



Municipal Employees' Retirement System of Michigan

Annual Actuarial Valuation Report
December 31, 2020 - Benzie Co (1003)





Spring, 2021

Benzie 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 Benzie Co (1003) as of December 31, 2020. 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. Benzie 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, 2020,
- Establish contribution requirements for the fiscal year beginning October 1, 2022,
- 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, 2020. 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, MERS Retirement Board sets certain assumptions for funding and GASB purposes. These assumptions are checked regularly through a comprehensive study, called an Experience Study. Studies were completed in 2018 and 2020, and are the basis of the economic and demographic assumptions and methods currently in place. Updated economic assumptions were adopted by the MERS Retirement Board at the February 28, 2019 board meeting and were effective with the December 31, 2019 annual actuarial valuation. **At the February 27, 2020 board meeting, the MERS Retirement Board adopted demographic assumptions effective with the December 31, 2020 annual actuarial valuation, which will impact contributions beginning in 2022.**

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:

<http://www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2020AnnualActuarialValuation-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, 2020. 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 Benzie 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.

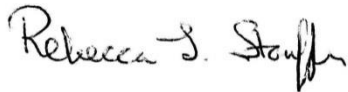
This report was prepared at the request of the MERS Retirement Board and may be provided only in its entirety by the municipality to other interested parties (MERS customarily provides the full report on request to associated third parties such as the auditor for the municipality). GRS is not responsible 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).

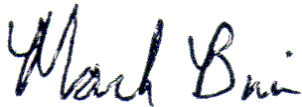
Sincerely,



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



Rebecca L. Stouffer, ASA, FCA, MAAA



Mark Buis, FSA, FCA, EA, MAAA



Table of Contents

Executive Summary	6
Table 1: Employer Contribution Details for the Fiscal Year Beginning October 1, 2022	13
Table 2: Benefit Provisions	15
Table 3: Participant Summary	19
Table 4: Reported Assets (Market Value)	21
Table 5: Flow of Valuation Assets	22
Table 6: Actuarial Accrued Liabilities and Valuation Assets as of December 31, 2020	23
Table 7: Actuarial Accrued Liabilities - Comparative Schedule	25
Tables 8 and 9: Division-Based Comparative Schedules	26
Table 10: Division-Based Layered Amortization Schedule	36
GASB Statement No. 68 Information	46
Benefit Provision History	47
Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method	53
Risk Commentary	54
State Reporting	56



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 funding 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.

	12/31/2020	12/31/2019
Funded Ratio*	64%	65%

* 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, 2020 valuation, the MERS Retirement Board has adopted updated demographic assumptions. Changes to these assumptions are effective for contributions beginning in 2022. Effective with the 2019 valuation, the MERS Retirement Board adopted updated economic assumptions. The combined impact of these assumption changes may be phased in. This valuation reflects the second year of phase-in for the economic assumption update and the first year of phase-in for the demographic assumption update. The remaining combined phase-in period is four 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
	12/31/2020	12/31/2020	12/31/2019	12/31/2019	12/31/2020	12/31/2020	12/31/2019	12/31/2019
Valuation Date:	October 1, 2022	October 1, 2022	October 1, 2021	October 1, 2021	October 1, 2022	October 1, 2022	October 1, 2021	October 1, 2021
Fiscal Year Beginning:	2022	2022	2021	2021	2022	2022	2021	2021
Division								
01 - Courthouse Empl's	-	-	-	-	\$ 3,524	\$ 4,232	\$ 3,169	\$ 3,496
02 - Sheriff Dept.	-	-	-	-	8,358	9,822	7,657	8,545
10 - Elctd Officials	-	-	32.21%	34.11%	9,045	10,134	9,468	10,026
11 - Commissioners	-	-	31.63%	33.87%	1,520	1,640	1,523	1,631
12 - NonUnion&NonElct	-	-	17.32%	18.66%	13,839	16,164	14,007	15,093
13 - Courthouse ee's after 10/01/1	-	-	5.95%	6.12%	1,589	1,850	1,881	1,935
14 - EMS Un	-	-	9.79%	10.01%	6,641	6,968	5,798	5,930
20 - COAM	-	-	-	-	19,769	21,665	18,123	19,404
21 - Sheriff Dept after 10/01/2011	-	-	3.73%	3.67%	3,225	4,200	3,565	3,508
22 - COAM after 10/01/2011	3.34%	3.71%	3.32%	3.27%	431	479	416	410
Total Municipality - Estimated Monthly Contribution					\$ 67,941	\$ 77,154	\$ 65,607	\$ 69,978
Total Municipality - Estimated Annual Contribution					\$ 815,292	\$ 925,848	\$ 787,284	\$ 839,736

Employee contribution rates:

Valuation Date:	Employee Contribution Rate	
	12/31/2020	12/31/2019
Division		
01 - Courthouse Empl's	6.00%	6.00%
02 - Sheriff Dept.	6.00%	6.00%
10 - Elctd Officials	6.00%	6.00%
11 - Commissioners	6.00%	6.00%
12 - NonUnion&NonElct	6.00%	6.00%
13 - Courthouse ee's after 10/01/1	6.00%	6.00%
14 - EMS Un	6.00%	6.00%
20 - COAM	6.00%	6.00%
21 - Sheriff Dept after 10/01/2011	6.00%	6.00%
22 - COAM after 10/01/2011	6.00%	6.00%

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.

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 2022 for the entire employer would be \$108,673, instead of \$77,154.

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 **7.35%** 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 Change in 2020

A 5-year experience study analyzing historical experience from 2013 through 2018 was completed in February 2020. In addition to changes to the economic assumptions which took effect with the fiscal year 2021 contribution rates, the experience study recommended updated demographic assumptions, including adjustments to the following actuarial assumptions: mortality, retirement, disability, and termination rates. Changes to the demographic assumptions resulting from the experience study have been approved by the



MERS Retirement Board and are effective beginning with the December 31, 2020 actuarial valuation, first impacting 2022 contributions. A complete description of the assumptions may be found in the Appendix to the valuation.

Comments on Asset Smoothing

To avoid dramatic spikes and dips in annual contribution requirements due to short term fluctuations in asset markets, MERS applies a technique called **asset smoothing**. This spreads out each year's investment gains or losses over the prior year and the following four years. 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 2020 was 8.17%, while the actual market rate of return was 12.70%.** 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, 2020, the actuarial value of assets is 97% of market value due to asset smoothing. This means that the 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 exceed the 7.35% 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).

If the December 31, 2020 valuation results were based on market value instead of actuarial value:

- The funded percent of your entire municipality would be 65% (instead of 64%); and
- Your total employer contribution requirement for the fiscal year starting October 1, 2022 would be \$886,572 (instead of \$925,848).

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 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, 2020 valuation, and are for the municipality in total, not by division. These results do not reflect a phase-in of the impact of the new actuarial assumptions.

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.

12/31/2020 Valuation Results	Lower Future Annual Returns	Lower Future Annual Returns	Valuation Assumptions
Investment Return Assumption	5.35%	6.35%	7.35%
Accrued Liability	\$ 29,819,773	\$ 26,302,869	\$ 23,401,706
Valuation Assets ¹	\$ 14,887,828	\$ 14,887,828	\$ 14,887,828
Unfunded Accrued Liability	\$ 14,931,945	\$ 11,415,041	\$ 8,513,878
Funded Ratio	50%	57%	64%
Monthly Normal Cost	\$ 41,159	\$ 28,763	\$ 19,474
Monthly Amortization Payment	\$ 89,548	\$ 73,259	\$ 57,680
Total Employer Contribution²	\$ 130,707	\$ 102,022	\$ 77,154

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

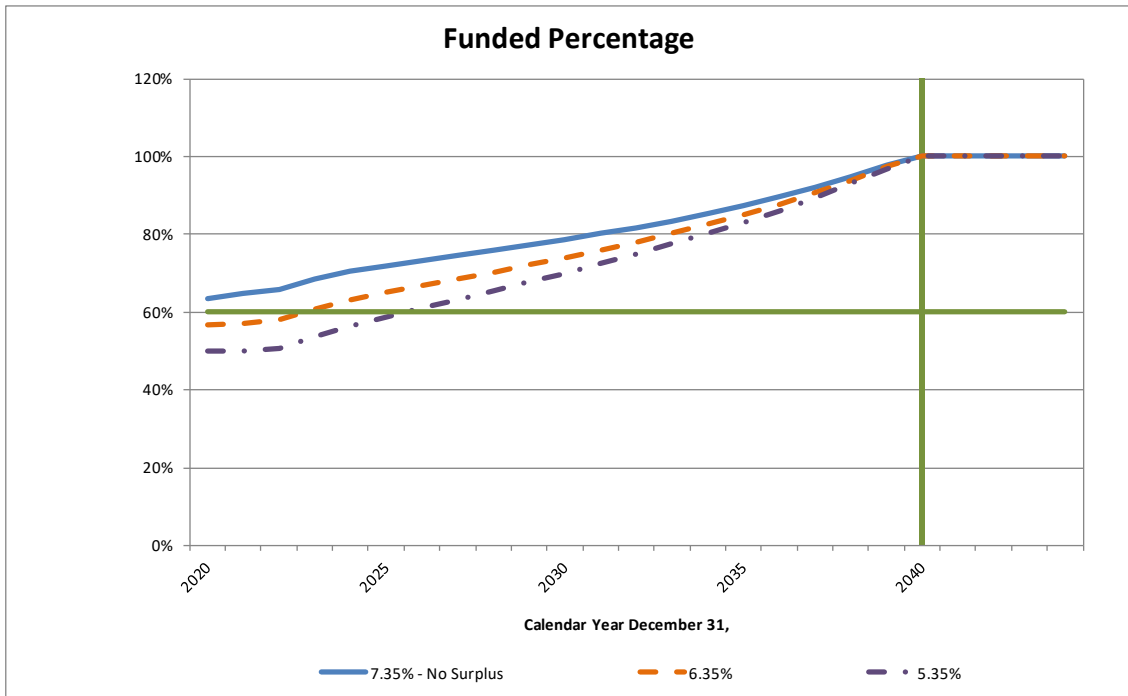
The next two pages show projections of the plan's funded ratio and computed employer contributions under the actuarial assumptions used in the valuation and alternate economic assumption scenarios. All three projections take into account the past investment experience that will continue to affect the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

The 7.35% scenario provides an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.35% 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 6.35% and 5.35% 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
7.35%¹ - NO PHASE-IN					
2020	2022	\$ 23,401,706	\$ 14,887,828	64%	\$ 925,848
2021	2023	\$ 24,200,000	\$ 15,700,000	65%	\$ 928,000
2022	2024	\$ 25,000,000	\$ 16,500,000	66%	\$ 943,000
2023	2025	\$ 25,800,000	\$ 17,600,000	68%	\$ 925,000
2024	2026	\$ 26,500,000	\$ 18,700,000	71%	\$ 912,000
2025	2027	\$ 27,300,000	\$ 19,600,000	72%	\$ 922,000
6.35%¹ - NO PHASE-IN					
2020	2022	\$ 26,302,869	\$ 14,887,828	57%	\$ 1,224,264
2021	2023	\$ 27,200,000	\$ 15,500,000	57%	\$ 1,240,000
2022	2024	\$ 28,000,000	\$ 16,200,000	58%	\$ 1,270,000
2023	2025	\$ 28,900,000	\$ 17,500,000	61%	\$ 1,250,000
2024	2026	\$ 29,700,000	\$ 18,800,000	63%	\$ 1,250,000
2025	2027	\$ 30,500,000	\$ 19,800,000	65%	\$ 1,260,000
5.35%¹ - NO PHASE-IN					
2020	2022	\$ 29,819,773	\$ 14,887,828	50%	\$ 1,568,484
2021	2023	\$ 30,800,000	\$ 15,400,000	50%	\$ 1,600,000
2022	2024	\$ 31,700,000	\$ 16,000,000	51%	\$ 1,640,000
2023	2025	\$ 32,600,000	\$ 17,500,000	54%	\$ 1,630,000
2024	2026	\$ 33,500,000	\$ 18,900,000	56%	\$ 1,630,000
2025	2027	\$ 34,400,000	\$ 20,200,000	59%	\$ 1,640,000

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

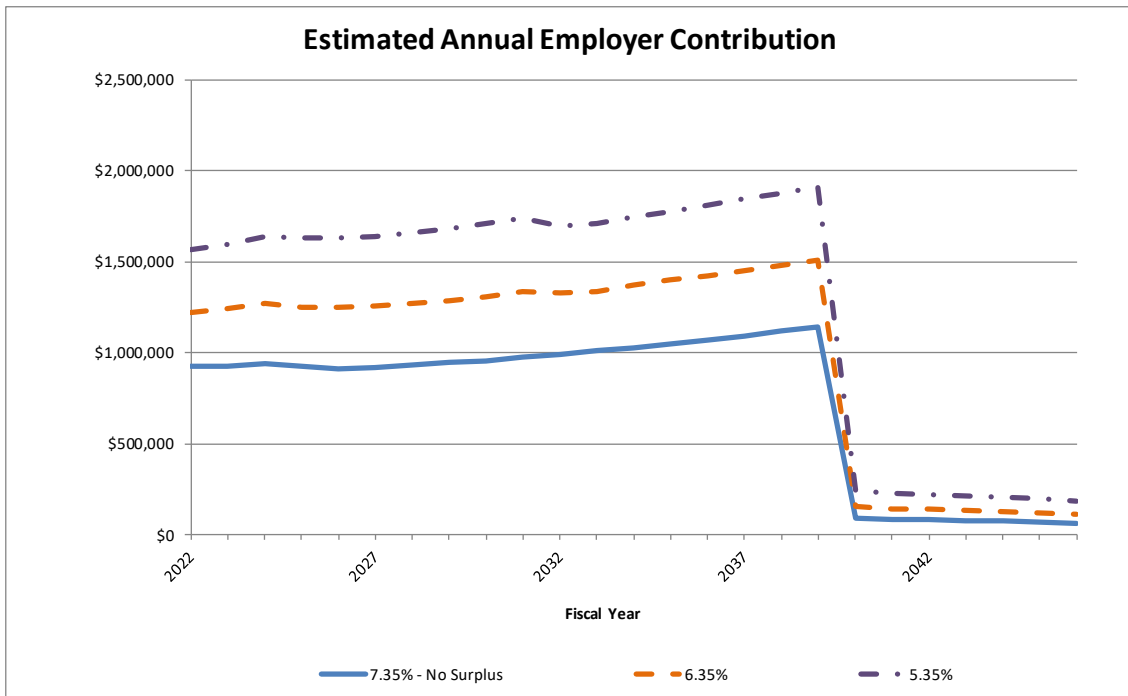
² Valuation Assets do not include assets from Surplus divisions, if any.



Notes:

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

The green indicator lines have been added at 60% funded and 20 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, 2022

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 - Courthse Empls	14.26%	6.00%	-	-	-	-	-	-	-
02 - Sheriff Dept.	13.74%	6.00%	-	-	-	-	-	-	-
10 - Elctd Officials	11.27%	6.00%	-	-	-	-	-	-	-
11 - Commissioners	12.98%	6.00%	-	-	-	-	-	-	-
12 - NonUnion&NonElct	12.71%	6.00%	-	-	-	-	-	-	-
13 - Courthouse ee's after 10/01/1	11.54%	6.00%	-	-	-	-	-	-	-
14 - EMS Un	12.07%	6.00%	-	-	-	-	-	-	-
20 - COAM	13.68%	6.00%	-	-	-	-	55.59%	50.71%	-
21 - Sheriff Dept after 10/01/2011	11.06%	6.00%	-	-	-	-	-	-	-
22 - COAM after 10/01/2011	9.66%	6.00%	3.66%	0.05%	3.71%	3.34%	55.59%	50.71%	0.84%
Estimated Monthly Contribution³									
01 - Courthse Empls			\$ 238	\$ 3,994	\$ 4,232	\$ 3,524			
02 - Sheriff Dept.			1,378	8,444	9,822	8,358			
10 - Elctd Officials			891	9,243	10,134	9,045			
11 - Commissioners			256	1,384	1,640	1,520			
12 - NonUnion&NonElct			5,464	10,700	16,164	13,839			
13 - Courthouse ee's after 10/01/1			1,392	458	1,850	1,589			
14 - EMS Un			3,508	3,460	6,968	6,641			
20 - COAM			2,067	19,598	21,665	19,769			
21 - Sheriff Dept after 10/01/2011			3,807	393	4,200	3,225			
22 - COAM after 10/01/2011			473	6	479	431			
Total Municipality			\$ 19,474	\$ 57,680	\$ 77,154	\$ 67,941			
Estimated Annual Contribution³			\$ 233,688	\$ 692,160	\$ 925,848	\$ 815,292			

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 to not 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 - Courtshse Emplys: Closed to new hires

	2020 Valuation	2019 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:	6.00%	6.00%
DC Plan for New Hires:	10/1/2020	
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)

02 - Sheriff Dept.: Closed to new hires

	2020 Valuation	2019 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):	25 & Out	25 & Out
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	6.00%	6.00%
DC Plan for New Hires:	5/1/2020	
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)

10 - Elctd Officials: Closed to new hires

	2020 Valuation	2019 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):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	6.00%	6.00%
DC Plan for New Hires:	1/1/2020	
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)



11 - Commissioners: Closed to new hires

	2020 Valuation	2019 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% 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:	6.00%	6.00%
DC Plan for New Hires:	1/1/2020	
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)

12 - NonUnion&NonElct: Closed to new hires

	2020 Valuation	2019 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:	6.00%	6.00%
DC Plan for New Hires:	1/1/2020	
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)

13 - Courthouse ee's after 10/01/1: Closed to new hires

	2020 Valuation	2019 Valuation
Benefit Multiplier:	2.00% Multiplier (no max)	2.00% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	6.00%	6.00%
DC Plan for New Hires:	10/1/2020	
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)



14 - EMS Un: Closed to new hires

	2020 Valuation	2019 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:	6.00%	6.00%
DC Plan for New Hires:	3/1/2020	
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)

20 - COAM: Closed to new hires, linked to Division 22

	2020 Valuation	2019 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):	25 & Out	25 & Out
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	6.00%	6.00%
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)

21 - Sheriff Dept after 10/01/2011: Closed to new hires

	2020 Valuation	2019 Valuation
Benefit Multiplier:	2.00% Multiplier (no max)	2.00% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	6.00%	6.00%
DC Plan for New Hires:	5/1/2020	
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)



22 - COAM after 10/01/2011: Open Division, linked to Division 20

	2020 Valuation	2019 Valuation
Benefit Multiplier:	2.00% Multiplier (no max)	2.00% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	6.00%	6.00%
Act 88:	Yes (Adopted 4/18/2000)	Yes (Adopted 4/18/2000)

Table 3: Participant Summary

Division	2020 Valuation		2019 Valuation		2020 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
01 - Courthouse Empls							
Active Employees	1	\$ 42,491	1	\$ 41,741	58.1	13.8	13.8
Vested Former Employees	4	12,454	4	12,454	52.1	6.6	21.9
Retirees and Beneficiaries	19	164,943	20	165,453	71.3		
Pending Refunds	0		0				
02 - Sheriff Dept.							
Active Employees	4	\$ 203,523	6	\$ 250,001	41.6	18.5	18.5
Vested Former Employees	11	82,091	10	70,903	47.9	8.1	12.3
Retirees and Beneficiaries	19	287,993	18	264,796	67.5		
Pending Refunds	7		7				
10 - Elctd Officials							
Active Employees	4	\$ 271,855	5	\$ 325,127	52.1	23.9	23.9
Vested Former Employees	1	26,394	1	26,394	55.4	17.0	18.7
Retirees and Beneficiaries	6	139,525	5	128,397	72.3		
Pending Refunds	2		2				
11 - Commissioners							
Active Employees	6	\$ 49,782	6	\$ 53,283	60.9	4.0	6.0
Vested Former Employees	1	5,755	1	5,755	53.8	8.3	8.3
Retirees and Beneficiaries	8	41,708	8	41,708	71.4		
Pending Refunds	1		1				
12 - NonUnion&NonElct							
Active Employees	22	\$ 1,078,593	19	\$ 894,822	47.5	8.6	10.8
Vested Former Employees	13	111,615	14	140,069	54.2	8.9	14.0
Retirees and Beneficiaries	31	279,822	29	268,487	68.5		
Pending Refunds	14		13				
13 - Courthouse ee's after 10/01/1							
Active Employees	10	\$ 329,508	11	\$ 343,680	47.8	4.6	5.9
Vested Former Employees	2	6,659	2	6,659	37.4	5.0	8.7
Retirees and Beneficiaries	1	6,917	1	6,917	71.0		
Pending Refunds	3		3				
14 - EMS Un							
Active Employees	13	\$ 755,627	12	\$ 655,484	43.8	7.5	7.5
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	1	11,406	1	11,406	65.7		
Pending Refunds	1		2				

Table 3 (continued)

Division	2020 Valuation		2019 Valuation		2020 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
20 - COAM							
Active Employees	6	\$ 384,239	8	\$ 486,061	45.7	20.4	20.7
Vested Former Employees	1	12,636	1	12,636	49.6	10.7	10.7
Retirees and Beneficiaries	12	334,334	10	258,340	61.9		
Pending Refunds	0		0				
21 - Sheriff Dept after 10/01/2011							
Active Employees	18	\$ 890,835	22	\$ 1,043,393	36.5	5.3	6.2
Vested Former Employees	1	3,323	1	3,323	42.0	3.7	5.9
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	19		17				
22 - COAM after 10/01/2011							
Active Employees	1	\$ 56,403	1	\$ 57,458	25.3	2.9	2.9
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	85	\$ 4,062,856	91	\$ 4,151,050	45.3	9.0	10.0
Vested Former Employees	34	260,927	34	278,193	50.5	8.3	13.7
Retirees and Beneficiaries	97	1,266,648	92	1,145,502	68.5		
Pending Refunds	47		45				
Total Participants	263		262				

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	2020 Valuation		2019 Valuation	
	Employer and Retiree ¹	Employee ²	Employer and Retiree ¹	Employee ²
01 - Courthouse Empl's	\$ 1,229,600	\$ 24,111	\$ 1,222,895	\$ 21,531
02 - Sheriff Dept.	3,076,576	164,798	2,878,789	146,345
10 - Elctd Officials	1,351,685	132,154	1,166,637	130,943
11 - Commissioners	292,515	14,315	281,680	11,317
12 - NonUnion&NonElct	3,731,682	422,011	3,257,873	337,192
13 - Courthouse ee's after 10/01/1	168,020	112,326	125,975	61,456
14 - EMS Un	448,758	188,354	324,935	167,326
20 - COAM	2,986,198	264,838	2,621,693	211,003
21 - Sheriff Dept after 10/01/2011	444,183	242,780	352,271	219,154
22 - COAM after 10/01/2011	7,371	8,797	25,662	12,060
Municipality Total³	\$ 13,736,589	\$ 1,574,484	\$ 12,258,409	\$ 1,318,326
Combined Assets³	\$15,311,072		\$13,576,736	

¹ Reserve for Employer Contributions and Benefit Payments.

² Reserve for Employee Contributions.

³ Totals may not add due to rounding.

The December 31, 2020 valuation assets (actuarial value of assets) are equal to 0.972357 times the reported market value of assets (compared to 1.013179 as of December 31, 2019). 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						
2010	\$ 456,891		\$ 63,751	\$ 521,508	\$ (433,510)	\$ (3,129)	\$ 0	\$ 9,023,218
2011	464,128	\$ 0	63,452	504,812	(513,157)	(127)	0	9,542,326
2012	449,227	0	63,371	476,669	(578,294)	0	59,078	10,012,377
2013	470,045	0	64,058	614,605	(632,176)	(12,426)	(1)	10,516,482
2014	570,851	100,000	75,158	629,083	(656,895)	(455)	0	11,234,224
2015	643,589	0	86,788	578,905	(813,875)	(2,189)	0	11,727,442
2016	486,587	60,827	105,809	615,774	(901,659)	(3,438)	27,253	12,118,595
2017	489,987	113,242	218,642	741,533	(944,850)	(4,773)	15,627	12,748,003
2018	603,248	171,718	247,200	482,604	(989,394)	(19,781)	0	13,243,598
2019	639,385	80,000	260,514	642,264	(1,102,005)	(8,092)	1	13,755,665
2020	685,830	87,000	263,352	1,151,954	(1,187,098)	(15,066)	146,191	14,887,828

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.

Additional employer contributions, if any, are shown separately starting in 2011. Prior to 2011, additional contributions are combined with the required employer contributions.

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, 2020**

Division	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
01 - Courthouse Empls	\$ 135,485	\$ 59,331	\$ 1,608,999	\$ 0	\$ 1,803,815	\$ 1,219,055	67.6%	\$ 584,760
02 - Sheriff Dept.	928,648	365,174	3,097,777	2,922	4,394,521	3,151,773	71.7%	1,242,748
10 - Elctd Officials	1,392,218	204,807	1,219,050	6,050	2,822,125	1,442,821	51.1%	1,379,304
11 - Commissioners	34,922	43,800	425,512	1,445	505,679	298,348	59.0%	207,331
12 - NonUnion&NonElct	1,873,157	847,919	2,892,089	19,514	5,632,679	4,038,872	71.7%	1,593,807
13 - Courthouse ee's after 10/01/1	245,588	13,741	71,327	7,043	337,699	272,596	80.7%	65,103
14 - EMS Un	992,969	0	113,708	7,109	1,113,786	619,500	55.6%	494,286
20 - COAM	2,024,468	68,127	3,979,640	0	6,072,235	3,161,168	52.1%	2,911,067
21 - Sheriff Dept after 10/01/2011	667,952	10,194	0	23,272	701,418	667,974	95.2%	33,444
22 - COAM after 10/01/2011	17,749	0	0	0	17,749	15,721	88.6%	2,028
Total	\$ 8,313,156	\$ 1,613,093	\$ 13,408,102	\$ 67,355	\$ 23,401,706	\$ 14,887,828	63.6%	\$ 8,513,878

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 22, 20	\$ 2,042,217	\$ 68,127	\$ 3,979,640	\$ 0	\$ 6,089,984	\$ 3,176,889	52.2%	\$ 2,913,095

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

The December 31, 2020 valuation assets (actuarial value of assets) are equal to 0.972357 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
2006	\$ 8,836,410	\$ 6,628,113	75%	\$ 2,208,297
2007	9,802,199	7,278,542	74%	2,523,657
2008	10,625,475	7,813,108	74%	2,812,367
2009	11,337,965	8,417,707	74%	2,920,258
2010	12,148,043	9,023,218	74%	3,124,825
2011	13,158,904	9,542,326	73%	3,616,578
2012	13,812,904	10,012,377	73%	3,800,527
2013	14,360,023	10,516,482	73%	3,843,541
2014	15,367,430	11,234,224	73%	4,133,206
2015	17,502,712	11,727,442	67%	5,775,270
2016	18,053,107	12,118,595	67%	5,934,512
2017	18,723,413	12,748,003	68%	5,975,410
2018	19,567,738	13,243,598	68%	6,324,140
2019	21,270,778	13,755,665	65%	7,515,113
2020	23,401,706	14,887,828	64%	8,513,878

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012, 2015, 2019 and 2020 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 - Courthouse Emplys

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 1,346,342	\$ 1,176,827	87%	\$ 169,515
2011	1,439,247	1,231,481	86%	207,766
2012	1,536,509	1,307,879	85%	228,630
2013	1,533,203	1,295,294	85%	237,909
2014	1,476,705	1,336,738	91%	139,967
2015	1,610,281	1,370,573	85%	239,708
2016	1,650,981	1,391,944	84%	259,037
2017	1,700,964	1,414,286	83%	286,678
2018	1,684,475	1,330,802	79%	353,673
2019	1,747,191	1,260,826	72%	486,365
2020	1,803,815	1,219,055	68%	584,760

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

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		
2010	10	\$ 297,361	12.41%	2.30%
2011	9	273,973	13.39%	2.30%
2012	9	278,578	14.52%	2.30%
2013	7	222,434	\$ 2,611	2.30%
2014	7	217,558	\$ 1,987	2.30%
2015	7	236,868	\$ 2,959	2.30%
2016	7	235,492	\$ 2,526	6.00%
2017	5	162,902	\$ 2,431	6.00%
2018	2	75,255	\$ 2,606	6.00%
2019	1	41,741	\$ 3,496	6.00%
2020	1	42,491	\$ 4,232	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 Dept.

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 3,714,111	\$ 2,791,734	75%	\$ 922,377
2011	4,003,148	2,959,371	74%	1,043,777
2012	4,243,819	3,154,290	74%	1,089,529
2013	4,170,912	3,163,845	76%	1,007,067
2014	4,296,601	3,277,788	76%	1,018,813
2015	4,096,194	2,956,410	72%	1,139,784
2016	3,814,117	2,947,963	77%	866,154
2017	3,896,443	3,079,498	79%	816,945
2018	3,947,839	3,109,593	79%	838,246
2019	4,144,761	3,065,002	74%	1,079,759
2020	4,394,521	3,151,773	72%	1,242,748

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

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		
2010	25	\$ 1,040,570	14.43%	1.84%
2011	25	1,071,218	15.06%	1.84%
2012	25	1,098,679	15.76%	1.84%
2013	21	924,089	\$ 11,915	1.84%
2014	18	814,342	\$ 11,407	1.84%
2015	14	643,548	\$ 11,558	1.84%
2016	9	416,940	\$ 6,818	6.00%
2017	9	450,405	\$ 7,013	6.00%
2018	9	430,231	\$ 7,319	6.00%
2019	6	250,001	\$ 8,545	6.00%
2020	4	203,523	\$ 9,822	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 - Elctd Officials

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 1,996,989	\$ 1,059,839	53%	\$ 937,150
2011	2,100,575	1,094,173	52%	1,006,402
2012	2,326,622	1,155,147	50%	1,171,475
2013	2,280,390	1,060,110	47%	1,220,280
2014	2,330,276	1,169,721	50%	1,160,555
2015	2,514,310	1,192,475	47%	1,321,835
2016	2,560,126	1,172,905	46%	1,387,221
2017	2,478,208	1,198,762	48%	1,279,446
2018	2,433,016	1,239,720	51%	1,193,296
2019	2,595,449	1,314,680	51%	1,280,769
2020	2,822,125	1,442,821	51%	1,379,304

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

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		
2010	5	\$ 274,039	27.74%	2.08%
2011	5	275,249	29.26%	2.08%
2012	3	153,487	55.74%	2.08%
2013	5	272,645	34.13%	2.08%
2014	5	280,221	31.86%	2.08%
2015	5	288,110	37.64%	2.08%
2016	5	304,738	34.68%	6.00%
2017	5	310,754	32.13%	6.00%
2018	5	317,359	30.43%	6.00%
2019	5	325,127	34.11%	6.00%
2020	4	271,855	\$ 10,134	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 11 - Commissioners

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 163,344	\$ 97,450	60%	\$ 65,894
2011	175,884	103,524	59%	72,360
2012	181,774	109,989	61%	71,785
2013	381,356	214,768	56%	166,588
2014	397,345	236,760	60%	160,585
2015	437,073	267,038	61%	170,035
2016	464,199	294,143	63%	170,056
2017	474,277	305,450	64%	168,827
2018	484,147	305,653	63%	178,494
2019	494,331	296,858	60%	197,473
2020	505,679	298,348	59%	207,331

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

Table 9-11: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2010	4	\$ 41,357	19.18%	0.00%
2011	6	57,789	16.97%	0.00%
2012	2	23,309	29.69%	0.00%
2013	6	59,581	27.25%	0.00%
2014	6	59,212	26.08%	0.00%
2015	7	68,505	26.07%	0.00%
2016	5	49,937	27.85%	6.00%
2017	7	63,322	23.53%	6.00%
2018	5	47,189	31.36%	6.00%
2019	6	53,283	33.87%	6.00%
2020	6	49,782	\$ 1,640	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 12 - NonUnion&NonElct

Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 3,022,664	\$ 2,539,986	84%	\$ 482,678
2011	3,352,500	2,710,126	81%	642,374
2012	3,301,642	2,749,254	83%	552,388
2013	3,640,437	3,062,593	84%	577,844
2014	4,046,398	3,225,346	80%	821,052
2015	4,322,468	3,208,003	74%	1,114,465
2016	4,535,427	3,322,864	73%	1,212,563
2017	4,777,737	3,564,880	75%	1,212,857
2018	5,273,145	3,852,376	73%	1,420,769
2019	5,107,642	3,642,445	71%	1,465,197
2020	5,632,679	4,038,872	72%	1,593,807

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

Table 9-12: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2010	26	\$ 1,073,505	11.53%	2.07%
2011	28	1,161,882	12.09%	2.07%
2012	26	984,631	12.69%	2.07%
2013	27	1,069,405	12.04%	2.07%
2014	29	1,199,447	12.91%	2.07%
2015	29	1,197,147	15.64%	2.07%
2016	27	1,176,231	13.33%	6.00%
2017	32	1,355,225	12.28%	6.00%
2018	34	1,615,593	12.29%	6.00%
2019	19	894,822	18.66%	6.00%
2020	22	1,078,593	\$ 16,164	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 - Courthouse ee's after 10/01/1

Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 0	\$ 0	0%	\$ 0
2011	0	0	0%	0
2012	0	0	0%	0
2013	50,360	48,981	97%	1,379
2014	65,189	64,071	98%	1,118
2015	91,366	81,354	89%	10,012
2016	103,156	94,866	92%	8,290
2017	119,902	109,639	91%	10,263
2018	170,345	150,842	89%	19,503
2019	234,288	189,901	81%	44,387
2020	337,699	272,596	81%	65,103

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

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		
2010	0	\$ 0	\$ 0	0.00%
2011	0	0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	4	88,757	7.55%	2.30%
2014	5	128,052	7.02%	2.30%
2015	5	139,598	7.45%	2.30%
2016	3	87,264	4.57%	6.00%
2017	5	141,235	4.87%	6.00%
2018	10	299,857	5.68%	6.00%
2019	11	343,680	6.12%	6.00%
2020	10	329,508	\$ 1,850	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 - EMS Un

Table 8-14: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 0	\$ 0	0%	\$ 0
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	854,480	498,749	58%	355,731
2020	1,113,786	619,500	56%	494,286

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

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		
2010	0	\$ 0	\$ 0	0.00%
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	0.00%
2019	12	655,484	10.01%	6.00%
2020	13	755,627	\$ 6,968	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 - COAM

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 1,904,593	\$ 1,357,382	71%	\$ 547,211
2011	2,087,550	1,443,651	69%	643,899
2012	2,222,538	1,535,818	69%	686,720
2013	2,084,770	1,455,287	70%	629,483
2014	2,706,146	1,882,276	70%	823,870
2015	4,231,825	2,487,580	59%	1,744,245
2016	4,652,303	2,621,827	56%	2,030,476
2017	4,889,998	2,695,868	55%	2,194,130
2018	5,116,201	2,767,685	54%	2,348,516
2019	5,470,200	2,870,028	52%	2,600,172
2020	6,072,235	3,161,168	52%	2,911,067

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

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		
2010	8	\$ 398,906	16.42%	2.00%
2011	8	414,245	17.65%	2.00%
2012	8	426,407	18.93%	2.00%
2013	7	366,417	\$ 5,519	2.00%
2014	9	453,600	\$ 7,740	2.00%
2015	9	497,910	\$ 14,567	2.00%
2016	9	510,696	\$ 14,870	6.00%
2017	9	517,190	\$ 15,802	6.00%
2018	8	482,185	\$ 16,976	6.00%
2019	8	486,061	\$ 19,404	6.00%
2020	6	384,239	\$ 21,665	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 21 - Sheriff Dept after 10/01/2011

Table 8-21: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 0	\$ 0	0%	\$ 0
2011	0	0	0%	0
2012	0	0	0%	0
2013	14,780	9,576	65%	5,204
2014	48,770	41,524	85%	7,246
2015	199,195	164,009	82%	35,186
2016	272,798	272,083	100%	715
2017	385,884	379,620	98%	6,264
2018	458,570	486,927	106%	(28,357)
2019	579,012	578,956	100%	56
2020	701,418	667,974	95%	33,444

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

Table 9-21: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2010	0	\$ 0	\$ 0	0.00%
2011	0	0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	9	323,686	6.85%	1.84%
2014	10	362,285	6.81%	1.84%
2015	15	595,479	7.36%	1.84%
2016	18	712,206	3.33%	6.00%
2017	16	715,978	3.73%	6.00%
2018	19	814,363	3.73%	6.00%
2019	22	1,043,393	3.67%	6.00%
2020	18	890,835	\$ 4,200	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 22 - COAM after 10/01/2011

Table 8-22: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 0	\$ 0	0%	\$ 0
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	43,424	38,220	88%	5,204
2020	17,749	15,721	89%	2,028

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

Table 9-22: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2010	0	\$ 0	\$ 0	0.00%
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%	4.00%
2019	1	57,458	3.27%	6.00%
2020	1	56,403	3.71%	6.00%

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 for the 12/31/2015 through 12/31/2020 valuations do not reflect the phase-in of the change in contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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 - Courthouse Emplpy

Table 10-01: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 239,708	23	\$ 267,101	18	\$ 21,348
(Gain)/Loss	12/31/2016	9,719	22	11,153	18	888
Amendment	12/31/2016	(5,305)	22	(6,091)	18	(492)
(Gain)/Loss	12/31/2017	18,507	21	21,096	18	1,692
(Gain)/Loss	12/31/2018	62,989	20	71,477	18	5,712
(Gain)/Loss	12/31/2019	72,926	19	82,028	18	6,564
Assumption	12/31/2019	52,525	19	56,040	18	4,476
Experience	12/31/2020	85,512	18	96,812	18	7,740
Total				\$ 599,616		\$ 47,928

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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 Dept.

Table 10-02: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 1,126,628	23	\$ 1,163,659	18	\$ 93,024
(Gain)/Loss	12/31/2016	(286,834)	22	(329,120)	18	(26,316)
Amendment	12/31/2016	(18,932)	22	(21,713)	18	(1,740)
(Gain)/Loss	12/31/2017	(10,778)	21	(12,281)	18	(984)
(Gain)/Loss	12/31/2018	31,663	20	35,935	18	2,868
(Gain)/Loss	12/31/2019	95,641	19	107,583	18	8,604
Assumption	12/31/2019	149,411	19	161,591	18	12,924
Experience	12/31/2020	143,100	18	162,011	18	12,948
Total				\$ 1,267,665		\$ 101,328

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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 - Elctd Officials

Table 10-10: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 1,321,835	23	\$ 1,393,703	18	\$ 111,420
(Gain)/Loss	12/31/2016	35,239	22	40,421	18	3,228
Amendment	12/31/2016	(4,563)	22	(5,219)	18	(420)
(Gain)/Loss	12/31/2017	(128,116)	21	(146,022)	18	(11,676)
(Gain)/Loss	12/31/2018	(90,036)	20	(102,151)	18	(8,172)
(Gain)/Loss	12/31/2019	9,655	19	10,864	18	864
Assumption	12/31/2019	84,196	19	86,469	18	6,912
Experience	12/31/2020	96,791	18	109,582	18	8,760
Total				\$ 1,387,647		\$ 110,916

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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 11 - Commissioners

Table 10-11: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 170,035	23	\$ 175,435	18	\$ 14,028
(Gain)/Loss	12/31/2016	495	22	564	18	48
Amendment	12/31/2016	(1,120)	22	(1,283)	18	(108)
(Gain)/Loss	12/31/2017	(3,522)	21	(4,013)	18	(324)
(Gain)/Loss	12/31/2018	8,491	20	9,632	18	768
(Gain)/Loss	12/31/2019	1,638	19	1,841	18	144
Assumption	12/31/2019	15,839	19	16,561	18	1,320
Experience	12/31/2020	8,055	18	9,119	18	732
Total				\$ 207,856		\$ 16,608

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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 12 - NonUnion&NonElct

Table 10-12: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 998,582	23	\$ 1,093,784	18	\$ 87,444
(Gain)/Loss	12/31/2016	50,256	22	57,671	18	4,608
Amendment	12/31/2016	(30,060)	22	(34,493)	18	(2,760)
(Gain)/Loss	12/31/2017	(13,754)	21	(15,690)	18	(1,260)
(Gain)/Loss	12/31/2018	176,771	20	200,570	18	16,032
(Gain)/Loss	12/31/2019	(897)	19	(1,003)	18	(84)
Assumption	12/31/2019	173,375	19	186,050	18	14,868
Experience	12/31/2020	105,548	18	119,496	18	9,552
Total				\$ 1,606,385		\$ 128,400

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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 - Courthouse ee's after 10/01/1

Table 10-13: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 10,012	23	\$ 11,273	18	\$ 900
(Gain)/Loss	12/31/2016	(990)	22	(1,140)	18	(96)
Amendment	12/31/2016	(3,440)	22	(3,948)	18	(312)
(Gain)/Loss	12/31/2017	3,911	21	4,458	18	360
(Gain)/Loss	12/31/2018	9,125	20	10,352	18	828
(Gain)/Loss	12/31/2019	17,154	19	19,294	18	1,548
Assumption	12/31/2019	6,857	19	7,446	18	600
Experience	12/31/2020	18,425	18	20,860	18	1,668
Total				\$ 68,595		\$ 5,496

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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 - EMS Un

Table 10-14: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 129,039	23	\$ 140,513	18	\$ 11,232
(Gain)/Loss	12/31/2016	2,482	22	2,844	18	228
Amendment	12/31/2016	(3,709)	22	(4,250)	18	(336)
(Gain)/Loss	12/31/2017	(1,722)	21	(1,958)	18	(156)
(Gain)/Loss	12/31/2018	20,884	20	23,697	18	1,896
(Gain)/Loss	12/31/2019	179,233	19	201,616	18	16,116
Assumption	12/31/2019	17,895	19	17,707	18	1,416
Experience	12/31/2020	122,927	18	139,172	18	11,124
Total				\$ 519,341		\$ 41,520

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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 20 - COAM

Table 10-20: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 1,744,245	23	\$ 1,959,363	18	\$ 156,636
(Gain)/Loss	12/31/2016	177,626	22	203,826	18	16,296
Amendment	12/31/2016	(12,763)	22	(14,631)	18	(1,176)
(Gain)/Loss	12/31/2017	84,294	21	96,073	18	7,680
(Gain)/Loss	12/31/2018	120,467	20	136,694	18	10,932
(Gain)/Loss	12/31/2019	25,561	19	28,753	18	2,304
Assumption	12/31/2019	198,410	19	206,543	18	16,512
Experience	12/31/2020	287,235	18	325,193	18	25,992
Total				\$ 2,941,814		\$ 235,176

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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 21 - Sheriff Dept after 10/01/2011

Table 10-21: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2020	33,609	10	38,050	10	4,716
Total				\$ 38,050		\$ 4,716

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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 22 - COAM after 10/01/2011

Table 10-22: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 10/1/2022		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2019	\$ 7,630	15	\$ 8,465	14	\$ 804
Assumption	12/31/2019	313	15	295	14	24
Amendment	12/31/2019	(2,690)	10	(2,883)	9	(384)
Experience	12/31/2020	(3,558)	15	(4,028)	15	(372)
Total				\$ 1,849		\$ 72

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, 2020 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2020 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:	12/31/2020
Measurement Date of the Total Pension Liability (TPL):	12/31/2020
At 12/31/2020, the following employees were covered by the benefit terms:	
Inactive employees or beneficiaries currently receiving benefits:	97
Inactive employees entitled to but not yet receiving benefits (including refunds):	81
Active employees:	<u>85</u>
	263
Total Pension Liability as of 12/31/2019 measurement date:	\$ 20,693,930
Total Pension Liability as of 12/31/2020 measurement date:	\$ 22,756,652
Service Cost for the year ending on the 12/31/2020 measurement date:	\$ 452,617
Change in the Total Pension Liability due to:	
- Benefit changes ¹ :	\$ 0
- Differences between expected and actual experience ² :	\$ 506,093
- Changes in assumptions ² :	\$ 761,920
Average expected remaining service lives of all employees (active and inactive):	3

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):	\$ 4,062,856
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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>(6.60%)</u>	Current Discount Rate <u>(7.60%)</u>	1% Increase <u>(8.60%)</u>
Change in Net Pension Liability as of 12/31/2020:	\$ 2,768,623	\$ 0	\$ (2,307,300)

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 - Courthouse Empl's

10/1/2020	DC Adoption Date 10-01-2020
12/1/2016	Service Credit Purchase Estimates - Yes
10/1/2016	Participant Contribution Rate 6%
9/1/2008	Fiscal Month - October
1/1/2008	E 2% COLA Adopted (01/01/2008)
1/1/2007	E 2% COLA Adopted (01/01/2007)
5/1/2006	Benefit B-4 (80% max)
5/1/2006	Member Contribution Rate 2.30%
1/1/2006	E 2% COLA Adopted (01/01/2006)
1/1/2005	E 2% COLA Adopted (01/01/2005)
1/1/2004	E 2% COLA Adopted (01/01/2004)
1/1/2003	Benefit B-3 (80% max)
1/1/2003	E 2% COLA Adopted (01/01/2003)
1/1/2002	E 2% COLA Adopted (01/01/2002)
1/1/2001	E 2% COLA Adopted (01/01/2001)
4/18/2000	Covered by Act 88
1/1/2000	E 2% COLA Adopted (01/01/2000)
1/1/1999	Benefit B-2
1/1/1999	Flexible E 2% COLA Adopted (01/01/1999)
1/1/1998	E 2% COLA Adopted (01/01/1998)
11/1/1997	Temporary 20 Years & Out (11/01/1997 - 01/03/1998)
11/1/1997	Temporary Benefit B-3 (80% max) (11/01/1997 - 01/03/1998)
6/1/1997	Temporary Benefit B-2 (06/01/1997 - 08/02/1997)
8/1/1994	Benefit FAC-5 (5 Year Final Average Compensation)
8/1/1994	8 Year Vesting
8/1/1994	Benefit C-1 (New)
8/1/1994	Member Contribution Rate 0.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

02 - Sheriff Dept.

5/1/2020	DC Adoption Date 05-01-2020
12/1/2016	Service Credit Purchase Estimates - Yes
11/1/2016	Participant Contribution Rate 6%
10/1/2014	Participant Contribution Rate 3.17%
10/1/2013	Participant Contribution Rate 2.47%
9/1/2008	Fiscal Month - October
1/1/2008	E 2% COLA Adopted (01/01/2008)
1/1/2007	E 2% COLA Adopted (01/01/2007)
1/1/2006	E 2% COLA Adopted (01/01/2006)
1/1/2005	Benefit B-4 (80% max)
1/1/2005	Member Contribution Rate 1.84%



02 - Sheriff Dept.

1/1/2005	E 2% COLA Adopted (01/01/2005)
2/1/2004	25 Years & Out
1/1/2004	E 2% COLA Adopted (01/01/2004)
1/1/2003	E 2% COLA Adopted (01/01/2003)
1/1/2002	E 2% COLA Adopted (01/01/2002)
1/1/2001	E 2% COLA Adopted (01/01/2001)
4/18/2000	Covered by Act 88
1/1/2000	Benefit B-3 (80% max)
1/1/2000	E 2% COLA Adopted (01/01/2000)
1/1/1999	Flexible E 2% COLA Adopted (01/01/1999)
1/3/1998	Benefit B-2
1/1/1998	E 2% COLA Adopted (01/01/1998)
11/1/1997	Temporary 20 Years & Out (11/01/1997 - 01/03/1998)
11/1/1997	Temporary Benefit B-3 (80% max) (11/01/1997 - 01/03/1998)
6/1/1997	Temporary Benefit B-2 (06/01/1997 - 08/02/1997)
8/1/1994	Benefit FAC-5 (5 Year Final Average Compensation)
8/1/1994	8 Year Vesting
8/1/1994	Benefit C-1 (New)
8/1/1994	Benefit F55 (With 25 Years of Service)
8/1/1994	Member Contribution Rate 0.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

10 - Elctd Officials

1/1/2020	Non-Accelerated Amortization
1/1/2020	DC Adoption Date 01-01-2020
12/1/2016	Service Credit Purchase Estimates - Yes
12/1/2016	Participant Contribution Rate 6%
9/1/2008	Fiscal Month - October
1/1/2008	E 2% COLA Adopted (01/01/2008)
1/1/2007	E 2% COLA Adopted (01/01/2007)
4/1/2006	Benefit B-4 (80% max)
4/1/2006	Member Contribution Rate 2.08%
1/1/2006	E 2% COLA Adopted (01/01/2006)
1/1/2005	E 2% COLA Adopted (01/01/2005)
1/1/2004	E 2% COLA Adopted (01/01/2004)
1/1/2003	E 2% COLA Adopted (01/01/2003)
1/1/2002	E 2% COLA Adopted (01/01/2002)
1/1/2001	E 2% COLA Adopted (01/01/2001)
4/18/2000	Covered by Act 88
1/1/2000	E 2% COLA Adopted (01/01/2000)
1/1/1999	Flexible E 2% COLA Adopted (01/01/1999)
1/1/1998	E 2% COLA Adopted (01/01/1998)
11/1/1997	Temporary 20 Years & Out (11/01/1997 - 01/02/1998)
9/1/1997	Benefit B-3 (80% max)
6/1/1997	Temporary Benefit B-2 (06/01/1997 - 08/02/1997)
1/1/1997	Benefit B-2
8/1/1994	Benefit FAC-5 (5 Year Final Average Compensation)
8/1/1994	8 Year Vesting

10 - Elctd Officials

8/1/1994	Benefit C-1 (New)
8/1/1994	Benefit F55 (With 25 Years of Service)
8/1/1994	Member Contribution Rate 0.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

11 - Commissioners

1/1/2020	Non-Accelerated Amortization
1/1/2020	DC Adoption Date 01-01-2020
12/1/2016	Service Credit Purchase Estimates - Yes
12/1/2016	Participant Contribution Rate 6%
9/1/2008	Fiscal Month - October
1/1/2008	E 2% COLA Adopted (01/01/2008)
1/1/2007	E 2% COLA Adopted (01/01/2007)
1/1/2006	E 2% COLA Adopted (01/01/2006)
1/1/2005	E 2% COLA Adopted (01/01/2005)
1/1/2004	E 2% COLA Adopted (01/01/2004)
1/1/2003	E 2% COLA Adopted (01/01/2003)
1/1/2002	E 2% COLA Adopted (01/01/2002)
1/1/2001	E 2% COLA Adopted (01/01/2001)
4/18/2000	Covered by Act 88
1/1/2000	E 2% COLA Adopted (01/01/2000)
1/1/1999	Flexible E 2% COLA Adopted (01/01/1999)
1/1/1998	E 2% COLA Adopted (01/01/1998)
11/1/1997	Temporary 20 Years & Out (11/01/1997 - 01/02/1998)
9/1/1997	Benefit B-3 (80% max)
6/1/1997	Temporary Benefit B-2 (06/01/1997 - 08/02/1997)
1/1/1997	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1997	8 Year Vesting
1/1/1997	Benefit C-1 (New)
1/1/1997	Member Contribution Rate 0.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

12 - NonUnion&NonElct

1/1/2020	Non-Accelerated Amortization
1/1/2020	DC Adoption Date 01-01-2020
12/1/2016	Service Credit Purchase Estimates - Yes
12/1/2016	Participant Contribution Rate 6%
9/1/2008	Fiscal Month - October
1/1/2008	E 2% COLA Adopted (01/01/2008)
1/1/2007	E 2% COLA Adopted (01/01/2007)
4/1/2006	Benefit B-4 (80% max)
4/1/2006	Member Contribution Rate 2.07%
1/1/2006	E 2% COLA Adopted (01/01/2006)
1/1/2005	E 2% COLA Adopted (01/01/2005)
6/1/2004	Benefit B-3 (80% max)
1/1/2004	E 2% COLA Adopted (01/01/2004)
1/1/2003	E 2% COLA Adopted (01/01/2003)



12 - NonUnion&NonElct

1/1/2002	E 2% COLA Adopted (01/01/2002)
1/1/2001	E 2% COLA Adopted (01/01/2001)
4/18/2000	Covered by Act 88
1/1/2000	E 2% COLA Adopted (01/01/2000)
1/1/1999	Flexible E 2% COLA Adopted (01/01/1999)
1/1/1998	E 2% COLA Adopted (01/01/1998)
11/1/1997	Temporary 20 Years & Out (11/01/1997 - 01/03/1998)
11/1/1997	Temporary Benefit B-3 (80% max) (11/01/1997 - 01/03/1998)
6/1/1997	Temporary Benefit B-2 (06/01/1997 - 08/02/1997)
1/1/1997	Benefit B-2
7/1/1996	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1996	8 Year Vesting
7/1/1996	Benefit C-1 (New)
7/1/1996	Member Contribution Rate 0.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

13 - Courthouse ee's after 10/01/1

1/1/2021	Non-Accelerated Amortization
10/1/2020	DC Adoption Date 10-01-2020
12/1/2016	Service Credit Purchase Estimates - Yes
10/1/2016	Participant Contribution Rate 6%
10/1/2012	Day of work defined as 8 Hours a Day for All employees.
10/1/2012	Benefit FAC-5 (5 Year Final Average Compensation)
10/1/2012	Non Standard Compensation Definition
10/1/2012	10 Year Vesting
10/1/2012	Benefit B-2
10/1/2012	Benefit F55 (With 25 Years of Service)
10/1/2012	Member Contribution Rate 2.30%
9/1/2008	Fiscal Month - October
4/18/2000	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 - EMS Un

3/1/2020	Non-Accelerated Amortization
3/1/2020	DC Adoption Date 03-01-2020
11/1/2019	Benefit FAC-5 (5 Year Final Average Compensation)
11/1/2019	8 Year Vesting
11/1/2019	Defined Benefit Normal Retirement Age - 60
11/1/2019	Service Credit Purchase Estimates - Yes
11/1/2019	Benefit B-4 (80% max)
11/1/2019	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
11/1/2019	Participant Contribution Rate 6%
9/1/2008	Fiscal Month - October
4/18/2000	Covered by Act 88
11/1/1997	Temporary 20 Years & Out (11/01/1997 - 01/03/1998)
11/1/1997	Temporary Benefit B-3 (80% max) (11/01/1997 - 01/03/1998)
6/1/1997	Temporary Benefit B-2 (06/01/1997 - 08/02/1997)



20 - COAM

12/1/2016	Service Credit Purchase Estimates - Yes
11/1/2016	Participant Contribution Rate 6%
10/1/2014	Participant Contribution Rate 4%
10/1/2013	Participant Contribution Rate 3%
3/1/2009	25 Years & Out
3/1/2009	Member Contribution Rate 2.00%
9/1/2008	Fiscal Month - October
1/1/2008	E 2% COLA Adopted (01/01/2008)
1/1/2007	E 2% COLA Adopted (01/01/2007)
1/1/2006	E 2% COLA Adopted (01/01/2006)
4/1/2004	Benefit FAC-5 (5 Year Final Average Compensation)
4/1/2004	8 Year Vesting
4/1/2004	Benefit B-4 (80% max)
4/1/2004	Benefit F55 (With 25 Years of Service)
4/1/2004	Member Contribution Rate 1.28%
4/18/2000	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

21 - Sheriff Dept after 10/01/2011

5/1/2020	DC Adoption Date 05-01-2020
5/1/2020	Non-Accelerated Amortization
12/1/2016	Service Credit Purchase Estimates - Yes
11/1/2016	Participant Contribution Rate 6%
10/1/2014	Participant Contribution Rate 3.17%
10/1/2013	Participant Contribution Rate 2.47%
10/1/2011	Member Contribution Rate 1.84%
10/1/2011	Day of work defined as 8 Hours a Day for All employees.
10/1/2011	Benefit FAC-5 (5 Year Final Average Compensation)
10/1/2011	10 Year Vesting
10/1/2011	Benefit B-2
10/1/2011	Benefit F55 (With 25 Years of Service)
9/1/2008	Fiscal Month - October
4/18/2000	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

22 - COAM after 10/01/2011

12/1/2016	Service Credit Purchase Estimates - Yes
10/1/2016	Participant Contribution Rate 6%
10/1/2014	Participant Contribution Rate 4%
10/1/2013	Participant Contribution Rate 3%
10/1/2011	Day of work defined as 8 Hours a Day for All employees.
10/1/2011	Benefit FAC-5 (5 Year Final Average Compensation)
10/1/2011	Non Standard Compensation Definition
10/1/2011	10 Year Vesting
10/1/2011	Benefit B-2
10/1/2011	Benefit F55 (With 25 Years of Service)
10/1/2011	Member Contribution Rate 2.00%



22 - COAM after 10/01/2011

9/1/2008 Fiscal Month - October
4/18/2000 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

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	2.00%

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>12/31/2020</u>	<u>12/31/2019</u>	<u>12/31/2018</u>
1. Ratio of the market value of assets to total payroll	3.8	3.3	3.0
2. Ratio of actuarial accrued liability to payroll	5.8	5.1	4.8
3. Ratio of actives to retirees and beneficiaries	0.9	1.0	1.1
4. Ratio of market value of assets to benefit payments	12.7	12.2	12.0
5. Ratio of net cash flow to market value of assets (boy)	-0.1%	-1.1%	0.1%

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, 2020	
11	Indicate number of active members	85
12	Indicate number of inactive members (excluding pending refunds)	34
13	Indicate number of retirees and beneficiaries	97
14	Investment Performance for Calendar Year Ending December 31, 2020¹	
15	Enter actual rate of return - prior 1-year period	13.59%
16	Enter actual rate of return - prior 5-year period	9.35%
17	Enter actual rate of return - prior 10-year period	7.91%
18	Actuarial Assumptions	
19	Actuarial assumed rate of investment return ²	7.35%
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	18
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	\$14,783,728
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions ⁵	\$24,355,806
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending September 30, 2021	\$1,131,684

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) indicate “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 7.00%.