



Municipal Employees' Retirement System of Michigan

Annual Actuarial Valuation Report
December 31, 2021 - Flat Rock, City of (8212)





Spring, 2022

Flat Rock, City of

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 Flat Rock, City of (8212) as of December 31, 2021. The report includes the determination of liabilities and contribution rates resulting from the participation in the Municipal Employees' Retirement System of Michigan ("MERS"). This report contains the minimum actuarially determined contribution requirement, in alignment with the MERS Plan Document, Actuarial Policy, the Michigan Constitution, and governing statutes. Flat Rock, City of is responsible for the employer contributions needed to provide MERS benefits for its employees and former employees.

The purposes of this valuation are to:

- Measure funding progress as of December 31, 2021,
- Establish contribution requirements for the fiscal year beginning July 1, 2023,
- Provide information regarding the identification and assessment of risk,
- Provide actuarial information in connection with applicable Governmental Accounting Standards Board (GASB) statements, and
- Provide information to assist the local unit of government with state reporting requirements.

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

The findings in this report are based on data and other information through December 31, 2021. The valuation was based upon information furnished by MERS concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by MERS.

The Municipal Employees' Retirement Act, PA 427 of 1984 and the MERS' Plan Document Article VI Sec. 71 (1)(d), provides the MERS Board with the authority to set actuarial assumptions and methods after consultation with the actuary. As the fiduciary of the plan, the MERS Retirement Board sets certain assumptions for funding and GASB purposes. These assumptions are reviewed regularly through a comprehensive study, most recently in the Fall of 2021. The MERS Retirement Board adopted a Dedicated Gains Policy at the February 17, 2022 Board meeting. The Dedicated Gains Policy will automatically reduce the assumed rate of investment return in conjunction with recognizing excess investment gains to mitigate the impact on employer contributions the first year. The new policy is effective with this December 31, 2021 annual actuarial valuation, and is reflected in the funded status and fiscal year 2023 contributions as shown in the Executive Summary.

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

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

<https://www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2021AnnualActuarialValuation-Appendix.pdf>

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

This report reflects the impact of COVID-19 experience through December 31, 2021. It does not reflect the ongoing impact of COVID-19, which is likely to influence demographic and economic experience, at least in the short term. We will continue to monitor these developments and their impact on the MERS Defined Benefit and Hybrid plans. Actual future experience will be reflected in each subsequent annual valuation, as experience emerges.

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

David T. Kausch, Rebecca L. Stouffer, and Mark Buis are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor. GRS maintains independent consulting agreements with certain local units of government for services unrelated to the actuarial consulting services provided in this report.



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

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

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

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

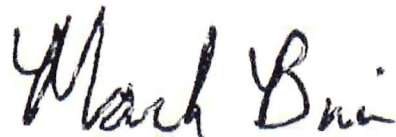
Sincerely,
Gabriel, Roeder, Smith & Company



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



Rebecca L. Stouffer, ASA, FCA, MAAA



Mark Buis, FSA, FCA, EA, MAAA



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Executive Summary

Funded Ratio

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

	12/31/2021	12/31/2020
Funded Ratio*	45%	42%

* Reflects assets from Surplus divisions, if any.

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

Required Employer Contributions

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

Effective for the December 31, 2021 valuation, the MERS Retirement Board has adopted a Dedicated Gains Policy which allows for recognition of asset gains in excess of a set threshold in combination with lowering the assumed rate of investment return (discussed below). Changes to these assumptions and methods are effective for contributions beginning in 2023. Effective with the 2020 and 2019 valuations respectively, the MERS Retirement Board adopted updated demographic and economic assumptions. The combined impact of the prior demographic and economic assumption changes may be phased in. The remaining combined phase-in period is three years for all assumption changes.

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

	Percentage of Payroll				Monthly \$ Based on Projected Payroll			
	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in
Valuation Date:	12/31/2021	12/31/2021	12/31/2020	12/31/2020	12/31/2021	12/31/2021	12/31/2020	12/31/2020
Fiscal Year Beginning:	July 1, 2023	July 1, 2023	July 1, 2022	July 1, 2022	July 1, 2023	July 1, 2023	July 1, 2022	July 1, 2022
Division								
01 - Gnrl Clercl	-	-	-	-	\$ 120	\$ 474	\$ 1,546	\$ 2,077
02 - Police POAM	-	-	-	-	2,116	2,504	4,092	4,674
10 - Gnrl Union	-	-	-	-	26,512	27,460	25,581	27,003
11 - Dept Heads	-	-	-	-	51,123	52,783	39,699	42,189
12 - Admn Empls	-	-	-	-	5,742	6,186	5,752	6,418
13 - Admin EE's after 9/1/2011	2.01%	2.21%	1.64%	1.96%	886	976	694	829
14 - Dept Heads after 9/2011	9.42%	9.69%	10.16%	10.57%	2,147	2,209	2,287	2,380
15 - General Clerical aft 7/1/15	1.38%	1.43%	0.80%	0.94%	260	270	89	104
16 - General Union aft 7/1/12	0.00%	0.00%	0.00%	0.00%	0	0	0	0
21 - COAM Cmnd Of	-	-	-	-	36,162	38,112	38,352	41,277
22 - Police after 5/1/2014	2.40%	2.66%	1.62%	2.08%	2,006	2,224	1,167	1,494
23 - COAM Cmnd hrd on/aft 5/1/14	0.00%	0.00%	1.94%	2.48%	0	0	514	658
Total Municipality - Estimated Monthly Contribution					\$ 127,074	\$ 133,198	\$ 119,773	\$ 129,103
Total Municipality - Estimated Annual Contribution					\$ 1,524,888	\$ 1,598,376	\$ 1,437,276	\$ 1,549,236

Employee contribution rates:

Valuation Date:	Employee Contribution Rate	
	12/31/2021	12/31/2020
Division		
01 - Gnrl Clercl	3% < ; 5% >	3% < ; 5% >
02 - Police POAM	3% < ; 5% >	3% < ; 5% >
10 - Gnrl Union	3% < ; 5% >	3% < ; 5% >
11 - Dept Heads	3% < ; 5% >	3% < ; 5% >
12 - Admn Empls	3% < ; 5% >	3% < ; 5% >
13 - Admin EE's after 9/1/2011	5.00%	5.00%
14 - Dept Heads after 9/2011	5.00%	5.00%
15 - General Clerical aft 7/1/15	5.00%	5.00%
16 - General Union aft 7/1/12	5.00%	5.00%
21 - COAM Cmnd Of	3% < ; 5% >	3% < ; 5% >
22 - Police after 5/1/2014	5.00%	5.00%
23 - COAM Cmnd hrd on/aft 5/1/14	5.00%	5.00%

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



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

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

Assuming that experience of the plan meets actuarial assumptions:

- To accelerate to a 100% funding ratio in 10 years, estimated monthly employer contributions for the fiscal year beginning in 2023 for the entire employer would be \$194,174, instead of \$133,198.

How and Why Do These Numbers Change?

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

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

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

Comments on Investment Rate of Return Assumption

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

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

Assumption and Method Change in 2021



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

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

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

Comments on Asset Smoothing

To avoid dramatic spikes and dips in annual contribution requirements due to short-term fluctuations in asset markets, MERS applies a technique called **asset smoothing**. This spreads out each year's investment gains or losses over the prior year and the following four years. After initial application of asset smoothing, remaining excess market gains are used to buy down the assumed rate of investment return and increase the level of valuation assets, to the extent allowed by the dedicated gains policy. This smoothing method is used to determine your actuarial value of assets (valuation assets), which is then used to determine both your funded ratio and your required contributions. **The (smoothed) actuarial rate of return for 2021 was 17.04%, while the actual market rate of return was 13.97%.** To see historical details of the market rate of return compared to the smoothed actuarial rate of return, refer to this report's Appendix or view the "[How Smoothing Works](#)" [video](#) on the [Defined Benefit resource page](#) of the MERS website.

As of December 31, 2021, the actuarial value of assets is just below 100% of market value due to asset smoothing and dedicated gains. This means that rate of return on the actuarial value of assets should exceed the actuarial assumption in the next few years provided that the annual market returns meet or exceed the 7.00% investment return assumption. When all assumptions are met, contribution rates are expected to stay approximately level as a percent of payroll (dollar amounts are expected to increase with wage inflation of 3.0% each year).

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

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

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



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

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

The relative impact of the economic scenarios below will vary from year to year, as the participant demographics change. The impact of each scenario should be analyzed for a given year, not from year to year. The results in the table are based on the December 31, 2021 valuation and are for the municipality in total, not by division. These results do not reflect a phase-in of the impact of the actuarial assumptions updated in the 2020 and 2019 valuations. There is no phase-in with dedicated gains.

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

12/31/2021 Valuation Results	Lower Future Annual Returns	Lower Future Annual Returns	Valuation Assumptions
Investment Return Assumption	5.00%	6.00%	7.00%
Accrued Liability	\$ 39,720,328	\$ 35,447,647	\$ 31,902,443
Valuation Assets ¹	\$ 14,323,622	\$ 14,323,622	\$ 14,323,622
Unfunded Accrued Liability	\$ 25,396,706	\$ 21,124,025	\$ 17,578,821
Funded Ratio	36%	40%	45%
Monthly Normal Cost	\$ 27,758	\$ 18,595	\$ 11,812
Monthly Amortization Payment	\$ 149,751	\$ 134,010	\$ 119,152
Total Employer Contribution²	\$ 177,509	\$ 153,018	\$ 133,198

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

² If assets exceed accrued liabilities for a division, the division may have an overfunding credit to reduce the division's employer contribution requirement. If the overfunding credit is larger than the normal cost, the division's full credit is included in the municipality's amortization payment above but the division's total contribution requirement is zero. This can cause the displayed normal cost and amortization payment to not add up to the displayed total employer contribution.

Projection Scenarios

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



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

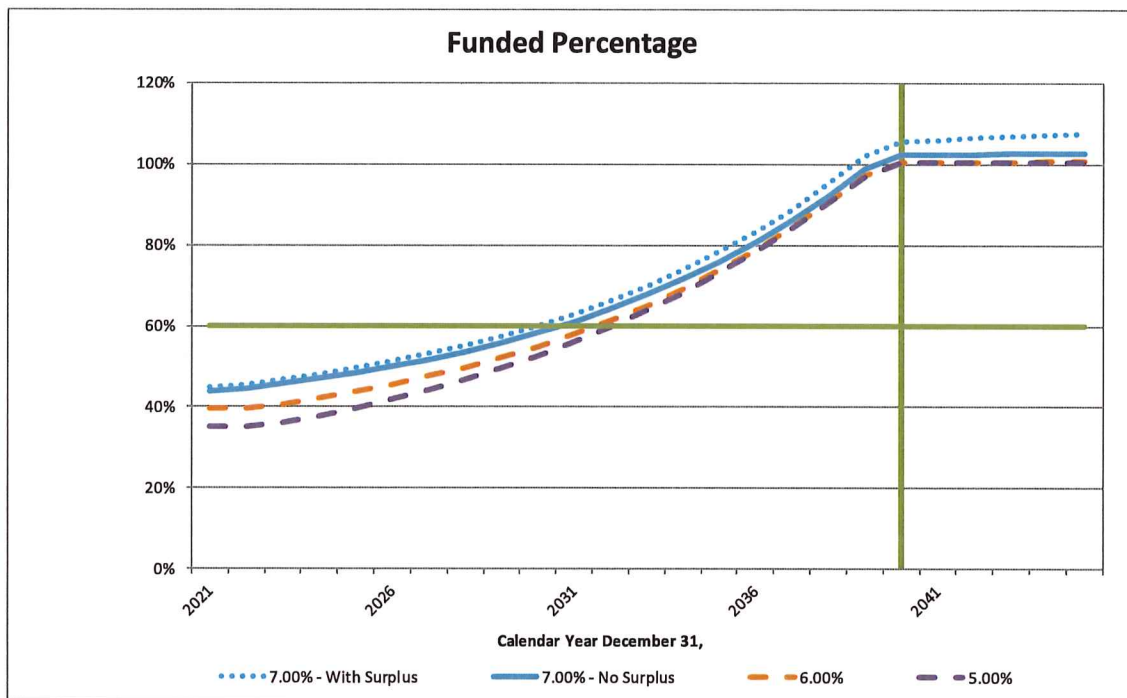
Your municipality includes one or more Surplus divisions. Extra contributions in a Surplus division may be used to reduce future employer contributions or to accelerate the date by which the municipality becomes 100% funded. The timing and use of these Surplus assets is discretionary. Certain employers have special funding arrangements that may differ from the Actuarial Policy.

The Funded Percentage graph shows projections of funded status under the 7.00% investment return assumption, both including the Surplus assets (contributed as of the valuation date), and without the Surplus assets. The graph including the Surplus assets assumes these Surplus assets grow with interest and are not used to lower future employer contributions. We modeled the projections including the Surplus assets in this fashion because the use of these assets is discretionary by the employer and we do not know when and how the employer will use them. Once the employer uses these Surplus assets, any future employer contributions are expected to be lower than those shown in the projections.

Valuation Year Ending 12/31	Fiscal Year Beginning 7/1	Actuarial Accrued Liability	Valuation Assets ²	Funded Percentage	Estimated Annual Employer Contribution
7.00%¹ - NO PHASE-IN					
2021	2023	\$ 31,902,443	\$ 14,008,699	44%	\$ 1,598,376
2022	2024	\$ 32,000,000	\$ 14,300,000	45%	\$ 1,640,000
2023	2025	\$ 32,200,000	\$ 14,700,000	46%	\$ 1,680,000
2024	2026	\$ 32,400,000	\$ 15,200,000	47%	\$ 1,730,000
2025	2027	\$ 32,500,000	\$ 15,700,000	48%	\$ 1,780,000
2026	2028	\$ 32,700,000	\$ 16,300,000	50%	\$ 1,820,000
6.00%¹ - NO PHASE-IN					
2021	2023	\$ 35,447,647	\$ 14,008,699	40%	\$ 1,836,216
2022	2024	\$ 35,500,000	\$ 14,100,000	40%	\$ 1,890,000
2023	2025	\$ 35,700,000	\$ 14,500,000	41%	\$ 1,940,000
2024	2026	\$ 35,900,000	\$ 15,100,000	42%	\$ 2,000,000
2025	2027	\$ 36,000,000	\$ 15,800,000	44%	\$ 2,050,000
2026	2028	\$ 36,100,000	\$ 16,500,000	46%	\$ 2,100,000
5.00%¹ - NO PHASE-IN					
2021	2023	\$ 39,720,328	\$ 14,008,699	35%	\$ 2,130,108
2022	2024	\$ 39,800,000	\$ 14,000,000	35%	\$ 2,200,000
2023	2025	\$ 40,000,000	\$ 14,400,000	36%	\$ 2,270,000
2024	2026	\$ 40,100,000	\$ 15,200,000	38%	\$ 2,320,000
2025	2027	\$ 40,200,000	\$ 16,000,000	40%	\$ 2,390,000
2026	2028	\$ 40,300,000	\$ 16,900,000	42%	\$ 2,450,000

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.

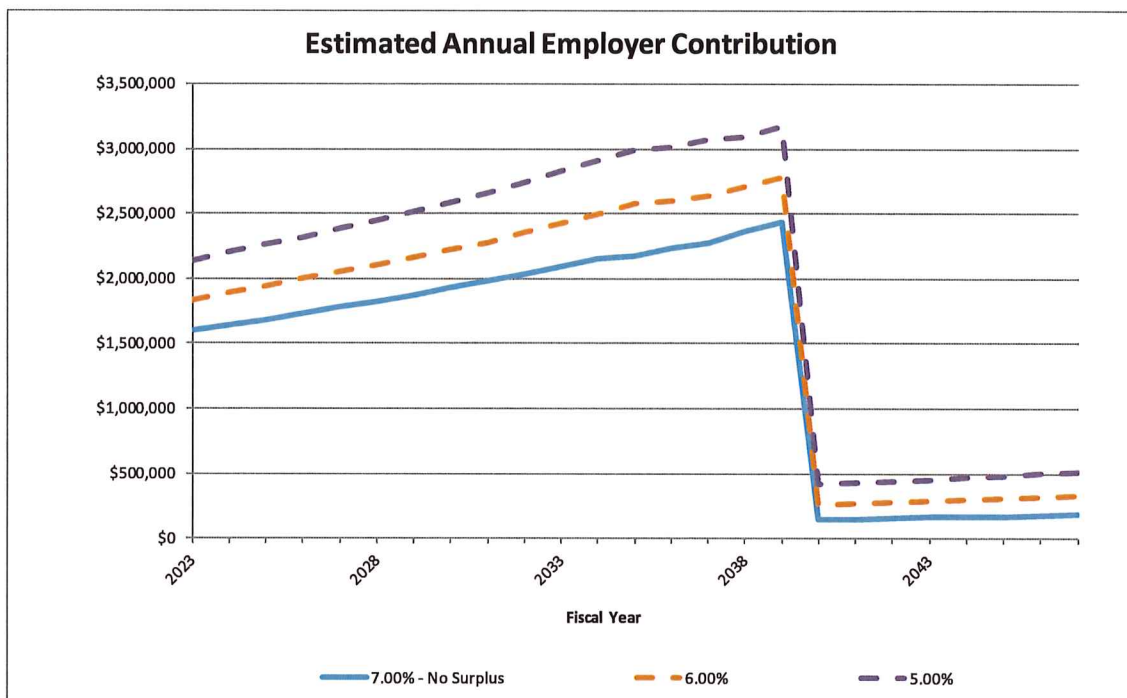


Notes:

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

Assumes assets from Surplus divisions will not be used to lower employer contributions during the projection period.

The green indicator lines have been added at 60% funded and 19 years following the valuation date for PA 202 purposes.



Notes:

All projected contributions are shown with no phase-in.

Projected employer contributions do not reflect the use of any assets from the Surplus divisions.

Table 1: Employer Contribution Details for the Fiscal Year Beginning July 1, 2023

Division	Total Normal Cost	Employee Contribut. Rate	Employer Contributions ¹				Computed Employer Contribut. With Phase-In	Blended ER Rate No Phase-In ⁵	Blended ER Rate With Phase-In ⁵	Employee Contribut. Conversion Factor ²
			Employer Normal Cost ⁶	Payment of the Unfunded Accrued Liability ⁴	Computed Employer Contribut. No Phase-In					
Percentage of Payroll										
01 - Gnr/ Clercl	13.67%	3% < ; 5% >	-	-	-	-	-	3.17%	1.62%	
02 - Police POAM	0.00%	3% < ; 5% >	-	-	-	-	-	5.64%	4.92%	
10 - Gnr/ Union	9.34%	3% < ; 5% >	-	-	-	-	-	47.02%	45.32%	
11 - Dept Heads	16.08%	3% < ; 5% >	-	-	-	-	-	161.07%	156.02%	
12 - Admn Empls	12.55%	3% < ; 5% >	-	-	-	-	-	9.63%	8.92%	
13 - Admin EE's after 9/1/2011	7.92%	5.00%	2.92%	-0.71%	2.21%	2.01%	2.01%	9.63%	8.92%	0.81%
14 - Dept Heads after 9/2011	8.78%	5.00%	3.78%	5.91%	9.69%	9.42%	9.42%	161.07%	156.02%	0.88%
15 - General Clerical aft 7/1/15	6.82%	5.00%	1.82%	-0.39%	1.43%	1.38%	1.38%	3.17%	1.62%	0.77%
16 - General Union aft 7/1/12	6.04%	5.00%	1.04%	-4.29%	0.00%	0.00%	0.00%	47.02%	45.32%	0.76%
21 - COAM Cmnd Of	14.80%	3% < ; 5% >	-	-	-	-	-	96.09%	90.81%	
22 - Police after 5/1/2014	7.95%	5.00%	2.95%	-0.29%	2.66%	2.40%	2.40%	5.64%	4.92%	0.88%
23 - COAM Cmnd hrd on/aft 5/1/14	8.04%	5.00%	3.04%	-6.05%	0.00%	0.00%	0.00%	96.09%	90.81%	0.89%
Estimated Monthly Contribution ³										
01 - Gnr/ Clercl			\$ 410	\$ 64	\$ 474	\$ 120	\$ 120			
02 - Police POAM			0	2,504	2,504	2,116	2,116			
10 - Gnr/ Union			641	26,819	27,460	26,512	26,512			
11 - Dept Heads			1,266	51,517	52,783	51,123	51,123			
12 - Admn Empls			2,302	3,884	6,186	5,742	5,742			
13 - Admin EE's after 9/1/2011			1,291	(315)	976	886	886			
14 - Dept Heads after 9/2011			862	1,347	2,209	2,147	2,147			
15 - General Clerical aft 7/1/15			343	(73)	270	260	260			
16 - General Union aft 7/1/12			429	(1,770)	0	0	0			
21 - COAM Cmnd Of			895	37,217	38,112	36,162	36,162			
22 - Police after 5/1/2014			2,471	(247)	2,224	2,006	2,006			
23 - COAM Cmnd hrd on/aft 5/1/14			902	(1,795)	0	0	0			
Total Municipality			\$ 11,812	\$ 119,152	\$ 133,198	\$ 127,074	\$ 127,074			
Estimated Annual Contribution ³										
			\$ 141,744	\$ 1,429,824	\$ 1,598,376	\$ 1,524,888	\$ 1,524,888			

1

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

2

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

3

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



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

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

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



Table 2: Benefit Provisions

01 - Gnrl Clercl: Closed to new hires, linked to Division 15

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	3.00% under \$4,200; 5.00% over \$4,200	3.00% under \$4,200; 5.00% over \$4,200
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)

02 - Police POAM: Closed to new hires, linked to Division 22

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	5 years	5 years
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	3.00% under \$4,200; 5.00% over \$4,200	3.00% under \$4,200; 5.00% over \$4,200
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)

10 - Gnrl Union: Closed to new hires, linked to Division 16

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	3.00% under \$4,200; 5.00% over \$4,200	3.00% under \$4,200; 5.00% over \$4,200
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)



11 - Dept Heads: Closed to new hires, linked to Division 14

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	3.00% under \$4,200; 5.00% over \$4,200	3.00% under \$4,200; 5.00% over \$4,200
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)

12 - Admn Empls: Closed to new hires, linked to Division 13

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	3.00% under \$4,200; 5.00% over \$4,200	3.00% under \$4,200; 5.00% over \$4,200
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)

13 - Admin EE's after 9/1/2011: Open Division, linked to Division 12

	2021 Valuation	2020 Valuation
Benefit Multiplier:	1.30% Multiplier (no max)	1.30% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)



14 - Dept Heads after 9/2011: Open Division, linked to Division 11

	2021 Valuation	2020 Valuation
Benefit Multiplier:	1.30% Multiplier (no max)	1.30% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)

15 - General Clerical aft 7/1/15: Open Division, linked to Division 01

	2021 Valuation	2020 Valuation
Benefit Multiplier:	1.30% Multiplier (no max)	1.30% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/1/1975)

16 - General Union aft 7/1/12: Open Division, linked to Division 10

	2021 Valuation	2020 Valuation
Benefit Multiplier:	1.30% Multiplier (no max)	1.30% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/1/1975)

21 - COAM Cmnd Of: Closed to new hires, linked to Division 23

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	3.00% under \$4,200; 5.00% over \$4,200	3.00% under \$4,200; 5.00% over \$4,200
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)



22 - Police after 5/1/2014: Open Division, linked to Division 02

	2021 Valuation	2020 Valuation
Benefit Multiplier:	1.30% Multiplier (no max)	1.30% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)

23 - COAM Cmnd hrd on/aft 5/1/14: Open Division, linked to Division 21

	2021 Valuation	2020 Valuation
Benefit Multiplier:	1.30% Multiplier (no max)	1.30% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 7/7/1975)	Yes (Adopted 7/7/1975)

Table 3: Participant Summary

Division	2021 Valuation		2020 Valuation		2021 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
01 - Gnrl Clercl							
Active Employees	1	\$ 55,718	1	\$ 48,934	52.6	13.8	13.8
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	4	78,816	5	100,491	73.1		
Pending Refunds	1		1				
02 - Police POAM							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	4	73,669	4	73,669	49.6	12.7	17.4
Retirees and Beneficiaries	8	173,309	9	220,235	71.2		
Pending Refunds	2		2				
10 - Gnrl Union							
Active Employees	3	\$ 171,590	4	\$ 224,562	52.2	25.2	25.2
Vested Former Employees	1	34,355	1	34,355	48.4	23.0	23.0
Retirees and Beneficiaries	19	495,803	19	485,672	70.8		
Pending Refunds	0		0				
11 - Dept Heads							
Active Employees	2	\$ 179,467	2	\$ 156,396	56.3	21.2	21.2
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	17	692,970	16	608,547	70.6		
Pending Refunds	0		0				
12 - Admn Empls							
Active Employees	4	\$ 358,982	4	\$ 359,971	52.9	18.2	18.2
Vested Former Employees	2	30,422	2	30,422	53.7	13.1	15.5
Retirees and Beneficiaries	4	49,343	4	49,343	67.1		
Pending Refunds	6		7				
13 - Admin EE's after 9/1/2011							
Active Employees	8	\$ 469,529	8	\$ 446,286	50.8	4.1	6.0
Vested Former Employees	1	2,438	1	2,438	46.8	2.3	15.9
Retirees and Beneficiaries	1	8,067	1	8,067	68.4		
Pending Refunds	4		4				
14 - Dept Heads after 9/2011							
Active Employees	3	\$ 201,016	3	\$ 176,075	44.3	5.1	9.1
Vested Former Employees	2	7,998	2	7,998	46.8	3.8	16.3
Retirees and Beneficiaries	1	5,845	1	5,845	59.0		
Pending Refunds	3		3				

Table 3 (continued)

Division	2021 Valuation		2020 Valuation		2021 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
15 - General Clerical aft 7/1/15							
Active Employees	5	\$ 206,166	3	\$ 119,787	33.1	2.2	2.2
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	3		3				
16 - General Union aft 7/1/12							
Active Employees	10	\$ 447,398	8	\$ 322,127	31.3	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	6		5				
21 - COAM Cmnd Of							
Active Employees	2	\$ 206,916	3	\$ 291,616	50.7	25.9	25.9
Vested Former Employees	1	40,052	1	40,052	56.9	19.6	19.6
Retirees and Beneficiaries	13	703,045	13	703,045	60.3		
Pending Refunds	0		0				
22 - Police after 5/1/2014							
Active Employees	13	\$ 933,567	12	\$ 802,230	31.0	3.4	3.4
Vested Former Employees	1	1,426	2	3,653	28.4	1.7	5.5
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	7		7				
23 - COAM Cmnd hrd on/aft 5/1/14							
Active Employees	2	\$ 224,735	2	\$ 202,500	33.0	5.9	6.6
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	53	\$ 3,455,084	50	\$ 3,150,484	40.0	7.6	8.1
Vested Former Employees	12	190,360	13	192,587	48.3	10.9	16.4
Retirees and Beneficiaries	67	2,207,198	68	2,181,245	68.5		
Pending Refunds	<u>32</u>		<u>32</u>				
Total Participants	164		163				

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

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

Table 4: Reported Assets (Market Value)

Division	2021 Valuation		2020 Valuation	
	Employer and Retiree ¹	Employee ²	Employer and Retiree ¹	Employee ²
01 - Gnrl Clercl	\$ 860,709	\$ 29,834	\$ 826,391	\$ 27,026
02 - Police POAM	1,619,246	150,290	1,540,396	149,706
10 - Gnrl Union	1,241,967	263,607	1,211,704	326,754
11 - Dept Heads	1,865,774	140,056	1,709,669	139,944
12 - Admn Empls	1,394,931	345,573	1,188,778	333,541
13 - Admin EE's after 9/1/2011	223,670	117,300	180,323	93,537
14 - Dept Heads after 9/2011	(15,315)	120,614	(50,199)	110,644
15 - General Clerical aft 7/1/15	18,887	33,111	9,978	24,294
16 - General Union aft 7/1/12	211,442	79,138	167,789	57,030
21 - COAM Cmnd Of	4,352,904	279,900	4,389,405	360,129
22 - Police after 5/1/2014	165,926	186,846	86,325	150,465
23 - COAM Cmnd hrd on/aft 5/1/14	293,528	49,481	45,372	38,146
S1 - Surplus Unassociated	315,389	0	0	0
Municipality Total³	\$ 12,549,058	\$ 1,795,752	\$ 11,305,930	\$ 1,811,215
Combined Assets³	\$14,344,810		\$13,117,145	

¹ Reserve for Employer Contributions and Benefit Payments.

² Reserve for Employee Contributions.

³ Totals may not add due to rounding.

The December 31, 2021 valuation assets (actuarial value of assets) are equal to 0.998523 times the reported market value of assets (compared to 0.972357 as of December 31, 2020). Refer to the Appendix for a description of the valuation asset derivation and a detailed calculation of valuation assets.

Assets in the Surplus division(s) are employer assets that have been reserved separately and may be used within the plan at the employer's discretion at some point in the future. These assets are not used in calculating the employer contribution for the fiscal year beginning July 1, 2023.

Table 5: Flow of Valuation Assets

Year Ended 12/31	Employer Contributions		Employee Contributions	Investment Income (Valuation Assets)	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
	Required	Additional						
2011	\$ 578,096	\$ 14,000	\$ 150,958	\$ 560,852	\$ (1,185,473)	\$ 0	\$ 0	\$ 11,869,966
2012	560,292	24,000	149,552	509,117	(1,180,076)	0	13,158	11,946,009
2013	582,166	24,000	149,078	683,746	(1,214,222)	0	0	12,170,777
2014	632,534	18,000	153,808	677,811	(1,280,604)	(22,564)	(1)	12,349,761
2015	734,717	0	153,679	591,545	(1,360,549)	(11,372)	0	12,457,781
2016	794,184	0	161,652	590,674	(1,529,593)	(54,688)	0	12,420,010
2017	1,011,341	0	170,854	723,249	(1,661,020)	(18,060)	0	12,646,374
2018	990,375	1,177	176,999	470,447	(1,831,644)	0	502,954	12,956,682
2019	966,194	0	176,323	573,792	(1,924,615)	(40,996)	(1)	12,707,379
2020	1,024,818	0	169,417	948,991	(2,094,749)	(1,309)	1	12,754,548
2021	1,139,074	300,000	173,083	2,130,102	(2,155,174)	(18,012)	1	14,323,622

Notes:

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

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

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

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

**Table 6: Actuarial Accrued Liabilities and Valuation Assets
as of December 31, 2021**

	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
01 - Gnr/ Clerl	\$ 184,299	\$ 0	\$ 738,534	\$ 977	\$ 923,810	\$ 889,227	96.3%	\$ 34,583
02 - Police POAM	0	454,849	1,636,226	1,799	2,092,874	1,766,922	84.4%	325,952
10 - Gnr/ Union	869,164	172,794	4,494,086	0	5,536,044	1,503,351	27.2%	4,032,693
11 - Dept Heads	1,331,106	0	8,250,033	0	9,581,139	2,002,868	20.9%	7,578,271
12 - Admn Empls	1,469,260	248,962	584,785	15,801	2,318,808	1,737,933	74.9%	580,875
13 - Admin EE's after 9/1/2011	186,647	12,152	84,482	18,396	301,677	340,467	112.9%	(38,790)
14 - Dept Heads after 9/2011	106,499	49,940	67,694	45,988	270,121	105,144	38.9%	164,977
15 - General Clerical aft 7/1/15	33,381	0	0	11,575	44,956	51,922	115.5%	(6,966)
16 - General Union aft 7/1/12	86,779	0	0	16,911	103,690	290,151	279.8%	(186,461)
21 - COAM Cmnd Of	1,574,615	375,864	8,322,934	0	10,273,413	4,625,961	45.0%	5,647,452
22 - Police after 5/1/2014	293,506	5,332	0	33,494	332,332	352,251	106.0%	(19,919)
23 - COAM Cmnd hrd on/aft 5/1/14	123,579	0	0	0	123,579	342,502	277.2%	(218,923)
S1 - Surplus Unassociated	0	0	0	0	0	314,923		(314,923)
Total	\$ 6,258,835	\$ 1,319,893	\$ 24,178,774	\$ 144,941	\$ 31,902,443	\$ 14,323,622	44.9%	\$ 17,578,821

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 13, 12	\$ 1,655,907	\$ 261,114	\$ 669,267	\$ 34,197	\$ 2,620,485	\$ 2,078,400	79.3%	\$ 542,085
Linked Divisions 14, 11	1,437,605	49,940	8,317,727	45,988	9,851,260	2,108,012	21.4%	7,743,248
Linked Divisions 15, 01	217,680	0	738,534	12,552	968,766	941,149	97.1%	27,617
Linked Divisions 16, 10	955,943	172,794	4,494,086	16,911	5,639,734	1,793,502	31.8%	3,846,232
Linked Divisions 22, 02	293,506	460,181	1,636,226	35,293	2,425,206	2,119,173	87.4%	306,033
Linked Divisions 23, 21	1,698,194	375,864	8,322,934	0	10,396,992	4,968,463	47.8%	5,428,529

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

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

Table 7: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 17,909,581	\$ 11,172,960	62%	\$ 6,736,621
2008	18,959,513	11,427,268	60%	7,532,245
2009	19,012,367	11,553,218	61%	7,459,149
2010	19,479,412	11,751,533	60%	7,727,879
2011	21,046,896	11,869,966	56%	9,176,930
2012	21,006,439	11,946,009	57%	9,060,430
2013	21,619,300	12,170,777	56%	9,448,523
2014	23,249,926	12,349,761	53%	10,900,165
2015	24,735,814	12,457,781	50%	12,278,033
2016	25,575,326	12,420,010	49%	13,155,316
2017	26,475,931	12,646,374	48%	13,829,557
2018	27,526,778	12,956,682	47%	14,570,096
2019	29,492,905	12,707,379	43%	16,785,526
2020	30,597,811	12,754,548	42%	17,843,263
2021	31,902,443	14,323,622	45%	17,578,821

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

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

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

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

Tables 8 and 9: Division-Based Comparative Schedules

Division 01 - Gnrl Clercl

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 1,240,276	\$ 1,113,794	90%	\$ 126,482
2012	1,268,067	1,071,750	85%	196,317
2013	1,084,922	1,062,698	98%	22,224
2014	1,128,198	1,084,443	96%	43,755
2015	1,221,856	1,091,530	89%	130,326
2016	1,249,595	1,090,812	87%	158,783
2017	1,131,698	1,088,318	96%	43,380
2018	1,174,627	1,048,925	89%	125,702
2019	1,017,225	857,353	84%	159,872
2020	1,083,558	829,827	77%	253,731
2021	923,810	889,227	96%	34,583

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

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

Table 9-01: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	5	\$ 193,212	10.87%	4.81%
2012	5	195,625	13.28%	4.81%
2013	5	194,659	7.37%	4.81%
2014	5	201,729	8.31%	4.82%
2015	5	200,703	\$ 1,839	4.82%
2016	3	129,841	\$ 1,638	3% < ; 5% >
2017	3	127,457	\$ 859	3% < ; 5% >
2018	2	88,986	\$ 1,292	3% < ; 5% >
2019	1	45,206	\$ 1,327	3% < ; 5% >
2020	1	48,934	\$ 2,077	3% < ; 5% >
2021	1	55,718	\$ 474	3% < ; 5% >

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

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

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

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

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

Division 02 - Police POAM

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 3,425,527	\$ 2,561,387	75%	\$ 864,140
2012	3,084,015	2,643,863	86%	440,152
2013	3,248,488	2,783,175	86%	465,313
2014	3,720,481	2,914,310	78%	806,171
2015	3,260,413	2,728,585	84%	531,828
2016	1,941,564	1,768,767	91%	172,797
2017	1,934,048	1,715,514	89%	218,534
2018	1,797,725	1,982,097	110%	(184,372)
2019	2,234,573	1,731,830	78%	502,743
2020	2,220,320	1,643,382	74%	576,938
2021	2,092,874	1,766,922	84%	325,952

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

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

Table 9-02: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	10	\$ 679,916	13.81%	4.90%
2012	10	738,404	10.20%	4.91%
2013	10	712,614	10.79%	4.90%
2014	9	726,817	\$ 8,894	4.91%
2015	6	435,063	\$ 5,335	4.90%
2016	1	74,444	\$ 1,048	3% < ; 5% >
2017	1	77,027	\$ 1,752	3% < ; 5% >
2018	0	0	\$ 0	3% < ; 5% >
2019	0	0	\$ 4,167	3% < ; 5% >
2020	0	0	\$ 4,674	3% < ; 5% >
2021	0	0	\$ 2,504	3% < ; 5% >

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

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

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

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

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

Division 10 - Gnrl Union

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 4,395,937	\$ 2,312,055	53%	\$ 2,083,882
2012	4,404,566	2,252,919	51%	2,151,647
2013	4,558,413	2,256,069	50%	2,302,344
2014	4,938,214	2,190,857	44%	2,747,357
2015	5,232,134	2,098,032	40%	3,134,102
2016	5,179,903	2,009,325	39%	3,170,578
2017	5,161,664	1,972,776	38%	3,188,888
2018	5,349,343	1,823,662	34%	3,525,681
2019	5,576,987	1,602,817	29%	3,974,170
2020	5,458,102	1,495,931	27%	3,962,171
2021	5,536,044	1,503,351	27%	4,032,693

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

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

Table 9-10: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	14	\$ 678,560	21.85%	4.86%
2012	14	694,633	23.69%	4.86%
2013	14	687,103	25.35%	4.86%
2014	11	584,821	33.72%	4.87%
2015	11	552,836	41.14%	4.86%
2016	10	509,153	\$ 20,530	3% < ; 5% >
2017	8	431,235	\$ 20,750	3% < ; 5% >
2018	7	413,178	\$ 23,409	3% < ; 5% >
2019	6	345,047	\$ 27,287	3% < ; 5% >
2020	4	224,562	\$ 27,003	3% < ; 5% >
2021	3	171,590	\$ 27,460	3% < ; 5% >

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

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

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

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

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

Division 11 - Dept Heads

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 5,501,468	\$ 1,799,096	33%	\$ 3,702,372
2012	5,438,796	1,761,029	32%	3,677,767
2013	5,611,449	1,718,314	31%	3,893,135
2014	5,763,778	1,572,595	27%	4,191,183
2015	6,156,103	1,362,899	22%	4,793,204
2016	6,147,688	1,261,783	21%	4,885,905
2017	6,408,084	1,166,298	18%	5,241,786
2018	6,466,776	971,567	15%	5,495,209
2019	7,847,892	1,423,522	18%	6,424,370
2020	8,245,760	1,798,483	22%	6,447,277
2021	9,581,139	2,002,868	21%	7,578,271

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

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

Table 9-11: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	6	\$ 373,217	65.02%	4.87%
2012	6	376,900	69.09%	4.86%
2013	4	261,909	102.84%	4.87%
2014	3	192,764	\$ 23,280	4.87%
2015	2	130,937	\$ 33,815	4.87%
2016	2	132,897	\$ 31,518	3% < ; 5% >
2017	2	135,719	\$ 42,716	3% < ; 5% >
2018	1	67,125	\$ 72,975	3% < ; 5% >
2019	3	231,249	\$ 39,480	3% < ; 5% >
2020	2	156,396	\$ 42,189	3% < ; 5% >
2021	2	179,467	\$ 52,783	3% < ; 5% >

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

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

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

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

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

Division 12 - Admn Emplys

Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 700,601	\$ 904,512	129%	\$ (203,911)
2012	711,163	833,922	117%	(122,759)
2013	877,165	910,606	104%	(33,441)
2014	994,933	987,916	99%	7,017
2015	1,162,823	1,064,634	92%	98,189
2016	1,206,769	1,139,289	94%	67,480
2017	1,411,701	1,216,800	86%	194,901
2018	1,568,915	1,248,281	80%	320,634
2019	1,613,381	1,291,330	80%	322,051
2020	2,105,255	1,480,237	70%	625,018
2021	2,318,808	1,737,933	75%	580,875

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

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

Table 9-12: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	9	\$ 452,043	\$ 244	4.87%
2012	8	424,103	\$ 1,409	4.87%
2013	8	471,271	\$ 2,667	4.89%
2014	8	470,198	\$ 2,829	4.89%
2015	7	411,191	\$ 2,899	4.89%
2016	6	374,290	\$ 2,397	3% < ; 5% >
2017	4	312,386	\$ 2,997	3% < ; 5% >
2018	4	346,907	\$ 4,032	3% < ; 5% >
2019	4	303,924	\$ 3,803	3% < ; 5% >
2020	4	359,971	\$ 6,418	3% < ; 5% >
2021	4	358,982	\$ 6,186	3% < ; 5% >

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

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

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

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

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

Division 13 - Admin EE's after 9/1/2011

Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0	100%	\$ 0
2012	64,103	172,086	269%	(107,983)
2013	80,285	197,914	247%	(117,629)
2014	90,908	197,312	217%	(106,404)
2015	98,899	94,228	95%	4,671
2016	113,192	109,623	97%	3,569
2017	131,069	134,596	103%	(3,527)
2018	165,894	174,861	105%	(8,967)
2019	205,592	216,098	105%	(10,506)
2020	236,274	266,290	113%	(30,016)
2021	301,677	340,467	113%	(38,790)

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

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

Table 9-13: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	0	\$ 0	0.00%	0.00%
2012	3	89,454	0.00%	5.00%
2013	6	253,401	0.00%	5.00%
2014	1	32,809	0.00%	5.00%
2015	3	134,072	1.84%	5.00%
2016	5	230,941	1.90%	5.00%
2017	6	265,648	2.18%	5.00%
2018	8	413,689	1.68%	5.00%
2019	9	519,493	2.17%	5.00%
2020	8	446,286	1.96%	5.00%
2021	8	469,529	2.21%	5.00%

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

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

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

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

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

Division 14 - Dept Heads after 9/2011

Table 8-14: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0	0%	\$ 0
2012	0	0	0%	0
2013	0	0	0%	0
2014	19,902	56,202	282%	(36,300)
2015	50,486	294,960	584%	(244,474)
2016	88,058	315,456	358%	(227,398)
2017	132,286	360,044	272%	(227,758)
2018	184,303	457,315	248%	(273,012)
2019	231,948	524,164	226%	(292,216)
2020	228,625	58,774	26%	169,851
2021	270,121	105,144	39%	164,977

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

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

Table 9-14: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	0	\$ 0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	5	355,109	2.06%	5.00%
2015	6	402,917	0.00%	5.00%
2016	6	403,926	0.00%	5.00%
2017	7	471,890	0.00%	5.00%
2018	7	495,647	0.00%	5.00%
2019	5	327,340	0.00%	5.00%
2020	3	176,075	10.57%	5.00%
2021	3	201,016	9.69%	5.00%

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

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

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

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

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

Division 15 - General Clerical aft 7/1/15

Table 8-15: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0	0%	\$ 0
2012	0	0	0%	0
2013	0	0	0%	0
2014	0	0	0%	0
2015	2,680	2,247	84%	433
2016	9,190	13,326	145%	(4,136)
2017	17,383	27,726	160%	(10,343)
2018	16,506	35,265	214%	(18,759)
2019	22,674	28,740	127%	(6,066)
2020	28,437	33,324	117%	(4,887)
2021	44,956	51,922	115%	(6,966)

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

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

Table 9-15: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	0	\$ 0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	1	38,229	2.85%	5.00%
2016	3	111,983	1.59%	5.00%
2017	3	112,118	1.17%	5.00%
2018	3	101,417	0.00%	5.00%
2019	4	155,959	1.00%	5.00%
2020	3	119,787	0.94%	5.00%
2021	5	206,166	1.43%	5.00%

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

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

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

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

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

Division 16 - General Union aft 7/1/12

Table 8-16: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0	0%	\$ 0
2012	0	0	0%	0
2013	0	0	0%	0
2014	0	0	0%	0
2015	0	0	0%	0
2016	4,398	35,728	812%	(31,330)
2017	12,227	62,319	510%	(50,092)
2018	27,897	117,576	421%	(89,679)
2019	48,992	264,872	541%	(215,880)
2020	63,319	218,605	345%	(155,286)
2021	103,690	290,151	280%	(186,461)

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

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

Table 9-16: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	0	\$ 0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	0	0	\$ 0	0.00%
2016	4	140,345	0.00%	5.00%
2017	4	134,511	0.00%	5.00%
2018	7	289,079	0.00%	5.00%
2019	8	348,729	0.00%	5.00%
2020	8	322,127	0.00%	5.00%
2021	10	447,398	0.00%	5.00%

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

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

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

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

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

Table 8-21: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 5,783,087	\$ 3,179,122	55%	\$ 2,603,965
2012	6,035,729	3,210,440	53%	2,825,289
2013	6,158,578	3,242,001	53%	2,916,577
2014	6,589,536	3,342,950	51%	3,246,586
2015	7,528,426	3,684,597	49%	3,843,829
2016	9,590,013	4,567,350	48%	5,022,663
2017	10,055,298	4,757,226	47%	5,298,072
2018	10,640,263	4,938,414	46%	5,701,849
2019	10,496,764	4,564,311	43%	5,932,453
2020	10,618,240	4,618,242	43%	5,999,998
2021	10,273,413	4,625,961	45%	5,647,452

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

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

Table 9-21: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	8	\$ 651,889	29.52%	4.90%
2012	6	521,972	40.71%	4.91%
2013	6	501,174	42.74%	4.91%
2014	6	539,333	43.49%	4.91%
2015	5	432,864	64.30%	4.91%
2016	7	634,250	58.84%	3% < ; 5% >
2017	5	510,627	75.32%	3% < ; 5% >
2018	5	548,875	\$ 38,093	3% < ; 5% >
2019	3	329,583	\$ 40,137	3% < ; 5% >
2020	3	291,616	\$ 41,277	3% < ; 5% >
2021	2	206,916	\$ 38,112	3% < ; 5% >

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

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

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

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

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

Division 22 - Police after 5/1/2014

Table 8-22: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0	0%	\$ 0
2012	0	0	0%	0
2013	0	0	0%	0
2014	3,976	3,176	80%	800
2015	21,994	36,069	164%	(14,075)
2016	44,956	108,551	242%	(63,595)
2017	80,473	144,757	180%	(64,284)
2018	134,529	158,719	118%	(24,190)
2019	176,268	182,094	103%	(5,826)
2020	226,616	230,244	102%	(3,628)
2021	332,332	352,251	106%	(19,919)

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

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

Table 9-22: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	0	\$ 0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	2	107,937	1.94%	5.00%
2015	4	240,330	1.18%	5.00%
2016	8	468,703	0.49%	5.00%
2017	13	772,038	1.07%	5.00%
2018	11	679,648	1.46%	5.00%
2019	11	746,685	1.66%	5.00%
2020	12	802,230	2.08%	5.00%
2021	13	933,567	2.66%	5.00%

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

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

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

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

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

Table 8-23: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0	0%	\$ 0
2012	0	0	0%	0
2013	0	0	0%	0
2014	0	0	0%	0
2015	0	0	0%	0
2016	0	0	0%	0
2017	0	0	0%	0
2018	0	0	0%	0
2019	20,609	20,248	98%	361
2020	83,305	81,209	97%	2,096
2021	123,579	342,502	277%	(218,923)

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

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

Table 9-23: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	0	\$ 0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	0	0	\$ 0	0.00%
2016	0	0	\$ 0	0.00%
2017	0	0	\$ 0	0.00%
2018	0	0	0.00%	5.00%
2019	1	68,655	1.63%	5.00%
2020	2	202,500	2.48%	5.00%
2021	2	224,735	0.00%	5.00%

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

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

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

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

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

Division S1 - Surplus Unassociated

Table 8-S1: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 0	\$ 0		\$ 0
2012	0	0		0
2013	0	0		0
2014	0	0		0
2015	0	0		0
2016	0	0		0
2017	0	0		0
2018	0	0		0
2019	0	0		0
2020	0	0		0
2021	0	314,923		(314,923)

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

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

Table 10: Division-Based Layered Amortization Schedule

Division 01 - Gnrl Clercl

Table 10-01: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 130,326	23	\$ 143,583	17	\$ 11,640
(Gain)/Loss	12/31/2016	17,825	22	19,879	17	1,608
(Gain)/Loss	12/31/2017	(119,118)	21	(132,006)	17	(10,704)
(Gain)/Loss	12/31/2018	89,623	20	98,875	17	8,016
(Gain)/Loss	12/31/2019	4,467	19	4,887	17	396
Assumption	12/31/2019	27,039	19	28,811	17	2,340
Experience	12/31/2020	88,173	18	97,159	17	7,884
Experience	12/31/2021	(227,422)	17	(251,714)	17	(20,412)
Total				\$ 9,474		\$ 768

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-02: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2019	\$ 495,174	15	\$ 525,692	13	\$ 52,032
Experience	12/31/2020	45,379	15	49,432	14	4,620
Experience	12/31/2021	(270,669)	15	(299,581)	15	(26,604)
Total				\$ 275,543		\$ 30,048

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-10: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 3,134,102	23	\$ 3,292,740	17	\$ 267,024
(Gain)/Loss	12/31/2016	(62,583)	22	(69,809)	17	(5,664)
(Gain)/Loss	12/31/2017	(28,080)	21	(31,123)	17	(2,520)
(Gain)/Loss	12/31/2018	314,364	20	346,833	17	28,128
(Gain)/Loss	12/31/2019	239,020	19	261,664	17	21,216
Assumption	12/31/2019	169,419	19	163,229	17	13,236
Experience	12/31/2020	(52,165)	18	(57,473)	17	(4,656)
Experience	12/31/2021	56,351	17	62,370	17	5,064
Total				\$ 3,968,431		\$ 321,828

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-11: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 4,793,204	23	\$ 4,234,124	17	\$ 343,368
(Gain)/Loss	12/31/2016	(5,173)	22	(5,770)	17	(468)
(Gain)/Loss	12/31/2017	322,052	21	356,914	17	28,944
(Gain)/Loss	12/31/2018	243,061	20	268,153	17	21,744
(Gain)/Loss	12/31/2019	706,474	19	773,436	17	62,724
Assumption	12/31/2019	254,918	19	244,218	17	19,800
Experience	12/31/2020	261,670	18	288,322	17	23,376
Experience	12/31/2021	1,322,646	17	1,463,927	17	118,716
Total				\$ 7,623,324		\$ 618,204

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-12: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 98,189	23	\$ 103,912	17	\$ 8,424
(Gain)/Loss	12/31/2016	(35,870)	22	(40,024)	17	(3,252)
(Gain)/Loss	12/31/2017	129,964	21	144,042	17	11,676
(Gain)/Loss	12/31/2018	116,335	20	128,351	17	10,404
(Gain)/Loss	12/31/2019	(61,804)	19	(67,660)	17	(5,484)
Assumption	12/31/2019	47,847	19	50,777	17	4,116
Experience	12/31/2020	299,661	18	330,189	17	26,772
Experience	12/31/2021	(67,326)	17	(74,518)	17	(6,048)
Total				\$ 575,069		\$ 46,608

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, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Division 13 - Admin EE's after 9/1/2011

Table 10-13: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2017	\$ (4,209)	15	\$ (4,249)	11	\$ (480)
(Gain)/Loss	12/31/2018	(4,632)	15	(4,818)	12	(504)
(Gain)/Loss	12/31/2019	(5,280)	15	(5,608)	13	(552)
Assumption	12/31/2019	4,409	15	4,763	13	468
Experience	12/31/2020	(19,412)	15	(21,151)	14	(1,980)
Experience	12/31/2021	(7,409)	15	(8,200)	15	(732)
Total				\$ (39,263)		\$ (3,780)

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Division 14 - Dept Heads after 9/2011

Table 10-14: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2020	\$ 193,697	15	\$ 211,005	14	\$ 19,740
Experience	12/31/2021	(36,400)	15	(40,288)	15	(3,576)
Total				\$ 170,717		\$ 16,164

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Division 15 - General Clerical aft 7/1/15

Table 10-15: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2016	\$ (4,549)	15	\$ (4,389)	10	\$ (540)
(Gain)/Loss	12/31/2017	(5,460)	15	(5,499)	11	(624)
(Gain)/Loss	12/31/2018	(7,827)	15	(8,133)	12	(852)
(Gain)/Loss	12/31/2019	13,268	15	14,081	13	1,392
Assumption	12/31/2019	(24)	15	5	13	0
Experience	12/31/2020	282	15	312	14	24
Experience	12/31/2021	(2,849)	15	(3,153)	15	(276)
Total				\$ (6,776)		\$ (876)

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Division 16 - General Union aft 7/1/12

Table 10-16: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2016	\$ (31,012)	15	\$ (29,972)	10	\$ (3,660)
(Gain)/Loss	12/31/2017	(16,712)	15	(16,823)	11	(1,896)
(Gain)/Loss	12/31/2018	(37,238)	15	(38,737)	12	(4,080)
(Gain)/Loss	12/31/2019	(131,460)	15	(139,559)	13	(13,812)
Assumption	12/31/2019	(570)	15	664	13	72
Experience	12/31/2020	56,410	15	61,447	14	5,748
Experience	12/31/2021	(36,750)	15	(40,675)	15	(3,612)
Total				\$ (203,655)		\$ (21,240)

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-21: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 3,843,829	23	\$ 4,071,096	17	\$ 330,144
(Gain)/Loss	12/31/2016	1,012,420	22	1,129,518	17	91,596
(Gain)/Loss	12/31/2017	147,344	21	163,308	17	13,248
(Gain)/Loss	12/31/2018	312,367	20	344,621	17	27,948
(Gain)/Loss	12/31/2019	(200,856)	19	(219,886)	17	(17,832)
Assumption	12/31/2019	370,302	19	373,083	17	30,252
Experience	12/31/2020	45,962	18	50,638	17	4,104
Experience	12/31/2021	(366,015)	17	(405,112)	17	(32,856)
Total				\$ 5,507,266		\$ 446,604

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Division 22 - Police after 5/1/2014

Table 10-22: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ (14,075)	10	\$ (11,787)	9	\$ (1,572)
(Gain)/Loss	12/31/2016	(48,420)	15	(46,800)	10	(5,712)
(Gain)/Loss	12/31/2017	3,619	15	3,644	11	408
(Gain)/Loss	12/31/2018	40,658	15	42,299	12	4,452
(Gain)/Loss	12/31/2019	13,641	15	14,482	13	1,428
Assumption	12/31/2019	(148)	15	(148)	13	(12)
Experience	12/31/2020	(2,018)	15	(2,198)	14	(204)
Experience	12/31/2021	(17,853)	15	(19,760)	15	(1,752)
Total				\$ (20,268)		\$ (2,964)

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-23: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2021	\$ (219,131)	15	\$ (242,538)	15	\$ (21,540)
Total				\$ (242,538)		\$ (21,540)

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2021 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2021 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

GASB Statement No. 68 Information

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

Actuarial Valuation Date:	12/31/2021
Measurement Date of the Total Pension Liability (TPL):	12/31/2021
At 12/31/2021, the following employees were covered by the benefit terms:	
Inactive employees or beneficiaries currently receiving benefits:	67
Inactive employees entitled to but not yet receiving benefits (including refunds):	44
Active employees:	<u>53</u>
	164
Total Pension Liability as of 12/31/2020 measurement date:	\$ 29,862,400
Total Pension Liability as of 12/31/2021 measurement date:	\$ 31,110,625
Service Cost for the year ending on the 12/31/2021 measurement date:	\$ 278,379
Change in the Total Pension Liability due to:	
- Benefit changes ¹ :	\$ 0
- Differences between expected and actual experience ² :	\$ (107,157)
- Changes in assumptions ² :	\$ 1,052,648
Average expected remaining service lives of all employees (active and inactive):	4

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):	\$ 3,455,084
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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 (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Change in Net Pension Liability as of 12/31/2021:	\$ 3,389,415	\$ 0	\$ (2,849,844)

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 - Gnrl Clercl

1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2009	E 2% COLA Adopted (01/01/2009)
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)
1/1/1998	E1 2.5% COLA for past retirees (01/01/1998)
5/1/1997	Temporary 8 Year Vesting (05/01/1997 - 07/01/1997)
1/1/1997	E1 2.5% COLA for past retirees (01/01/1997)
1/1/1996	Flexible E 2% COLA Adopted (01/01/1996)
4/1/1994	Temporary Benefit FAC-3 (3 Year Final Average Compensation) (04/01/1994 - 08/01/1994)
1/1/1994	Benefit B-4 (80% max)
1/1/1994	Flexible E 2% COLA Adopted (01/01/1994)
1/1/1993	Flexible E 2% COLA Adopted (01/01/1993)
1/1/1992	Flexible E 2% COLA Adopted (01/01/1992)
1/1/1991	Flexible E 2% COLA Adopted (01/01/1991)
1/1/1990	Flexible E 2% COLA Adopted (01/01/1990)
1/1/1989	Flexible E 2% COLA Adopted (01/01/1989)
1/1/1988	Flexible E 2% COLA Adopted (01/01/1988)
2/1/1987	Benefit C-2/Base B-1
1/1/1987	Flexible E 2% COLA Adopted (01/01/1987)
7/7/1975	Covered by Act 88
4/21/1975	Exclude Temporary Employees
11/1/1968	Benefit C-1 (Old)
9/1/1967	Benefit FAC-5 (5 Year Final Average Compensation)
9/1/1967	10 Year Vesting
9/1/1967	Benefit C (Old)
9/1/1967	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

02 - Police POAM

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2009	E 2% COLA Adopted (01/01/2009)
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)
1/1/1997	E1 2.5% COLA for past retirees (01/01/1997)



02 - Police POAM

6/15/1996	Temporary Benefit FAC-3 (3 Year Final Average Compensation) (06/15/1996 - 08/02/1996)
12/19/1994	Temporary Benefit FAC-3 (3 Year Final Average Compensation) (12/19/1994 - 04/01/1995)
4/1/1994	Benefit B-4 (80% max)
4/1/1994	Benefit F50 (With 25 Years of Service)
1/1/1994	Flexible E 2% COLA Adopted (01/01/1994)
1/1/1993	Flexible E 2% COLA Adopted (01/01/1993)
1/1/1992	Flexible E 2% COLA Adopted (01/01/1992)
1/1/1991	Flexible E 2% COLA Adopted (01/01/1991)
1/1/1990	Flexible E 2% COLA Adopted (01/01/1990)
1/1/1989	Flexible E 2% COLA Adopted (01/01/1989)
1/1/1988	Flexible E 2% COLA Adopted (01/01/1988)
1/1/1987	Flexible E 2% COLA Adopted (01/01/1987)
7/1/1985	Benefit C-2/Base B-1
4/1/1985	Benefit F55 (With 25 Years of Service)
7/7/1975	Covered by Act 88
4/21/1975	Exclude Temporary Employees
11/1/1968	Benefit C-1 (Old)
9/1/1967	10 Year Vesting
9/1/1967	Benefit C (Old)
9/1/1967	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
9/1/1967	Fiscal Month - July
9/1/1967	Benefit FAC-5 (5 Year Final Average Compensation)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

10 - Gnrl Union

1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2009	E 2% COLA Adopted (01/01/2009)
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)
1/1/1999	E1 2.5% COLA for past retirees (01/01/1999)
4/2/1998	Benefit FAC-5 (5 Year Final Average Compensation)
2/2/1998	Benefit FAC-3 (3 Year Final Average Compensation)
1/31/1998	Temporary Benefit FAC-3 (3 Year Final Average Compensation) (01/31/1998 - 02/01/1998)
1/1/1997	E1 2.5% COLA for past retirees (01/01/1997)
1/1/1996	Flexible E 2% COLA Adopted (01/01/1996)
5/1/1995	Temporary Benefit FAC-3 (3 Year Final Average Compensation) (05/01/1995 - 09/30/1995)
4/1/1994	Temporary Benefit FAC-3 (3 Year Final Average Compensation) (04/01/1994 - 08/01/1994)
1/1/1994	Benefit B-4 (80% max)
1/1/1994	Flexible E 2% COLA Adopted (01/01/1994)
1/1/1993	Flexible E 2% COLA Adopted (01/01/1993)
1/1/1992	Flexible E 2% COLA Adopted (01/01/1992)
1/1/1991	Flexible E 2% COLA Adopted (01/01/1991)



10 - Gnrl Union

7/1/1990	Benefit B-2
1/1/1990	Flexible E 2% COLA Adopted (01/01/1990)
1/1/1989	Flexible E 2% COLA Adopted (01/01/1989)
1/1/1988	Flexible E 2% COLA Adopted (01/01/1988)
1/1/1987	Flexible E 2% COLA Adopted (01/01/1987)
9/1/1985	Benefit FAC-5 (5 Year Final Average Compensation)
9/1/1985	10 Year Vesting
9/1/1985	Benefit C-2/Base B-1
9/1/1985	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
7/7/1975	Covered by Act 88
4/21/1975	Exclude Temporary Employees
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

11 - Dept Heads

1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2006	E 2% COLA Adopted (01/01/2006)
8/1/2000	E2 2.5% COLA for future retirees (08/01/2000)
9/1/1997	Benefit FAC-3 (3 Year Final Average Compensation)
9/1/1997	Benefit F50 (With 25 Years of Service)
1/1/1997	E1 2.5% COLA for past retirees (01/01/1997)
4/1/1994	Temporary Benefit FAC-3 (3 Year Final Average Compensation) (04/01/1994 - 08/01/1994)
1/2/1994	Benefit B-4 (80% max)
1/1/1994	2.5% Multiplier (no max)
1/1/1994	Flexible E 2% COLA Adopted (01/01/1994)
7/1/1993	Temporary Benefit FAC-3 (3 Year Final Average Compensation) (07/01/1993 - 01/01/1994)
7/1/1993	Temporary Benefit B-4 (80% max) (07/01/1993 - 01/01/1994)
7/1/1993	Temporary Benefit F55 (With 30 Years of Service) (07/01/1993 - 01/01/1994)
1/1/1993	Flexible E 2% COLA Adopted (01/01/1993)
1/1/1992	Flexible E 2% COLA Adopted (01/01/1992)
1/1/1991	Flexible E 2% COLA Adopted (01/01/1991)
1/1/1990	Flexible E 2% COLA Adopted (01/01/1990)
1/1/1989	Flexible E 2% COLA Adopted (01/01/1989)
1/1/1988	Flexible E 2% COLA Adopted (01/01/1988)
1/1/1987	Flexible E 2% COLA Adopted (01/01/1987)
2/1/1985	Benefit FAC-5 (5 Year Final Average Compensation)
2/1/1985	10 Year Vesting
2/1/1985	Benefit C-2/Base B-1
2/1/1985	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
7/7/1975	Covered by Act 88
4/21/1975	Exclude Temporary Employees
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60

11 - Dept Heads

Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

12 - Admn Emplys

1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
1/1/1999	E1 2.5% COLA for past retirees (01/01/1997)
9/1/1997	Benefit FAC-5 (5 Year Final Average Compensation)
9/1/1997	10 Year Vesting
9/1/1997	Benefit B-4 (80% max)
9/1/1997	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
7/7/1975	Covered by Act 88
4/21/1975	Exclude Temporary Employees
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

13 - Admin EE's after 9/1/2011

1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
9/1/2011	Day of work defined as 8 Hours a Day for All employees.
9/1/2011	Benefit FAC-5 (5 Year Final Average Compensation)
9/1/2011	Exclude Temporary Employees
9/1/2011	10 Year Vesting
9/1/2011	Benefit C (New)
9/1/2011	Member Contribution Rate 5.00%
7/7/1975	Covered by Act 88
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

14 - Dept Heads after 9/2011

1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
9/1/2011	Day of work defined as 80 Hours a Month for All employees.
9/1/2011	Benefit FAC-5 (5 Year Final Average Compensation)
9/1/2011	Exclude Temporary Employees requiring less than 6 months
9/1/2011	10 Year Vesting
9/1/2011	Benefit C (New)



14 - Dept Heads after 9/2011

9/1/2011	Benefit F50 (With 25 Years of Service)
9/1/2011	Member Contribution Rate 5.00%
7/7/1975	Covered by Act 88
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

15 - General Clerical aft 7/1/15

1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2015	Day of work defined as 8 Hours a Day for All employees.
7/1/2015	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/2015	Exclude Temporary Employees requiring less than 6 months
7/1/2015	10 Year Vesting
7/1/2015	Benefit C (New)
7/1/2015	Participant Contribution Rate 5%
7/7/1975	Covered by Act 88
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

16 - General Union aft 7/1/12

1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2012	Day of work defined as 8 Hours a Day for All employees.
7/1/2012	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/2012	Exclude Temporary Employees requiring less than 6 months
7/1/2012	10 Year Vesting
7/1/2012	Benefit C (New)
7/1/2012	Participant Contribution Rate 5%
7/7/1975	Covered by Act 88
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

21 - COAM Cmnd Of

1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 84 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes



21 - COAM Cmnd Of

1/1/2007	E 2% COLA Adopted (01/01/2007)
1/1/2006	E 2% COLA Adopted (01/01/2006)
1/1/1999	E1 2.5% COLA for past retirees (01/01/1997)
7/1/1997	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/1997	10 Year Vesting
7/1/1997	Benefit B-4 (80% max)
7/1/1997	Benefit F50 (With 25 Years of Service)
7/1/1997	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
7/7/1975	Covered by Act 88
4/21/1975	Exclude Temporary Employees
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

22 - Police after 5/1/2014

1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 84 hours
1/1/2021	Custom Wages
3/1/2018	Dual Enrollment with MERS DC
12/1/2016	Service Credit Purchase Estimates - Yes
5/1/2014	Day of work defined as 84 Hours a Month for All employees.
5/1/2014	Benefit FAC-5 (5 Year Final Average Compensation)
5/1/2014	Exclude Temporary Employees requiring less than 6 months
5/1/2014	10 Year Vesting
5/1/2014	Benefit C (New)
5/1/2014	Benefit F50 (With 25 Years of Service)
5/1/2014	Member Contribution Rate 5.00%
7/7/1975	Covered by Act 88
9/1/1967	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

23 - COAM Cmnd hrd on/aft 5/1/14

1/1/2021	Public Safety Employees - Yes
1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 84 hours
1/1/2021	Custom Wages
7/1/2018	Day of work defined as 84 Hours a Month for All employees.
7/1/2018	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/2018	Exclude Temporary Employees requiring less than 6 months
7/1/2018	10 Year Vesting
7/1/2018	Defined Benefit Normal Retirement Age - 60
7/1/2018	Service Credit Purchase Estimates - Yes
7/1/2018	Benefit C (New)
7/1/2018	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
7/1/2018	Benefit F50 (With 25 Years of Service)



23 - COAM Cmnd hrd on/aft 5/1/14

7/1/2018	Participant Contribution Rate 5%
7/7/1975	Covered by Act 88
9/1/1967	Fiscal Month - July

S1 - Surplus Unassociated

9/1/1967	Fiscal Month - July
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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>12/31/2021</u>	<u>12/31/2020</u>	<u>12/31/2019</u>	<u>12/31/2018</u>
1. Ratio of the market value of assets to total payroll	4.2	4.2	3.7	3.4
2. Ratio of actuarial accrued liability to payroll	9.2	9.7	8.6	8.0
3. Ratio of actives to retirees and beneficiaries	0.8	0.7	0.9	0.9
4. Ratio of market value of assets to benefit payments	6.6	6.3	6.4	6.5
5. Ratio of net cash flow to market value of assets (boy)	-4.3%	-7.2%	-7.0%	-1.3%

RATIO OF MARKET VALUE OF ASSETS TO TOTAL PAYROLL

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

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

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

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

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

RATIO OF MARKET VALUE OF ASSETS TO BENEFIT PAYMENTS

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

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

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



State Reporting

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

Form 5572		
Line Reference	Description	Result
10	Membership as of December 31, 2021	
11	Indicate number of active members	53
12	Indicate number of inactive members (excluding pending refunds)	12
13	Indicate number of retirees and beneficiaries	67
14	Investment Performance for Calendar Year Ending December 31, 2021¹	
15	Enter actual rate of return - prior 1-year period	14.13%
16	Enter actual rate of return - prior 5-year period	9.96%
17	Enter actual rate of return - prior 10-year period	9.11%
18	Actuarial Assumptions	
19	Actuarial assumed rate of investment return ²	7.00%
20	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Level Percent
21	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any ³	17
22	Is each division within the system closed to new employees? ⁴	No
23	Uniform Assumptions	
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$13,259,724
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions ⁵	\$32,394,508
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending June 30, 2022	\$1,672,296

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