



Municipal Employees' Retirement System of Michigan

Annual Actuarial Valuation Report
December 31, 2021 - Manistee Co (5101)





Spring, 2022

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, 2021. 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, 2021,
- Establish contribution requirements for the fiscal year beginning October 1, 2023,
- 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, 2021. 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 will automatically reduce the assumed rate of investment return in conjunction with recognizing excess investment gains to mitigate the impact on employer contributions the first year. The new policy is effective with this December 31, 2021 annual actuarial valuation, and is reflected in the funded status and fiscal year 2023 contributions as shown in the Executive Summary.

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-2021AnnualActuarialValuation-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, 2021. It does not reflect the ongoing impact of COVID-19, which is likely to influence demographic and economic experience, at least in the short term. We will continue to monitor these developments and their impact on the MERS Defined Benefit and Hybrid plans. 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.

David T. Kausch, Rebecca L. Stouffer, and Mark Buis 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).

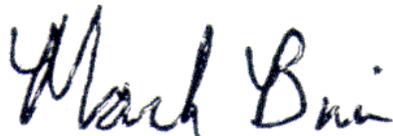
Sincerely,
Gabriel, Roeder, Smith & Company



David T. Kausch, FSA, FCA, EA, MAAA



Rebecca L. Stouffer, ASA, FCA, MAAA



Mark Buis, FSA, FCA, EA, MAAA



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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.

	12/31/2021	12/31/2020
Funded Ratio*	72%	67%

* 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 for the December 31, 2021 valuation, the MERS Retirement Board has 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 (discussed below). Changes to these assumptions and methods are effective for contributions beginning in 2023. Effective with the 2020 and 2019 valuations respectively, the MERS Retirement Board adopted updated demographic and economic assumptions. The combined impact of the prior demographic and economic assumption changes may be phased in. The remaining combined phase-in period is three years for all assumption changes.

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:	12/31/2021	12/31/2021	12/31/2020	12/31/2020	12/31/2021	12/31/2021	12/31/2020	12/31/2020
Fiscal Year Beginning:	October 1, 2023	October 1, 2023	October 1, 2022	October 1, 2022	October 1, 2023	October 1, 2023	October 1, 2022	October 1, 2022
Division								
01 - General	-	-	-	-	\$ 0	\$ 0	\$ 0	\$ 0
02 - Sheriff/POAM	-	-	-	-	16,276	18,458	17,302	20,575
04 - MCF	-	-	-	-	54,805	63,499	63,572	76,613
10 - 911 Employees	9.32%	10.67%	10.58%	12.74%	4,988	5,708	5,277	6,357
13 - GEA & TPOAM	-	-	-	-	8,934	10,106	9,788	11,546
14 - Crt EEs, Exec EEs & Elctd	-	-	-	-	54,488	59,394	54,310	61,669
20 - Sheriff/Adm	-	-	-	-	11,628	12,436	10,191	11,403
HA - AFSCME hired aft 10/01/2011	7.43%	7.72%	6.85%	7.33%	4,349	4,519	3,624	3,879
HB - Sheriff POAM (POLC) af 10/1/1	6.44%	6.51%	6.55%	6.65%	5,817	5,879	6,221	6,314
HC - Executive after 10/1/2012	8.24%	8.43%	7.40%	7.79%	7,382	7,554	4,862	5,120
HE - Court EEs hired af 11/1/2012	8.28%	8.63%	7.88%	8.42%	7,502	7,820	6,957	7,434
HF - Sheriff Admin after 1/1/2013	4.75%	4.75%	0.00%	0.00%	222	222	0	0
Total Municipality - Estimated Monthly Contribution					\$ 176,391	\$ 195,595	\$ 182,104	\$ 210,910
Total Municipality - Estimated Annual Contribution					\$ 2,116,692	\$ 2,347,140	\$ 2,185,248	\$ 2,530,920

Employee contribution rates:

Valuation Date:	Employee Contribution Rate	
	12/31/2021	12/31/2020
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 of what MERS calls “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 Surplus divisions would not immediately lower future contributions, however the assets from the Surplus division 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 return are being used to lower the investment assumption, there will be less 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 2023 for the entire employer would be \$251,482, instead of \$195,595.

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 2021



Effective February 17, 2022, the MERS Retirement Board adopted a dedicated gains policy that automatically adjusts 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 year after implementation (i.e., minimize the first-year impact (i.e., increase) in employer contributions).

The dedicated gains policy has been implemented with the December 31, 2021 annual actuarial valuation. After initial application of the smoothing method, remaining market gains were used to lower the assumed rate of investment return from 7.35% to 7.00%. The December 31, 2021 valuation liabilities were developed using this new, lower assumption. Additionally, as a result of recognizing excess market gains, the valuation assets used to fund these liabilities are 7.2% higher than if there were no dedicated gain policy. The combined impact of these changes will minimize the first-year impact on employer contributions and may result in an increase or a decrease in employer contributions.

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 2021 was 17.04%, while the actual market rate of return was 13.97%.** 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, 2021, the actuarial value of assets is just below 100% of market value due to asset smoothing and dedicated gains. This means that rate of return on the actuarial value of assets should exceed the actuarial assumption in the next few years provided that the annual market returns meet or exceed the 7.00% investment return assumption. When all assumptions are met, contribution rates are expected to stay approximately level as a percent of payroll (dollar amounts are expected to increase with wage inflation of 3.0% each year).

As of December 31, 2021, the market value of assets and actuarial value of assets are very similar, resulting in a funded percentage that is not materially different.

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 future 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, 2021 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 with 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.

12/31/2021 Valuation Results	Lower Future Annual Returns	Lower Future Annual Returns	Valuation Assumptions
Investment Return Assumption	5.00%	6.00%	7.00%
Accrued Liability	\$ 83,661,591	\$ 74,191,439	\$ 66,354,793
Valuation Assets ¹	\$ 47,728,736	\$ 47,728,736	\$ 47,728,736
Unfunded Accrued Liability	\$ 35,932,855	\$ 26,462,703	\$ 18,626,057
Funded Ratio	57%	64%	72%
Monthly Normal Cost	\$ 102,263	\$ 76,013	\$ 56,377
Monthly Amortization Payment	\$ 223,015	\$ 171,318	\$ 121,864
Total Employer Contribution²	\$ 340,009	\$ 263,366	\$ 195,595

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 take into account the past investment experience that will continue to affect the actuarial rate of return in the short term.

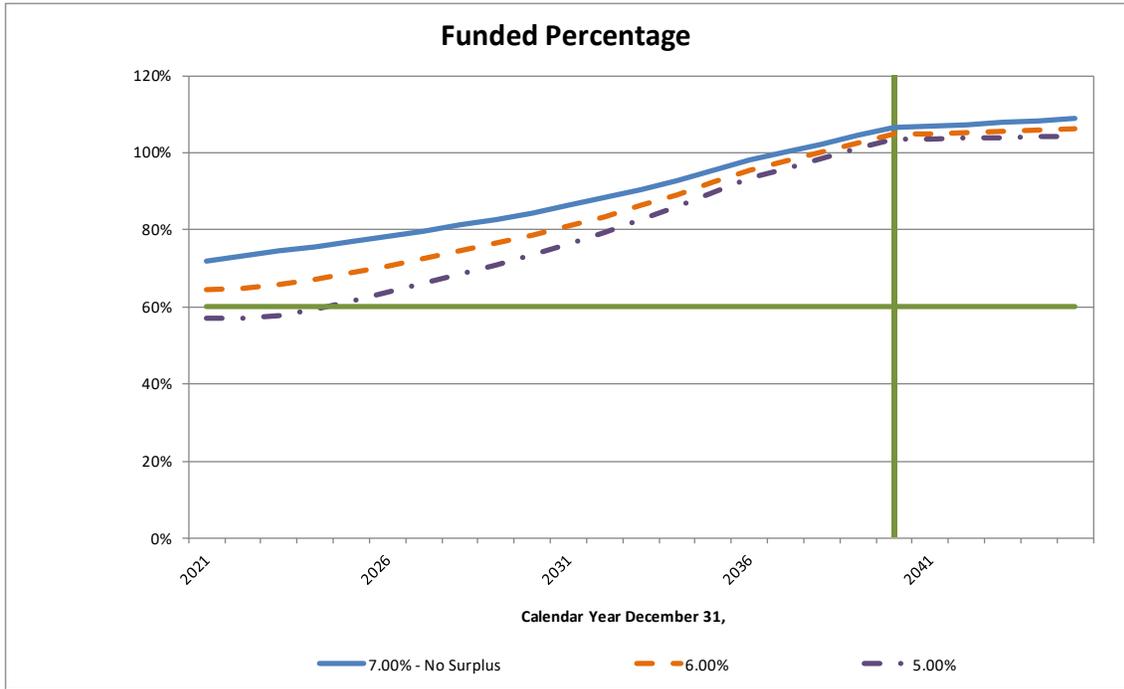


The 7.00% scenario provides an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.00% market return. The other two scenarios may be useful if the municipality chooses to budget more conservatively and make contributions in addition to the minimum requirements. 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
7.00%¹ - NO PHASE-IN					
2021	2023	\$ 66,354,793	\$ 47,728,736	72%	\$ 2,347,140
2022	2024	\$ 67,600,000	\$ 49,400,000	73%	\$ 2,400,000
2023	2025	\$ 68,800,000	\$ 51,300,000	75%	\$ 2,460,000
2024	2026	\$ 70,000,000	\$ 53,000,000	76%	\$ 2,520,000
2025	2027	\$ 71,200,000	\$ 54,800,000	77%	\$ 2,580,000
2026	2028	\$ 72,200,000	\$ 56,500,000	78%	\$ 2,650,000
6.00%¹ - NO PHASE-IN					
2021	2023	\$ 74,191,439	\$ 47,728,736	64%	\$ 3,160,392
2022	2024	\$ 75,500,000	\$ 49,000,000	65%	\$ 3,260,000
2023	2025	\$ 76,800,000	\$ 50,500,000	66%	\$ 3,350,000
2024	2026	\$ 78,000,000	\$ 52,500,000	67%	\$ 3,430,000
2025	2027	\$ 79,200,000	\$ 54,600,000	69%	\$ 3,510,000
2026	2028	\$ 80,300,000	\$ 56,800,000	71%	\$ 3,590,000
5.00%¹ - NO PHASE-IN					
2021	2023	\$ 83,661,591	\$ 47,728,736	57%	\$ 4,080,108
2022	2024	\$ 85,000,000	\$ 48,500,000	57%	\$ 4,220,000
2023	2025	\$ 86,400,000	\$ 49,800,000	58%	\$ 4,350,000
2024	2026	\$ 87,700,000	\$ 52,200,000	60%	\$ 4,450,000
2025	2027	\$ 88,900,000	\$ 54,800,000	62%	\$ 4,550,000
2026	2028	\$ 90,100,000	\$ 57,400,000	64%	\$ 4,650,000

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

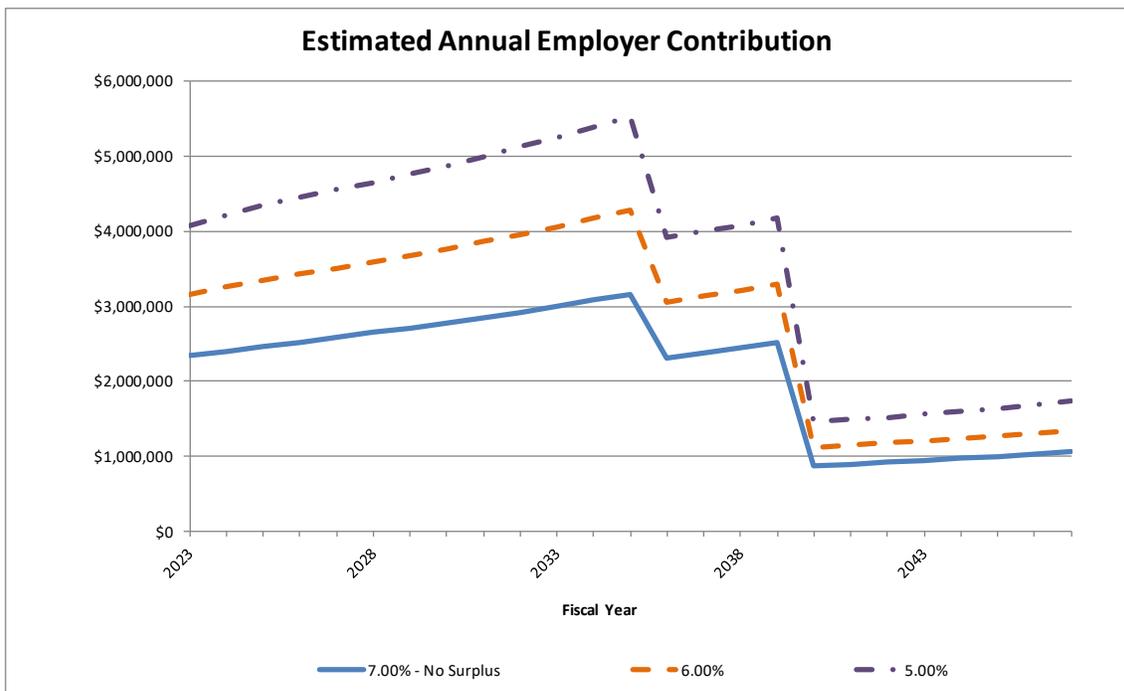
² Valuation Assets do not include assets from Surplus divisions, if any.



Notes:

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

The green indicator lines have been added at 60% funded and 19 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, 2023

Division	Total Normal Cost	Employee Contribut. Rate	Employer Contributions ¹			Computed Employer Contribut. With Phase-In	Blended ER Rate No Phase-In ⁵	Blended ER Rate With Phase-In ⁵	Employee Contribut. Conversion Factor ²
			Employer Normal Cost ⁶	Payment of the Unfunded Accrued Liability ⁴	Computed Employer Contribut. No Phase-In				
Percentage of Payroll									
01 - General	0.00%	0.00%	-	-	-	-	-	-	-
02 - Sheriff/POAM	19.32%	12.28%	-	-	-	-	19.96%	18.12%	-
04 - MCF	10.60%	4.85%	-	-	-	-	-	-	-
10 - 911 Employees	11.27%	2.52%	8.75%	1.92%	10.67%	9.32%	-	-	0.90%
13 - GEA & TPOAM	18.25%	18.00%	-	-	-	-	20.97%	19.05%	-
14 - Crt EEs, Exec EEs & Elctd	13.76%	3.28%	-	-	-	-	33.82%	31.19%	-
20 - Sheriff/Adm	14.22%	2.88%	-	-	-	-	52.76%	49.39%	-
HA - AFSCME hired aft 10/01/2011	8.01%	0.00%	8.01%	-0.29%	7.72%	7.43%	20.97%	19.05%	-
HB - Sheriff POAM (POLC) af 10/1/1	7.31%	0.00%	7.31%	-0.80%	6.51%	6.44%	19.96%	18.12%	-
HC - Executive after 10/1/2012	8.23%	0.00%	8.23%	0.20%	8.43%	8.24%	-	-	-
HE - Court EEs hired af 11/1/2012	8.12%	0.00%	8.12%	0.51%	8.63%	8.28%	33.82%	31.19%	-
HF - Sheriff Admin after 1/1/2013	5.09%	0.00%	5.09%	-0.34%	4.75%	4.75%	52.76%	49.39%	-
Estimated Monthly Contribution³									
01 - General			\$ 0	\$ (17,354)	\$ 0	\$ 0			
02 - Sheriff/POAM			2,226	16,232	18,458	16,276			
04 - MCF			9,659	53,840	63,499	54,805			
10 - 911 Employees			4,680	1,028	5,708	4,988			
13 - GEA & TPOAM			28	10,078	10,106	8,934			
14 - Crt EEs, Exec EEs & Elctd			11,333	48,061	59,394	54,488			
20 - Sheriff/Adm			2,190	10,246	12,436	11,628			
HA - AFSCME hired aft 10/01/2011			4,688	(169)	4,519	4,349			
HB - Sheriff POAM (POLC) af 10/1/1			6,602	(723)	5,879	5,817			
HC - Executive after 10/1/2012			7,375	179	7,554	7,382			
HE - Court EEs hired af 11/1/2012			7,358	462	7,820	7,502			
HF - Sheriff Admin after 1/1/2013			238	(16)	222	222			
Total Municipality			\$ 56,377	\$ 121,864	\$ 195,595	\$ 176,391			
Estimated Annual Contribution³			\$ 676,524	\$ 1,462,368	\$ 2,347,140	\$ 2,116,692			

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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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

	2021 Valuation	2020 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	2021 Valuation		2020 Valuation		2021 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	55.8	1.9	11.8
Retirees and Beneficiaries	12	46,960	13	52,006	78.6		
Pending Refunds	0		0				
02 - Sheriff/POAM							
Active Employees	7	\$ 413,301	10	\$ 562,251	49.3	17.9	17.9
Vested Former Employees	4	36,845	4	20,402	44.3	7.2	17.9
Retirees and Beneficiaries	28	461,340	25	380,336	68.2		
Pending Refunds	5		6				
04 - MCF							
Active Employees	53	\$ 2,293,216	61	\$ 2,765,811	51.6	17.4	17.6
Vested Former Employees	43	239,117	40	215,276	49.8	8.6	11.8
Retirees and Beneficiaries	123	1,575,211	123	1,575,418	69.6		
Pending Refunds	155		157				
10 - 911 Employees							
Active Employees	13	\$ 591,695	13	\$ 551,980	40.1	8.7	10.1
Vested Former Employees	5	55,974	5	55,974	47.5	10.7	15.0
Retirees and Beneficiaries	6	112,710	6	112,710	61.2		
Pending Refunds	12		9				
13 - GEA & TPOAM							
Active Employees	6	\$ 186,163	8	\$ 263,924	56.9	16.9	16.9
Vested Former Employees	1	1,170	1	1,170	61.8	2.3	18.3
Retirees and Beneficiaries	24	361,984	23	330,177	70.1		
Pending Refunds	8		9				
14 - Crt EEs, Exec EEs & Elctd							
Active Employees	27	\$ 1,444,935	29	\$ 1,473,627	52.2	17.0	18.7
Vested Former Employees	11	148,459	12	156,359	53.1	10.5	14.6
Retirees and Beneficiaries	54	1,146,862	52	1,146,352	67.5		
Pending Refunds	8		8				
20 - Sheriff/Adm							
Active Employees	3	\$ 221,128	3	\$ 185,616	41.5	18.8	18.8
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	7	257,432	7	256,756	63.6		
Pending Refunds	0		0				

Table 3 (continued)

Division	2021 Valuation		2020 Valuation		2021 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	21	\$ 585,223	18	\$ 482,621	41.7	2.9	2.9
Vested Former Employees	2	2,814	1	581	61.2	3.0	13.7
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	0		0				
HB - Sheriff POAM (POLC) af 10/1/1							
Active Employees	21	\$ 935,528	22	\$ 960,815	37.3	3.0	3.7
Vested Former Employees	7	12,631	4	6,627	39.0	2.7	9.3
Retirees and Beneficiaries	1	908	0	0	61.4		
Pending Refunds	0		0				
HC - Executive after 10/1/2012							
Active Employees	18	\$ 991,313	14	\$ 726,926	45.2	2.3	3.6
Vested Former Employees	4	18,853	3	13,896	44.7	5.3	8.3
Retirees and Beneficiaries	1	2,470	1	2,470	60.4		
Pending Refunds	0		0				
HE - Court EEs hired af 11/1/2012							
Active Employees	16	\$ 753,731	15	\$ 717,141	43.3	3.4	4.1
Vested Former Employees	3	8,921	2	5,693	53.8	4.9	10.5
Retirees and Beneficiaries	1	618	1	618	64.3		
Pending Refunds	0		0				
HF - Sheriff Admin after 1/1/2013							
Active Employees	1	\$ 44,275	0	\$ 0	21.2	0.7	0.7
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	186	\$ 8,460,508	193	\$ 8,690,712	46.6	10.7	11.4
Vested Former Employees	81	525,581	73	476,775	49.3	7.8	12.4
Retirees and Beneficiaries	257	3,966,495	251	3,856,843	69.0		
Pending Refunds	188		189				
Total Participants	712		706				

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	2021 Valuation		2020 Valuation	
	Employer and Retiree ¹	Employee ²	Employer and Retiree ¹	Employee ²
01 - General	\$ 1,806,878	\$ 0	\$ 1,628,519	\$ 0
02 - Sheriff/POAM	5,111,042	659,040	4,385,397	825,207
04 - MCF	17,380,747	1,262,651	15,896,181	1,222,825
10 - 911 Employees	2,353,610	177,004	2,088,332	160,582
13 - GEA & TPOAM	2,647,898	223,966	2,500,388	232,805
14 - Crt EEs, Exec EEs & Elctd	11,277,074	841,373	10,313,589	823,068
20 - Sheriff/Adm	2,346,390	188,555	2,171,817	181,654
HA - AFSCME hired aft 10/01/2011	255,636	0	187,205	0
HB - Sheriff POAM (POLC) af 10/1/1	477,216	0	357,236	0
HC - Executive after 10/1/2012	365,047	0	252,634	0
HE - Court EEs hired af 11/1/2012	423,282	0	322,080	0
HF - Sheriff Admin after 1/1/2013	1,928	0	0	0
Municipality Total³	\$ 44,446,748	\$ 3,352,590	\$ 40,103,378	\$ 3,446,141
Combined Assets³	\$47,799,337		\$43,549,519	

¹ Reserve for Employer Contributions and Benefit Payments.

² Reserve for Employee Contributions.

³ Totals may not add due to rounding.

The December 31, 2021 valuation assets (actuarial value of assets) are equal to 0.998523 times the reported market value of assets (compared to 0.972357 as of December 31, 2020). 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						
2011	\$ 1,329,259	\$ 0	\$ 298,496	\$ 1,572,288	\$ (1,763,005)	\$ (16,612)	\$ 0	\$ 30,256,558
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

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, 2021**

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	\$ 6,969	\$ 415,976	\$ 0	\$ 422,945	\$ 1,804,209	426.6%	\$ (1,381,264)
02 - Sheriff/POAM	2,253,939	159,015	5,828,521	12,181	8,253,656	5,761,560	69.8%	2,492,096
04 - MCF	7,888,562	1,590,886	16,021,052	114,803	25,615,303	18,615,862	72.7%	6,999,441
10 - 911 Employees	1,132,440	298,033	1,262,627	6,988	2,700,088	2,526,877	93.6%	173,211
13 - GEA & TPOAM	709,902	13,902	3,676,091	10,034	4,409,929	2,867,622	65.0%	1,542,307
14 - Crt EEs, Exec EEs & Elctd	5,719,674	1,313,911	12,331,897	12,571	19,378,053	12,100,548	62.4%	7,277,505
20 - Sheriff/Adm	963,723	0	3,107,170	0	4,070,893	2,531,201	62.2%	1,539,692
HA - AFSCME hired aft 10/01/2011	206,399	27,682	0	0	234,081	255,258	109.0%	(21,177)
HB - Sheriff POAM (POLC) af 10/1/1	329,528	49,080	10,729	0	389,337	476,511	122.4%	(87,174)
HC - Executive after 10/1/2012	273,924	88,864	29,575	0	392,363	364,507	92.9%	27,856
HE - Court EEs hired af 11/1/2012	403,142	77,265	7,738	0	488,145	422,656	86.6%	65,489
HF - Sheriff Admin after 1/1/2013	0	0	0	0	0	1,925	0.0%	(1,925)
Total	\$ 19,881,233	\$ 3,625,607	\$ 42,691,376	\$ 156,577	\$ 66,354,793	\$ 47,728,736	71.9%	\$ 18,626,057

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	\$ 916,301	\$ 41,584	\$ 3,676,091	\$ 10,034	\$ 4,644,010	\$ 3,122,880	67.2%	\$ 1,521,130
Linked Divisions HB, 02	2,583,467	208,095	5,839,250	12,181	8,642,993	6,238,071	72.2%	2,404,922
Linked Divisions HE, 14	6,122,816	1,391,176	12,339,635	12,571	19,866,198	12,523,204	63.0%	7,342,994
Linked Divisions HF, 20	963,723	0	3,107,170	0	4,070,893	2,533,126	62.2%	1,537,767

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

The December 31, 2021 valuation assets (actuarial value of assets) are equal to 0.998523 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
2007	\$ 31,065,279	\$ 23,935,045	77%	\$ 7,130,234
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

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
2011	\$ 609,042	\$ 1,332,163	219%	\$ (723,121)
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)

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	1	\$ 8,520	0.00%	0.00%
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%

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
2011	\$ 4,552,496	\$ 3,309,956	73%	\$ 1,242,540
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

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	25	\$ 1,173,102	12.00%	7.84%
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%

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 04 - MCF

Table 8-04: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 15,101,655	\$ 12,165,558	81%	\$ 2,936,097
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

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	164	\$ 5,512,443	9.95%	1.79%
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%

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
2011	\$ 1,086,257	\$ 1,084,705	100%	\$ 1,552
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

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	11	\$ 463,095	7.05%	2.52%
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%

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
2011	\$ 3,436,020	\$ 2,500,608	73%	\$ 935,412
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

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	29	\$ 822,796	\$ 9,516	3.56%
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%

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
2011	\$ 6,422,241	\$ 4,538,489	71%	\$ 1,883,752
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

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	36	\$ 1,524,043	16.34%	3.28%
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%

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 20 - Sheriff/Adm

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 2,253,644	\$ 1,592,306	71%	\$ 661,338
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

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	4	\$ 235,776	23.32%	2.88%
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%

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
2011	\$ 0	\$ 0	0%	\$ 0
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)

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	0	\$ 0	\$ 0	0.00%
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%

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
2011	\$ 0	\$ 0	0%	\$ 0
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)

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	0	\$ 0	\$ 0	0.00%
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%

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
2011	\$ 0	\$ 0	0%	\$ 0
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

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	0	\$ 0	\$ 0	0.00%
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%

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
2011	\$ 0	\$ 0	0%	\$ 0
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

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	0	\$ 0	\$ 0	0.00%
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%

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
2011	\$ 0	\$ 0	0%	\$ 0
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)

Notes: Actuarial assumptions were revised for the 2011, 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		
2011	0	\$ 0	\$ 0	0.00%
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%

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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ (938,202)	10	\$ (779,868)	9	\$ (103,872)
(Gain)/Loss	12/31/2016	52,943	10	39,243	5	8,748
(Gain)/Loss	12/31/2017	(38,384)	10	(32,293)	6	(6,108)
(Gain)/Loss	12/31/2018	(147,162)	10	(136,763)	7	(22,584)
(Gain)/Loss	12/31/2019	(189,813)	10	(189,596)	8	(27,900)
Assumption	12/31/2019	12,897	10	19,951	8	2,940
Experience	12/31/2020	(120,597)	10	(129,035)	9	(17,184)
Experience	12/31/2021	(307,831)	10	(346,524)	10	(42,288)
Total				\$ (1,554,885)		\$ (208,248)

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 2,357,501	23	\$ 2,447,305	17	\$ 198,468
(Gain)/Loss	12/31/2016	203,355	22	231,155	17	18,744
(Gain)/Loss	12/31/2017	(663,621)	21	(749,321)	17	(60,768)
(Gain)/Loss	12/31/2018	313,933	20	352,872	17	28,620
(Gain)/Loss	12/31/2019	153,610	19	171,174	17	13,884
Assumption	12/31/2019	282,173	19	297,580	17	24,132
Experience	12/31/2020	(36,338)	18	(40,756)	17	(3,300)
Experience	12/31/2021	(273,852)	17	(308,275)	17	(24,996)
Total				\$ 2,401,734		\$ 194,784

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 5,284,639	23	\$ 6,090,640	13	\$ 602,844
(Gain)/Loss	12/31/2016	(690,714)	22	(750,745)	13	(74,304)
Amendment	12/31/2016	(28,629)	22	(31,117)	13	(3,084)
(Gain)/Loss	12/31/2017	193,774	19	209,215	13	20,712
(Gain)/Loss	12/31/2018	37,992	17	41,047	13	4,068
(Gain)/Loss	12/31/2019	476,974	15	515,427	13	51,012
Assumption	12/31/2019	699,599	15	713,927	13	70,668
Experience	12/31/2020	1,183,771	14	1,306,095	13	129,276
Experience	12/31/2021	(1,392,123)	13	(1,567,109)	13	(155,112)
Total				\$ 6,527,380		\$ 646,080

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 66,562	23	\$ 81,957	17	\$ 6,648
(Gain)/Loss	12/31/2016	25,040	22	28,464	17	2,304
(Gain)/Loss	12/31/2017	(49,368)	21	(55,730)	17	(4,524)
(Gain)/Loss	12/31/2018	132,371	20	148,783	17	12,072
(Gain)/Loss	12/31/2019	(53,292)	19	(59,387)	17	(4,812)
Assumption	12/31/2019	71,263	19	78,404	17	6,360
Experience	12/31/2020	107,875	18	120,985	17	9,816
Experience	12/31/2021	(170,134)	17	(191,519)	17	(15,528)
Total				\$ 151,957		\$ 12,336

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 1,408,762	23	\$ 1,482,263	17	\$ 120,204
(Gain)/Loss	12/31/2016	179,396	22	203,921	17	16,536
(Gain)/Loss	12/31/2017	(216,493)	21	(244,447)	17	(19,824)
Amendment	12/31/2017	(4,427)	21	(4,977)	17	(408)
(Gain)/Loss	12/31/2018	7,588	20	8,534	17	696
Amendment	12/31/2018	(9,528)	20	(10,705)	17	(864)
(Gain)/Loss	12/31/2019	(13,029)	19	(14,512)	17	(1,176)
Assumption	12/31/2019	123,810	19	128,134	17	10,392
Amendment	12/31/2019	(2,916)	19	(3,250)	17	(264)
Experience	12/31/2020	174,058	18	195,216	17	15,828
Experience	12/31/2021	(221,092)	17	(248,883)	17	(20,184)
Total				\$ 1,491,294		\$ 120,936

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 2,454,448	23	\$ 2,571,583	17	\$ 208,548
(Gain)/Loss	12/31/2016	107,697	22	122,421	17	9,924
(Gain)/Loss	12/31/2017	(212,857)	21	(240,341)	17	(19,488)
(Gain)/Loss	12/31/2018	785,470	20	882,914	17	71,604
Merger	12/31/2018			2,360,774	17	191,448
(Gain)/Loss	12/31/2019	607,015	19	676,443	17	54,852
Assumption	12/31/2019	536,960	19	554,838	17	45,000
Experience	12/31/2020	592,220	18	664,211	17	53,868
Experience	12/31/2021	(427,475)	17	(481,207)	17	(39,024)
Total				\$ 7,111,636		\$ 576,732

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 885,745	23	\$ 933,032	17	\$ 75,660
(Gain)/Loss	12/31/2016	110,882	22	126,033	17	10,224
(Gain)/Loss	12/31/2017	80,741	21	91,170	17	7,392
(Gain)/Loss	12/31/2018	76,649	20	86,161	17	6,984
(Gain)/Loss	12/31/2019	111,119	19	123,817	17	10,044
Assumption	12/31/2019	120,035	19	124,416	17	10,092
Experience	12/31/2020	(27,578)	18	(30,930)	17	(2,508)
Experience	12/31/2021	55,456	17	62,427	17	5,064
Total				\$ 1,516,126		\$ 122,952

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2017	\$ (1,541)	15	\$ (1,574)	11	\$ (180)
(Gain)/Loss	12/31/2018	(2,144)	15	(2,273)	12	(240)
(Gain)/Loss	12/31/2019	(25,717)	15	(27,792)	13	(2,748)
Assumption	12/31/2019	1,571	15	1,901	13	192
Experience	12/31/2020	13,004	15	14,424	14	1,344
Experience	12/31/2021	(3,996)	15	(4,498)	15	(396)
Total				\$ (19,812)		\$ (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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2017	\$ (23,700)	15	\$ (24,319)	11	\$ (2,748)
(Gain)/Loss	12/31/2018	(2,349)	15	(2,483)	12	(264)
(Gain)/Loss	12/31/2019	(14,683)	15	(15,858)	13	(1,572)
Assumption	12/31/2019	2,200	15	2,673	13	264
Experience	12/31/2020	(27,110)	15	(30,063)	14	(2,808)
Experience	12/31/2021	(15,435)	15	(17,375)	15	(1,548)
Total				\$ (87,425)		\$ (8,676)

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 12,453	23	\$ 14,198	17	\$ 1,152
(Gain)/Loss	12/31/2016	6,503	22	7,394	17	600
(Gain)/Loss	12/31/2017	3,453	21	3,906	17	312
(Gain)/Loss	12/31/2018	4,361	20	4,901	17	396
(Gain)/Loss	12/31/2019	10,964	19	12,217	17	996
Assumption	12/31/2019	2,412	19	2,396	17	192
Experience	12/31/2020	(20,791)	18	(23,317)	17	(1,896)
Experience	12/31/2021	4,394	17	4,946	17	396
Total				\$ 26,641		\$ 2,148

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 8,718	23	\$ 12,478	17	\$ 1,008
(Gain)/Loss	12/31/2016	(4,569)	22	(5,179)	17	(420)
(Gain)/Loss	12/31/2017	498	21	552	17	48
(Gain)/Loss	12/31/2018	12,533	20	14,089	17	1,140
(Gain)/Loss	12/31/2019	(5,323)	19	(5,926)	17	(480)
Assumption	12/31/2019	5,521	19	6,042	17	492
Experience	12/31/2020	23,038	18	25,836	17	2,100
Experience	12/31/2021	18,128	17	20,407	17	1,656
Total				\$ 68,299		\$ 5,544

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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 10/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2021	\$ (1,925)	15	\$ (2,167)	15	\$ (192)
Total				\$ (2,167)		\$ (192)

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 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:	12/31/2021
Measurement Date of the Total Pension Liability (TPL):	12/31/2021
At 12/31/2021, the following employees were covered by the benefit terms:	
Inactive employees or beneficiaries currently receiving benefits:	257
Inactive employees entitled to but not yet receiving benefits (including refunds):	269
Active employees:	<u>186</u>
	712
Total Pension Liability as of 12/31/2020 measurement date:	\$ 61,672,787
Total Pension Liability as of 12/31/2021 measurement date:	\$ 64,608,881
Service Cost for the year ending on the 12/31/2021 measurement date:	\$ 814,677
Change in the Total Pension Liability due to:	
- Benefit changes ¹ :	\$ 0
- Differences between expected and actual experience ² :	\$ (805,600)
- Changes in assumptions ² :	\$ 2,319,525
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):	\$ 8,460,508
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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 12/31/2021:	\$ 7,485,939	\$ 0	\$ (6,271,098)

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
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)
12/1/1964	Benefit FAC-5 (5 Year Final Average Compensation)
12/1/1964	10 Year Vesting
12/1/1964	Benefit C (Old)
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
1/1/1990	Blanket Resolution (All Service)
1/1/1988	Benefit C-2/Base C-1 (Old)
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)
12/1/1964	Benefit FAC-5 (5 Year Final Average Compensation)
12/1/1964	10 Year Vesting
12/1/1964	Benefit C (Old)
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

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
1/1/2001	30 Years & Out
1/1/2001	6 Year Vesting
1/1/2001	Benefit B-1
4/1/1986	Member Contribution Rate 0.00%
12/8/1970	Covered by Act 88
12/1/1970	Benefit C-1 (Old)
12/1/1964	Benefit FAC-5 (5 Year Final Average Compensation)
12/1/1964	10 Year Vesting
12/1/1964	Benefit C (Old)
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



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
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)
	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



14 - Crt EEs, Exec EEs & Elctd

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
	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
	No Early Reduced Conditions

HF - Sheriff Admin after 1/1/2013

1/1/2021	Workers Compensation - Service Granted
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HF - Sheriff Admin after 1/1/2013

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>12/31/2021</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	5.6	5.0	4.4	4.0
2. Ratio of actuarial accrued liability to payroll	7.8	7.3	6.4	6.1
3. Ratio of actives to retirees and beneficiaries	0.7	0.8	0.9	1.0
4. Ratio of market value of assets to benefit payments	12.1	11.8	11.9	11.6
5. Ratio of net cash flow to market value of assets (boy)	-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, 2021	
11	Indicate number of active members	186
12	Indicate number of inactive members (excluding pending refunds)	81
13	Indicate number of retirees and beneficiaries	257
14	Investment Performance for Calendar Year Ending December 31, 2021¹	
15	Enter actual rate of return - prior 1-year period	14.13%
16	Enter actual rate of return - prior 5-year period	9.96%
17	Enter actual rate of return - prior 10-year period	9.11%
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	17
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	\$44,183,652
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions ⁵	\$67,441,082
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending September 30, 2022	\$2,770,836

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%.