55-59	49	10	59	4,294,665	970,594	5,265,259
60-64	13	2	15	1,148,723	187,375	1,336,098
65 & Up	<u>1</u>	<u>0</u>	<u>1</u>	<u>84,403</u>	<u>0</u>	<u>84,403</u>
Total	1,366	265	1,631	\$ 113,302,223	\$ 21,909,998	\$ 135,212,221



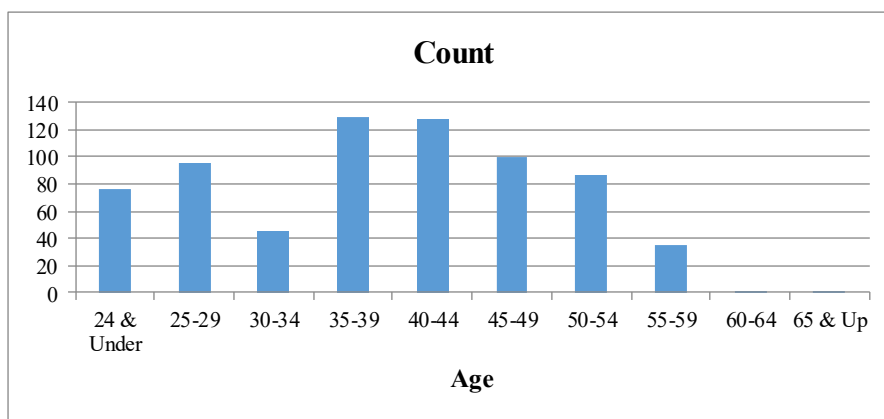
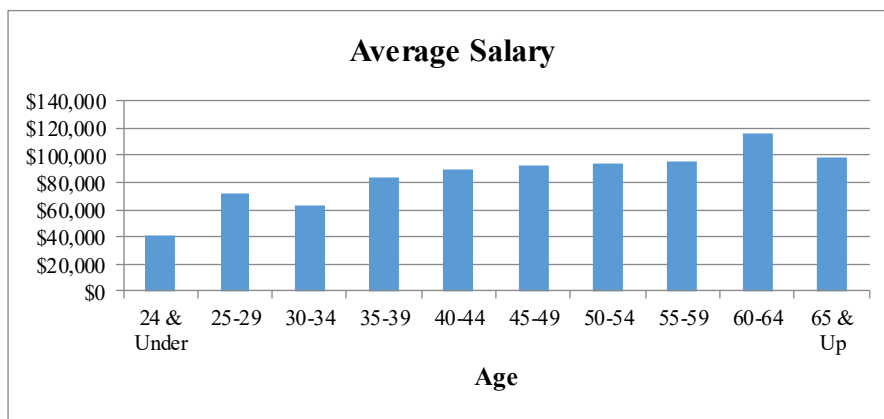


APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF ACTIVE MEMBERS
as of January 1, 2022**

Firemen

<u>Age</u>	<u>Count</u>			<u>Reported FY 2021 Earnings</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
24 & Under	60	16	76	\$ 2,497,428	\$ 627,304	\$ 3,124,732
25-29	85	10	95	6,076,862	712,374	6,789,236
30-34	39	6	45	2,453,530	407,975	2,861,505
35-39	124	5	129	10,515,417	287,313	10,802,730
40-44	124	3	127	11,087,886	265,022	11,352,908
45-49	97	2	99	8,909,952	179,055	9,089,007
50-54	86	1	87	8,002,819	124,198	8,127,017
55-59	34	1	35	3,231,846	97,207	3,329,053
60-64	1	0	1	116,048	0	116,048
65 & Up	<u>1</u>	<u>0</u>	<u>1</u>	<u>97,827</u>	<u>0</u>	<u>97,827</u>
Total	651	44	695	\$ 52,989,615	\$ 2,700,448	\$ 55,690,063





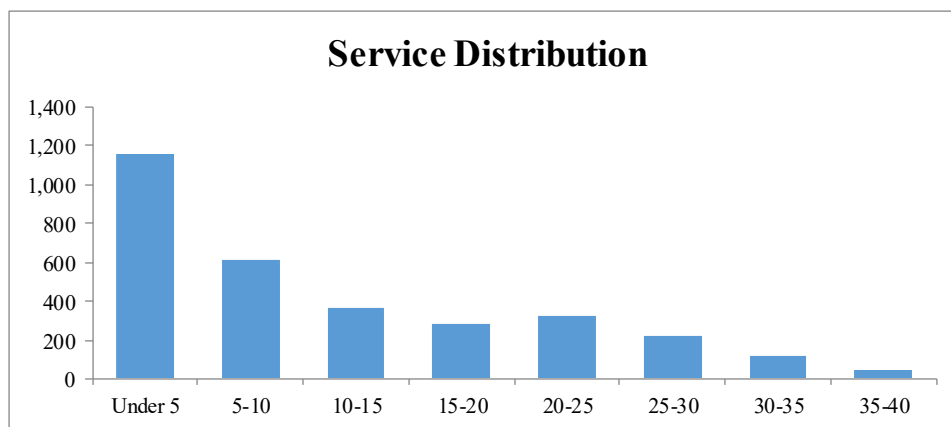
APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

General City*

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	46	0	0	0	0	0	0	0	46
25-29	149	11	0	0	0	0	0	0	160
30-34	200	62	9	0	0	0	0	0	271
35-39	175	110	53	20	0	0	0	0	358
40-44	150	119	62	60	21	1	0	0	413
45-49	142	81	54	41	65	14	0	0	397
50-54	122	93	75	63	103	64	22	1	543
55-59	84	62	56	51	77	92	39	11	472
60-64	59	63	35	30	40	43	36	21	327
65 & Up	27	13	18	18	14	11	18	15	134
Total	1,154	614	362	283	320	225	115	48	3,121

* Includes Elected Officials, General Employees of the City of Milwaukee, and Redevelopment Authority



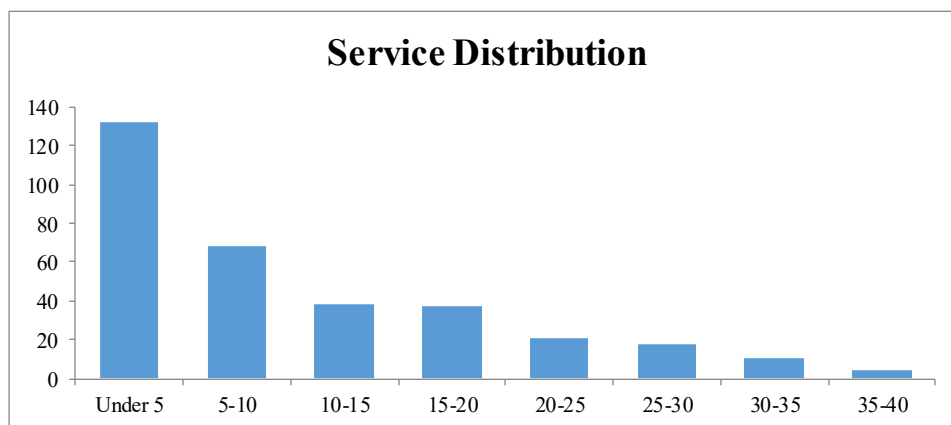


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

Water Department

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	2	0	0	0	0	0	0	0	2
25-29	16	1	0	0	0	0	0	0	17
30-34	29	9	0	0	0	0	0	0	38
35-39	22	11	3	2	0	0	0	0	38
40-44	20	11	8	8	2	0	0	0	49
45-49	23	11	4	8	7	0	0	0	53
50-54	10	11	9	7	5	7	3	0	52
55-59	7	8	8	10	5	7	3	0	48
60-64	3	5	6	0	1	4	3	4	26
65 & Up	0	1	0	2	1	0	1	0	5
Total	132	68	38	37	21	18	10	4	328



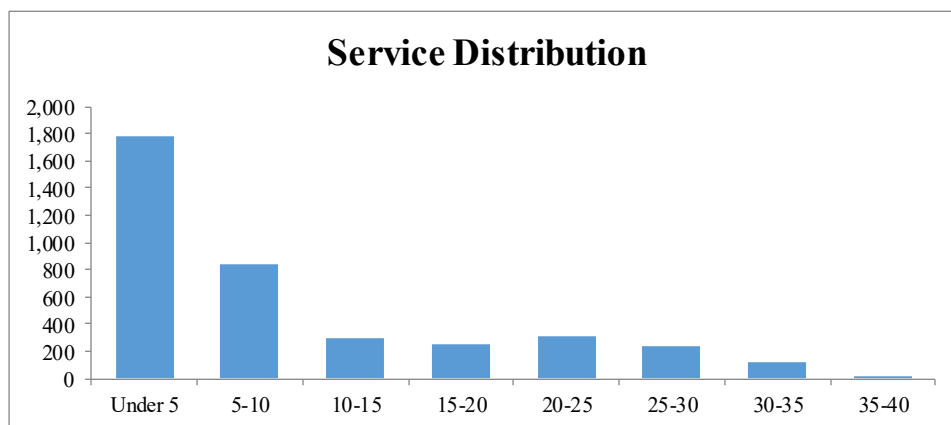


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

School Board

<u>Age</u>	<u>Service</u>								<u>Total</u>
	<u>Under 5</u>	<u>5-10</u>	<u>10-15</u>	<u>15-20</u>	<u>20-25</u>	<u>25-30</u>	<u>30-35</u>	<u>35-40</u>	
24 & Under	123	0	0	0	0	0	0	0	123
25-29	282	22	0	0	0	0	0	0	304
30-34	319	84	3	0	0	0	0	0	406
35-39	230	117	26	2	0	0	0	0	375
40-44	227	122	41	26	15	2	0	0	433
45-49	159	125	44	32	38	14	0	0	412
50-54	169	122	59	69	78	47	20	0	564
55-59	138	96	69	64	87	92	48	2	596
60-64	95	106	43	39	69	60	41	10	463
65 & Up	45	53	16	25	25	16	10	5	195
Total	1,787	847	301	257	312	231	119	17	3,871



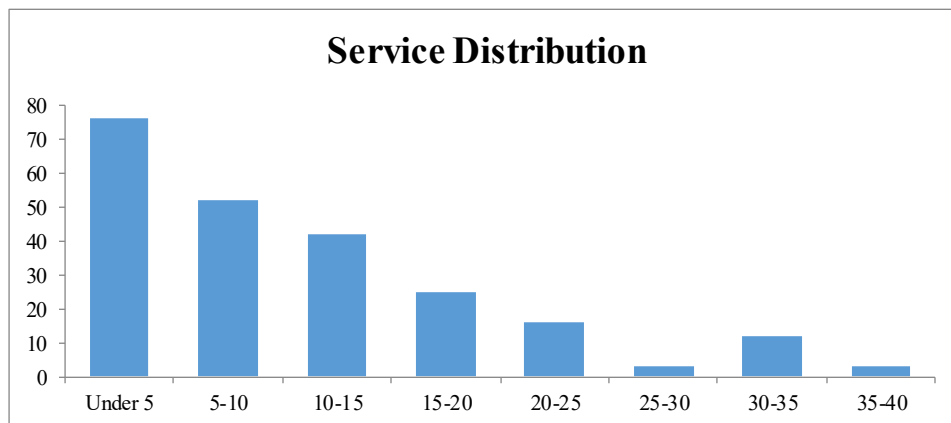


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

Sewerage Commission

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	4	0	0	0	0	0	0	0	4
25-29	15	1	0	0	0	0	0	0	16
30-34	17	12	0	0	0	0	0	0	29
35-39	11	14	11	0	0	0	0	0	36
40-44	9	9	8	3	0	0	0	0	29
45-49	10	6	12	6	2	0	0	0	36
50-54	7	1	5	5	5	0	1	0	24
55-59	2	3	4	4	2	2	6	1	24
60-64	0	3	1	5	4	1	4	0	18
65 & Up	1	3	1	2	3	0	1	2	13
Total	76	52	42	25	16	3	12	3	229



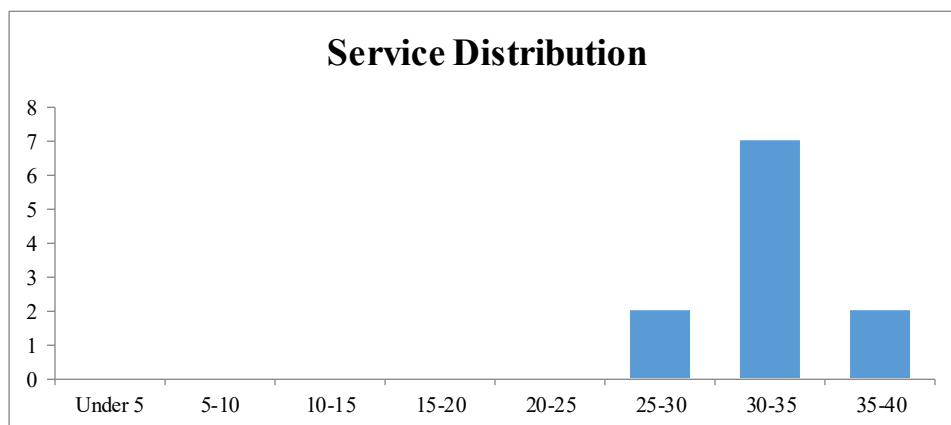


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

Veolia

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	1	0	0	1
55-59	0	0	0	0	0	1	3	0	4
60-64	0	0	0	0	0	0	2	0	2
65 & Up	0	0	0	0	0	0	2	2	4
Total	0	0	0	0	0	2	7	2	11



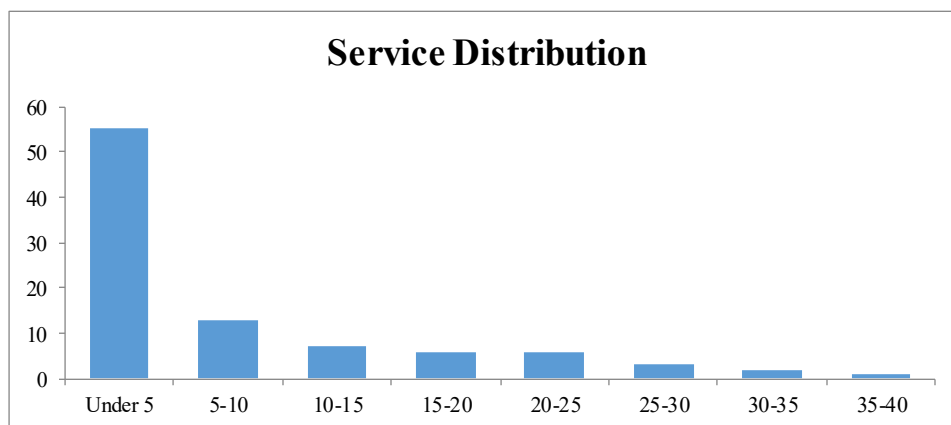


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

Wisconsin District Center

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	3	0	0	0	0	0	0	0	3
25-29	9	1	0	0	0	0	0	0	10
30-34	6	2	1	0	0	0	0	0	9
35-39	5	0	1	0	0	0	0	0	6
40-44	8	1	1	2	2	0	0	0	14
45-49	5	4	1	1	0	0	0	0	11
50-54	3	1	1	0	1	2	0	0	8
55-59	4	1	0	1	2	1	1	0	10
60-64	4	2	0	1	1	0	1	0	9
65 & Up	8	1	2	1	0	0	0	1	13
Total	55	13	7	6	6	3	2	1	93



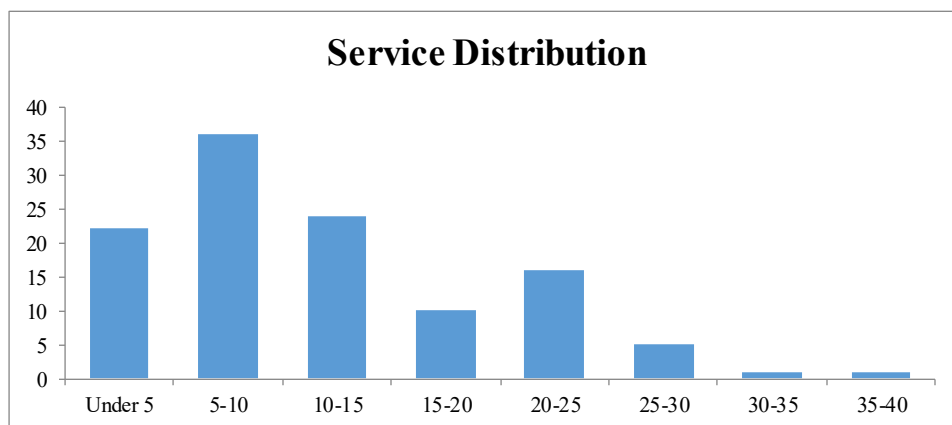


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

Housing Authority

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	0	0	0	0	0	0	0	0	0
25-29	4	2	0	0	0	0	0	0	6
30-34	1	3	0	0	0	0	0	0	4
35-39	0	3	3	0	0	0	0	0	6
40-44	9	8	4	1	0	0	0	0	22
45-49	4	5	3	0	1	0	0	0	13
50-54	2	8	3	3	6	0	1	0	23
55-59	2	2	7	3	5	4	0	1	24
60-64	0	4	2	1	2	1	0	0	10
65 & Up	0	1	2	2	2	0	0	0	7
Total	22	36	24	10	16	5	1	1	115



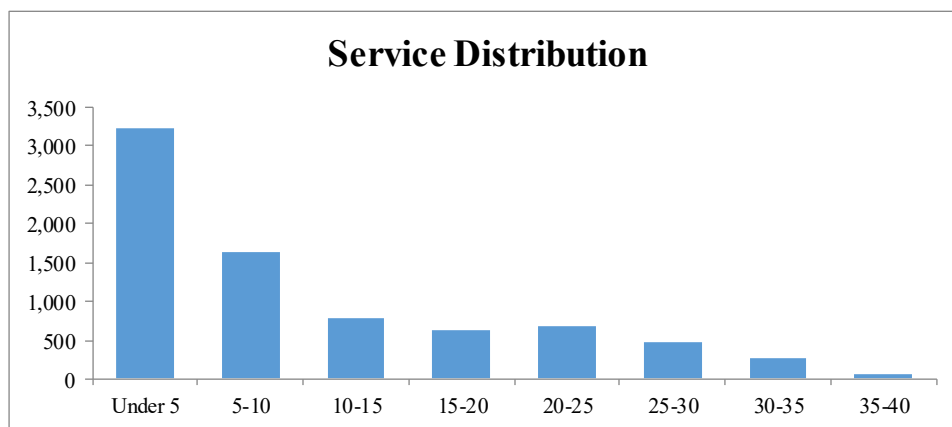


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

General Employees – Total

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	178	0	0	0	0	0	0	0	178
25-29	475	38	0	0	0	0	0	0	513
30-34	572	172	13	0	0	0	0	0	757
35-39	443	255	97	24	0	0	0	0	819
40-44	423	270	124	100	40	3	0	0	960
45-49	343	232	118	88	113	28	0	0	922
50-54	313	236	152	147	198	121	47	1	1,215
55-59	237	172	144	133	178	199	100	15	1,178
60-64	161	183	87	76	117	109	87	35	855
65 & Up	81	72	39	50	45	27	32	25	371
Total	3,226	1,630	774	618	691	487	266	76	7,768



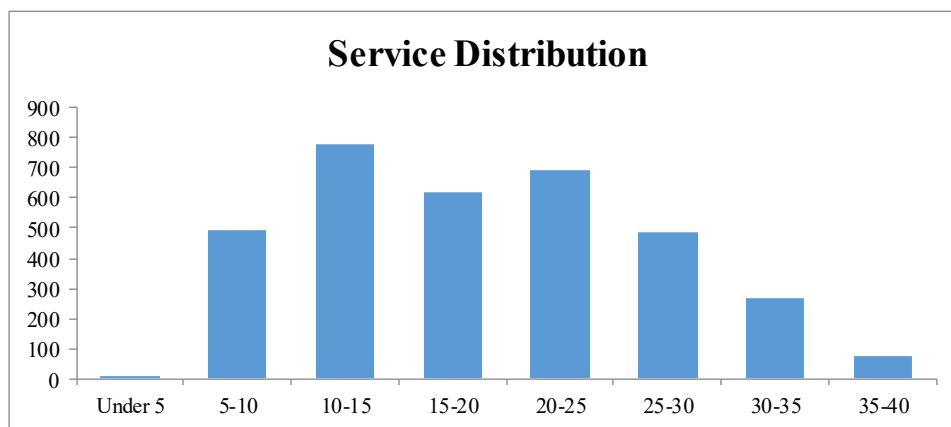


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

General Employees – Tier 1

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	0	0	0	0	0	0	0	0	0
25-29	0	3	0	0	0	0	0	0	3
30-34	2	34	13	0	0	0	0	0	49
35-39	2	82	97	24	0	0	0	0	205
40-44	0	78	124	100	40	3	0	0	345
45-49	3	76	118	88	113	28	0	0	426
50-54	1	85	152	147	198	121	47	1	752
55-59	1	58	144	133	178	199	100	15	828
60-64	0	54	87	76	117	109	87	35	565
65 & Up	0	20	39	50	45	27	32	25	238
Total	9	490	774	618	691	487	266	76	3,411



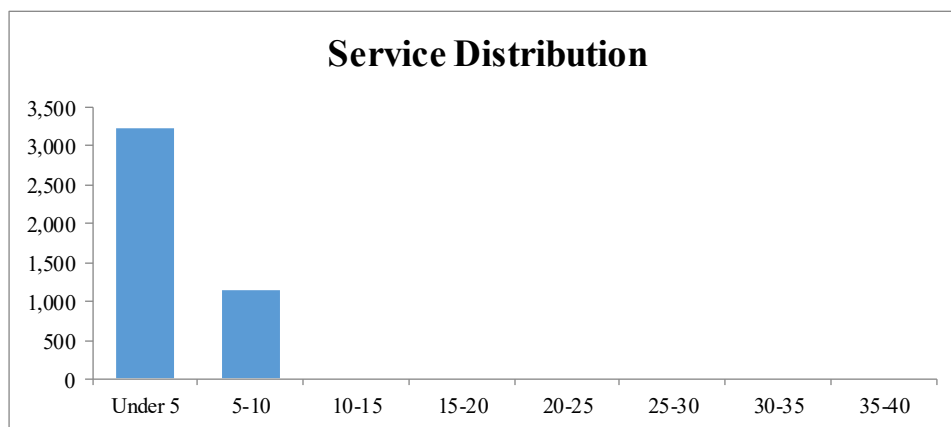


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

General Employees – Tier 2

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	178	0	0	0	0	0	0	0	178
25-29	475	35	0	0	0	0	0	0	510
30-34	570	138	0	0	0	0	0	0	708
35-39	441	173	0	0	0	0	0	0	614
40-44	423	192	0	0	0	0	0	0	615
45-49	340	156	0	0	0	0	0	0	496
50-54	312	151	0	0	0	0	0	0	463
55-59	236	114	0	0	0	0	0	0	350
60-64	161	129	0	0	0	0	0	0	290
65 & Up	81	52	0	0	0	0	0	0	133
Total	3,217	1,140	0	0	0	0	0	0	4,357



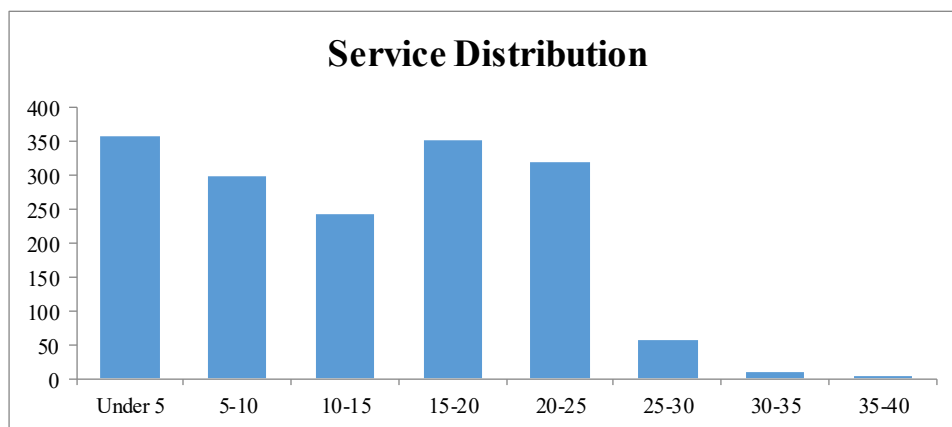


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

Policemen

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	42	0	0	0	0	0	0	0	42
25-29	112	57	2	0	0	0	0	0	171
30-34	109	84	58	9	0	0	0	0	260
35-39	51	107	92	65	13	0	0	0	328
40-44	26	34	52	106	67	0	0	0	285
45-49	13	10	26	100	104	14	1	0	268
50-54	2	4	10	49	104	30	3	0	202
55-59	1	2	1	19	25	8	3	0	59
60-64	0	0	1	1	6	4	2	1	15
65 & Up	0	0	0	1	0	0	0	0	1
Total	356	298	242	350	319	56	9	1	1,631



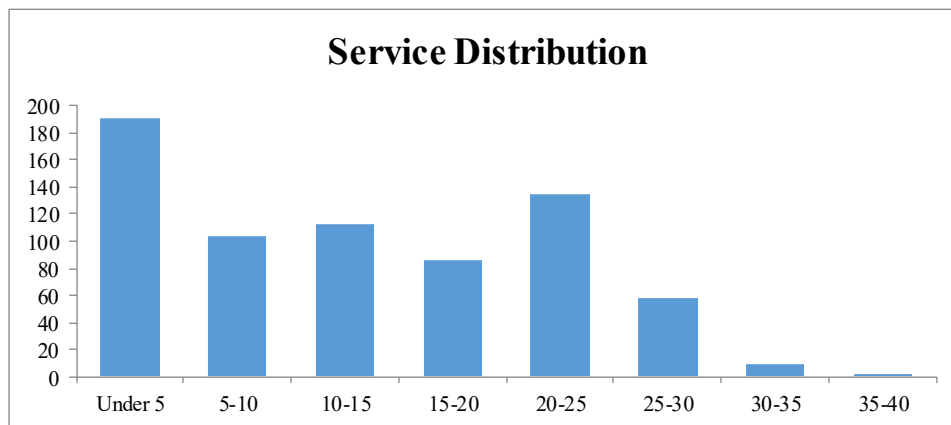


APPENDIX A: MEMBERSHIP DATA

**DISTRIBUTION OF ACTIVE MEMBERS
as of January 1, 2022**

Firemen

Age	Service								Total
	Under 5	5-10	10-15	15-20	20-25	25-30	30-35	35-40	
24 & Under	76	0	0	0	0	0	0	0	76
25-29	52	43	0	0	0	0	0	0	95
30-34	32	8	4	1	0	0	0	0	45
35-39	19	26	37	38	9	0	0	0	129
40-44	6	21	39	11	42	8	0	0	127
45-49	3	5	19	19	37	16	0	0	99
50-54	2	1	12	10	36	25	1	0	87
55-59	0	0	1	6	10	9	9	0	35
60-64	0	0	0	0	0	0	0	1	1
65 & Up	0	0	0	1	0	0	0	0	1
Total	190	104	112	86	134	58	10	1	695



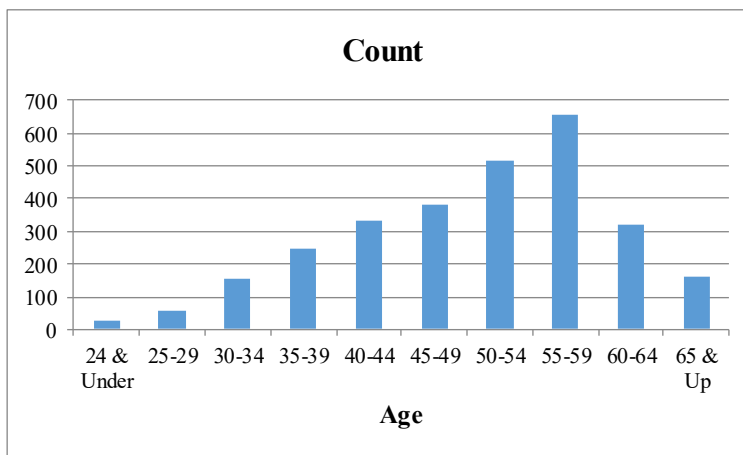
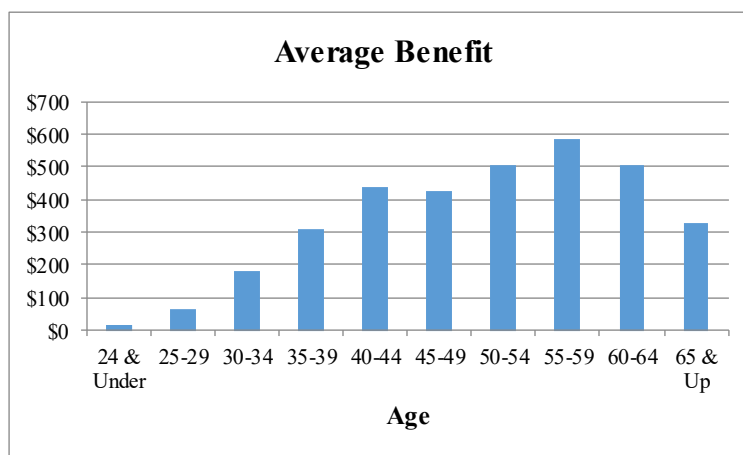


APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF INACTIVE VESTED MEMBERS
as of January 1, 2022**

General Employees

Age	Count			Estimated Monthly Benefits		
	Male	Female	Total	Male	Female	Total
24 & Under	10	17	27	\$ 194	\$ 171	\$ 365
25-29	22	37	59	1,035	2,764	3,799
30-34	65	88	153	14,710	12,613	27,323
35-39	81	166	247	29,083	47,018	76,101
40-44	125	206	331	58,212	86,546	144,758
45-49	165	218	383	76,008	86,718	162,726
50-54	196	319	515	118,996	139,924	258,920
55-59	265	392	657	197,436	187,990	385,426
60-64	126	194	320	81,949	78,653	160,602
65 & Up	<u>69</u>	<u>95</u>	<u>164</u>	<u>32,695</u>	<u>20,894</u>	<u>53,589</u>
Total	1,124	1,732	2,856	\$ 610,318	\$ 663,291	\$ 1,273,609



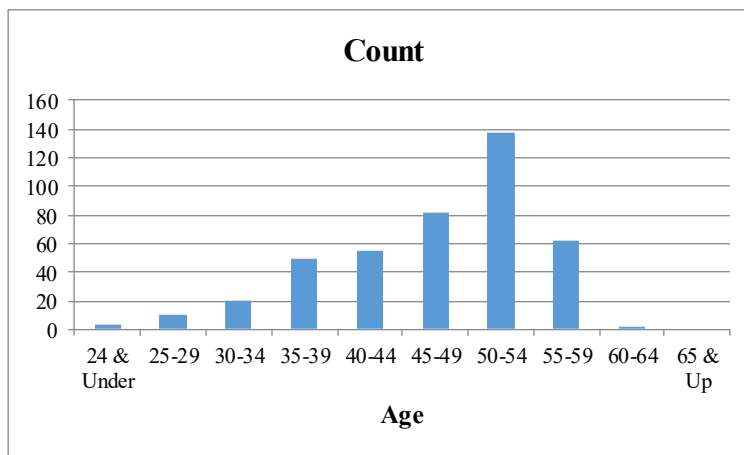
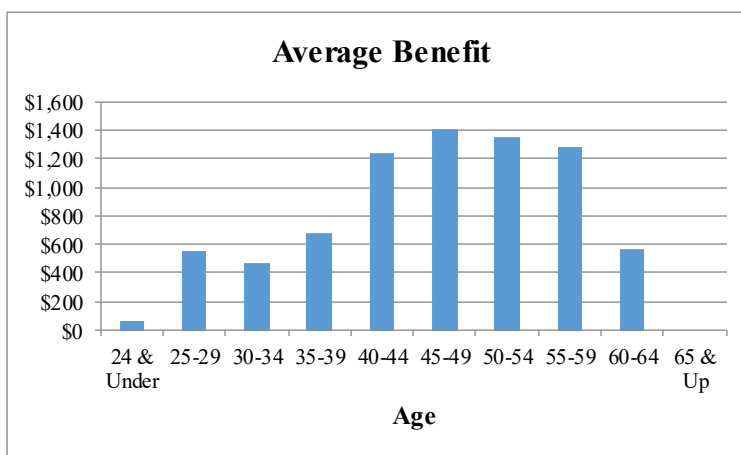


APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF INACTIVE VESTED MEMBERS
as of January 1, 2022**

Policemen

Age	Count			Estimated Monthly Benefits		
	Male	Female	Total	Male	Female	Total
24 & Under	3	1	4	\$ 270	\$ 1	\$ 271
25-29	8	3	11	4,073	2,045	6,118
30-34	14	6	20	7,120	2,303	9,423
35-39	39	11	50	28,002	5,606	33,608
40-44	39	16	55	49,546	18,887	68,433
45-49	59	22	81	99,057	15,080	114,137
50-54	103	35	138	149,799	36,822	186,621
55-59	50	12	62	59,622	19,297	78,919
60-64	1	0	1	564	0	564
65 & Up	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	316	106	422	\$ 398,053	\$ 100,041	\$ 498,094



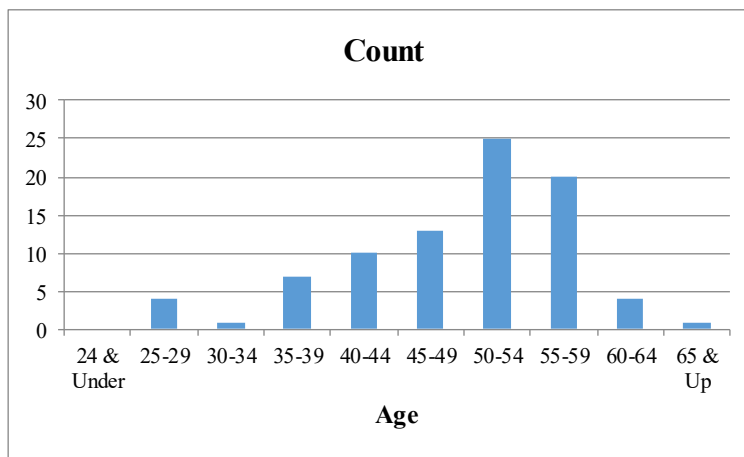
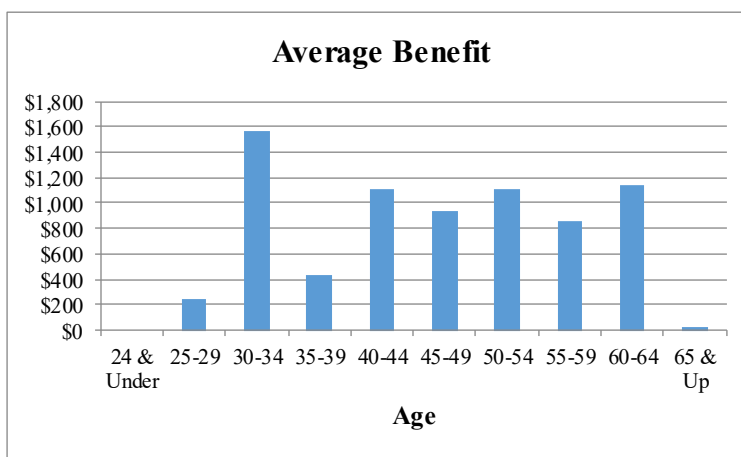


APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF INACTIVE VESTED MEMBERS
as of January 1, 2022**

Firemen

Age	Count			Estimated Monthly Benefits		
	Male	Female	Total	Male	Female	Total
24 & Under	0	0	0	\$ 0	\$ 0	\$ 0
25-29	4	0	4	971	0	971
30-34	1	0	1	1,568	0	1,568
35-39	6	1	7	2,984	9	2,993
40-44	10	0	10	11,136	0	11,136
45-49	13	0	13	12,257	0	12,257
50-54	22	3	25	26,166	1,509	27,675
55-59	20	0	20	17,127	0	17,127
60-64	4	0	4	4,588	0	4,588
65 & Up	<u>1</u>	<u>0</u>	<u>1</u>	<u>25</u>	<u>0</u>	<u>25</u>
Total	81	4	85	\$ 76,822	\$ 1,518	\$ 78,340





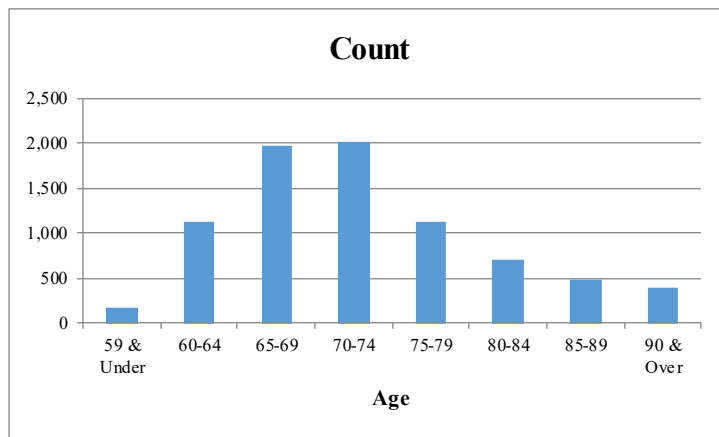
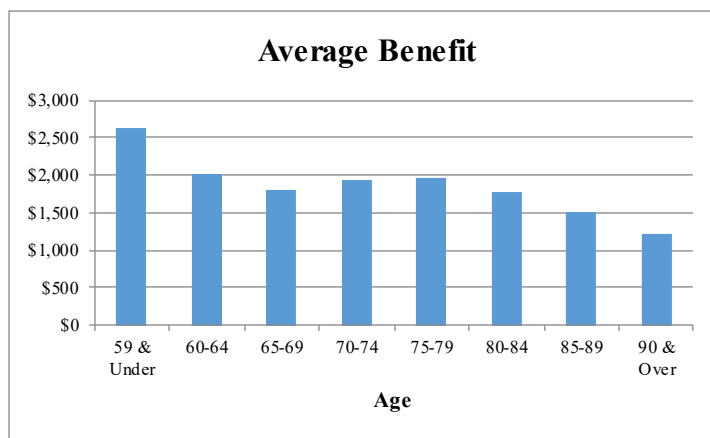
APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF RETIRED MEMBERS
as of January 1, 2022**

General Employees

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	73	104	177	\$ 202,783	\$ 264,345	\$ 467,128
60-64	546	592	1,138	1,290,402	998,776	2,289,178
65-69	936	1,031	1,967	2,135,431	1,414,955	3,550,386
70-74	1,035	989	2,024	2,485,797	1,423,166	3,908,963
75-79	577	553	1,130	1,452,747	754,887	2,207,634
80-84	319	398	717	830,875	441,665	1,272,540
85-89	195	284	479	479,175	246,100	725,275
90 & Over	<u>142</u>	<u>250</u>	<u>392</u>	<u>306,503</u>	<u>173,402</u>	<u>479,905</u>
Total	3,823	4,201	8,024	\$ 9,183,713	\$ 5,717,296	\$ 14,901,009

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





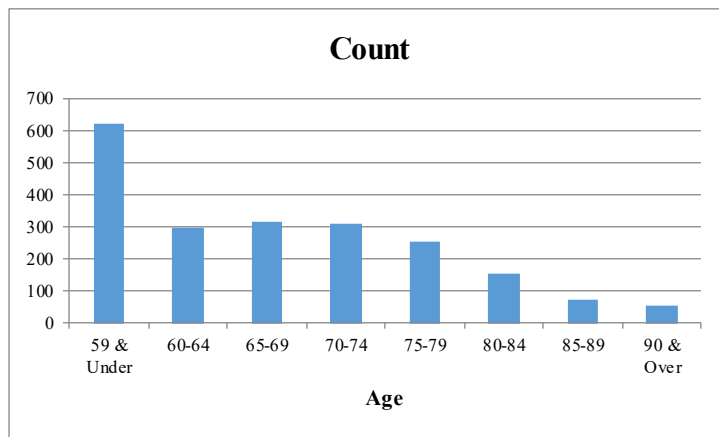
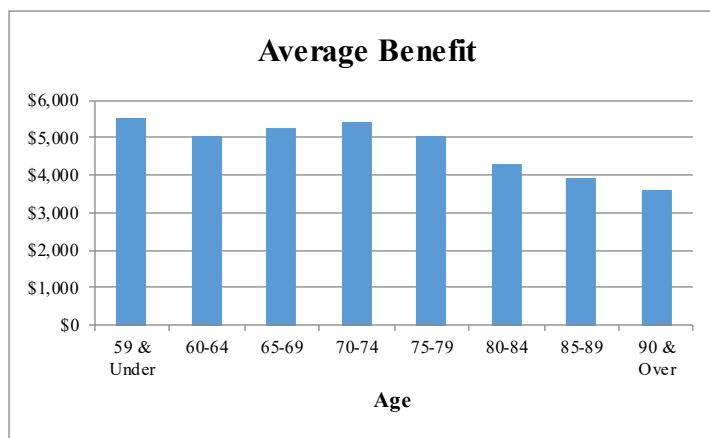
APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF RETIRED MEMBERS
as of January 1, 2022**

Policemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	504	116	620	\$ 2,784,962	\$ 649,236	\$ 3,434,198
60-64	244	54	298	1,236,875	268,160	1,505,035
65-69	269	44	313	1,406,555	231,966	1,638,521
70-74	284	23	307	1,549,876	113,837	1,663,713
75-79	246	8	254	1,243,327	34,075	1,277,402
80-84	154	1	155	660,526	3,870	664,396
85-89	74	0	74	288,891	0	288,891
90 & Over	<u>51</u>	<u>2</u>	<u>53</u>	<u>187,076</u>	<u>4,969</u>	<u>192,045</u>
Total	1,826	248	2,074	\$ 9,358,088	\$ 1,306,113	\$ 10,664,201

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





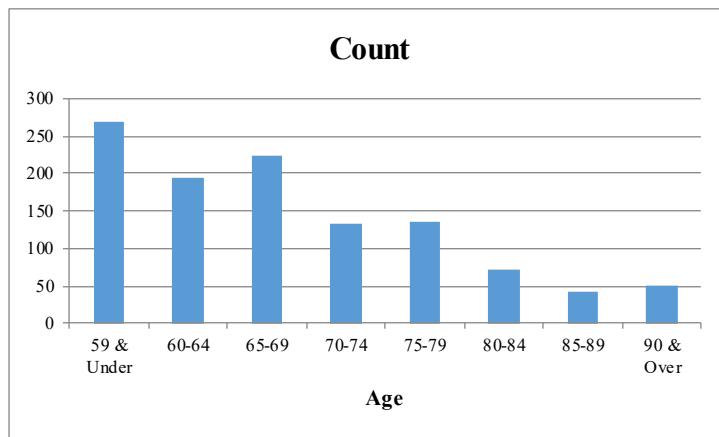
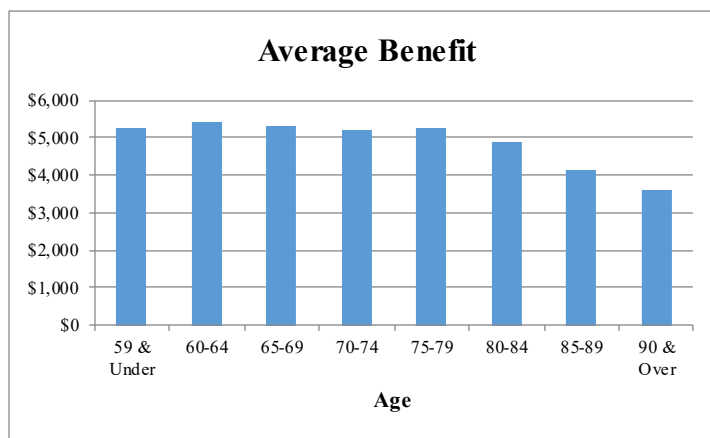
APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF RETIRED MEMBERS
as of January 1, 2022**

Firemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	248	21	269	\$ 1,310,067	\$ 107,112	\$ 1,417,179
60-64	180	15	195	978,317	81,169	1,059,486
65-69	215	8	223	1,153,743	32,001	1,185,744
70-74	128	5	133	671,948	18,741	690,689
75-79	136	0	136	714,389	0	714,389
80-84	72	0	72	349,826	0	349,826
85-89	42	0	42	173,919	0	173,919
90 & Over	<u>49</u>	<u>1</u>	<u>50</u>	<u>175,599</u>	<u>4,083</u>	<u>179,682</u>
Total	1,070	50	1,120	\$ 5,527,808	\$ 243,106	\$ 5,770,914

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





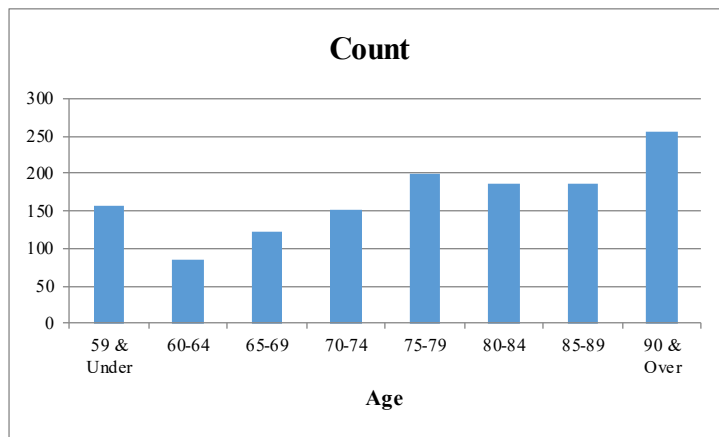
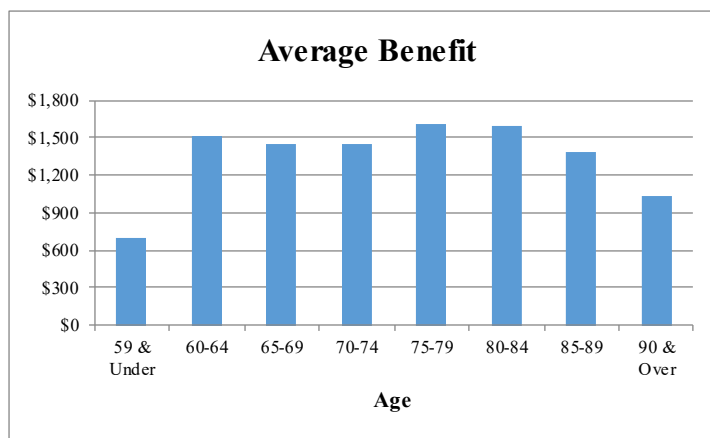
APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF BENEFICIARIES
as of January 1, 2022**

General Employees

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	64	94	158	\$ 34,610	\$ 75,290	\$ 109,900
60-64	18	67	85	16,019	112,440	128,459
65-69	24	99	123	24,891	153,633	178,524
70-74	29	122	151	23,857	195,201	219,058
75-79	30	170	200	24,352	298,102	322,454
80-84	16	170	186	12,384	283,927	296,311
85-89	15	172	187	10,445	249,852	260,297
90 & Over	<u>36</u>	<u>220</u>	<u>256</u>	<u>19,036</u>	<u>246,135</u>	<u>265,171</u>
Total	232	1,114	1,346	\$ 165,594	\$ 1,614,580	\$ 1,780,174

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





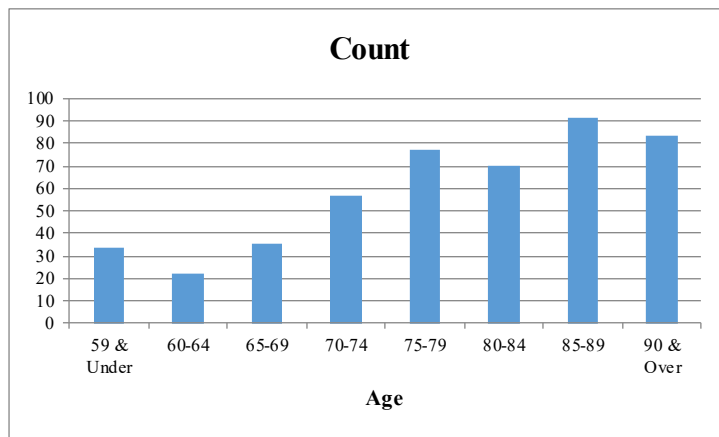
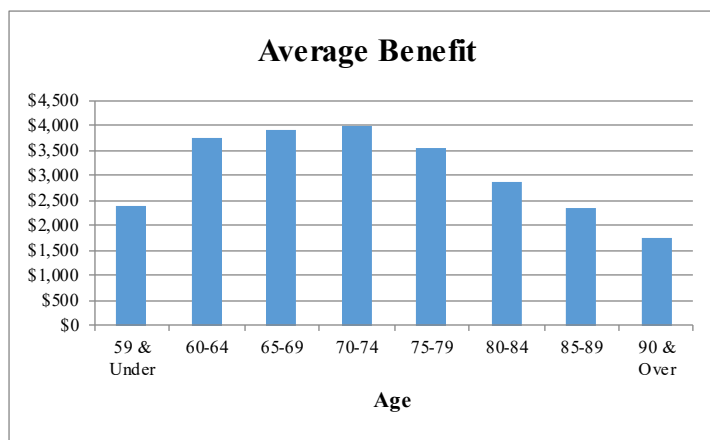
APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF BENEFICIARIES
as of January 1, 2022**

Policemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	6	28	34	\$ 7,078	\$ 74,644	\$ 81,722
60-64	1	21	22	300	81,824	82,124
65-69	3	32	35	6,194	130,545	136,739
70-74	2	55	57	4,611	222,977	227,588
75-79	2	75	77	5,201	267,412	272,613
80-84	0	70	70	0	201,053	201,053
85-89	1	90	91	265	214,728	214,993
90 & Over	<u>1</u>	<u>82</u>	<u>83</u>	<u>1,098</u>	<u>145,041</u>	<u>146,139</u>
Total	16	453	469	\$ 24,747	\$ 1,338,224	\$ 1,362,971

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





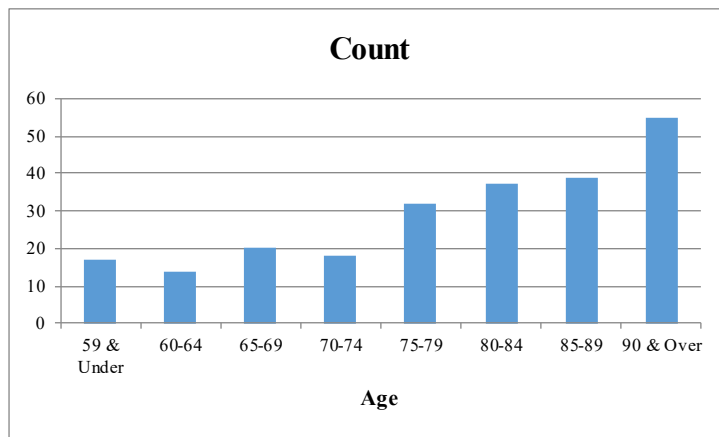
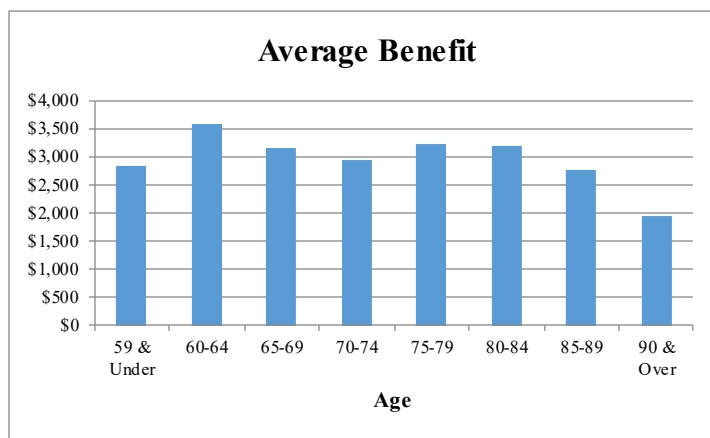
APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF BENEFICIARIES
as of January 1, 2022**

Firemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
59 & Under	5	12	17	\$ 6,656	\$ 41,749	\$ 48,405
60-64	1	13	14	1,995	48,251	50,246
65-69	1	19	20	125	62,770	62,895
70-74	0	18	18	0	53,009	53,009
75-79	0	32	32	0	103,108	103,108
80-84	0	37	37	0	117,198	117,198
85-89	0	39	39	0	107,771	107,771
90 & Over	<u>0</u>	<u>55</u>	<u>55</u>	<u>0</u>	<u>107,403</u>	<u>107,403</u>
Total	7	225	232	\$ 8,776	\$ 641,259	\$ 650,035

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





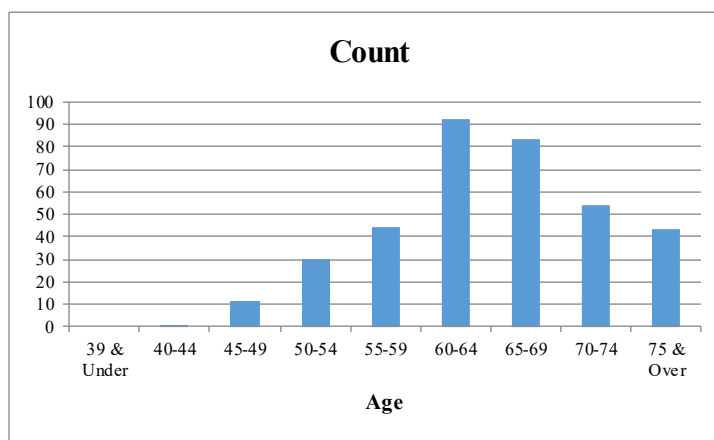
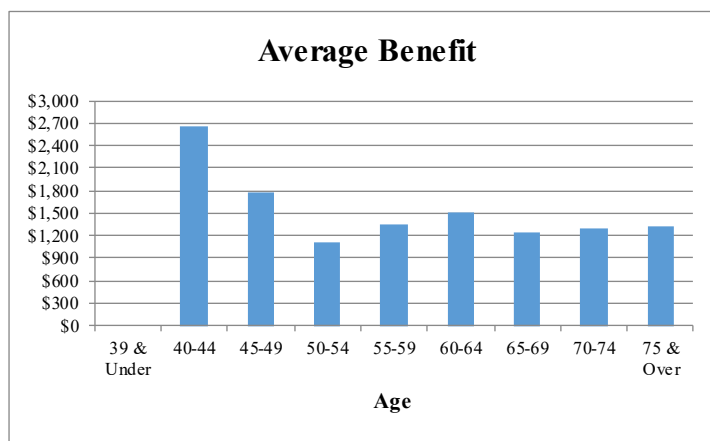
APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF DISABLED MEMBERS
as of January 1, 2022**

General Employees

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
39 & Under	0	0	0	\$ 0	\$ 0	\$ 0
40-44	1	0	1	2,644	0	2,644
45-49	6	5	11	9,580	9,811	19,391
50-54	10	20	30	12,918	20,420	33,338
55-59	22	22	44	37,427	22,329	59,756
60-64	47	45	92	94,715	44,760	139,475
65-69	38	45	83	57,480	46,348	103,828
70-74	27	27	54	38,574	31,231	69,805
75 & Over	<u>24</u>	<u>19</u>	<u>43</u>	<u>41,652</u>	<u>15,113</u>	<u>56,765</u>
Total	175	183	358	\$ 294,990	\$ 190,012	\$ 485,002

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





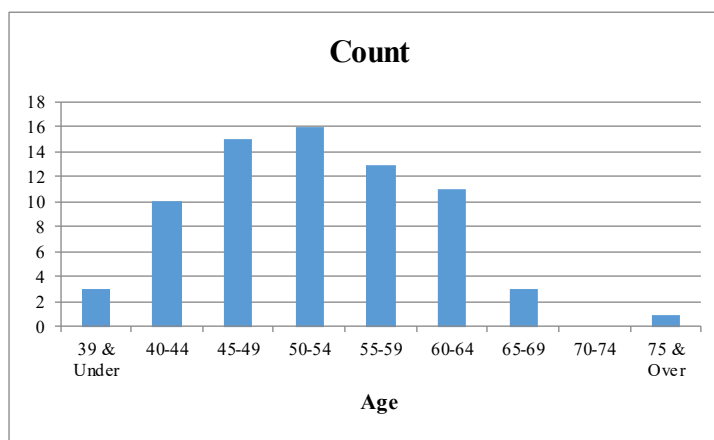
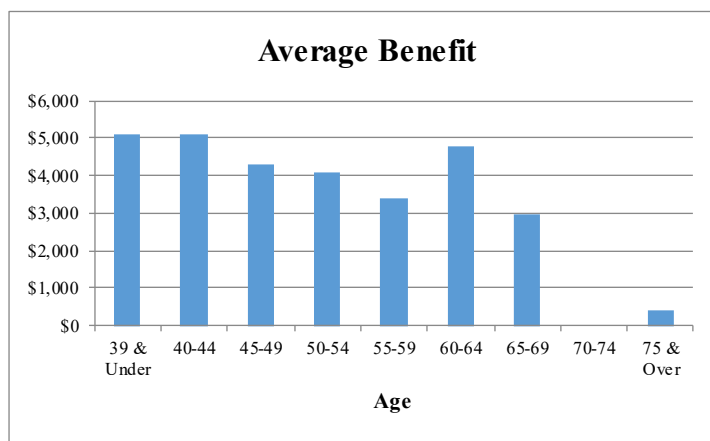
APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF DISABLED MEMBERS
as of January 1, 2022**

Policemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
39 & Under	3	0	3	\$ 15,244	\$ 0	\$ 15,244
40-44	7	3	10	35,032	15,847	50,879
45-49	11	4	15	48,638	15,895	64,533
50-54	7	9	16	25,681	39,685	65,366
55-59	8	5	13	21,215	23,147	44,362
60-64	5	6	11	26,775	25,794	52,569
65-69	3	0	3	8,882	0	8,882
70-74	0	0	0	0	0	0
75 & Over	<u>1</u>	<u>0</u>	<u>1</u>	<u>424</u>	<u>0</u>	<u>424</u>
Total	45	27	72	\$ 181,891	\$ 120,368	\$ 302,259

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





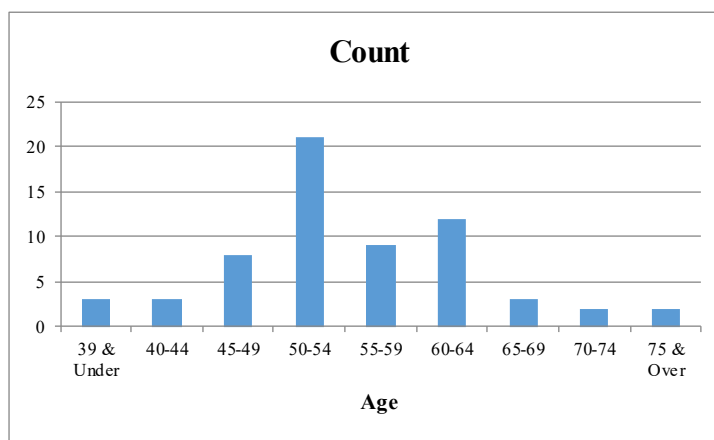
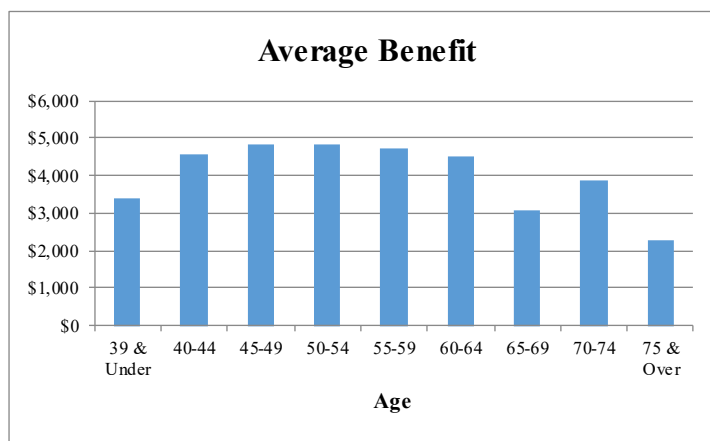
APPENDIX A: MEMBERSHIP DATA

**SUMMARY OF DISABLED MEMBERS
as of January 1, 2022**

Firemen

Age	Count			Monthly Benefits		
	Male	Female	Total	Male	Female	Total
39 & Under	3	0	3	\$ 10,108	\$ 0	\$ 10,108
40-44	3	0	3	13,697	0	13,697
45-49	8	0	8	38,464	0	38,464
50-54	20	1	21	96,232	5,012	101,244
55-59	8	1	9	37,450	5,041	42,491
60-64	7	5	12	35,394	18,961	54,355
65-69	2	1	3	6,046	3,160	9,206
70-74	2	0	2	7,760	0	7,760
75 & Over	<u>2</u>	<u>0</u>	<u>2</u>	<u>4,519</u>	<u>0</u>	<u>4,519</u>
Total	55	8	63	\$ 249,670	\$ 32,174	\$ 281,844

Note: The counts shown are for members who are receiving benefits as of January 1, 2022. Benefit amounts are the full December monthly payment and have been reduced for any workers' compensation offsets.





APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

SUMMARY OF BENEFIT PROVISIONS

A summary of the main benefit provisions of the Retirement System and of the sources of revenue from which benefits are paid is presented in the following digest. Items in parentheses in the text are the provisions applicable to law enforcement officers.

Eligibility for Membership

Membership is optional for all Employees that were in service as of January 1, 1938. New Employees are automatically members as a condition of employment. Membership is optional for elected officials. Note that unless specifically stated, elected officials follow the same rules as General Employees.

Additionally, effective January 1, 2014, there are two tiers of benefits. Tier 1 is for General Employees enrolled prior to January 1, 2014, and all Fire and Police Employees. Tier 2 is for General Employees enrolled on or after January 1, 2014.

Participation in the Combined Fund

On January 19, 2001 the Combined Fund was created and was retroactive to January 1, 2000. Individuals who participate in the Combined Fund may be eligible for certain benefit enhancements which are described in this Summary of Plan Provisions. Members who enroll in the ERS after June 28, 2000, and their eligible survivors, are automatically participants in the Combined Fund. Members enrolled in the ERS on or before June 28, 2000, and their eligible survivors, participate in the Combined Fund provided that the members consented in writing to the Global Pension Settlement. Eligible survivors of members or retirees who died on or before June 28, 2000 participate in the Combined Fund provided that the eligible survivors consented in writing to the Global Pension Settlement. Members or survivors whose benefit payments ceased prior to January 1, 2000, are not eligible for benefits from the Combined Fund.

Creditable Service

Creditable service equals prior service plus membership service. Prior service includes service as an employee prior to January 1, 1938, or prior to an amendment which made the employee eligible for membership in the ERS. Membership service means service as an employee since last becoming a member, on account of which contributions are made.

- For most Employees, 2080 hours of service constitute one year of creditable service. For prevailing wage Employees (carpenters and other tradespeople) 2000 hours constitute one year. For members employed by the school board for a 10-month school year, 1600 hours of service constitute a year of creditable service. After July 2006, for members serving as firefighters, 2590 hours of service constitutes one year of creditable service. After September 2016, for members serving as firefighters, 2756 hours of service constitutes one year of creditable service.
- Under certain conditions creditable service may be granted for periods of absence due to military service.
- For purposes of computing the service retirement allowance only, creditable service is granted for periods of eligibility for a duty disability retirement allowance.
- No more than one year of creditable service is granted for service in a single calendar year.



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

Imputed Service

Imputed service credit may be granted, under specified conditions, to members who consented to the Global Pension Settlement. Imputed service credit is used to calculate the amount of certain benefits, but is not used to determine eligibility for any kind of benefit. An individual may be eligible for one or more types of imputed service credit.

Eligibility for Imputed Service Credit

Only individuals participating in the Combined Fund can become eligible for the following types of imputed service credit.

- a) Imputed military service credit: The member must have been active in the armed forces of the United States of America prior to his or her enrollment in the ERS, and must have been honorably discharged. A member must be described as in 36-04-1-c. An individual eligible for imputed military service credit must apply for the credit.
- b) Imputed fire and police service credit: The member must be described as in 36-04-4-a. The member must have been in active ERS service as a fireman or policeman as of January 1, 2000, and must also retire from ERS service as a fireman or policeman, or die while a fireman or policeman eligible for protective survivorship option benefits. To be eligible, the member must retire or die as a policeman or fireman and must have attained the minimum service retirement requirements as outlined in 36-05-1.
- c) Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund, (the "Fund"): The member must be described as in 36-04-4-b. The member must have been a policeman who was an active member of the "Fund" as of January 1, 2000. If the policeman was in active ERS service as of January 1, 2000, he must either retire as a policeman on a service retirement allowance at the minimum service retirement age of 57 or after completing 25 years of creditable service as a fireman or policeman; or he must retire on a policeman's duty disability retirement allowance and subsequently convert to a service retirement allowance. If the policeman was retired on a duty disability retirement allowance as of January 1, 2000, then he must subsequently convert to a service retirement allowance.

Benefits Affected by Imputed Service Credit

- a) Imputed military service credit and/or imputed fire and police service credit: The amount of the service retirement allowance, the conversion service retirement allowance, protective survivorship option benefits, and the extended life duty disability retirement allowance are affected. If the eligible individual is also entitled to a 5% Lump Sum Bonus, and/or an 8.6% Dissolution Bonus that is based on the affected benefit, then the imputed service credit is included in calculating the base for the bonus payment(s).
- b) Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund: The amount of the service retirement allowance and the conversion service retirement allowance are affected. If the service retirement allowance is affected, then the imputed service credit is included in calculating the base for the 5% Lump Sum Bonus.

See the benefit descriptions later in this summary for further details on how imputed service credit is used.



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

Amount of Imputed Service Credit

- a) Imputed military service credit: A period of eligible military service consists of a period of at least 90 consecutive days of active service in the armed forces of the United States prior to enrollment in the ERS. Total eligible military service equals the sum of all periods of eligible military service. Imputed military service credit equals one-third of the member's total eligible military service, to a maximum of three years of imputed military service credit.
- b) Imputed fire and police service credit: For policemen and firemen with 20 years of creditable service as a fireman or policeman - 1.5 years. For firemen with less than 20 years of creditable service as a fireman or policeman: 1.5 years times the full years of creditable fire and police service, divided by 20.
- c) Imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund: 2 years.

Seasonal Service

Seasonal service credit may be granted under specified conditions to certain General City Employees. Seasonal service credit is used to calculate the amount of certain benefits but is not used to determine eligibility for any kind of benefit.

Eligibility for Seasonal Service Credit

In order to be eligible for seasonal service credit, a member must be a General City employee with five or more years of City service credit, and a member of one of the groups as outlined in 36-04-1-d.

Benefits Affected by Seasonal Service Credit

Seasonal service credit affects the amount of the service retirement allowance, the conversion service retirement allowance and protective survivorship option benefits. If the eligible individual is also entitled to a 5% Lump Sum Bonus that is based on the affected benefit, then the seasonal service credit is included in calculating the base for the bonus payment.

Amount of Seasonal Service Credit

Seasonal service is based on the hours worked as a City Labor-Seasonal employee and/or Playground Laborer-Seasonal employee (MPS), but limited to one year of additional service credit.

Qualifying for an ERS Benefit

Rules regarding qualifying time are encapsulated in the ERS Board Rules & Regulations, XV.G. The rules have been adopted and applied prospectively for enrollments prior to 1995, 1995 to 2001 and post 2001. All members are fully vested after attaining four years of qualifying time.



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

Earnable Compensation

The annual regular base salary that would be payable to a member if he or she worked the full normal working time for his or her position as described in 36-02-12. Earnable compensation for the calendar year preceding retirement may also include special pays as negotiated in labor agreements such as longevity in rank pay, (limited) variable shift assignment pay, police liaison officer pay, and/or certification pay for policemen; and emergency medical technician pay for firemen. Earnable compensation for school board Employees represented by Local 950, OEIU, also includes site differential pay.

Final Average Salary

- a) For General Employees, final average salary means the average annual earnable compensation computed on the 3 years of creditable service preceding retirement, death or separation from service during which earnable compensation was the highest.
- b) For policemen and firemen, final average salary means the average annual earnable compensation computed on the year of creditable service preceding retirement, death or separation from service during which earnable compensation was the highest.
- c) For members converting from a duty disability retirement allowance to a service retirement allowance, the service retirement allowance is computed on the basis of the current compensation of the member's position at the service retirement date.

Service Retirement

Eligibility for Service Retirement

For Tier 1 Benefits (applicable to General Employees enrolled prior to January 1, 2014 and all Fire and Police Employees), eligibility for service retirement is as defined under 36-05-01 as follows:

- a) A service retirement allowance is payable to any member who elects to retire after attaining the minimum service retirement age, which is age 60 for General Employees and age 57 for policemen and firemen.
- b) General Employees that have attained age 55 and completed 30 years of qualifying time are eligible for service retirement.
- c) Policemen who participate in the Combined Fund are eligible for service retirement at any age after attaining 25 years of fire or police qualifying time, if they were hired prior to December 20, 2015.
- d) Policemen who participate in the Combined Fund, who have attained age 50 are eligible for service retirement after completing 25 years of police qualifying time, if they were hired on/after December 20, 2015.
- e) Firemen who participate in the Combined Fund, who have attained age 49 and completed 22 years of fire or police qualifying time, are eligible for service retirement, if they were hired prior to July 30, 2016.
- f) Firemen who participate in the Combined Fund, who have attained age 52 and completed 25 years of fire qualifying time, are eligible for service retirement, if they were hired on/after July 30, 2016.



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

- g) Policeman and firemen who are not participants in the Combined Fund are eligible for service retirement after attaining age 52 and completing 25 years of fire or police qualifying time.

For Tier 2 Benefits (applicable to General Employees enrolled on or after January 1, 2014), eligibility for service retirement is as defined under 36-05-01 as follows:

- a) A service retirement allowance is payable to any member who elects to retire after attaining the minimum service retirement age, which is age 65 for General Employees.
- b) General Employees that have attained age 60 and completed 30 years of qualifying time are eligible for service retirement.

Amount of Service Retirement Allowance

The amount of a member's service retirement allowance under 36-05-01 is equal to the following:

- a) For General Employees, enrolled prior to January 1, 2014, 2% of final average salary for each year of creditable service, imputed military service, or seasonal service limited to 70% of final average salary. For General Employees, enrolled on or after January 1, 2014, 1.6% of final average salary for each year of creditable service, imputed military service, or seasonal service limited to 70% of final average salary.
- b) For firemen enrolled prior to March 1, 1989, and policemen enrolled prior to July 1, 1989, and who were in active service on or after January 1, 1995, 2.5% of final average salary for each year of creditable service or imputed service (of any kind).
- c) For firemen enrolled after February 28, 1989, and policemen enrolled after June 30, 1989, 2.5% of final average salary for each year of creditable service or imputed military service, limited to 90% of final average salary, plus 2.5% of final average salary for each year of imputed fire and police service or imputed service under the dissolution of the Firemen and Policemen's Survivorship Fund.
- d) For elected officials enrolled prior to January 1, 2014, 2.6% of final average salary for each year of creditable service as an elected official for years before 1996, limited to 70% of the final average salary; from 1996 forward the rate of accrual for creditable service, imputed military service, or seasonal service is 2.5% except for the mayor, who will have an accrual rate of 2.0%, limited to 70% of the final average salary, except for elected officials who were enrolled prior to 2014 and are first elected to office on or after January 1, 2014, in which case their accrual rate is 2% for each year if they contribute 5.5% of their earnable compensation, or 2.5% for each year if they contribute 7% of their earnable compensation. For elected officials enrolled on or after January 1, 2014, 1.6% of final average salary for each year of creditable service as an elected official limited to 70% of the final average salary.

Funds Charged with Service Retirement Allowance

For individuals participating in the Combined Fund, service retirement allowance payments are charged to the Combined Fund. For all other individuals, the service retirement allowance is charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member enrolled on or after February 1, 1996.



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

Ordinary Disability Retirement Allowance

Eligibility for Ordinary Disability Retirement Allowance

A member who the medical council certifies is mentally or physically incapacitated for further performance of duty that such incapacity is likely to be permanent and that such member should be retired, is eligible for the ordinary disability retirement allowance. The ordinary disability allowance is not payable if the member qualifies for the duty disability allowance.

Amount of Ordinary Disability Retirement Allowance

Imputed service credit and seasonal service credit are not used in any part of the calculation of the Ordinary Disability Retirement Allowance. The “service retirement allowance” referred to below is calculated based on creditable service only.

- a) For General Employees, 90% of the service retirement allowance based on creditable service to date of disability retirement, but no less than 25% of final average salary, provided such amount does not exceed 90% of the retirement allowance payable had the member continued in service to the minimum service retirement age.
- b) For policemen and firemen hired after January 1, 1971, who have 5 years of service, 25% of final average salary plus 2% thereof for each year of creditable service in excess of 5 years up to a maximum of 50% of final average salary.
- c) For policemen and firemen hired before January 1, 1971, the greater of the benefit described in (a), or the benefit described in (b).
- d) The benefit is payable for life while the member remains disabled, except that for General Employees with less than 10 years of qualifying time, the duration is limited to one-fourth (1/4) of the period of the service accrued to the date of disability.
- e) Members receiving benefits for life may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary.

Funds Charged with Ordinary Disability Retirement Allowance

Ordinary disability retirement allowance payments are charged to the Combined Fund if the eligible individual is a participant in the Combined Fund. Otherwise, the allowance is charged to (i) the Retirement Fund, if the member’s enrollment date is before February 1, 1996, and (ii) the Combined Retirement and Disability Fund, if the member’s enrollment date is on or after February 1, 1996.



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

Duty Disability Retirement Allowance

Eligibility for Duty Disability Retirement Allowance

If a member becomes permanently and totally incapacitated for duty as a result of the performance of his duty, and his mental or physical incapacitation is medically certified, such member is eligible for a duty disability retirement allowance. Unless the member is beyond his/her conversion age, in which case the member would be eligible for an extended lifetime Duty Disability benefit. The medical certification is made by the Medical Council for General Employees, for members of the MPA enrolled after June 28, 2005, and for members of the MPFFA enrolled after December 13, 2005 with disability based on a mental injury. For all other members, the medical certification is made by the Medical Panel, except as indicated below. There are certain diseases that are considered presumptive for purposes of duty disabilities.

All new duty disability applications are reviewed by the Medical Council effective June 19, 2016 for MPA members, effective January 1, 2016 for MPSO members, and effective July 29, 2016 for MPFFA members.

Effective July 14, 2015, a new state law was enacted related to duty disability benefits for mental injuries (section 62.624 Wis. Stat.). The ERS may only provide a duty disability benefit for a mental injury if the following criteria are met:

- a) The mental injury resulted from a situation of greater dimensions than the day-to-day mental stresses and tension and post-traumatic stress that all similarly situated Employees must experience as part of the employment, *and*
- b) The employer certifies that the mental injury is a duty-related injury.

Only if a duty-related mental injury has occurred, can the duty disability application be forwarded to the Medical Panel or Medical Council for the examination and requisite certification.

Amount of Duty Disability Related Benefits

Imputed service credit and seasonal service credit are not used when calculating a duty disability retirement allowance. Imputed service credit or seasonal service credit is used when calculating the conversion service retirement allowance referred to in paragraphs (a) - (c) below. Eligibility for imputed military service credit depends upon the date of the conversion, not upon the date of the duty disability retirement.

- a) For General Employees, the duty disability retirement allowance equals 75% of the member's final average salary. Members receive the allowance, while disability continues, until the later of age 65, or for a period of 5 years, at which time they convert to a service retirement allowance. General Employees receiving duty disability benefits may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary.
- b) For firemen and policemen, the duty disability retirement allowance is 75% of the current annual salary for the position held by the member at retirement, plus \$40 per month for each child younger than age 18 (up to a maximum of 20% of the member's salary). In certain cases of extreme disability, when approved by a panel of physicians, the disability allowance will be 90% of such salary. Duty disability benefits paid to firemen on account of heart and lung disease are at the 75% level. In the event of the death of a policeman or fireman receiving a 75% or 90% disability



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

allowance, 70% or 75%, respectively, of the amount of the member's allowance shall be paid to the member's spouse during her lifetime.

The 90% duty disability allowances are payable for life. For policemen enrolled on or after January 1, 1990, and firemen enrolled on or after December 17, 1989, the 75% duty disability allowances are payable until the earlier of attainment of age 57, or completion of 25 years of service and attainment of age 52, at which time the member must either convert to a service retirement allowance or irrevocably elect to receive a recalculated duty disability allowance, referred to as an extended life duty disability allowance, as described in (c), below. Different conversion age requirements apply to policemen enrolled prior to January 1, 1990, and firemen enrolled prior to December 17, 1989, as discussed in (d), below. A fireman or policeman who becomes duty disabled on or after his conversion age may choose between a service retirement or extended life duty disability retirement.

- c) The extended life duty disability allowance referred to in (b), above, equals the lesser of the conversion service retirement allowance, or 75% of the current annual salary, provided further that the benefit will not be less than 57% of current annual salary for a fireman, or 60% of current annual salary for a policeman. "Current annual salary" here refers to the salary at the conversion age, for the position held by the member at the time of injury. The extended life duty disability allowance is payable for life and, unlike the duty disability allowance, is a fixed amount that does not change after the conversion age, notwithstanding any cost of living adjustments. Firemen or policemen receiving extended life duty disability benefits may elect reduced benefits under an optional form of payment in order to provide a death benefit to a designated beneficiary. Their spouses are not eligible to receive the 70% benefit payable to surviving spouses of firemen and policemen who die while in receipt of the 75% duty disability benefit.
- d) For policemen enrolled prior to January 1, 1990, and firemen enrolled prior to December 17, 1989, the conversion age determination depends upon the member's enrollment date and whether or not the member signed the DeBraska II release form.

Under Charter Ordinance 980130 Substitute 2 (DeBraska I), duty disabled firemen and policemen who retired on duty disability before October 17, 1992, have a conversion age equal to the greater of the conversion age in effect when they were enrolled, or the conversion age in effect at the time of their disability retirement.

Under Charter Ordinance 000789 (DeBraska II), duty disabled firemen and policemen who signed the DeBraska II release form are subject to the following conversion requirements: (i) members retired on duty disability prior to February 8, 1972, will receive duty disability benefits for life; (ii) members enrolled prior to February 8, 1972, who are either policemen who retired on duty disability on or after August 1, 1985, or firemen who retired on duty disability on or after March 1, 1984, will have a conversion age of 63; (iii) members enrolled on or after February 8, 1972, who retired on duty disability on or after October 17, 1992, will not be required to convert to service retirement prior to the conversion age requirements that were in effect when they enrolled; and (iv) for all other members who signed the DeBraska II release form, there is no difference between the conversion requirements of Charter Ordinance 980130 Substitute 2, and Charter Ordinance 000789. In general, only members who were duty disabled prior to January 1, 2001 were given the opportunity to sign the DeBraska II release form.

Under the Charter Ordinance (which reflects the Rehrauer decision) firemen and policemen who



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

retire (or previously retired) on duty disability and who did not sign the DeBraska II release form will convert at the highest conversion age agreed upon during their employment (Section 36-05-3). Members who enrolled prior to February 8, 1972, who are either policemen who retired on duty disability on or after November 1, 1976, or firemen who retired on duty disability on or after October 1, 1977, will receive duty disability for life if they did not sign the DeBraska II release form, and will have a conversion age of 63 if they did sign the DeBraska II release form.

Funds Charged with Duty Disability Related Benefits

- a) For participants in the Combined Fund, duty disability benefits paid to members, benefits paid to survivors of members who die while duty disabled, child allotment payments, conversion service retirement benefits, and extended life duty disability benefits are paid from the Combined Fund.
- b) For General Employees who do not participate in the Combined Fund, duty disability benefits, and survivor benefits paid to beneficiaries of General Employees who elect an optional form of payment and die while disabled, are paid from (i) the General Employees Duty Disability Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.
- c) For members who do not participate in the Combined Fund, benefits paid after conversion to either a service retirement allowance or an extended life disability benefit are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.

Ordinary Death Benefit

Eligibility and Amount of Ordinary Death Benefit

- a) In the event of death of a member while in service, a death benefit equal to the sum of the member's accumulated contributions, plus if the member has one or more years of active service, one-half his final average salary is payable to the designated beneficiary. Optional forms of payment of such benefit to the beneficiary are provided. If the member had elected a protective survivorship option – and duty death benefits are not payable – such option will become effective and the ordinary death benefit will not be payable. If a duty death benefit is payable the ordinary death benefit will not be paid.
- b) Unless the member elects an optional death benefit, the death benefit subsequent to retirement is the amount remaining, if any, of the member's contributions with interest to retirement less the sum of the allowance payments made prior to the member's death.

Funds Charged with Ordinary Death Benefits

Ordinary death benefits paid on behalf of a participant in the Combined Fund are charged to the Combined Fund. Otherwise, ordinary death benefits are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.



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Protective Survivorship Option

Eligibility and Amount of Protective Survivorship Option

Firemen may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 49 and completion of 22 years of qualifying time as a fireman or policeman, or age 52 and 25 years of qualifying time as a fireman or policeman, or age 57. Policemen may elect a Protective Survivorship Option (PSO) during the 6 months that precede the earlier of attainment of age 57, or completion of 25 years of qualifying time as a policeman or fireman. Firemen and policemen who fail to elect a PSO during the eligible period are deemed to have elected an Option 2 PSO with the spouse as the named beneficiary.

General Employees who enrolled prior to January 1, 2014, may elect a PSO during the 6 months that precede the earlier of attainment of age 60 or completion of 30 years of qualifying time and attainment of age 55. General Employees who enrolled on or after January 1, 2014, may elect a PSO during the 6 months that precede the earlier of attainment of age 65, or completion of 30 years of qualifying time and attainment of age 60.

Firemen and policemen are allowed to reselect a PSO if they marry, or divorce, and to select a different option and/or beneficiary at retirement, if they wish. As of June 5, 2012, General Employees may also reselect a PSO if they marry, or divorce, or select a different option and/or beneficiary at retirement.

The PSO may be canceled if the joint annuitant predeceases the member before retirement; or if the member is divorced from the joint annuitant before retirement.

Under a PSO, if a member eligible to retire on a service retirement allowance dies prior to retirement, benefits begin to the named beneficiary just as if the member retired under such option immediately prior to his or her death, except that imputed service credit arising from the dissolution of the Firemen and Policemen's Survivorship Fund will not be used in the calculation of the PSO benefit. If a fireman eligible for PSO coverage dies prior to age 49, benefits for the named beneficiary will be deferred until the date the fireman would have attained age 49. Imputed military service, imputed fire and police service, and seasonal service credit may be used in the calculation of the deferred PSO benefit.

In all cases where the requirements are met for both a PSO benefit and a duty death benefit, the duty death benefit will be payable in lieu of the PSO.

Funds Charged with PSO Benefits

PSO benefits for participants in the Combined Fund are charged to the Combined Fund. Benefits for individuals who do not participate in the Combined Fund are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Retirement and Disability Fund if the member's enrollment date is on or after February 1, 1996.



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Duty Death Benefits

Eligibility and Amount of Duty Death Benefits

In the event the member's death occurs in the performance of his duty, a lump sum payment equal to the member's accumulated contributions, plus an annuity of 60% of such deceased member's final average salary will be paid to one of the following (payable in this order):

- The member's surviving spouse
- The member's children until their 21st birthday
- The member's dependent parents
- Death of a fireman that is due to heart or lung disease is considered a duty death.

Funds Charged with Duty Death Benefits

Benefits payable to participants in the Combined Fund are charged to the Combined Fund. Heart & Lung duty death benefits payable to individuals who are not participants in the Combined Fund are charged to the Heart & Lung Fund. Duty death benefits (other than Heart & Lung) payable to individuals who are not participants in the Combined Fund are charged to (i) the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

Member Contributions

Member contribution rates are the following percentages of annual salary:

General Employees	5.5% (tier 1 – enrolled prior to January 1, 2014) 4.0% (tier 2 – enrolled on or after January 1, 2014)
Firemen and Policemen- Elected Officials	7.0% 7.0% (tier 1 – enrolled prior to January 1, 2014 and elected to an office prior to January 1, 2014; if enrolled prior to January 1, 2014, and elected or the first time to an office on or after January 1, 2014, and employee was paying contributions prior to being elected, employee pays contributions at the rate they were paying prior to becoming an elected official; if enrolled prior to January 1, 2014, and elected or the first time to an office on or after January 1, 2014, and employer was picking up contributions on behalf of the employee prior to being elected, employer pays 7.0%) 4.0% (tier 2 – enrolled on or after January 1, 2014)

Under state law, per 2011 Wisconsin Act 10, participating employers are no longer permitted to make contributions on the member's behalf (with the exception of contractually agreed upon arrangements).

Member contributions made for or by participants in the Combined Fund are credited to the Combined Fund. Member contributions made for or by individuals who are not participants in the Combined Fund are credited to (i) the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.



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Pension Escalators

Several different pension escalators are paid by the ERS as listed and described under section 36-05-1(h). They are as follows:

- Fire and Police \$50 Escalator

Eligible Groups and Amounts

- a) Firemen in Local 215 who retired under a service retirement allowance between March 1, 1990, and December 31, 1992; members of the Milwaukee Police Association (MPA) who retired under a service retirement allowance between January 1, 1990, and December 31, 1992; members of the Milwaukee Police Supervisors Organization who retired under a service retirement allowance between January 1, 1991, and December 31, 1992; and firemen in Local 215 or members of the MPA who elect a deferred retirement allowance after separating from service between January 1, 1993, and December 31, 1994, with 25 years of service; are eligible for a pension escalator which increases their allowance by \$50 per month on the 4th, 7th, and 10th anniversary of retirement.
- b) Members who both retired on duty disability and converted from duty disability to service retirement during the eligibility period are eligible for the escalators on the 4th, 7th, and 10th anniversaries of their conversion dates.
- c) The surviving spouses of eligible retirees, or of members who died during the eligibility period, are eligible provided that the member elected an optional benefit at retirement – or elected a protective survivorship option (PSO) prior to retirement – with the spouse as beneficiary. The member's surviving spouse receives increases on the member's 4th, 7th, and 10th anniversary of retirement (or spouse's retirement date in the case of a PSO) with the amount of the escalator adjusted to reflect the option elected by the member.

Funds Charged with Duty Death Benefits

Fire and Police \$50 escalators paid to participants in the Combined Fund are charged to the Combined Fund.

Fire and Police \$50 escalators paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- January 1996 Catch-up COLA for pre-October, 1987 Retirees

Eligible Group

- a) General Employees that attained the minimum service retirement age and retired with a service retirement allowance prior to October 1, 1987, or who retired on a duty disability allowance and converted to a service retirement allowance prior to October 1, 1987.
- b) Firemen and policemen who retired prior to October 1, 1987, who became eligible to retire on service retirement at age 57, or after attaining age 52 and completing 25 years of service. Also,



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firemen and policemen who retired on a duty disability allowance and converted to a service retirement allowance prior to October 1, 1987.

- c) Surviving spouses of eligible retirees, or of members who elected a PSO and died prior to October 1 1987, after naming their spouse as the designated beneficiary under Option 2, Option 3, or Option 4 with a percentage to the beneficiary.

Timing and Amount of Increase

The catch-up COLA was a permanent increase in the ERS monthly benefit which was granted effective January 1, 1996. The increase was an amount equal to (i) the total ERS benefit in payment, multiplied by the greater of (ii) the total percentage change in the cost of living for each full calendar month between the 8th anniversary of service retirement and October 1, 1995, and (iii) the total percentage change required to bring the member's allowance to 60% of its full inflation adjusted value considering inflation for the period from retirement to October 1, 1995. The percentage change in the cost of living was measured by the increase in the CPI-U, U.S. Cities, as reported by the U.S. Department of Labor, Bureau of Labor Statistics.

When the catch-up COLA was calculated, the factor was not applied to supplemental, pass through benefits, which are paid by the ERS but are not a liability of the ERS. These pass through benefits, which appear on the pension payroll data supplied to the actuary, are part of an old guaranteed minimum program. The ERS is a paying agent for these benefits, but is reimbursed by the City for all such payments.

Funds Charged

Catch-up COLA amounts paid to participants in the Combined Fund are charged to the Combined Fund. Catch-up COLA amounts paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- 2% Escalator for pre-1993 Retirees

Eligible Group

- a) General Employees that attained the minimum service retirement age and retired with a service retirement allowance prior to January 1, 1993, or who retired on a duty disability allowance and converted to a service retirement allowance prior to January 1, 1993.
- b) Firemen and policemen who retired prior to January 1, 1993, who became eligible to retire on service retirement at age 57, or after attaining age 52 and completing 25 years of service. Also, firemen and policemen who retired on a duty disability allowance and converted to a service retirement allowance prior to January 1, 1993.
- c) Surviving spouses of eligible members who elected Option 3 with the spouse as the beneficiary, or of members who died prior to January 1, 1993 after electing an Option 3 PSO with the spouse as the beneficiary.



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Timing and Amount of Increase

The first increase occurs with the later of the January 1996 installment or the installment next following the 8th anniversary of the member's service retirement date (or the 8th anniversary of the surviving spouse's retirement date in the case of a PSO). Thereafter, increases occur annually on the anniversary of the first increase.

The first increase is 2% of the total ERS benefit in payment. That is, the monthly benefit to which the increase is applied includes \$50 fire and police escalators, and the January, 1996 catch-up COLA amount, if any, but it excludes supplemental pass through payments, if any. Increases after the first are also 2%, and are compounded -- that is, they are applied to the total ERS benefit in payment, including all prior increases, and again, excluding any supplemental pass through payments. (The benefit initially payable to an eligible spouse upon the member's death includes 50% of any increases in payment at the member's death.)

Funds Charged

2% escalators paid to participants in the Combined Fund are charged to the Combined Fund. 2% escalators paid to individuals who are not participants in the Combined Fund are charged to the Retirement Fund.

- CPI Escalator for post-1992 Fire and Police Retirees who don't Participate in the Combined Fund and Pre-2000 CPI Escalator for post-1992 Fire and Police Retirees who do Participate in the Combined Fund

Eligible Group

- a) Firemen and policemen in active service on or after January 1, 1993, who become eligible to retire on service retirement at age 57 or after attaining age 52 and completing 25 years of service.
- b) Firemen and policemen who retire on either a 75% Fire & Police duty disability benefit or a Heart & Lung duty disability benefit (i) between January 1, 1993, and December 31, 1994, and thereafter convert to service retirement; or (ii) on or after January 1, 1995, and who are eligible to elect between service retirement and extended life duty disability benefits at their conversion age.
- c) Police in active service on or after January 1, 1995, who separate with 25 years of service and elect a deferred retirement allowance.
- d) Surviving spouses of eligible members who elect Option 2 or 3, or who elect Option 4 with a percentage to the spouse, or who elect a PSO with a percentage to the spouse.



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Timing and Amount of Increase

For members who retired on service retirement between January 1, 1993, and December 31, 1994; or who retired on duty disability between January 1, 1993, and December 31, 1994, and later convert to service retirement; and for eligible surviving spouses of members who died prior to retirement between January 1, 1993, and December 31, 1994, with PSO coverage in effect; the first increase occurs for March of the year following the first full calendar year of service retirement. For all others, the first increase occurs one full year after the member's service retirement date. Thereafter, increases occur annually on the anniversary of the first increase.

The monthly benefit is increased by an amount equal to (i) the total allowance for the preceding December (including all prior increases), multiplied by the lesser of (ii) 3%, and (iii) the increase in the CPI-U, U.S. Cities Average, for the calendar year preceding the increase. (The benefit initially payable to an eligible spouse upon the member's death includes a proportionate share of any increases in payment at the member's death, based on the option elected.)

Funds Charged

Benefits payable to participants in the Combined Fund are charged to the Combined Fund. For individuals who are not participants in the Combined Fund: (i) benefits are charged to the Retirement Fund for members whose enrollment dates are prior to February 1, 1996; and (ii) benefits are charged to the Combined Retirement and Disability Fund for members whose enrollment dates are on or after February 1, 1996.

- Post-1999 CPI Escalator for post-1992 Fire and Police Retirees who Participate in the Combined Fund

Eligible Group

The eligible group is restricted to individuals who were firemen and policemen who retired on duty disability between October 17, 1992, and December 31, 1992; or who were in active service on or after January 1, 1993, who either retire as firemen or policemen, or who die in active service as firemen or policemen; and their eligible surviving spouses. The types of benefits that receive the CPI escalator include:

- a) The service retirement allowance and ordinary disability retirement allowance.
- b) Benefits paid to members after the duty disability conversion age: the conversion service retirement allowance or the extended life duty disability retirement allowance.
- c) Benefits paid to members after separation from service: the deferred retirement allowance, early retirement allowance, involuntary separation allowance, or the ERS allowance paid under the County transfer or State reciprocity provisions.
- d) The spouse survivor allowance paid to the surviving spouse of an eligible member who elects Option 2 or 3, or who elects Option 4 with a percentage to the spouse, or who elects a PSO with a percentage to the spouse.
- e) The fire and police or heart & lung duty disability surviving spouse allowance.



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- f) The duty death surviving spouse allowance.

Timing and Amount of Increases that occur after 1999

- a) The first post-1999 increase occurs the later of March 2000 and March of the year following the first full calendar year of retirement for: members who retired on service retirement or ordinary disability between January 1, 1993, and December 31, 1994; or who convert to service retirement after a period of duty disability which commenced between January 1, 1993, and December 31, 1994; or who separated from service between January 1, 1993, and December 31, 1994, and subsequently retire on a deferred, early, involuntary separation, or County transfer/ State reciprocity allowance; eligible spouse survivors of such members, including PSO spouse survivors when the member died between January 1, 1993, and December 31, 1994; duty death surviving spouses of members who died between January 1, 1993, and December 31, 1994; and duty disability surviving spouses where both the member's duty disability retirement date and duty disabled death date were between January 1, 1993, and December 31, 1994.
- b) The first post-1999 increase occurs the later of the year 2000 anniversary or the first anniversary of the member's date of death for: duty disability surviving spouses where the member's duty disability death date is on or after January 1, 1995.
- c) For all others, the first post-1999 increase occurs the later of the year 2000 anniversary or the first anniversary of the member's retirement or pre-retirement death. (Note: this group includes members who retired on duty disability between October 17, 1992, and December 31, 1994, who subsequently elect an extended life duty disability retirement allowance, and members who retired on duty disability between October 17, 1992, and December 31, 1992, who subsequently convert to service retirement.)

Thereafter, increases occur annually on the anniversary of the first post-1999 increase.

The monthly benefit is increased by an amount equal to (i) the total allowance for the preceding December (including all prior increases), multiplied by the lesser of (ii) 3%, and (iii) the increase in the CPI-U, U.S. Cities Average, for the calendar year preceding the increase. If the member retired on duty disability between October 17, 1992, and December 31, 1992, and subsequently converts to service retirement, then the 2nd, 3rd, and 4th increases will not be less than 1.5%, and the 5th and subsequent increases will not be less than 2%. (The benefit initially payable to an eligible spouse upon the member's death includes a proportionate share of any increases in payment at the member's death, based on the option elected.)

Funds Charged

The CPI escalator is charged to the Combined Fund.



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- 2% Guarantee for Fire and Police CPI Escalator for Participants in Combined Fund

The eligible group is restricted to firemen and policemen who retire on service retirement, their spouse survivors, and PSO spouse survivors. In addition, firemen members of Local 215 and policemen members of the MPA must have been in active service on or after January 1, 1998; policemen members of the MPSO must have been in active service on or after January 1, 1999; and non-represented firemen and policemen must have been in active service on or after January 1, 2000. The benefit is a guarantee that the CPI Escalator will not be less than 2% per annum.

- 2% Escalator for post-1992 General Employee Retirees who do Not Participate in Combined Fund

Eligible Group

- a) General Employees who retire on a service retirement allowance on or after January 1, 1993 who have either (i) attained age 60, or (ii) completed 30 years of service and attained age 55.
- b) General Employees receiving a duty disability retirement allowance who convert to service retirement on or after January 1, 1993.
- c) Spouses of eligible members who either elect Option 3 at retirement with the spouse as beneficiary, or who die after electing an Option 3 PSO with the spouse as beneficiary.

Timing and Amount of Increase

The first increase occurs with the installment next following the 8th anniversary of the member's service retirement or conversion to service retirement date (or the 8th anniversary of the surviving spouse's retirement date in the case of a PSO). Thereafter, increases occur annually on the anniversary of the first increase.

Each increase is 2%, and increases after the first are compounded -- that is, they are applied to the total benefit in payment, including all prior increases. (The benefit initially payable to an eligible spouse upon the member's death includes 50% of any increases in payment at the member's death.)

Funds Charged

For members whose enrollment dates are prior to February 1, 1996, the 2% escalator for post-1992 general employee retirees is paid from the Retirement Fund. For members whose enrollment dates are on or after February 1, 1996, the 2% escalator for post-1992 general employee retirees is paid from the Combined Retirement and Disability Fund.

- Post-1999 1.5% / 2% Escalator for General Employee Retirees and for Pre-1993 Fire and Police Retirees who Participate in the Combined Fund

Eligible Group

The eligible group includes (i) pre-1993 retirees and surviving spouses who are not eligible for either the 2% Escalator for pre-1993 retirees, or the Post-1999 CPI Escalator for post-1992 fire and police retirees; and (ii) post-1992 general employee retirees and their surviving spouses. The types of benefits that receive the 1.5%/2% escalator include:



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- a) The service retirement allowance and ordinary disability retirement allowance for all members, and the duty disability retirement allowance for General Employees.
- b) Benefits paid to members after the duty disability conversion age: the conversion service retirement allowance for all members or the extended life duty disability retirement allowance for fire and police.
- c) Benefits paid to members after separation from service: the deferred retirement allowance, early retirement allowance, involuntary separation allowance, or the ERS allowance paid under the County transfer or State reciprocity provisions.
- d) The spouse survivor allowance paid to the surviving spouse of an eligible member who elects Option 2 or 3, or who elects Option 4 with a percentage to the spouse, or who elects a PSO with a percentage to the spouse.
- e) The fire and police or heart & lung duty disability surviving spouse allowance.
- f) The duty death surviving spouse allowance.

Timing and Amount of Increases that occur after 1999

- a) The first post-1999 increase occurs for January 2000 for eligible Option 2 and 4 spouse survivors of members retired on a service retirement allowance or a conversion service retirement allowance - and for eligible Option 2 and 4 PSO spouse survivors - when the member's date of retirement or pre-retirement death was prior to January 1988.
- b) The first post-1999 increase occurs the later of the year 2000 anniversary or the 2nd anniversary of the member's date of death for: duty disability surviving spouses of firemen and policemen.
- c) For all others, the first post-1999 increase occurs the later of the year 2000 anniversary or the 2nd anniversary of the member's retirement or pre-retirement death.

Thereafter, increases occur annually on the anniversary of the first increase.

All increases for the group described in paragraph (a) are 2% increases. For paragraphs (b) and (c), an increase which takes effect on the 2nd, 3rd, or 4th anniversary is a 1.5% increase. An increase which takes effect on the 5th or subsequent anniversary is a 2% increase. Increases after the first one are compounded -- that is, they are applied to the total benefit in payment, including all prior increases. (The benefit initially payable to an eligible spouse upon the member's death includes the spouse's proportionate share of any increases in payment at the member's death, based on the option elected.)

Tier 2 Employees receive an increase of 2% on the fifth anniversary of their retirement and on each anniversary that follows, but only for service retirement.

Fire and Police Survivorship Benefits Prior to the Global Pension Settlement

The survivors of firemen or policemen who die in active service or while in receipt of a disability allowance may be entitled to a survivorship benefit. The survivorship benefit is payable to the spouse of the deceased member provided the spouse has one or more eligible children in her care. Eligible children include unmarried children who are either under the age of 18, or are over age 18, but who suffer from a disability which commenced before the age of 18. The amount of the survivorship benefit for a death occurring in 2000 is \$600 monthly for the spouse and one child or for two or more eligible children. If there is no surviving widow and only one child, the benefit is \$300. Upon attainment of age 57, \$300 is payable to the spouse for her lifetime. Benefits payable to a spouse cease on remarriage and benefits payable in respect of children cease on attainment of age 18 (unless disabled prior to age 18) or marriage. For member deaths



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that occurred prior to 2000 the monthly amount payable depends upon the plan provisions in effect at the member's death.

Fire and Police Survivorship Benefits for Survivors Participating in the Combined Fund

Survivors of firemen or policemen who died prior to 2000 while in active service or while retired on disability (and contributing to the Fire and Police Survivorship Fund) may be entitled to a survivorship benefit. The survivorship benefit is payable to the spouse of the deceased member provided the spouse has one or more eligible children in her care. For participants in the Combined Fund, the amount of the survivorship benefit for a death occurring prior to 2000 is \$600 monthly for the spouse and one child under age 18, or for two or more children under age 18. If there is no surviving widow and only one child, the benefit is \$300. The monthly amount payable to a disabled child over the age of 18 depends upon the plan provisions in effect at the member's death. Upon attainment of age 57, \$300 is payable to the spouse for her lifetime. Benefits payable to a spouse cease on remarriage and benefits payable in respect of children cease on attainment of age 18 (unless disability commenced prior to age 18) or marriage.

Survivorship Benefits for Participants in the Combined Fund are charged to the Combined Fund.

Separation Benefits

Eligibility and Amounts

Should a member separate from service, and no other benefit is payable, such a member will possibly be entitled to one of the options outlined below. Additional eligibility information about Separation Benefits is provided under 36-05-6.

- a) If the member has less than four years of creditable service, a refund of member contributions (not paid by the member's employer). Interest at 4.0% per annum on the 4%, 5.5%, or 7% member paid contributions is also payable.
- b) If the member has four years of creditable service, a deferred allowance payable at the minimum service retirement age.
- c) A refund of the member contributions and interest, including contributions paid on the member's behalf, is payable to (i) General Employees after 4 years of creditable service, or (ii) firemen or policemen after 10 years of creditable service.
- d) If the member's service is involuntarily terminated, or the member terminates voluntarily after attaining age 55 and completing 15 years of creditable service, such member may elect to receive a deferred allowance at the minimum service retirement age, or an immediate allowance that is the actuarial equivalent of the deferred allowance.
- e) If the member has 25 years of qualifying time as a fireman or policeman, and is not participating in the Combined Fund, a deferred allowance payable at age 52.
- f) If the member is a fireman with 25 years of qualifying time as a fireman or policeman, had not attained age 49 at the date of separation from service, and is participating in the Combined Fund, a deferred allowance payable at age 52.



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

Imputed service credit and seasonal service credit are not used when calculating separation benefits.

Funds Charged with Separation Benefits

Benefits paid to participants in the Combined Fund are charged to the Combined Fund. Separation benefits paid to individuals not participating in the Combined Fund are charged to (i) the Retirement Fund if the member's enrollment date is prior to February 1, 1996, and (ii) the Combined Fund if the member's enrollment date is on or after February 1, 1996.

Lump Sum Bonus Payments

Under the Global Pension Settlement, various lump sum bonus payments may be made to eligible individuals participating in the Combined Fund. An individual may be eligible for one or more types of lump sum bonus payments.

Eligibility for Lump Sum Bonus Payments

Only individuals participating in the Combined Fund can become eligible for the following types of lump sum bonus payments. In addition, the following conditions apply to the individual lump sum bonuses.

- a) 5% lump sum bonus: Members who are inactive as of January 1, 2000, will become eligible at the time that their deferred retirement allowance commences.

Members in active service as of January 1, 2000, will become eligible when they first retire.

If a member in active service as of January 1, 2000, dies prior to retirement and the member's surviving spouse is eligible for either a surviving spouse duty death benefit (including Heart & Lung duty death) or a PSO spouse survivor benefit then the surviving spouse is eligible for this bonus payment.

Only one 5% lump sum bonus will be paid on account of an individual member. Thus, if a member receiving a duty disability retirement allowance receives a 5% lump sum bonus on account of the duty disability benefit, then the member will not be eligible for an additional 5% lump sum bonus at the time of conversion.

- b) 8.6% lump sum bonus: A fireman or policeman in active service as of January 1, 2000, who (i) retires as a fireman or policeman on a service retirement allowance; or (ii) converts to service retirement or elects an extended life duty disability retirement allowance after retiring as a fireman or policeman on duty disability; (iii) attains age 63 while in receipt of an ordinary disability retirement allowance or a lifetime Fire & Police or Heart & Lung duty disability retirement allowance, is eligible for this bonus so long as the member did not receive 2 years of imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund; (iv) or retires as a fireman or policeman on an extended life duty disability.

If a fireman or policeman in active service as of January 1, 2000, dies prior to retirement and the member's surviving spouse is eligible for either a surviving spouse duty death benefit (including Heart & Lung duty death) or a PSO spouse survivor benefit then the surviving spouse is eligible for this bonus payment.



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

A fireman or policeman retired on disability as of January 1, 2000, who is also an active member of the Firemen and Policemen's Survivorship Fund as of January 1, 2000 - under age 57 at 1/1/2000, and made all required contributions to the Survivorship Fund – is eligible for this bonus if he (i) converts to service retirement or elects an extended life duty disability retirement allowance; or (ii) is ineligible to convert to service retirement and attains age 63 while in receipt of the disability retirement allowance; provided that he (iii) did not receive 2 years of imputed service credit under the dissolution of the Firemen and Policemen's Survivorship Fund.

Amount of Lump Sum Bonus Payments

Age factors are used in the 5% lump sum bonus and the 8.6% lump sum bonus calculations. The age factors for these bonus payments are contained in s. 36-05-11-a.

- a) 5% lump sum bonus: For members who are either inactive or active as of January 1, 2000, who retire in the future, the bonus payment equals 5% times their initial annual retirement allowance times a factor based on attained age on the retirement date. The retirement allowance used in the bonus calculation is to be reduced for early retirement, if applicable, but is not to be reduced for any optional election the member might have made under s. 36-05-7.

If a member in active service as of January 1, 2000 dies prior to retirement and the member's surviving spouse is eligible for this bonus payment, then the bonus will equal 5% times the spouse's initial annual benefit times a factor based on the spouse's attained age when the benefit commences.

- b) 8.6% lump sum bonus: In the explanation that follows, whenever an annual allowance is used in calculating a bonus due to a member, the allowance used is the allowance that would be paid if the member did not elect an option under s. 36-05-7.

For members who retire on service retirement: 8.6% times the annual service retirement allowance times a factor based on attained age at retirement.

For surviving spouses who receive either a PSO benefit or a duty death benefit: 8.6% times the initial annual allowance payable to the spouse times a factor based on the spouse's attained age when the benefit commences.

For a member who is retired on duty disability as of January 1, 2000 - or who retires on duty disability thereafter - and who is eligible to convert to service retirement: 8.6% times the annual conversion service retirement allowance earned as of the conversion age times a factor based on attained age at conversion.

For a member who is retired on disability as of January 1, 2000 – or who retired on disability thereafter – who is ineligible to convert to service retirement, and who is age 63 or younger at the later of 1/1/2000 or the disability retirement date: 8.6% times the “hypothetical” annual conversion service retirement allowance earned at age 63 times the attained age factor for age 63. The “hypothetical” allowance is calculated as if the member were eligible to convert at age 63.

For a member who retires on disability after January 1, 2000, who is older than age 63 at the disability retirement date: 8.6% times the annual disability allowance payable when the allowance commences times a factor based on the member's attained age at retirement.



APPENDIX B: SUMMARY OF BENEFIT PROVISIONS

Funds Charged

The 5% lump sum bonus and the 8.6% lump sum bonus are paid from the Combined Fund.

Benefits Not Valued

None.



APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Methods

The method of financing the ERS is prescribed in Section 36.08 of the MCC.

Actuarial Cost Method

The method used to determine Normal Cost and Accrued Actuarial Liability (AAL) is the Individual Entry Age Normal Cost Method. The UAAL, under this method, is the AAL over the Actuarial Value of Assets. The total Employer contribution is the sum of the Employer portion of the Normal Cost (Total Normal Cost less expected member contributions) plus an amount to amortize the UAAL according to the Amortization Method.

If the Actuarial Value of Assets exceeds the sum of the AAL and the Employer portion of the Normal Cost, there is no Employer contribution required for that year.

Asset Values

Two asset values are used in this report. A description of each and a brief explanation of where they are used follows:

- **Market Value**

The market value of assets is the value of investments if they were to be sold on the date valued. The market value of assets is used to develop the actuarial value of assets.

- **Actuarial Value**

The actuarial value of the assets in the Employers' Reserve Fund and the Securities Lending Fund is equal to the market value of assets. These Funds are not available to pay the benefits for ERS members so they are excluded from the allocation of the actuarial value of assets to the various funds and groups and the resulting calculations of employer contributions. The actuarial value of assets for the remaining funds is a smoothed value of assets (see Table 7). The difference between (1) the expected return on the actuarial value of assets at the beginning of the year, based on the investment return assumption and the net non-investment cash flows, and (2) the actual return on the market value of assets is smoothed equally over five years. As a result, there are five components of excess/shortfall returns to be smoothed each year.

The preliminary actuarial value for the current valuation is the preliminary actuarial value from the prior year plus non-investment cash flows (contributions less benefits and refunds) plus the expected return on the market value of assets at the applicable assumed investment return and the current year's recognition of each of the prior five year's excess/shortfall returns.

Amortization Method

Closed layered amortization method with amortization payments for each base increasing by 2.00% per year. The outstanding balance of the unfunded actuarial accrued liability (UAAL) as of January 1, 2019 is amortized over a fixed 25-year period. At each subsequent valuation date, any changes to the UAAL arising from actuarial gains or losses will be amortized over a fixed 15-year period and any changes to the UAAL arising from changes in assumptions, methods, or plan provisions will be amortized over a fixed 25-year period.



APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Assumptions are based on the experience investigation prepared as of December 31, 2016 and adopted by the Board of Trustees on October 23, 2017 for use beginning with the January 1, 2018 actuarial valuation. The investment return assumption of 7.50% was adopted by the Board of Trustees on April 29, 2019, for use in the January 1, 2019 actuarial valuation.

Investment Return Assumption: 7.50% per annum (net of investment expenses), compounded annually.

Inflation: 2.50% per annum.

Cost of Living Adjustments (COLA): For retirees whose COLA is defined as the lesser of 3.00% and CPI-U, the assumed COLA is 2.50% per annum.

Payroll Growth for UAAL amortization: UAAL amortization payments increase at 2.00% per annum.

Illustrative Rates of Salary Increase:

Age	Salary Increases	
	General Employees	Firemen and Policemen
25	4.93%	9.47%
30	3.79	7.72
35	3.78	5.78
40	2.89	4.68
45	2.50	4.28
50	2.50	4.08
55	2.50	4.00
60	2.50	4.00
65	2.50	4.00

Annual increases of 2.50% per annum is assumed for Policemen, Firemen and General Employees on duty disability. The increases for duty disabled Firemen and Policemen affect both current duty disability benefits and future service retirement or extended life conversion benefits. The increases for General Employees affect only service retirement conversion benefits.

Deaths After Retirement: For regular retirees and survivors, the RP-2014 Healthy Annuitant Mortality Table, using 111% of rates for males and 110% of rates for females, projected generationally using Scale MP-2016, was used. For duty and ordinary disability retirees, the RP-2014 Disability Mortality Table, using 102% of rates for males and 98% of rates for females, projected generationally using Scale MP-2016, was used.

Deaths Prior to Retirement: For death in active service, the RP-2014 Non-annuitant Mortality Table projected generationally with Scale MP-2016 was used.

Mortality Projection: All mortality rates are projected using generational improvement with Scale MP-2016.



APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Illustrative Rates of Termination:

Age	<u>Less than 5 Years of Service</u>		<u>At least 5 Years of Service</u>	
	Males	Females	Males	Females
<u>General Employees</u>				
20	17.62%	24.05%	13.00%	14.30%
25	15.93	24.12	12.68	14.30
30	11.31	16.77	6.92	8.45
35	10.66	15.60	7.19	7.27
40	8.78	10.40	4.51	8.45
45	9.10	9.23	2.99	4.67
50	8.32	8.58	2.38	3.38
55	6.83	7.80	1.99	3.64
60	-	-	-	-
<u>Firemen and Policemen</u>				
20	6.15%	5.55%	-	-
25	2.33	4.65	1.34%	2.33%
30	2.75	7.38	1.13	3.34
35	3.38	6.63	1.10	1.88
40	4.40	4.40	0.90	0.97
45	5.40	4.40	1.08	1.53
50	8.80	4.40	4.05	6.70
55	10.00	4.40	-	-
60	-	-	-	-

All terminations are assumed to be involuntary.

Members who terminate vested are assumed to take a refund if it is more valuable than their deferred benefit. Regular interest credited on contribution account balances is assumed to be 4.0%.



APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Illustrative Rates of Early and Normal Retirement:

Age	Early Retirement	Normal Retirement				
	General Employees	General Employees		Firemen	Policemen	
		Males	Females	All	Not in Combined Fund	In Combined Fund
42						10%
43						25
44						25
45						25
46						32
47						32
48				10%		32
49				13		25
50				13		25
51				13	44%	25
52				18	44	25
53				18	24	25
54		35%	26%	20	24	25
55	4%	45	26	25	24	25
56	4	30	17	25	40	25
57	4	27	15	30	35	25
58	4	27	20	35	35	25
59	4	22	20	35	35	25
60	4	19	19	35	35	25
61	4	19	20	50	35	25
62	4	28	25	50	50	50
63	4	20	18	100	100	100
64	4	20	18	100	100	100
65		30	25	100	100	100
66		30	30	100	100	100
67		18	20	100	100	100
68		18	20	100	100	100
69		18	20	100	100	100
70		100	100	100	100	100



APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Illustrative Rates of Disability:

Age	Disability Rates		
	General Employees	Firemen	Policemen
20	0.050%	0.064%	0.030%
25	0.050	0.136	0.030
30	0.060	0.280	0.100
35	0.077	0.760	0.187
40	0.131	0.960	0.231
45	0.162	0.960	0.231
50	0.256	1.080	0.210
55	0.527	1.080	0.210
60	0.077	1.080	0.210
65	0.200	1.080	0.210

Elected officials are assumed to become disabled at the same rate as General Employees.

Duty Disabilities:

Employee Group	Percentage of Disabilities Incurred in the Performance of Duty	Percentage of Duty Disabilities Assumed		Assumption Adopted January 1
		Eligible For The 90% Benefit	Under The Heart & Lung Law	
General Employees	10.0%	N/A	N/A	2018
Police other than MPA	70.0%	5.0%	N/A	2018
MPA enrolled on or before 4/18/2005	70.0%	5.0%	N/A	2018
MPA enrolled after 4/18/2005	62.5%	7.5%	N/A	2008
Fire other than MPFFA	90.0%	5.0%	15.0%	2008
MPFFA enrolled on or before 10/3/2005	90.0%	5.0%	15.0%	2008
MPFFA enrolled after 10/3/2005	81.2%	6.9%	20.8%	2008

Upon reaching their service conversion date, 100% of Policemen and Firemen who become duty disabled are assumed to convert to a service retirement benefit.



APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Marriage Assumption and Duty Disability Child Allotments:

It is assumed that female spouses are three years younger than males. In absence of evidence to the contrary, it is assumed that 85% of General Employees and 95% of Policemen and Firemen are married, with dependent children, described by the following table:

Member's Age at Death or Disability	Number of Dependent Children	Age of Youngest Child
20	0.0	-
25	1.5	1
30	2.5	2
35	2.5	5
40	2.5	8
45	2.0	11
50	1.5	14
55	1.0	15
60 and Over	0.0	-

The percentage of retiring employees assumed to elect option 3, the subsidized 50% option, is 25% for males and 15% for females. The percentage of General Employees assumed electing the 100% PSO option before retirement is 40% for males and 15% for females. For Firemen and Policemen, 95% are assumed to elect the 100% PSO option before retirement.

Duty Deaths:

The following percentages of deaths in active service are assumed to incur in the performance of duty:

General Employees: 5%
 Police & Fire: 10%. In addition, amongst firemen, 25% of duty deaths are assumed to occur under the Heart and Lung Law.

Imputed Military Service:

The following percentages of eligible members are assumed to earn 1 year of imputed military service credit:

General Employees: 10%
 Police: 13%
 Fire: 13%

These percentages are based on troop strength statistics from the Department of Defense website. (Adopted 1/1/2003)



APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Seasonal Service Credit: The following percentages of eligible members are assumed to receive one year of reasonable service credit:

Member's Union or Bargaining Group	Percentage with Seasonal Service	Assumption Adopted January 1
District Council 48, AFSCME	27.09%	2005
Fire Equipment Dispatchers Local 494, IBEW	0.00%	2006
Electrical Group Local 494, IBEW	31.00%	2006
Machine Shop Local 494, IBEW	12.00%	2005
Bridge Operators Local 195, IBEW	28.57%	2005
Joint 129/48 Local 139, IOUE & DC48	100.00%	2005
Machinists Local 510, IAM	5.00%	2005
Sanitation Local 61, LIUNA	98.06%	2005
TEAM (Techs, Eng, Archs of Milw)	5.00%	2005
MBCTC (Bricklayers, Carpenters, Cement Masons, Painters, Iron Workers)	10.00%	2005
Police Sworn Management, Police Civilian Management, Managers, Elected Officials (except mayor)	3.13%	2005
Non-represented in the Police Department and General City non-represented	5.00%	2005

Miscellaneous

Future Service Accrual: For members active on the valuation date, credited service in each future year is assumed to be the greater of credited service earned in the year prior to the valuation, or the average of the three highest years of service credit out of the five years that preceded the valuation date. New hires are assumed to accrue a full year of service in each future year (adopted 1/1/2007).

Annualized Compensation: For active members, their prior year reported compensation amount is annualized based on their Future Service Accrual and further increased by a leap year adjustment factor of 1.0034 ($26.089285 \div 26$).

Deemed Inactives: Active members who worked less than 100 hours in the prior year, but who have not officially terminated employment are treated as Inactives. These members are not assumed to earn additional service credit in future years.

Decrement Timing: All withdrawals, deaths, disabilities, and retirements are assumed to occur mid-year.



APPENDIX C: SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

Liability for Inactive Members: The data provided for inactive members does not contain all the elements to calculate the member's deferred benefit. The deferred benefit amounts for these members are estimated using the member's life-to-date earnings and assumed salary increases. For terminated members who are missing a termination date on their record, it is assumed that they terminated at age 35. The actuary is collecting data so that future members' deferred benefits can be estimated.

Administrative Expenses: Based on the most recent fiscal year end.

Normal Cost: Normal cost rate reflects the impact of new entrants during the year

Changes Since Prior Valuation: None.



APPENDIX D: GLOSSARY OF TERMS

Note that the first definitions given are the “official” definitions of the term. For some terms there is a second definition, in italics, which is the unofficial definition.

Actuarial Accrued Liability (AAL): The portion of the Present Value of Projected Benefits (PVFB) allocated to past service. Also difference between (i) the actuarial present value of future benefits, and (ii) the present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.” *The amount of money that should be in the fund. The funding target.*

Actuarial Assumptions: Estimates of future plan experience with respect to rates of mortality, disability, retirement, investment income and salary increases. Demographic (“people”) assumptions (rates of mortality, separation, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic (“money”) assumptions (salary increases and investment income) consist of an underlying rate appropriate in an inflation- free environment plus a provision for a long-term average rate of inflation. *Estimates of future events used to project what we know now- current member data, assets, and benefit provisions – into an estimate of future benefits.*

Actuarial Cost Method: A mathematical budgeting procedure for allocating the dollar amount of the Present Value of Projected Benefits (PVFB) between the normal costs to be paid in the future and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Methods: The collective term for the Actuarial Cost Method, the Amortization Payment for UAAL Method, and the Asset Valuation Method used to develop the contribution requirements for the Retirement System. *The funding policy.*

Actuarial Equivalent: Benefits whose actuarial present values are equal.

Actuarial Present Value: The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial Value of Assets (AVA): A smoothed value of assets which is used to limit contribution volatility. Also known as the funding value of assets. *Smoothed value of assets.*

Amortization Payment for UAAL: Payment of the unfunded actuarial accrued liability by means of periodic contributions of interest and principal, as opposed to a lump sum payment. The components of the amortization payment for UAAL includes:

- Amortization Period Length – Generally amortization periods of up to 15 to 25 years (and certainly not longer than 30). Similar to a mortgage, the shorter the amortization period, the higher the payment and the faster the UAAL is paid off.
- Amortization payment increases – Future payments can be level dollar, like a mortgage, or as a level percent of pay. Most Retirement Systems amortize UAAL as a level percent of pay which when combined with the employer normal cost that is developed as a level percent of pay can result in contributions that are easier to budget.



APPENDIX D: GLOSSARY OF TERMS

- Amortization type – An amortization schedule can be closed or open. A closed amortization schedule is similar to a mortgage – at the end of the amortization period the UAAL is designed to be paid off. An open amortization period is similar to refinancing the UAAL year after year.
- Amortization schedule – UAAL can be amortized over a single amortization period, or it can be amortized over a schedule.

The amortization payment for UAAL can be thought of as the UAAL mortgage payment.

Asset Valuation Method: The components of how the actuarial value of assets is to be developed. CMERS uses a five-year smoothing of asset gains and losses, which is the most commonly used method.

Experience Gain (Loss): A measure of the difference between actual experience and experience anticipated by a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used. *The experience Gain (Loss) represents how much the actuary missed the mark in a given year.*

Funded Ratio: The percent of the actuarial accrued liabilities covered by the actuarial value of assets. Also known as the funded status. *The ratio of how much money you actually have in the fund to the amount you should have in the fund.*

Normal Cost: The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” An amortization payment toward the unfunded actuarial accrued liability is paid in addition to the normal cost to arrive at the total contribution in a given year. *The cost of benefits accruing during the year.*

Present Value of Future Normal Cost (PVFNC): The portion of the Present Value of Projected Benefits (PVFB) allocated to future service. *The value in today’s dollars of the amount of contribution to be made in the future for benefits accruing for members in the Retirement System as of the valuation date.*

Present Value of Future Benefits (PVFB): The projected future benefit payments of the plan are discounted into today’s dollars using an assumed rate of investment return assumption to determine the Present Value of Future Benefits (PVFB) of the Retirement System. The PVFB is the discounted value of the projected benefits promised to all members as of a valuation date, including future pay and service for members which has not yet been earned. *If the Retirement System held assets equal to the PVFB and all the assumptions were realized, there would be sufficient funds to pay off all the benefits to be paid in the future for members in the Retirement System as of the valuation date.*

Reserve Account: An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability (UAAL): The difference between the actuarial accrued liability (AAL) and actuarial value of assets (AVA). The UAAL is sometimes referred to as “unfunded accrued liability.” *Funding shortfall, or prefunded amount if negative.*

Valuation Date: The date that the actuarial valuation calculations are performed as of. *Also known as the “snapshot date”.*