



Municipal Employees' Retirement System of Michigan

Annual Actuarial Valuation Report
December 31, 2022 - Manistee Co (5101)





Spring 2023

Manistee Co

In care of:
Municipal Employees' Retirement System of Michigan
1134 Municipal Way
Lansing, Michigan 48917

This report presents the results of the Annual Actuarial Valuation, prepared for Manistee Co (5101) as of December 31, 2022. The report includes the determination of liabilities and contribution rates resulting from the participation in the Municipal Employees' Retirement System of Michigan ("MERS"). This report contains the minimum actuarially determined contribution requirement, in alignment with the MERS Plan Document, Actuarial Policy, the Michigan Constitution, and governing statutes. Manistee Co is responsible for the employer contributions needed to provide MERS benefits for its employees and former employees.

The purposes of this valuation are to:

- Measure funding progress as of December 31, 2022,
- Establish contribution requirements for the fiscal year beginning October 1, 2024,
- Provide information regarding the identification and assessment of risk,
- Provide actuarial information in connection with applicable Governmental Accounting Standards Board (GASB) statements, and
- Provide information to assist the local unit of government with state reporting requirements.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The findings in this report are based on data and other information through December 31, 2022. The valuation was based upon information furnished by MERS concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by MERS.

The Municipal Employees' Retirement Act, PA 427 of 1984 and the MERS' Plan Document Article VI Sec. 71 (1)(d), provides the MERS Board with the authority to set actuarial assumptions and methods after consultation with the actuary. As the fiduciary of the plan, the MERS Retirement Board sets certain assumptions for funding and GASB purposes. These assumptions are reviewed regularly through a comprehensive study, most recently in the Fall of 2021. The MERS Retirement Board adopted a Dedicated Gains Policy at the February 17, 2022 Board meeting. The Dedicated Gains Policy automatically reduces the assumed rate of investment return in conjunction with recognizing excess investment gains to mitigate the impact on employer contributions the first year. The policy was effective with the December 31, 2021 annual actuarial valuation.

The Michigan Department of Treasury provides required assumptions to be used for purposes of Public Act 202 reporting. These assumptions are for reporting purposes only and do not impact required contributions. Please refer to the State Reporting page found at the end of this report for information for this filing.

For a full list of all the assumptions used, please refer to the division-specific assumptions described in table(s) in this report, and to the Appendix on the MERS website at:

<https://www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2022AnnualActuarialValuation-Appendix.pdf>

The actuarial assumptions used for this valuation, including the assumed rate of investment return, are reasonable for purposes of the measurement.

This report reflects the impact of COVID-19 experience through December 31, 2022. At this time, no future assumptions have been adjusted as a result of COVID-19. Actual future experience will be reflected in each subsequent annual valuation, as experience emerges.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of Manistee Co as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and with applicable statutes.

Rebecca L. Stouffer, Mark Buis, Kurt Dosson, and Shana M. Neeson are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor. GRS maintains independent consulting agreements with certain local units of government for services unrelated to the actuarial consulting services provided in this report.



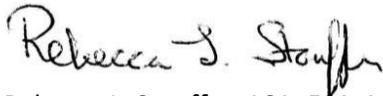
The Retirement Board of the Municipal Employees' Retirement System of Michigan confirms that the System provides for payment of the required employer contribution as described in Section 20m of Act No. 314 of 1965 (MCL 38.1140m).

This information is purely actuarial in nature. It is not intended to serve as a substitute for legal, accounting, or investment advice.

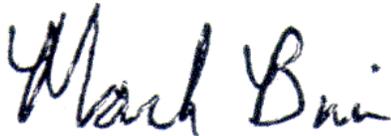
This report was prepared at the request of the MERS Retirement Board and may be provided only in its entirety by the municipality to other interested parties (MERS customarily provides the full report on request to associated third parties such as the auditor for the municipality). GRS is not responsible for the consequences of any unauthorized use. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

If you have reason to believe that the plan provisions are incorrectly described, that important plan provisions relevant to this valuation are not described, that conditions have changed since the calculations were made, that the information provided in this report is inaccurate or is in anyway incomplete, or if you need further information in order to make an informed decision on the subject matter in this report, please contact your Regional Manager at 1.800.767.MERS (6377).

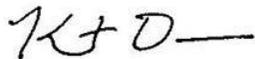
Sincerely,
Gabriel, Roeder, Smith & Company



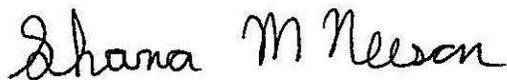
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Executive Summary

Funded Ratio

The funded ratio of a plan is the percentage of the dollar value of the actuarial accrued liability that is covered by the actuarial value of assets. While the funded ratio may be a useful plan measurement, understanding a plan's funding trend may be more important than a particular point in time. Refer to Table 7 to find a history of this information.

	12/31/2022	12/31/2021
Funded Ratio*	70%	72%

* Reflects assets from Surplus divisions, if any.

Throughout this report are references to valuation results generated prior to the 2018 valuation date. Results prior to 2018 were received directly from the prior actuary or extracted from the previous valuation system by MERS's technology service provider.

Required Employer Contributions

Your required employer contributions are shown in the following table. Employee contributions, if any, are in addition to the employer contributions.

Effective with the December 31, 2021 valuation, the MERS Retirement Board adopted a Dedicated Gains Policy which allows for recognition of asset gains in excess of a set threshold in combination with lowering the assumed rate of investment return. Effective with the 2020 and 2019 valuations respectively, the MERS Retirement Board adopted updated demographic and economic assumptions. The combined impact of the prior 2020 and 2019 demographic and economic assumption changes may be phased in. This valuation reflects the last year of phase-in. The combined impact of the past economic and demographic changes will be fully reflected in the 2023 annual actuarial valuation.

By default, MERS will invoice you based on the amount in the “No Phase-in” columns. This amount will be considered the minimum required contribution unless you request to be billed the “Phase-in” rates. If you wish to be billed using the phased-in rates, please contact MERS, at which point the alternate minimum required contribution will be the amount in the “Phase-in” columns.

	Percentage of Payroll				Monthly \$ Based on Projected Payroll			
	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in
	Valuation Date: 12/31/2022	12/31/2022	12/31/2021	12/31/2021	12/31/2022	12/31/2022	12/31/2021	12/31/2021
Fiscal Year Beginning:	October 1, 2024	October 1, 2024	October 1, 2023	October 1, 2023	October 1, 2024	October 1, 2024	October 1, 2023	October 1, 2023
Division								
01 - General	-	-	-	-	\$ 0	\$ 0	\$ 0	\$ 0
02 - Sheriff/POAM	-	-	-	-	18,873	19,964	16,276	18,458
04 - MCF	-	-	-	-	64,984	69,331	54,805	63,499
10 - 911 Employees	13.45%	14.17%	9.32%	10.67%	6,749	7,109	4,988	5,708
13 - GEA & TPOAM	-	-	-	-	10,388	10,974	8,934	10,106
14 - Crt EEs, Exec EEs & Elctd	-	-	-	-	63,423	65,876	54,488	59,394
20 - Sheriff/Adm	-	-	-	-	12,550	12,954	11,628	12,436
HA - AFSCME hired aft 10/01/2011	8.04%	8.15%	7.43%	7.72%	6,028	6,113	4,349	4,519
HB - Sheriff POAM (POLC) af 10/1/1	6.77%	6.80%	6.44%	6.51%	7,536	7,567	5,817	5,879
HC - Executive after 10/1/2012	8.52%	8.60%	8.24%	8.43%	9,530	9,616	7,382	7,554
HE - Court EEs hired af 11/1/2012	8.51%	8.69%	8.28%	8.63%	7,650	7,809	7,502	7,820
HF - Sheriff Admin after 1/1/2013	4.68%	4.68%	4.75%	4.75%	252	252	222	222
Total Municipality - Estimated Monthly Contribution					\$ 207,963	\$ 217,565	\$ 176,391	\$ 195,595
Total Municipality - Estimated Annual Contribution					\$ 2,495,556	\$ 2,610,780	\$ 2,116,692	\$ 2,347,140

Employee contribution rates:

Valuation Date:	Employee Contribution Rate	
	12/31/2022	12/31/2021
Division		
01 - General	0.00%	0.00%
02 - Sheriff/POAM	12.28%	12.28%
04 - MCF	4.85%	4.85%
10 - 911 Employees	2.52%	2.52%
13 - GEA & TPOAM	18.00%	18.00%
14 - Crt EEs, Exec EEs & Elctd	3.28%	3.28%
20 - Sheriff/Adm	2.88%	2.88%
HA - AFSCME hired aft 10/01/2011	0.00%	0.00%
HB - Sheriff POAM (POLC) af 10/1/1	0.00%	0.00%
HC - Executive after 10/1/2012	0.00%	0.00%
HE - Court EEs hired af 11/1/2012	0.00%	0.00%
HF - Sheriff Admin after 1/1/2013	0.00%	0.00%

The employer may contribute more than the minimum required contributions, as these additional contributions will earn investment income and may result in lower future contribution requirements.



Employers making contributions in excess of the minimum requirements may elect to apply the excess contribution immediately to a particular division, or segregate the excess into one or more “Surplus” divisions. An election in the first case would immediately reduce any unfunded accrued liability and lower the amortization payments throughout the remaining amortization period. An election to set up one or more Surplus divisions would not immediately lower future contributions, however the assets from the Surplus division(s) could be transferred to an unfunded division in the future to reduce the unfunded liability in future years, or to be used to pay all or a portion of the minimum required contribution in a future year. For purposes of this report, the assets in any Surplus division have been included in the municipality’s total assets, unfunded accrued liability, and funded status; however, these assets are not used in calculating the minimum required contribution.

MERS strongly encourages employers to contribute more than the minimum contribution shown above. With the implemented Dedicated Gains policy, market gains and losses will continue to be smoothed over five years; however, since excess returns are used to lower the investment assumption, there will be fewer gains to smooth in down markets. Having additional funds in Surplus divisions will assist plans with navigating any market volatility.

Assuming that experience of the plan meets actuarial assumptions:

- To accelerate to a 100% funding ratio in 10 years, estimated monthly employer contributions for the fiscal year beginning in 2024 for the entire employer would be \$270,735, instead of \$217,565.

How and Why Do These Numbers Change?

In a defined benefit plan, contributions vary from one annual actuarial valuation to the next as a result of the following:

- Changes in benefit provisions (see Table 2),
- Changes in actuarial assumptions and methods (see the Appendix), and
- Experience of the plan (investment experience and demographic experience); this is the difference between actual experience of the plan and the actuarial assumptions.

These impacts are reflected in various tables in the report. For more information, please contact your Regional Manager.

Comments on Investment Rate of Return Assumption

A defined benefit plan is funded by employer contributions, participant contributions, and investment earnings. Investment earnings have historically provided a significant portion of the funding. The larger the share of benefits being provided from investment returns, the smaller the required contributions, and vice versa. Determining the contributions required to prefund the promised retirement benefits requires an assumption of what investment earnings are expected to add to the fund over a long period of time. This is called the **Investment Return Assumption**.

The MERS Investment Return Assumption is **7.00%** per year. This, along with all of our other actuarial assumptions, is reviewed at least every five years in an Experience Study that compares the assumptions used against actual experience and recommends adjustments if necessary. If your municipality would like to explore contributions at lower assumed investment return assumptions, please review the “What If” projection scenarios later in this report.

Assumption and Method Change in 2022



Effective February 17, 2022, the MERS Retirement Board adopted a dedicated gains policy that automatically lowers the assumed rate of investment return by using excess asset gains to mitigate large increases in required contributions to the Plan. Full details of this dedicated gains policy are available in the Actuarial Policy found on the MERS [website](#). Some goals of the dedicated gains policy are to:

- Provide a systematic approach to lower the assumed rate of investment return between experience studies, and
- Use excess gains to cover both the increase in normal cost and any increase in UAL payment the first contribution year after application (i.e., minimize the first-year impact (i.e., increase) in employer contributions).

The dedicated gains policy was implemented with the December 31, 2021 annual actuarial valuation and was reflected in the computed employer contribution amounts beginning in fiscal year 2023.

Investment performance measured for the one-year period ending December 31, 2022 did not result in excess gains for use in lowering the assumed rate of investment return. As a result, this assumption remains at 7.00%.

Furthermore, there were no other assumption or method changes in 2022.

Protecting MI Pension Grant Program

On July 1, 2022, Michigan lawmakers passed the state budget for the 2022-23 fiscal year. As a part of the budget, \$750 million was earmarked for underfunded municipal pension plans in counties, cities, townships, villages and road commissions across the state. Known as the **Protecting MI Pension Grant Program**, the legislation is designed to support municipal plans that are under 60% funded.

As of the valuation date the amount of funds and list of grant recipients is not yet known. Any funds received by municipalities will be considered in a future valuation.

Comments on Asset Smoothing

To avoid dramatic spikes and dips in annual contribution requirements due to short-term fluctuations in asset markets, MERS applies a technique called **asset smoothing**. This spreads out each year's investment gains or losses over the prior year and the following four years. After initial application of asset smoothing, remaining excess market gains are used to buy down the assumed rate of investment return and increase the level of valuation assets, to the extent allowed by the dedicated gains policy. This smoothing method is used to determine your actuarial value of assets (valuation assets), which is then used to determine both your funded ratio and your required contributions. **The (smoothed) actuarial rate of return for 2022 was 3.51%, while the actual market rate of return was (10.61%).** To see historical details of the market rate of return compared to the smoothed actuarial rate of return, refer to this report's Appendix or view the "[How Smoothing Works](#)" [video](#) on the [Defined Benefit resource page](#) of the MERS website.

As of December 31, 2022, the actuarial value of assets is 116% of market value due to asset smoothing. This means that there are deferred investment losses, which will put upward pressure on contributions in the short term.

If the December 31, 2022 valuation results were based on market value instead of actuarial value:

- The funded percent of your entire municipality would be 61% (instead of 70%); and



- Your total employer contribution requirement for the fiscal year starting October 1, 2024 would be \$3,267,744 (instead of \$2,610,780).

Alternate Scenarios to Estimate the Potential Volatility of Results ("What If Scenarios")

The calculations in this report are based on assumptions about long-term economic and demographic behavior. These assumptions will never materialize in a given year, except by coincidence. Therefore, the results will vary from one year to the next. The volatility of the results depends upon the characteristics of the plan. For example:

- Open divisions that have substantial assets compared to their active employee payroll will have more volatile employer contribution rates due to investment return fluctuations.
- Open divisions that have substantial accrued liability compared to their active employee payroll will have more volatile employer contribution rates due to demographic experience fluctuations.
- Small divisions will have more volatile contribution patterns than larger divisions because statistical fluctuations are relatively larger among small populations.
- Shorter amortization periods result in more volatile contribution patterns.

Many assumptions are important in determining the required employer contributions. In the following table, we show the impact of varying the Investment Return assumption. Lower investment returns would generally result in higher required employer contributions, and vice versa. The three economic scenarios below provide a quantitative risk assessment for the impact of investment returns on the plan's projected financial condition for funding purposes.

The relative impact of the economic scenarios below will vary from year to year, as the participant demographics change. The impact of each scenario should be analyzed for a given year, not from year to year. The results in the table are based on the December 31, 2022 valuation and are for the municipality in total, not by division. These results do not reflect a phase-in of the impact of the actuarial assumptions updated in the 2020 and 2019 valuations. There is no phase-in of dedicated gains.

It is important to note that calculations in this report are mathematical estimates based upon assumptions regarding future events, which may or may not materialize. Actuarial calculations can and do vary from one valuation to the next, sometimes significantly depending on the group's size. Projections are not predictions. Future valuations will be based on actual future experience.

12/31/2022 Valuation Results	Lower Future Annual Returns	Lower Future Annual Returns	Valuation Assumptions
Investment Return Assumption	5.00%	6.00%	7.00%
Accrued Liability	\$ 85,299,461	\$ 75,732,537	\$ 67,808,552
Valuation Assets ¹	\$ 47,751,353	\$ 47,751,353	\$ 47,751,353
Unfunded Accrued Liability	\$ 37,548,108	\$ 27,981,184	\$ 20,057,199
Funded Ratio	56%	63%	70%
Monthly Normal Cost	\$ 105,260	\$ 78,503	\$ 58,466
Monthly Amortization Payment	\$ 247,359	\$ 192,148	\$ 139,753
Total Employer Contribution²	\$ 369,346	\$ 288,679	\$ 217,565

¹ The Valuation Assets include assets from Surplus divisions, if any.

² If assets exceed accrued liabilities for a division, the division may have an overfunding credit to reduce the division's



employer contribution requirement. If the overfunding credit is larger than the normal cost, the division's full credit is included in the municipality's amortization payment above but the division's total contribution requirement is zero. This can cause the displayed normal cost and amortization payment to not add up to the displayed total employer contribution.

Projection Scenarios

The next two pages show projections of the plan's funded ratio and computed employer contributions under the actuarial assumptions used in the valuation and alternate economic assumption scenarios. All three projections account for the past investment experience that will continue to affect the actuarial rate of return in the short term.

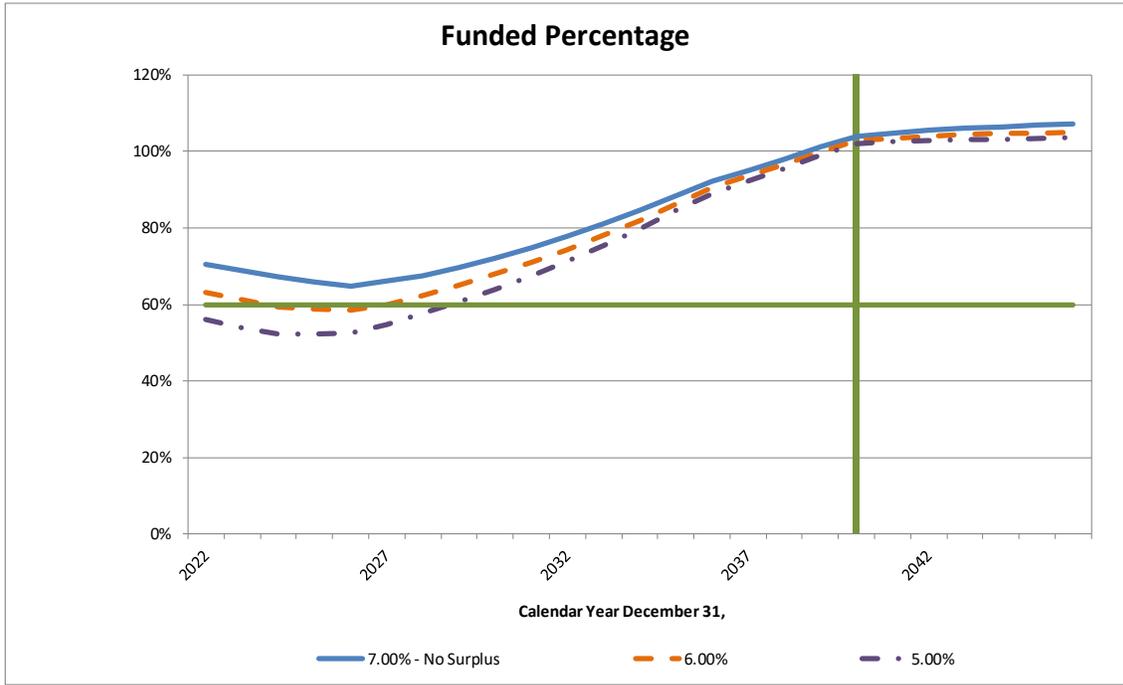
The 7.00% scenario provides an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.00% market return. The other two scenarios may be useful if the municipality chooses to budget more conservatively and make contributions in addition to the minimum requirements. The 6.00% and 5.00% projection scenarios provide an indication of the potential required employer contribution if these assumptions were met over the long term.

Valuation Year Ending 12/31	Fiscal Year Beginning 10/1	Actuarial Accrued Liability	Valuation Assets ²	Funded Percentage	Estimated Annual Employer Contribution ³
7.00%¹ - NO PHASE-IN					
2022	2024	\$ 67,808,552	\$ 47,751,353	70%	\$ 2,610,780
2023	2025	\$ 68,900,000	\$ 47,500,000	69%	\$ 2,880,000
2024	2026	\$ 70,100,000	\$ 47,100,000	67%	\$ 3,160,000
2025	2027	\$ 71,300,000	\$ 46,900,000	66%	\$ 3,440,000
2026	2028	\$ 72,400,000	\$ 46,800,000	65%	\$ 3,720,000
2027	2029	\$ 73,400,000	\$ 48,400,000	66%	\$ 3,840,000
6.00%¹ - NO PHASE-IN					
2022	2024	\$ 75,732,537	\$ 47,751,353	63%	\$ 3,464,148
2023	2025	\$ 76,900,000	\$ 47,000,000	61%	\$ 3,760,000
2024	2026	\$ 78,200,000	\$ 46,400,000	59%	\$ 4,050,000
2025	2027	\$ 79,400,000	\$ 46,700,000	59%	\$ 4,330,000
2026	2028	\$ 80,500,000	\$ 47,100,000	58%	\$ 4,620,000
2027	2029	\$ 81,500,000	\$ 48,900,000	60%	\$ 4,780,000
5.00%¹ - NO PHASE-IN					
2022	2024	\$ 85,299,461	\$ 47,751,353	56%	\$ 4,432,152
2023	2025	\$ 86,500,000	\$ 46,600,000	54%	\$ 4,760,000
2024	2026	\$ 87,900,000	\$ 45,800,000	52%	\$ 5,080,000
2025	2027	\$ 89,100,000	\$ 46,600,000	52%	\$ 5,350,000
2026	2028	\$ 90,300,000	\$ 47,600,000	53%	\$ 5,650,000
2027	2029	\$ 91,400,000	\$ 50,100,000	55%	\$ 5,830,000

¹ Represents both the interest rate for discounting liabilities and the future investment return assumption on the Market Value of assets.

² Valuation Assets do not include assets from Surplus divisions, if any.

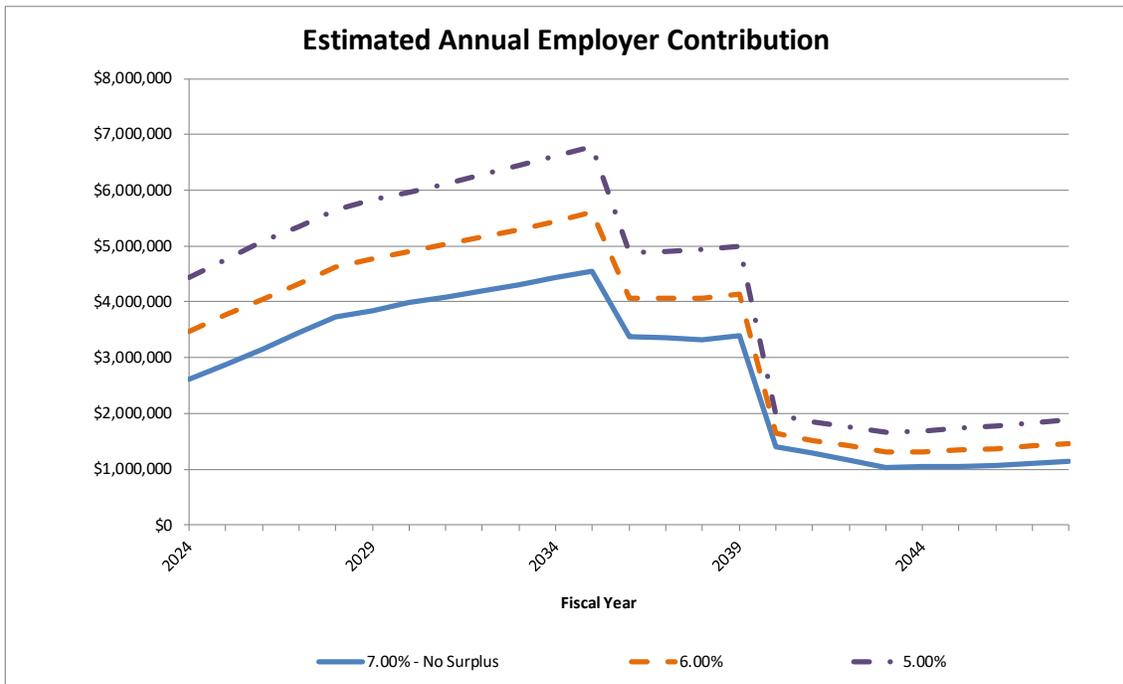
³ All projected contributions are shown with no phase-in.



Notes:

All projected funded percentages are shown with no phase-in.

The green indicator lines have been added at 60% funded and 18 years following the valuation date for PA 202 purposes.



Notes:

All projected contributions are shown with no phase-in.

Table 1: Employer Contribution Details for the Fiscal Year Beginning October 1, 2024

Division	Total Normal Cost	Employee Contribution Rate	Employer Contributions ¹			Computed Employer Contribution With Phase-In	Blended ER Rate No Phase-In ⁵	Blended ER Rate With Phase-In ⁵	Employee Contribution Conversion Factor ²
			Employer Normal Cost ⁶	Payment of the Unfunded Accrued Liability ⁴	Computed Employer Contribution No Phase-In				
Percentage of Payroll									
01 - General	0.00%	0.00%	-	-	-	-	-	-	-
02 - Sheriff/POAM	19.34%	12.28%	-	-	-	-	19.27%	18.49%	-
04 - MCF	10.72%	4.85%	-	-	-	-	-	-	-
10 - 911 Employees	11.35%	2.52%	8.83%	5.34%	14.17%	13.45%	-	-	0.93%
13 - GEA & TPOAM	18.23%	18.00%	-	-	-	-	19.84%	19.06%	-
14 - Crt EEs, Exec EEs & Elctd	13.19%	3.28%	-	-	-	-	38.45%	37.09%	-
20 - Sheriff/Adm	14.20%	2.88%	-	-	-	-	55.38%	53.68%	-
HA - AFSCME hired aft 10/01/2011	8.01%	0.00%	8.01%	0.14%	8.15%	8.04%	19.84%	19.06%	-
HB - Sheriff POAM (POLC) af 10/1/1	7.31%	0.00%	7.31%	-0.51%	6.80%	6.77%	19.27%	18.49%	-
HC - Executive after 10/1/2012	8.45%	0.00%	8.45%	0.15%	8.60%	8.52%	-	-	-
HE - Court EEs hired af 11/1/2012	7.84%	0.00%	7.84%	0.85%	8.69%	8.51%	38.45%	37.09%	-
HF - Sheriff Admin after 1/1/2013	5.09%	0.00%	5.09%	-0.41%	4.68%	4.68%	55.38%	53.68%	-
Estimated Monthly Contribution³									
01 - General			\$ 0	\$ (19,346)	\$ 0	\$ 0			
02 - Sheriff/POAM			2,224	17,740	19,964	18,873			
04 - MCF			8,695	60,636	69,331	64,984			
10 - 911 Employees			4,430	2,679	7,109	6,749			
13 - GEA & TPOAM			25	10,949	10,974	10,388			
14 - Crt EEs, Exec EEs & Elctd			10,084	55,792	65,876	63,423			
20 - Sheriff/Adm			2,091	10,863	12,954	12,550			
HA - AFSCME hired aft 10/01/2011			6,011	102	6,113	6,028			
HB - Sheriff POAM (POLC) af 10/1/1			8,140	(573)	7,567	7,536			
HC - Executive after 10/1/2012			9,447	169	9,616	9,530			
HE - Court EEs hired af 11/1/2012			7,045	764	7,809	7,650			
HF - Sheriff Admin after 1/1/2013			274	(22)	252	252			
Total Municipality			\$ 58,466	\$ 139,753	\$ 217,565	\$ 207,963			
Estimated Annual Contribution³			\$ 701,592	\$ 1,677,036	\$ 2,610,780	\$ 2,495,556			

¹ The above employer contribution requirements are in addition to the employee contributions, if any.

² If employee contributions are increased/decreased by 1.00% of pay, the employer contribution requirement will decrease/increase by the Employee Contribution Conversion Factor. The conversion factor is usually under 1% because employee contributions may be refunded at termination of employment and not used to fund retirement pensions. Employer contributions will all be used to fund pensions.

³ For divisions that are open to new hires, estimated contributions are based on projected fiscal year payroll. Actual contributions will be based on actual reported



monthly pays, and will be different from the above amounts. For divisions that will have no new hires (i.e., closed divisions), invoices will be based on the above dollar amounts which are based on projected fiscal year payroll. See description of Open Divisions and Closed Divisions in the Appendix.

- ⁴ Note that if the overfunding credit is larger than the normal cost, the full credit is shown above but the total contribution requirement is zero. This will cause the displayed normal cost and unfunded accrued liability contributions not to add across.
- ⁵ For linked divisions, the employer will be invoiced the Computed Employer Contribution No Phase-in rate shown above for each linked division (a contribution rate for the open division; a contribution dollar for the closed-but-linked division), unless the employer elects to contribute the Blended Employer Contribution rate shown above, by contacting MERS at 800-767-MERS (6377).
- ⁶ For divisions with a negative employer normal cost, employee contributions cover the normal cost and a portion of the payment of any unfunded accrued liability.

Please see the Comments on Asset Smoothing in the Executive Summary of this report.



Table 2: Benefit Provisions

01 - General: Open Division

	2022 Valuation	2021 Valuation
Benefit Multiplier:	2.00% Multiplier (no max)	2.00% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	8 years	8 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

02 - Sheriff/POAM: Closed to new hires, linked to Division HB

	2022 Valuation	2021 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	8 years	8 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	5 years	5 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	12.28%	12.28%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

04 - MCF: Closed to new hires

	2022 Valuation	2021 Valuation
Benefit Multiplier:	2.00% Multiplier (no max)	2.00% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	30 & Out	30 & Out
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	4.85%	4.85%
DC Plan for New Hires:	4/1/2017	4/1/2017
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

10 - 911 Employees: Open Division

	2022 Valuation	2021 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	8 years	8 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	2.52%	2.52%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

13 - GEA & TPOAM: Closed to new hires, linked to Division HA

	2022 Valuation	2021 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	8 years	8 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	18.00%	18.00%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

14 - Crt EEs, Exec EEs & Elctd: Closed to new hires, linked to Division HE

	2022 Valuation	2021 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	8 years	8 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	3.28%	3.28%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

20 - Sheriff/Adm: Closed to new hires, linked to Division HF

	2022 Valuation	2021 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	8 years	8 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	2.88%	2.88%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)



HA - AFSCME hired aft 10/01/2011: Open Division, linked to Division 13

	2022 Valuation	2021 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

HB - Sheriff POAM (POLC) af 10/1/1: Open Division, linked to Division 02

	2022 Valuation	2021 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

HC - Executive after 10/1/2012: Open Division

	2022 Valuation	2021 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

HE - Court EEs hired af 11/1/2012: Open Division, linked to Division 14

	2022 Valuation	2021 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)



HF - Sheriff Admin after 1/1/2013: Open Division, linked to Division 20

	2022 Valuation	2021 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 12/8/1970)	Yes (Adopted 12/8/1970)

Table 3: Participant Summary

Division	2022 Valuation		2021 Valuation		2022 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
01 - General							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	1	797	1	797	56.8	1.9	11.8
Retirees and Beneficiaries	11	41,271	12	46,960	77.7		
Pending Refunds	0		0				
02 - Sheriff/POAM							
Active Employees	7	\$ 422,584	7	\$ 413,301	50.3	18.9	18.9
Vested Former Employees	4	36,845	4	36,845	45.3	7.2	18.5
Retirees and Beneficiaries	28	459,238	28	461,340	69.2		
Pending Refunds	5		5				
04 - MCF							
Active Employees	46	\$ 2,041,886	53	\$ 2,293,216	53.1	18.8	19.1
Vested Former Employees	44	253,952	43	239,117	50.1	8.7	11.8
Retirees and Beneficiaries	126	1,636,321	123	1,575,211	70.1		
Pending Refunds	151		155				
10 - 911 Employees							
Active Employees	12	\$ 554,934	13	\$ 591,695	41.4	8.0	10.9
Vested Former Employees	4	54,680	5	55,974	48.7	12.7	17.5
Retirees and Beneficiaries	7	149,410	6	112,710	62.6		
Pending Refunds	13		12				
13 - GEA & TPOAM							
Active Employees	6	\$ 186,962	6	\$ 186,163	57.9	17.9	17.9
Vested Former Employees	0	0	1	1,170	0.0	0.0	0.0
Retirees and Beneficiaries	24	357,593	24	361,984	70.4		
Pending Refunds	7		8				
14 - Crt EEs, Exec EEs & Elctd							
Active Employees	24	\$ 1,326,044	27	\$ 1,444,935	51.5	17.6	18.9
Vested Former Employees	10	142,082	11	148,459	53.4	10.9	14.5
Retirees and Beneficiaries	58	1,246,501	54	1,146,862	68.3		
Pending Refunds	6		8				
20 - Sheriff/Adm							
Active Employees	3	\$ 211,444	3	\$ 221,128	42.5	19.8	19.8
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	7	257,432	7	257,432	64.0		
Pending Refunds	0		0				

Table 3 (continued)

Division	2022 Valuation		2021 Valuation		2022 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
HA - AFSCME hired aft 10/01/2011							
Active Employees	24	\$ 765,785	21	\$ 585,223	42.0	3.3	3.3
Vested Former Employees	1	581	2	2,814	54.4	1.3	3.3
Retirees and Beneficiaries	1	2,110	0	0	70.1		
Pending Refunds	0		0				
HB - Sheriff POAM (POLC) af 10/1/1							
Active Employees	26	\$ 1,157,648	21	\$ 935,528	36.5	3.1	3.9
Vested Former Employees	9	16,478	7	12,631	38.2	2.7	9.1
Retirees and Beneficiaries	1	908	1	908	62.4		
Pending Refunds	0		0				
HC - Executive after 10/1/2012							
Active Employees	22	\$ 1,236,717	18	\$ 991,313	46.3	2.7	3.6
Vested Former Employees	4	18,853	4	18,853	45.7	5.3	8.5
Retirees and Beneficiaries	0	0	1	2,470	0.0		
Pending Refunds	0		0				
HE - Court EEs hired af 11/1/2012							
Active Employees	17	\$ 793,687	16	\$ 753,731	42.5	3.5	4.1
Vested Former Employees	3	8,921	3	8,921	54.8	4.9	10.5
Retirees and Beneficiaries	2	6,981	1	618	63.1		
Pending Refunds	0		0				
HF - Sheriff Admin after 1/1/2013							
Active Employees	1	\$ 52,358	1	\$ 44,275	22.2	1.7	1.7
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	0		0				
Total Municipality							
Active Employees	188	\$ 8,750,049	186	\$ 8,460,508	46.4	10.4	11.1
Vested Former Employees	80	533,189	81	525,581	49.0	7.9	12.1
Retirees and Beneficiaries	265	4,157,765	257	3,966,495	69.5		
Pending Refunds	182		188				
Total Participants	715		712				

¹ Annual payroll for active employees; annual deferred benefits payable for vested former employees; annual benefits being paid for retirees and beneficiaries.

² Descriptions can be found under Miscellaneous and Technical Assumptions in the Appendix.

Table 4: Reported Assets (Market Value)

Division	2022 Valuation		2021 Valuation	
	Employer and Retiree ¹	Employee ²	Employer and Retiree ¹	Employee ²
01 - General	\$ 1,570,037	\$ 0	\$ 1,806,878	\$ 0
02 - Sheriff/POAM	4,257,481	741,492	5,111,042	659,040
04 - MCF	14,648,547	1,304,981	17,380,747	1,262,651
10 - 911 Employees	2,056,897	165,688	2,353,610	177,004
13 - GEA & TPOAM	2,101,762	263,262	2,647,898	223,966
14 - Crt EEs, Exec EEs & Elctd	9,538,360	824,028	11,277,074	841,373
20 - Sheriff/Adm	1,945,820	203,555	2,346,390	188,555
HA - AFSCME hired aft 10/01/2011	276,618	0	255,636	0
HB - Sheriff POAM (POLC) af 10/1/1	495,028	9	477,216	0
HC - Executive after 10/1/2012	415,662	0	365,047	0
HE - Court EEs hired af 11/1/2012	433,727	0	423,282	0
HF - Sheriff Admin after 1/1/2013	5,035	0	1,928	0
Municipality Total³	\$ 37,744,973	\$ 3,503,015	\$ 44,446,748	\$ 3,352,590
Combined Assets³	\$41,247,988		\$47,799,337	

¹ Reserve for Employer Contributions and Benefit Payments.

² Reserve for Employee Contributions.

³ Totals may not add due to rounding.

The December 31, 2022 valuation assets (actuarial value of assets) are equal to 1.157665 times the reported market value of assets (compared to 0.998523 as of December 31, 2021). Refer to the Appendix for a description of the valuation asset derivation and a detailed calculation of valuation assets.

Table 5: Flow of Valuation Assets

Year Ended 12/31	Employer Contributions		Employee Contributions	Investment Income (Valuation Assets)	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
	Required	Additional						
2012	\$ 1,253,282	\$ 0	\$ 339,894	\$ 1,458,482	\$ (1,835,042)	\$ (23,342)	\$ 56,346	\$ 31,506,178
2013	1,277,307	0	309,257	1,925,047	(1,979,373)	(33,091)	36,130	33,041,455
2014	1,304,362	0	407,374	1,915,524	(2,197,586)	(37,483)	48,038	34,481,684
2015	1,352,930	0	381,789	1,718,738	(2,505,464)	(15,796)	0	35,413,881
2016	1,341,154	500,003	452,068	1,888,489	(2,653,542)	(17,468)	29,238	36,953,823
2017	1,432,569	1,520,347	442,134	2,330,111	(2,931,537)	(118,993)	0	39,628,454
2018	1,578,670	411,368	410,390	1,460,302	(3,151,109)	(18,639)	0	40,319,436
2019	1,635,531	9,801	372,659	1,879,151	(3,324,184)	(70,767)	0	40,821,627
2020	1,674,295	0	338,966	3,185,456	(3,667,714)	(26,719)	19,769	42,345,680
2021	1,942,066	0	289,338	7,111,766	(3,936,965)	(23,149)	0	47,728,736
2022	2,339,798	0	258,993	1,549,507	(4,091,206)	(34,475)	0	47,751,353

Notes:

Transfers in and out are usually related to the transfer of participants between municipalities, and to employer and employee payments for service credit purchases (if any) that the governing body has approved.

The investment income column reflects the recognized investment income based on Valuation Assets. It does not reflect the market value investment return in any given year.

The Valuation Asset balance includes assets from Surplus divisions, if any.

Years where historical information is not available will be displayed with zero values.



**Table 6: Actuarial Accrued Liabilities and Valuation Assets
as of December 31, 2022**

Division	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
01 - General	\$ 0	\$ 7,493	\$ 395,021	\$ 0	\$ 402,514	\$ 1,817,577	451.6%	\$ (1,415,063)
02 - Sheriff/POAM	2,492,604	170,269	5,683,034	12,757	8,358,664	5,787,136	69.2%	2,571,528
04 - MCF	7,474,662	1,564,255	16,619,165	119,233	25,777,315	18,468,841	71.6%	7,308,474
10 - 911 Employees	914,520	313,154	1,703,350	10,528	2,941,552	2,573,009	87.5%	368,543
13 - GEA & TPOAM	758,166	0	3,563,866	7,731	4,329,763	2,737,905	63.2%	1,591,858
14 - Crt EEs, Exec EEs & Elctd	5,493,168	1,340,220	13,149,154	12,919	19,995,461	11,996,173	60.0%	7,999,288
20 - Sheriff/Adm	1,011,652	0	3,042,173	0	4,053,825	2,488,257	61.4%	1,565,568
HA - AFSCME hired aft 10/01/2011	303,639	4,668	21,143	0	329,450	320,231	97.2%	9,219
HB - Sheriff POAM (POLC) af 10/1/1	436,700	57,942	10,591	0	505,233	573,087	113.4%	(67,854)
HC - Executive after 10/1/2012	410,227	95,286	0	0	505,513	481,198	95.2%	24,315
HE - Court EEs hired af 11/1/2012	438,910	79,529	87,658	0	606,097	502,110	82.8%	103,987
HF - Sheriff Admin after 1/1/2013	3,165	0	0	0	3,165	5,829	184.2%	(2,664)
Total	\$ 19,737,413	\$ 3,632,816	\$ 44,275,155	\$ 163,168	\$ 67,808,552	\$ 47,751,353	70.4%	\$ 20,057,199

The following results show the combined accrued liabilities and assets for each set of linked divisions. These results are already shown in the table on the prior page(s).

Table 6 (continued)

Division	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
Linked Divisions HA, 13	\$ 1,061,805	\$ 4,668	\$ 3,585,009	\$ 7,731	\$ 4,659,213	\$ 3,058,136	65.6%	\$ 1,601,077
Linked Divisions HB, 02	2,929,304	228,211	5,693,625	12,757	8,863,897	6,360,223	71.8%	2,503,674
Linked Divisions HE, 14	5,932,078	1,419,749	13,236,812	12,919	20,601,558	12,498,283	60.7%	8,103,275
Linked Divisions HF, 20	1,014,817	0	3,042,173	0	4,056,990	2,494,086	61.5%	1,562,904

Please see the Comments on Asset Smoothing in the Executive Summary of this report.

The December 31, 2022 valuation assets (actuarial value of assets) are equal to 1.157665 times the reported market value of assets. Refer to the Appendix for a description of the valuation asset derivation and a detailed calculation of valuation assets.

Table 7: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2008	\$ 33,375,896	\$ 25,360,755	76%	\$ 8,015,141
2009	34,479,961	26,970,458	78%	7,509,503
2010	36,592,533	28,836,132	79%	7,756,401
2011	39,228,060	30,256,558	77%	8,971,502
2012	41,258,320	31,506,178	76%	9,752,142
2013	43,329,826	33,041,455	76%	10,288,371
2014	46,145,483	34,481,684	75%	11,663,799
2015	50,527,189	35,413,881	70%	15,113,308
2016	52,648,167	36,953,823	70%	15,694,344
2017	53,852,149	39,628,454	74%	14,223,695
2018	55,632,646	40,319,436	72%	15,313,210
2019	59,481,476	40,821,627	69%	18,659,849
2020	63,321,296	42,345,680	67%	20,975,616
2021	66,354,793	47,728,736	72%	18,626,057
2022	67,808,552	47,751,353	70%	20,057,199

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The Valuation Assets include assets from Surplus divisions, if any.

Years where historical information is not available will be displayed with zero values.

Throughout this report are references to valuation results generated prior to the 2018 valuation date. Results prior to 2018 were received directly from the prior actuary or extracted from the previous valuation system by MERS's technology service provider.

Tables 8 and 9: Division-Based Comparative Schedules

Division 01 - General

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 609,550	\$ 1,335,265	219%	\$ (725,715)
2013	564,145	1,359,509	241%	(795,364)
2014	507,088	1,430,025	282%	(922,937)
2015	502,337	1,440,539	287%	(938,202)
2016	498,842	1,456,894	292%	(958,052)
2017	454,497	1,492,154	328%	(1,037,657)
2018	447,353	1,495,422	334%	(1,048,069)
2019	443,004	1,515,338	342%	(1,072,334)
2020	450,012	1,583,502	352%	(1,133,490)
2021	422,945	1,804,209	427%	(1,381,264)
2022	402,514	1,817,577	452%	(1,415,063)

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-01: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	1	\$ 11,187	0.00%	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	0	0	\$ 0	0.00%
2016	0	0	\$ 0	0.00%
2017	0	0	\$ 0	0.00%
2018	0	0	\$ 0	0.00%
2019	0	0	\$ 0	0.00%
2020	0	0	\$ 0	0.00%
2021	0	0	\$ 0	0.00%
2022	0	0	\$ 0	0.00%

¹ For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

² For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division 02 - Sheriff/POAM

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 5,087,061	\$ 3,596,243	71%	\$ 1,490,818
2013	5,468,332	3,834,273	70%	1,634,059
2014	5,931,070	4,046,642	68%	1,884,428
2015	6,586,413	4,228,912	64%	2,357,501
2016	7,037,269	4,434,596	63%	2,602,673
2017	6,814,568	4,822,537	71%	1,992,031
2018	7,225,939	4,937,551	68%	2,288,388
2019	7,748,531	5,026,455	65%	2,722,076
2020	7,802,719	5,066,567	65%	2,736,152
2021	8,253,656	5,761,560	70%	2,492,096
2022	8,358,664	5,787,136	69%	2,571,528

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-02: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	24	\$ 1,195,594	\$ 13,782	7.54%
2013	22	1,093,007	\$ 14,572	7.84%
2014	20	1,026,719	\$ 14,709	9.57%
2015	20	1,041,121	\$ 16,695	12.28%
2016	19	1,017,465	\$ 18,431	12.28%
2017	13	684,175	\$ 13,473	12.28%
2018	12	662,563	\$ 16,095	12.28%
2019	11	636,503	\$ 20,035	12.28%
2020	10	562,251	\$ 20,575	12.28%
2021	7	413,301	\$ 18,458	12.28%
2022	7	422,584	\$ 19,964	12.28%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Table 8-04: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 15,684,070	\$ 12,579,145	80%	\$ 3,104,925
2013	16,420,741	13,104,416	80%	3,316,325
2014	17,578,284	13,599,449	77%	3,978,835
2015	19,249,440	13,964,801	73%	5,284,639
2016	20,478,886	15,051,580	74%	5,427,306
2017	21,176,376	15,457,170	73%	5,719,206
2018	21,792,343	15,970,748	73%	5,821,595
2019	23,177,885	16,140,401	70%	7,037,484
2020	24,920,958	16,645,785	67%	8,275,173
2021	25,615,303	18,615,862	73%	6,999,441
2022	25,777,315	18,468,841	72%	7,308,474

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-04: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	150	\$ 5,046,655	10.54%	2.07%
2013	132	4,526,071	11.39%	2.07%
2014	128	4,762,440	10.88%	3.24%
2015	133	4,764,948	12.25%	4.22%
2016	132	4,658,970	12.17%	4.85%
2017	111	4,308,541	\$ 51,890	4.85%
2018	89	3,771,863	\$ 52,810	4.85%
2019	77	3,343,516	\$ 65,459	4.85%
2020	61	2,765,811	\$ 76,613	4.85%
2021	53	2,293,216	\$ 63,499	4.85%
2022	46	2,041,886	\$ 69,331	4.85%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division 10 - 911 Employees

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 1,174,771	\$ 1,184,073	101%	\$ (9,302)
2013	1,294,055	1,308,870	101%	(14,815)
2014	1,400,025	1,433,088	102%	(33,063)
2015	1,624,420	1,557,858	96%	66,562
2016	1,793,355	1,694,038	95%	99,317
2017	1,893,930	1,834,727	97%	59,203
2018	2,114,286	1,924,224	91%	190,062
2019	2,248,159	2,031,964	90%	216,195
2020	2,519,890	2,186,747	87%	333,143
2021	2,700,088	2,526,877	94%	173,211
2022	2,941,552	2,573,009	87%	368,543

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-10: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	11	\$ 464,434	6.73%	2.52%
2013	11	460,819	6.97%	2.52%
2014	10	431,427	6.72%	2.52%
2015	12	511,836	8.33%	2.52%
2016	12	544,795	8.62%	2.52%
2017	11	455,744	8.20%	2.52%
2018	10	492,728	10.56%	2.52%
2019	9	467,126	11.55%	2.52%
2020	13	551,980	12.74%	2.52%
2021	13	591,695	10.67%	2.52%
2022	12	554,934	14.17%	2.52%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division 13 - GEA & TPOAM

Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 3,571,455	\$ 2,628,676	74%	\$ 942,779
2013	3,602,669	2,668,206	74%	934,463
2014	3,884,839	2,823,151	73%	1,061,688
2015	4,261,728	2,852,966	67%	1,408,762
2016	4,479,273	2,850,355	64%	1,628,918
2017	4,422,418	2,974,420	67%	1,447,998
2018	4,334,604	2,881,453	66%	1,453,151
2019	4,216,097	2,658,691	63%	1,557,406
2020	4,397,054	2,657,639	60%	1,739,415
2021	4,409,929	2,867,622	65%	1,542,307
2022	4,329,763	2,737,905	63%	1,591,858

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-13: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	28	\$ 828,770	\$ 9,031	4.71%
2013	26	767,554	\$ 8,413	4.71%
2014	25	756,257	\$ 9,354	4.71%
2015	21	633,618	\$ 10,768	5.99%
2016	17	556,935	\$ 11,928	5.99%
2017	14	433,489	\$ 9,777	7.87%
2018	12	387,391	\$ 8,750	15.00%
2019	8	259,655	\$ 9,839	18.00%
2020	8	263,924	\$ 11,546	18.00%
2021	6	186,163	\$ 10,106	18.00%
2022	6	186,962	\$ 10,974	18.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division 14 - Crt EEs, Exec EEs & Elctd

Table 8-14: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 6,724,479	\$ 4,794,736	71%	\$ 1,929,743
2013	7,009,083	5,116,441	73%	1,892,642
2014	7,342,963	5,352,120	73%	1,990,843
2015	7,916,423	5,461,975	69%	2,454,448
2016	8,131,379	5,499,335	68%	2,632,044
2017	8,060,872	5,597,612	69%	2,463,260
2018	15,900,480	10,538,990	66%	5,361,490
2019	17,379,867	10,651,538	61%	6,728,329
2020	18,401,640	10,828,807	59%	7,572,833
2021	19,378,053	12,100,548	62%	7,277,505
2022	19,995,461	11,996,173	60%	7,999,288

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-14: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	36	\$ 1,526,060	\$ 19,955	3.28%
2013	32	1,423,975	\$ 18,681	3.28%
2014	25	1,160,842	\$ 18,142	3.28%
2015	22	940,869	\$ 20,985	3.28%
2016	16	709,590	\$ 20,482	3.28%
2017	14	600,580	\$ 18,977	3.28%
2018	31	1,512,283	\$ 45,135	3.28%
2019	30	1,490,650	\$ 55,147	3.28%
2020	29	1,473,627	\$ 61,669	3.28%
2021	27	1,444,935	\$ 59,394	3.28%
2022	24	1,326,044	\$ 65,876	3.28%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 2,308,192	\$ 1,629,893	71%	\$ 678,299
2013	2,375,062	1,695,294	71%	679,768
2014	2,498,228	1,743,985	70%	754,243
2015	2,650,198	1,764,453	67%	885,745
2016	2,812,536	1,788,398	64%	1,024,138
2017	3,177,879	2,048,920	65%	1,128,959
2018	3,245,219	2,018,135	62%	1,227,084
2019	3,492,724	2,017,604	58%	1,475,120
2020	3,757,455	2,288,415	61%	1,469,040
2021	4,070,893	2,531,201	62%	1,539,692
2022	4,053,825	2,488,257	61%	1,565,568

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-20: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	4	\$ 237,370	25.05%	2.88%
2013	4	235,773	\$ 4,702	2.88%
2014	3	187,431	\$ 5,042	2.88%
2015	3	189,048	\$ 6,100	2.88%
2016	2	123,445	\$ 6,688	2.88%
2017	4	252,043	\$ 8,282	2.88%
2018	4	258,041	\$ 9,075	2.88%
2019	3	184,940	\$ 10,825	2.88%
2020	3	185,616	\$ 11,403	2.88%
2021	3	221,128	\$ 12,436	2.88%
2022	3	211,444	\$ 12,954	2.88%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division HA - AFSCME hired aft 10/01/2011

Table 8-HA: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 0	\$ 0	0%	\$ 0
2013	4,466	4,510	101%	(44)
2014	13,473	8,618	64%	4,855
2015	20,165	19,966	99%	199
2016	40,714	37,723	93%	2,991
2017	59,787	61,351	103%	(1,564)
2018	86,478	90,133	104%	(3,655)
2019	102,450	130,488	127%	(28,038)
2020	165,153	182,030	110%	(16,877)
2021	234,081	255,258	109%	(21,177)
2022	329,450	320,231	97%	9,219

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-HA: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	0	\$ 0	\$ 0	0.00%
2013	4	69,578	9.02%	0.00%
2014	5	80,788	8.79%	0.00%
2015	8	160,598	8.23%	0.00%
2016	10	238,032	8.26%	0.00%
2017	12	272,339	7.03%	0.00%
2018	13	312,002	7.16%	0.00%
2019	21	483,717	6.82%	0.00%
2020	18	482,621	7.33%	0.00%
2021	21	585,223	7.72%	0.00%
2022	24	765,785	8.15%	0.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division HB - Sheriff POAM (POLC) af 10/1/1

Table 8-HB: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 1,951	\$ 1,133	58%	\$ 818
2013	8,802	9,020	103%	(218)
2014	27,066	23,874	88%	3,192
2015	53,123	45,931	87%	7,192
2016	96,983	80,038	83%	16,945
2017	102,701	124,915	122%	(22,214)
2018	154,162	181,155	118%	(26,993)
2019	206,548	248,376	120%	(41,828)
2020	277,920	347,361	125%	(69,441)
2021	389,337	476,511	122%	(87,174)
2022	505,233	573,087	113%	(67,854)

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-HB: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	1	\$ 31,595	5.80%	0.00%
2013	6	179,423	6.60%	0.00%
2014	8	252,324	6.61%	0.00%
2015	8	293,975	6.61%	0.00%
2016	13	463,571	6.59%	0.00%
2017	18	662,190	7.23%	0.00%
2018	20	766,305	6.98%	0.00%
2019	22	897,046	6.72%	0.00%
2020	22	960,815	6.65%	0.00%
2021	21	935,528	6.51%	0.00%
2022	26	1,157,648	6.80%	0.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division HC - Executive after 10/1/2012

Table 8-HC: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 0	\$ 0	0%	\$ 0
2013	4,925	4,605	94%	320
2014	18,074	12,556	70%	5,518
2015	35,437	22,984	65%	12,453
2016	58,863	38,002	65%	20,861
2017	85,173	60,584	71%	24,589
2018	122,751	92,982	76%	29,769
2019	208,012	164,248	79%	43,764
2020	269,854	245,650	91%	24,204
2021	392,363	364,507	93%	27,856
2022	505,513	481,198	95%	24,315

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-HC: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	0	\$ 0	\$ 0	0.00%
2013	3	77,372	6.97%	0.00%
2014	4	142,298	8.25%	0.00%
2015	4	149,735	8.01%	0.00%
2016	4	171,115	7.99%	0.00%
2017	4	212,254	7.49%	0.00%
2018	8	404,259	8.08%	0.00%
2019	15	856,179	7.93%	0.00%
2020	14	726,926	7.79%	0.00%
2021	18	991,313	8.43%	0.00%
2022	22	1,236,717	8.60%	0.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division HE - Court EEs hired af 11/1/2012

Table 8-HE: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 0	\$ 0	0%	\$ 0
2013	4,817	3,687	77%	1,130
2014	13,377	13,770	103%	(393)
2015	47,272	38,554	82%	8,718
2016	91,941	82,439	90%	9,502
2017	141,089	133,066	94%	8,023
2018	209,031	188,643	90%	20,388
2019	258,199	236,524	92%	21,675
2020	358,641	313,177	87%	45,464
2021	488,145	422,656	87%	65,489
2022	606,097	502,110	83%	103,987

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-HE: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	0	\$ 0	\$ 0	0.00%
2013	2	74,441	7.34%	0.00%
2014	6	207,654	7.98%	0.00%
2015	8	366,760	8.12%	0.00%
2016	10	484,997	7.46%	0.00%
2017	13	586,320	7.55%	0.00%
2018	13	605,975	7.49%	0.00%
2019	13	631,339	7.42%	0.00%
2020	15	717,141	8.42%	0.00%
2021	16	753,731	8.63%	0.00%
2022	17	793,687	8.69%	0.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Division HF - Sheriff Admin after 1/1/2013

Table 8-HF: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2012	\$ 0	\$ 0	0%	\$ 0
2013	0	0	0%	0
2014	0	0	0%	0
2015	0	0	0%	0
2016	0	0	0%	0
2017	0	0	0%	0
2018	0	0	0%	0
2019	0	0	0%	0
2020	0	0	0%	0
2021	0	1,925	0%	(1,925)
2022	3,165	5,829	184%	(2,664)

Notes: Actuarial assumptions were revised for the 2012, 2015, 2019, 2020 and 2021 actuarial valuations.

The percent funded does not reflect valuation assets from Surplus divisions, if any.

Table 9-HF: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2012	0	\$ 0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	0	0	\$ 0	0.00%
2016	0	0	\$ 0	0.00%
2017	0	0	\$ 0	0.00%
2018	0	0	0.00%	0.00%
2019	0	0	0.00%	0.00%
2020	0	0	0.00%	0.00%
2021	1	44,275	4.75%	0.00%
2022	1	52,358	4.68%	0.00%

1 For open divisions, a percent of pay contribution is shown. For closed divisions, a monthly dollar contribution is shown.

2 For each valuation year, the computed employer contribution is based on the employee rate. If the employee rate changes during the applicable fiscal year, the computed employer contribution will be adjusted.

Note: The contributions shown in Table 9 reflect the employer contribution requirement without phase-in. If applicable, the current phase-in contribution is shown in Table 1.

See the Benefit Provision History, later in this report, for past benefit provision changes.

Years where historical information is not available will be displayed with zero values.

Table 10: Division-Based Layered Amortization Schedule

Division 01 - General

Table 10-01: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ (938,202)	10	\$ (726,992)	8	\$ (106,980)
(Gain)/Loss	12/31/2016	52,943	10	32,939	4	9,012
(Gain)/Loss	12/31/2017	(38,384)	10	(28,234)	5	(6,288)
(Gain)/Loss	12/31/2018	(147,162)	10	(122,971)	6	(23,268)
(Gain)/Loss	12/31/2019	(189,813)	10	(174,002)	7	(28,740)
Assumption	12/31/2019	12,897	10	18,306	7	3,024
Experience	12/31/2020	(120,597)	10	(120,289)	8	(17,700)
Experience	12/31/2021	(307,831)	10	(327,029)	9	(43,560)
Experience	12/31/2022	(128,508)	10	(144,661)	10	(17,652)
Total				\$ (1,592,933)		\$ (232,152)

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division 02 - Sheriff/POAM

Table 10-02: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 2,357,501	23	\$ 2,413,280	16	\$ 204,420
(Gain)/Loss	12/31/2016	203,355	22	227,943	16	19,308
(Gain)/Loss	12/31/2017	(663,621)	21	(738,903)	16	(62,592)
(Gain)/Loss	12/31/2018	313,933	20	347,963	16	29,472
(Gain)/Loss	12/31/2019	153,610	19	168,792	16	14,304
Assumption	12/31/2019	282,173	19	293,444	16	24,852
Experience	12/31/2020	(36,338)	18	(40,195)	16	(3,408)
Experience	12/31/2021	(273,852)	17	(303,993)	16	(25,752)
Experience	12/31/2022	128,754	16	144,938	16	12,276
Total				\$ 2,513,269		\$ 212,880

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division 04 - MCF

Table 10-04: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 5,284,639	23	\$ 5,893,279	12	\$ 620,928
(Gain)/Loss	12/31/2016	(690,714)	22	(726,422)	12	(76,536)
Amendment	12/31/2016	(28,629)	22	(30,104)	12	(3,168)
(Gain)/Loss	12/31/2017	193,774	19	202,431	12	21,324
(Gain)/Loss	12/31/2018	37,992	17	39,712	12	4,188
(Gain)/Loss	12/31/2019	476,974	15	498,730	12	52,548
Assumption	12/31/2019	699,599	15	690,788	12	72,780
Experience	12/31/2020	1,183,771	14	1,263,772	12	133,152
Experience	12/31/2021	(1,392,123)	13	(1,516,327)	12	(159,768)
Experience	12/31/2022	524,269	12	590,168	12	62,184
Total				\$ 6,906,027		\$ 727,632

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division 10 - 911 Employees

Table 10-10: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 66,562	23	\$ 80,816	16	\$ 6,852
(Gain)/Loss	12/31/2016	25,040	22	28,073	16	2,376
(Gain)/Loss	12/31/2017	(49,368)	21	(54,951)	16	(4,656)
(Gain)/Loss	12/31/2018	132,371	20	146,708	16	12,432
(Gain)/Loss	12/31/2019	(53,292)	19	(58,566)	16	(4,956)
Assumption	12/31/2019	71,263	19	77,312	16	6,552
Experience	12/31/2020	107,875	18	119,298	16	10,104
Experience	12/31/2021	(170,134)	17	(188,860)	16	(15,996)
Experience	12/31/2022	203,839	16	229,461	16	19,440
Total				\$ 379,291		\$ 32,148

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division 13 - GEA & TPOAM

Table 10-13: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 1,408,762	23	\$ 1,461,658	16	\$ 123,816
(Gain)/Loss	12/31/2016	179,396	22	201,087	16	17,028
(Gain)/Loss	12/31/2017	(216,493)	21	(241,048)	16	(20,424)
Amendment	12/31/2017	(4,427)	21	(4,903)	16	(420)
(Gain)/Loss	12/31/2018	7,588	20	8,411	16	708
Amendment	12/31/2018	(9,528)	20	(10,560)	16	(900)
(Gain)/Loss	12/31/2019	(13,029)	19	(14,311)	16	(1,212)
Assumption	12/31/2019	123,810	19	126,352	16	10,704
Amendment	12/31/2019	(2,916)	19	(3,204)	16	(276)
Experience	12/31/2020	174,058	18	192,505	16	16,308
Experience	12/31/2021	(221,092)	17	(245,422)	16	(20,784)
Experience	12/31/2022	71,700	16	80,712	16	6,840
Total				\$ 1,551,277		\$ 131,388

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division 14 - Crt EEs, Exec EEs & Elctd

Table 10-14: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 2,454,448	23	\$ 2,535,829	16	\$ 214,800
(Gain)/Loss	12/31/2016	107,697	22	120,723	16	10,224
(Gain)/Loss	12/31/2017	(212,857)	21	(237,002)	16	(20,076)
(Gain)/Loss	12/31/2018	785,470	20	870,636	16	73,752
Merger	12/31/2018			2,327,955	16	197,196
(Gain)/Loss	12/31/2019	607,015	19	667,044	16	56,508
Assumption	12/31/2019	536,960	19	547,119	16	46,344
Experience	12/31/2020	592,220	18	654,974	16	55,476
Experience	12/31/2021	(427,475)	17	(474,517)	16	(40,200)
Experience	12/31/2022	791,586	16	891,086	16	75,480
Total				\$ 7,903,847		\$ 669,504

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Table 10-20: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 885,745	23	\$ 920,066	16	\$ 77,940
(Gain)/Loss	12/31/2016	110,882	22	124,278	16	10,524
(Gain)/Loss	12/31/2017	80,741	21	89,904	16	7,620
(Gain)/Loss	12/31/2018	76,649	20	84,967	16	7,200
(Gain)/Loss	12/31/2019	111,119	19	122,093	16	10,344
Assumption	12/31/2019	120,035	19	122,684	16	10,392
Experience	12/31/2020	(27,578)	18	(30,500)	16	(2,580)
Experience	12/31/2021	55,456	17	61,558	16	5,220
Experience	12/31/2022	38,697	16	43,561	16	3,696
Total				\$ 1,538,611		\$ 130,356

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division HA - AFSCME hired aft 10/01/2011

Table 10-HA: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2022	\$ 12,267	15	\$ 13,809	15	\$ 1,224
Total				\$ 13,809		\$ 1,224

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division HB - Sheriff POAM (POLC) af 10/1/1

Table 10-HB: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2017	\$ (23,700)	15	\$ (23,178)	10	\$ (2,832)
(Gain)/Loss	12/31/2018	(2,349)	15	(2,384)	11	(264)
(Gain)/Loss	12/31/2019	(14,683)	15	(15,342)	12	(1,620)
Assumption	12/31/2019	2,200	15	2,587	12	276
Experience	12/31/2020	(27,110)	15	(29,262)	13	(2,892)
Experience	12/31/2021	(15,435)	15	(16,990)	14	(1,584)
Experience	12/31/2022	20,403	15	22,968	15	2,040
Total				\$ (61,601)		\$ (6,876)

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division HC - Executive after 10/1/2012

Table 10-HC: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 12,453	23	\$ 14,000	16	\$ 1,188
(Gain)/Loss	12/31/2016	6,503	22	7,291	16	624
(Gain)/Loss	12/31/2017	3,453	21	3,857	16	324
(Gain)/Loss	12/31/2018	4,361	20	4,834	16	408
(Gain)/Loss	12/31/2019	10,964	19	12,042	16	1,020
Assumption	12/31/2019	2,412	19	2,365	16	204
Experience	12/31/2020	(20,791)	18	(22,988)	16	(1,944)
Experience	12/31/2021	4,394	17	4,883	16	420
Experience	12/31/2022	(2,289)	16	(2,577)	16	(216)
Total				\$ 23,707		\$ 2,028

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division HE - Court EEs hired af 11/1/2012

Table 10-HE: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 8,718	23	\$ 12,309	16	\$ 1,044
(Gain)/Loss	12/31/2016	(4,569)	22	(5,107)	16	(432)
(Gain)/Loss	12/31/2017	498	21	541	16	48
(Gain)/Loss	12/31/2018	12,533	20	13,896	16	1,176
(Gain)/Loss	12/31/2019	(5,323)	19	(5,844)	16	(492)
Assumption	12/31/2019	5,521	19	5,956	16	504
Experience	12/31/2020	23,038	18	25,472	16	2,160
Experience	12/31/2021	18,128	17	20,122	16	1,704
Experience	12/31/2022	36,234	16	40,788	16	3,456
Total				\$ 108,133		\$ 9,168

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

Division HF - Sheriff Admin after 1/1/2013

Table 10-HF: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2024		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2021	\$ (1,925)	15	\$ (2,120)	14	\$ (204)
Experience	12/31/2022	(605)	15	(681)	15	(60)
Total				\$ (2,801)		\$ (264)

¹ For each type of UAL (layer), this is the original balance as of the date the layer was established.

² According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

³ This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2022 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2022 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Note: The original balance and original amortization periods prior to 12/31/2018 were received from the prior actuary.

GASB Statement No. 68 Information

The following information has been prepared to provide some of the information necessary to complete GASB Statement No. 68 disclosures. GASB Statement No. 68 is effective for fiscal years beginning after June 15, 2014. Additional resources, including an Implementation Guide, are available at <http://www.mersofmich.com/>.

Actuarial Valuation Date:		12/31/2022
Measurement Date of the Total Pension Liability (TPL):		12/31/2022
At 12/31/2022, the following employees were covered by the benefit terms:		
Inactive employees or beneficiaries currently receiving benefits:		265
Inactive employees entitled to but not yet receiving benefits (including refunds):		262
Active employees:		<u>188</u>
		715
Total Pension Liability as of 12/31/2021 measurement date:	\$	64,608,881
Total Pension Liability as of 12/31/2022 measurement date:	\$	66,042,115
Service Cost for the year ending on the 12/31/2022 measurement date:	\$	872,400
Change in the Total Pension Liability due to:		
- Benefit changes ¹ :	\$	0
- Differences between expected and actual experience ² :	\$	120,306
- Changes in assumptions ² :	\$	0
Average expected remaining service lives of all employees (active and inactive):		2

¹ A change in liability due to benefit changes is immediately recognized when calculating pension expense for the year.

² Changes in liability due to differences between actual and expected experience, and changes in assumptions, are recognized in pension expense over the average remaining service lives of all employees.

Covered employee payroll (Needed for Required Supplementary Information):	\$	8,750,049
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Note: Covered employee payroll may differ from the GASB Statement No. 68 definition.

Sensitivity of the Net Pension Liability to changes in the discount rate:

	1% Decrease <u>(6.25%)</u>	Current Discount Rate <u>(7.25%)</u>	1% Increase <u>(8.25%)</u>
Change in Net Pension Liability as of 12/31/2022: \$	7,570,840	\$ 0	\$ (6,346,882)

Note: The current discount rate shown for GASB Statement No. 68 purposes is higher than the MERS assumed rate of return. This is because for GASB Statement No. 68 purposes, the discount rate must be gross of administrative expenses, whereas for funding purposes it is net of administrative expenses.



Benefit Provision History

The following benefit provision history is provided by MERS. Any corrections to this history or discrepancies between this information and information displayed elsewhere in the valuation report should be reported to MERS. All provisions are listed by date of adoption.

01 - General

1/1/2021	Voter-Elected Officials - Included
1/1/2021	FMLA - Service Granted
1/1/2021	Appointed Officials - Included
1/1/2021	Contract Employees - Included
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 40 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
3/21/2013	Fiscal Month - October
7/1/1996	Benefit B-2 (No Max)
9/1/1992	Temporary 6 Year Vesting (09/01/1992 - 11/03/1992)
1/1/1992	8 Year Vesting
4/15/1986	Day of work defined as 4 Hours a Day for All employees.
1/1/1984	Member Contribution Rate 0.00%
12/8/1970	Covered by Act 88
12/1/1970	Benefit C-1 (Old) (No Max)
12/1/1964	Benefit FAC-5 (5 Year Final Average Compensation)
12/1/1964	10 Year Vesting
12/1/1964	Benefit C (Old) (No Max)
12/1/1964	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

02 - Sheriff/POAM

1/1/2021	FMLA - Service Granted
1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 40 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/1/2015	Participant Contribution Rate 12.28%
1/1/2014	Member Contribution Rate 9.57%
3/21/2013	Fiscal Month - October
1/1/2013	Member Contribution Rate 7.84%
1/1/2012	Member Contribution Rate 7.54%
1/1/2011	Member Contribution Rate 7.72%
1/1/2010	Member Contribution Rate 7.91%
1/1/2009	Member Contribution Rate 5.91%
1/1/2008	Member Contribution Rate 4.77%
1/1/2007	E2 2.5% COLA for future retirees (07/01/2006)
7/1/2006	Member Contribution Rate 4.82%



02 - Sheriff/POAM

7/1/2001	Member Contribution Rate 1.33%
10/1/1999	Member Contribution Rate 1.24%
7/1/1999	Member Contribution Rate 0.00%
10/1/1998	Benefit B-4 (80% max)
10/1/1998	Member Contribution Rate 2.88%
1/1/1997	Temporary Benefit B-4 (80% max) (01/01/1997 - 04/03/1997)
1/1/1995	8 Year Vesting
1/1/1995	Benefit B-2 (No Max)
1/1/1990	Blanket Resolution (All Service)
1/1/1988	Benefit C-2/Base C-1 (Old) (No Max)
1/1/1988	Benefit F50 (With 25 Years of Service)
4/15/1986	Day of work defined as 4 Hours a Day for All employees.
1/1/1984	Member Contribution Rate 0.00%
12/8/1970	Covered by Act 88
12/1/1970	Benefit C-1 (Old) (No Max)
12/1/1964	Benefit FAC-5 (5 Year Final Average Compensation)
12/1/1964	10 Year Vesting
12/1/1964	Benefit C (Old) (No Max)
12/1/1964	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

04 - MCF

1/1/2021	Part Time Employees - Included
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2020	Non-Accelerated Amortization
4/1/2017	Accelerated to 15-year Amortization
4/1/2017	DC Adoption Date 04-01-2017
12/1/2016	Service Credit Purchase Estimates - Yes
10/1/2016	Participant Contribution Rate 4.85%
10/1/2015	Participant Contribution Rate 4.22%
1/1/2014	Member Contribution Rate 3.24%
1/1/2014	Fiscal Month - October
1/1/2013	Member Contribution Rate 2.29%
1/1/2012	Member Contribution Rate 2.07%
6/1/2011	Member Contribution Rate 1.79%
4/1/2006	Member Contribution Rate 1.09%
2/1/2006	Benefit B-2 (No Max)
1/1/2001	30 Years & Out
1/1/2001	6 Year Vesting
1/1/2001	Benefit B-1 (No Max)
4/1/1986	Member Contribution Rate 0.00%
12/8/1970	Covered by Act 88
12/1/1970	Benefit C-1 (Old) (No Max)
12/1/1964	Benefit FAC-5 (5 Year Final Average Compensation)
12/1/1964	10 Year Vesting
12/1/1964	Benefit C (Old) (No Max)
12/1/1964	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%



04 - MCF

Defined Benefit Normal Retirement Age - 60
Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

10 - 911 Employees

1/1/2021 FMLA - Service Granted
1/1/2021 Public Safety Employees - Yes
1/1/2021 Other Leave - Service Granted
1/1/2021 Workers Compensation - Service Granted
1/1/2021 Service Credit Qualification - 40 hours
1/1/2021 Custom Wages
12/1/2016 Service Credit Purchase Estimates - Yes
3/21/2013 Fiscal Month - October
7/1/2000 Benefit B-4 (80% max)
7/1/2000 Member Contribution Rate 2.52%
9/1/1997 Benefit B-2 (No Max)
1/1/1992 8 Year Vesting
4/15/1986 Day of work defined as 4 Hours a Day for All employees.
1/1/1984 Member Contribution Rate 0.00%
12/8/1970 Covered by Act 88
12/1/1964 Benefit FAC-5 (5 Year Final Average Compensation)
12/1/1964 10 Year Vesting
12/1/1964 Benefit C-1 (Old) (No Max)
Defined Benefit Normal Retirement Age - 60
Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

13 - GEA & TPOAM

1/1/2021 FMLA - Service Granted
1/1/2021 Other Leave - Service Granted
1/1/2021 Workers Compensation - Service Granted
1/1/2021 Service Credit Qualification - 40 hours
1/1/2021 Custom Wages
10/1/2019 Participant Contribution Rate 18%
10/1/2018 Participant Contribution Rate 15%
10/1/2017 Participant Contribution Rate 12.31%
12/1/2016 Service Credit Purchase Estimates - Yes
10/1/2016 Participant Contribution Rate 7.87%
10/1/2015 Participant Contribution Rate 5.99%
3/21/2013 Fiscal Month - October
1/1/2012 Member Contribution Rate 4.71%
7/1/1999 Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1999 8 Year Vesting
7/1/1999 Benefit B-4 (80% max)
7/1/1999 Benefit F55 (With 20 Years of Service)
7/1/1999 Member Contribution Rate 3.56%
12/8/1970 Covered by Act 88
Defined Benefit Normal Retirement Age - 60
Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years



14 - Crt EEs, Exec EEs & Elctd

1/1/2021	Voter-Elected Officials - Included
1/1/2021	FMLA - Service Granted
1/1/2021	Appointed Officials - Included
1/1/2021	Contract Employees - Included
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 40 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
3/21/2013	Fiscal Month - October
7/1/2000	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/2000	8 Year Vesting
7/1/2000	Benefit B-4 (80% max)
7/1/2000	Benefit F55 (With 20 Years of Service)
7/1/2000	Member Contribution Rate 3.28%
12/8/1970	Covered by Act 88
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

20 - Sheriff/Adm

1/1/2021	Voter-Elected Officials - Included
1/1/2021	FMLA - Service Granted
1/1/2021	Appointed Officials - Included
1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 40 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
3/21/2013	Fiscal Month - October
1/1/1999	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1999	8 Year Vesting
1/1/1999	Benefit B-4 (80% max)
1/1/1999	Benefit F50 (With 25 Years of Service)
1/1/1999	Member Contribution Rate 2.88%
12/8/1970	Covered by Act 88
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

HA - AFSCME hired aft 10/01/2011

1/1/2021	Workers Compensation - Service Granted
1/1/2021	Custom Wages
1/1/2021	FMLA - Service Granted
1/1/2021	Service Credit Qualification - 40 hours
3/21/2013	Fiscal Month - October
10/1/2011	Benefit FAC-3 (3 Year Final Average Compensation)
10/1/2011	6 Year Vesting
10/1/2011	1.5% Multiplier
12/8/1970	Covered by ACT 88



HA - AFSCME hired aft 10/01/2011

Defined Benefit Normal Retirement Age - 60
No Early Reduced Conditions

HB - Sheriff POAM (POLC) af 10/1/1

1/1/2021 Workers Compensation - Service Granted
1/1/2021 Custom Wages
1/1/2021 FMLA - Service Granted
1/1/2021 Public Safety Employees - Yes
1/1/2021 Service Credit Qualification - 40 hours
3/21/2013 Fiscal Month - October
10/1/2012 Day of work defined as 4 Hours a Day for All employees.
10/1/2012 Benefit FAC-3 (3 Year Final Average Compensation)
10/1/2012 6 Year Vesting
10/1/2012 1.5% Multiplier
10/1/2012 Benefit F55 (With 25 Years of Service)
12/8/1970 Covered by ACT 88
Defined Benefit Normal Retirement Age - 60
No Early Reduced Conditions

HC - Executive after 10/1/2012

1/1/2021 Workers Compensation - Service Granted
1/1/2021 Custom Wages
1/1/2021 Appointed Officials - Included
1/1/2021 Contract Employees - Included
1/1/2021 FMLA - Service Granted
1/1/2021 Other Leave - Service Granted
1/1/2021 Service Credit Qualification - 40 hours
3/21/2013 Fiscal Month - October
10/1/2012 Benefit FAC-3 (3 Year Final Average Compensation)
10/1/2012 6 Year Vesting
10/1/2012 1.5% Multiplier
12/8/1970 Covered by ACT 88
Defined Benefit Normal Retirement Age - 60
No Early Reduced Conditions

HE - Court EEs hired af 11/1/2012

1/1/2021 Workers Compensation - Service Granted
1/1/2021 Custom Wages
1/1/2021 Appointed Officials - Included
1/1/2021 Voter-Elected Officials - Included
1/1/2021 FMLA - Service Granted
1/1/2021 Other Leave - Service Granted
1/1/2021 Service Credit Qualification - 40 hours
3/21/2013 Fiscal Month - October
11/1/2012 Benefit FAC-3 (3 Year Final Average Compensation)
11/1/2012 6 Year Vesting
11/1/2012 1.5% Multiplier
12/8/1970 Covered by ACT 88
Defined Benefit Normal Retirement Age - 60



HE - Court EEs hired af 11/1/2012

No Early Reduced Conditions

HF - Sheriff Admin after 1/1/2013

1/1/2021	Workers Compensation - Service Granted
1/1/2021	Custom Wages
1/1/2021	Appointed Officials - Included
1/1/2021	Voter-Elected Officials - Included
1/1/2021	FMLA - Service Granted
1/1/2021	Other Leave - Service Granted
1/1/2021	Public Safety Employees - Yes
1/1/2021	Service Credit Qualification - 40 hours
3/21/2013	Fiscal Month - October
1/1/2013	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2013	6 Year Vesting
1/1/2013	1.5% Multiplier
12/8/1970	Covered by ACT 88
	Defined Benefit Normal Retirement Age - 60
	No Early Reduced Conditions

Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

Details on MERS plan provisions, actuarial assumptions, and actuarial methodology can be found in the Appendix. Some actuarial assumptions are specific to this municipality and its divisions. These are listed below.

Increase in Final Average Compensation

Division	FAC Increase Assumption
All Divisions	1.00%

Miscellaneous and Technical Assumptions

Loads – None.

Amortization Policy for Closed Not Linked Divisions: The default funding policy for closed not linked divisions, including open divisions with zero active members, is to follow a non-accelerated amortization, where each closed period decreases by one year each year until the period is exhausted. In select instances, closed not linked division(s) may follow an accelerated amortization policy.

Risk Commentary

Determination of the accrued liability, the employer contribution, and the funded ratio requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability, the actuarially determined contribution and the funded ratio that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements 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 due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

- **Investment Risk** – actual investment returns may differ from the expected returns;
- **Asset/Liability Mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
- **Salary and Payroll Risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
- **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
- **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	<u>12/31/2022</u>	<u>12/31/2021</u>	<u>12/31/2020</u>	<u>12/31/2019</u>	<u>12/31/2018</u>
1. Ratio of the market value of assets to total payroll	4.7	5.6	5.0	4.4	4.0
2. Ratio of actuarial accrued liability to payroll	7.7	7.8	7.3	6.4	6.1
3. Ratio of actives to retirees and beneficiaries	0.7	0.7	0.8	0.9	1.0
4. Ratio of market value of assets to benefit payments	10.0	12.1	11.8	11.9	11.6
5. Ratio of net cash flow to market value of assets (boy)	-3.2%	-4.0%	-4.1%	-3.7%	-2.0%

RATIO OF MARKET VALUE OF ASSETS TO TOTAL PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of actives to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

RATIO OF MARKET VALUE OF ASSETS TO BENEFIT PAYMENTS

The MERS' Actuarial Policy requires a total minimum contribution equal to the excess (if any) of three times the expected annual benefit payments over the projected market value of assets as of the participating municipality or court's Fiscal Year for which the contribution applies. The ratio of market value of assets to benefit payments as of the valuation date provides an indication of whether the division is at risk for triggering the minimum contribution rule in the near term. If the division triggers this minimum contribution rule, the required employer contributions could increase dramatically relative to previous valuations.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.



State Reporting

The following information has been prepared to provide some of the information necessary to complete the Public Act 202 pension reporting requirements for the State of Michigan’s Local Government Retirement System Annual Report (Form No. 5572). Additional resources are available at www.mersofmich.com and on the State [website](#).

Form 5572		
Line Reference	Description	Result
10	Membership as of December 31, 2022	
11	Indicate number of active members	188
12	Indicate number of inactive members (excluding pending refunds)	80
13	Indicate number of retirees and beneficiaries	265
14	Investment Performance for Calendar Year Ending December 31, 2022¹	
15	Enter actual rate of return - prior 1-year period	(10.37)%
16	Enter actual rate of return - prior 5-year period	4.95%
17	Enter actual rate of return - prior 10-year period	6.79%
18	Actuarial Assumptions	
19	Actuarial assumed rate of investment return ²	7.00%
20	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Level Percent
21	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any ³	16
22	Is each division within the system closed to new employees? ⁴	No
23	Uniform Assumptions	
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$44,557,354
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions ⁵	\$68,907,032
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending September 30, 2023	\$2,973,696

1. The Municipal Employees’ Retirement System’s investment performance has been provided to GRS from MERS Investment Staff and is included here for reporting purposes. The investment performance figures reported are net of investment expenses on a rolling calendar year basis for the previous 1-, 5-, and 10-year periods as required under PA 530.
2. Net of administrative and investment expenses.
3. Populated with the longest amortization period remaining in the amortization schedule, across all divisions in the plan. This is when each division and the plan in total is expected to reach 100% funded if all assumptions are met.
4. If all divisions within the employer are closed, “yes.” If at least one division is open (including shadow divisions), “no.”
5. Line 25 actuarial accrued liability is determined under PA 202 uniform assumptions which differ from the valuation assumptions. In particular, the assumed rate of return for PA 202 purposes is 6.85%.