



Municipal Employees' Retirement System of Michigan

Annual Actuarial Valuation Report

December 31, 2021 - Muskegon, City of (6116)





Spring, 2022

Muskegon, 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 Muskegon, City of (6116) 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. Muskegon, 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 Muskegon, 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).

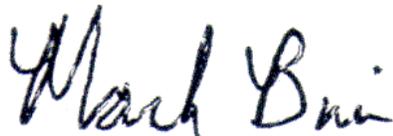
Sincerely,
Gabriel, Roeder, Smith & Company



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*	74%	70%

* 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: July 1, 2023	12/31/2021 July 1, 2023	12/31/2020 July 1, 2022	12/31/2020 July 1, 2022	12/31/2021 July 1, 2023	12/31/2021 July 1, 2023	12/31/2020 July 1, 2022	12/31/2020 July 1, 2022
Division								
01 - NonUnion Gen	-	-	-	-	\$ 36,725	\$ 43,071	\$ 37,037	\$ 46,556
02 - NonUn Police	-	-	-	-	371	527	492	726
10 - General Ret	-	-	-	-	40,913	43,091	44,989	48,256
11 - Clerical	-	-	-	-	3,508	5,040	4,761	7,059
12 - DPW 517M	-	-	-	-	0	543	2,066	7,007
20 - PLC/Fire Ret	-	-	-	-	94,142	98,230	98,152	104,284
21 - PolicePatrol	-	-	-	-	32,839	40,171	35,415	46,413
22 - Police Comm	-	-	-	-	78,671	84,613	77,947	86,860
50 - FF Local 370	-	-	-	-	56,359	62,805	61,203	70,872
Total Municipality - Estimated Monthly Contribution					\$ 343,528	\$ 378,091	\$ 362,062	\$ 418,033
Total Municipality - Estimated Annual Contribution					\$ 4,122,336	\$ 4,537,092	\$ 4,344,744	\$ 5,016,396

Employee contribution rates:

Valuation Date:	Employee Contribution Rate	
	12/31/2021	12/31/2020
Division		
01 - NonUnion Gen	5.00%	5.00%
02 - NonUn Police	6.00%	6.00%
10 - General Ret	0.00%	0.00%
11 - Clerical	5.00%	5.00%
12 - DPW 517M	5.00%	5.00%
20 - PLC/Fire Ret	0.00%	0.00%
21 - PolicePatrol	3.00%	3.00%
22 - Police Comm	6.00%	6.00%
50 - FF Local 370	6.00%	6.00%

The employer may contribute more than the minimum required contributions, as these additional contributions will earn investment income and may result in lower future contribution requirements. Employers making contributions in excess of the minimum requirements may elect to apply the excess contribution immediately to a particular division, or segregate the excess into one or more of what MERS calls “Surplus” divisions. An election in the first case would immediately reduce any unfunded accrued liability and lower the amortization payments throughout the remaining amortization period. An election to set up Surplus



divisions would not immediately lower future contributions, however the assets from the Surplus division could be transferred to an unfunded division in the future to reduce the unfunded liability in future years, or to be used to pay all or a portion of the minimum required contribution in a future year. For purposes of this report, the assets in any Surplus division have been included in the municipality's total assets, unfunded accrued liability, and funded status; however, these assets are not used in calculating the minimum required contribution.

MERS strongly encourages employers to contribute more than the minimum contribution shown above. 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.

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	\$ 166,630,604	\$ 148,904,943	\$ 134,172,424
Valuation Assets ¹	\$ 99,841,768	\$ 99,841,768	\$ 99,841,768
Unfunded Accrued Liability	\$ 66,788,836	\$ 49,063,175	\$ 34,330,656
Funded Ratio	60%	67%	74%
Monthly Normal Cost	\$ 61,915	\$ 43,398	\$ 29,858
Monthly Amortization Payment	\$ 636,883	\$ 486,323	\$ 348,233
Total Employer Contribution²	\$ 698,798	\$ 529,721	\$ 378,091

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

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

Projection Scenarios

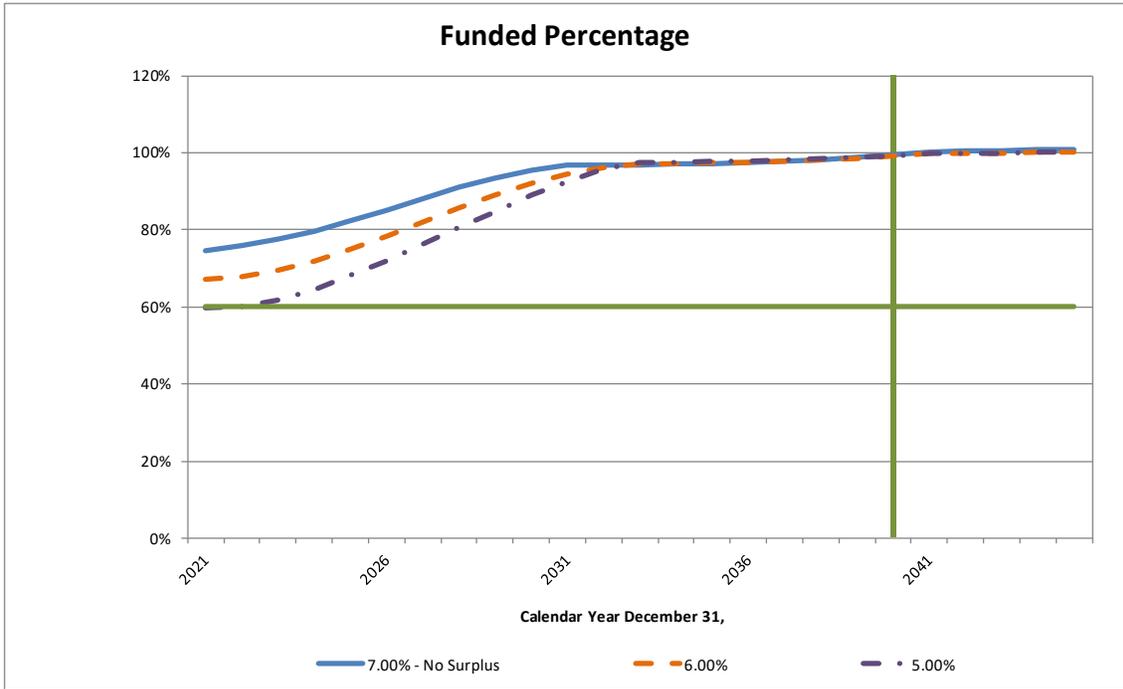
The next two pages show projections of the plan's funded ratio and computed employer contributions under the actuarial assumptions used in the valuation and alternate economic assumption scenarios. All three projections take into account the past investment experience that will continue to affect the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

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

Valuation Year Ending 12/31	Fiscal Year Beginning 7/1	Actuarial Accrued Liability	Valuation Assets ²	Funded Percentage	Estimated Annual Employer Contribution
7.00%¹ - NO PHASE-IN					
2021	2023	\$ 134,172,424	\$ 99,841,768	74%	\$ 4,537,092
2022	2024	\$ 134,100,000	\$ 101,900,000	76%	\$ 5,470,000
2023	2025	\$ 134,000,000	\$ 104,000,000	78%	\$ 5,590,000
2024	2026	\$ 133,600,000	\$ 106,400,000	80%	\$ 5,720,000
2025	2027	\$ 132,900,000	\$ 109,200,000	82%	\$ 5,760,000
2026	2028	\$ 131,900,000	\$ 112,100,000	85%	\$ 4,420,000
6.00%¹ - NO PHASE-IN					
2021	2023	\$ 148,904,943	\$ 99,841,768	67%	\$ 6,356,652
2022	2024	\$ 148,600,000	\$ 100,900,000	68%	\$ 7,340,000
2023	2025	\$ 148,200,000	\$ 102,900,000	69%	\$ 7,510,000
2024	2026	\$ 147,600,000	\$ 106,100,000	72%	\$ 7,680,000
2025	2027	\$ 146,600,000	\$ 109,800,000	75%	\$ 7,770,000
2026	2028	\$ 145,300,000	\$ 113,700,000	78%	\$ 6,500,000
5.00%¹ - NO PHASE-IN					
2021	2023	\$ 166,630,604	\$ 99,841,768	60%	\$ 8,385,576
2022	2024	\$ 166,100,000	\$ 99,900,000	60%	\$ 9,430,000
2023	2025	\$ 165,300,000	\$ 102,000,000	62%	\$ 9,650,000
2024	2026	\$ 164,300,000	\$ 106,200,000	65%	\$ 9,860,000
2025	2027	\$ 162,900,000	\$ 111,000,000	68%	\$ 9,990,000
2026	2028	\$ 161,200,000	\$ 116,100,000	72%	\$ 8,800,000

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

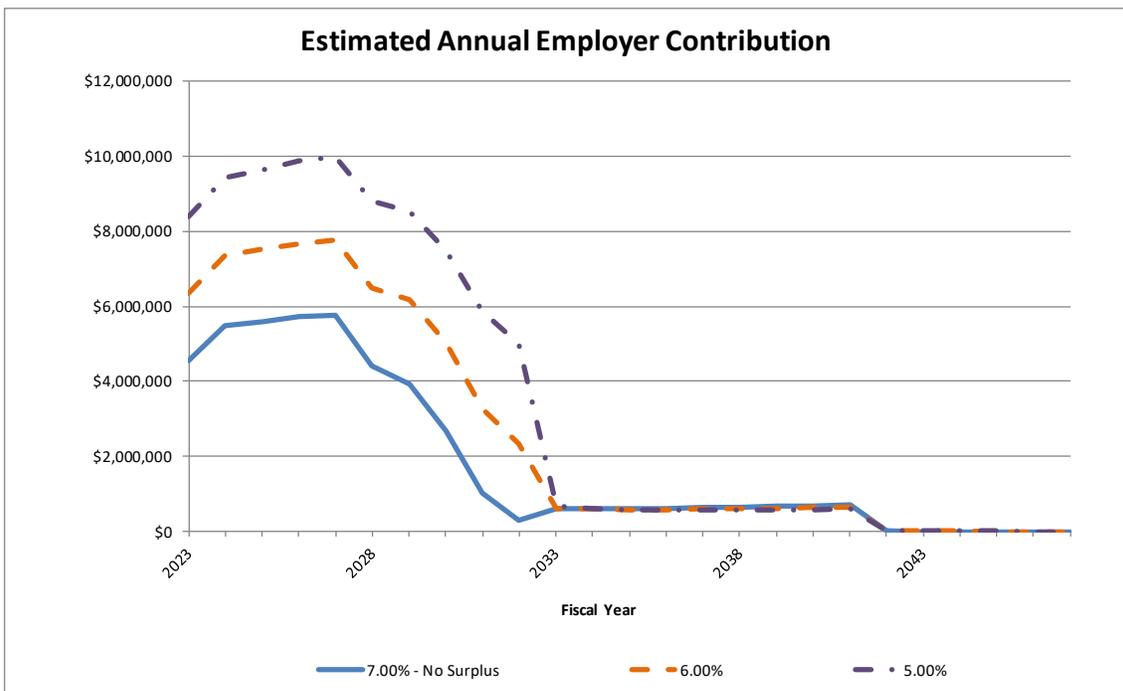
² Valuation Assets do not include assets from Surplus divisions, if any.



Notes:

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

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



Notes:

All projected contributions are shown with no phase-in.

Table 1: Employer Contribution Details for the Fiscal Year Beginning 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 - NonUnion Gen	10.01%	5.00%	-	-	-	-	-	-	-
02 - NonUn Police	0.00%	6.00%	-	-	-	-	-	-	-
10 - General Ret	0.00%	0.00%	-	-	-	-	-	-	-
11 - Clerical	10.99%	5.00%	-	-	-	-	-	-	-
12 - DPW 517M	9.99%	5.00%	-	-	-	-	-	-	-
20 - PLC/Fire Ret	0.00%	0.00%	-	-	-	-	-	-	-
21 - PolicePatrol	17.24%	3.00%	-	-	-	-	-	-	-
22 - Police Comm	18.41%	6.00%	-	-	-	-	-	-	-
50 - FF Local 370	19.32%	6.00%	-	-	-	-	-	-	-
Estimated Monthly Contribution³									
01 - NonUnion Gen			\$ 4,208	\$ 38,863	\$ 43,071	\$ 36,725			
02 - NonUn Police			0	527	527	371			
10 - General Ret			0	43,091	43,091	40,913			
11 - Clerical			914	4,126	5,040	3,508			
12 - DPW 517M			3,739	(3,196)	543	0			
20 - PLC/Fire Ret			0	98,230	98,230	94,142			
21 - PolicePatrol			10,535	29,636	40,171	32,839			
22 - Police Comm			10,012	74,601	84,613	78,671			
50 - FF Local 370			450	62,355	62,805	56,359			
Total Municipality			\$ 29,858	\$ 348,233	\$ 378,091	\$ 343,528			
Estimated Annual Contribution³			\$ 358,296	\$ 4,178,796	\$ 4,537,092	\$ 4,122,336			

- 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 - NonUnion Gen: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	Bridged Benefit: 2.25% Multiplier (80% max)-Frozen FAC; 2.00% Multiplier (no max)	Bridged Benefit: 2.25% Multiplier (80% max)-Frozen FAC; 2.00% Multiplier (no max)
Bridged Benefit Date:	1/31/2017	1/31/2017
Normal Retirement Age:	60	60
Vesting:	5 years	5 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	5.00%	5.00%
RS50% Percentage:	50%	50%
D-2:	D2 (25%)	D2 (25%)
DC Plan for New Hires:	2/1/2006	2/1/2006
	Annuity Withdrawal (Valuation Interest Rate)	Annuity Withdrawal (Valuation Interest Rate)
Act 88:	Yes (Adopted 11/10/1964)	Yes (Adopted 11/10/1964)

02 - NonUn Police: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	3.00% Multiplier (80% max)	3.00% Multiplier (80% max)
Normal Retirement Age:	55	55
Vesting:	10 years	10 years
Early Retirement (Unreduced):	53/25	53/25
Early Retirement (Reduced):	50/25	50/25
Final Average Compensation:	3 years	3 years
Employee Contributions:	6.00%	6.00%
RS50% Percentage:	50%	50%
D-2:	D2 (25%)	D2 (25%)
DC Plan for New Hires:	2/1/2006	2/1/2006
	Annuity Withdrawal (Valuation Interest Rate)	Annuity Withdrawal (Valuation Interest Rate)
Act 88:	Yes (Adopted 11/10/1964)	Yes (Adopted 11/10/1964)

10 - General Ret: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	Old Plan Benefits	Old Plan Benefits
Normal Retirement Age:	-	-
Vesting:	-	-
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	-	-
Final Average Compensation:	-	-
Employee Contributions:	-	-
Act 88:	Yes (Adopted 11/10/1964)	Yes (Adopted 11/10/1964)

11 - Clerical: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	Bridged Benefit: 2.25% Multiplier (80% max)-Frozen FAC; 2.00% Multiplier (no max)	Bridged Benefit: 2.25% Multiplier (80% max)-Frozen FAC; 2.00% Multiplier (no max)
Bridged Benefit Date:	12/31/2018	12/31/2018
Normal Retirement Age:	60	60
Vesting:	5 years	5 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	5.00%	5.00%
RS50% Percentage:	50%	50%
D-2:	D2 (25%)	D2 (25%)
DC Plan for New Hires:	11/1/2006	11/1/2006
Act 88:	Yes (Adopted 11/10/1964)	Yes (Adopted 11/10/1964)

12 - DPW 517M: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	Bridged Benefit: 2.25% Multiplier (80% max)-Frozen FAC; 2.00% Multiplier (80% max)	Bridged Benefit: 2.25% Multiplier (80% max)-Frozen FAC; 2.00% Multiplier (80% max)
Bridged Benefit Date:	12/31/2016	12/31/2016
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/30	55/30
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	5.00%	5.00%
RS50% Percentage:	50%	50%
D-2:	D2 (25%)	D2 (25%)
DC Plan for New Hires:	5/1/2007	5/1/2007
Act 88:	Yes (Adopted 11/10/1964)	Yes (Adopted 11/10/1964)



20 - PLC/Fire Ret: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	Old Plan Benefits	Old Plan Benefits
Normal Retirement Age:	-	-
Vesting:	-	-
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	-	-
Final Average Compensation:	-	-
Employee Contributions:	-	-
Act 88:	Yes (Adopted 11/10/1964)	Yes (Adopted 11/10/1964)

21 - PolicePatrol: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	Bridged Benefit: 3.00% Multiplier (75% max)-Frozen FAC; 2.67% Multiplier (75% max)	Bridged Benefit: 3.00% Multiplier (75% max)-Frozen FAC; 2.67% Multiplier (75% max)
Bridged Benefit Date:	12/31/2016	12/31/2016
Normal Retirement Age:	55	55
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	3.00%	3.00%
RS50% Percentage:	50%	50%
D-2:	D2 (25%)	D2 (25%)
DC Plan for New Hires:	8/1/2006 Annuity Withdrawal (Valuation Interest Rate)	8/1/2006 Annuity Withdrawal (Valuation Interest Rate)
Act 88:	Yes (Adopted 11/10/1964)	Yes (Adopted 11/10/1964)

22 - Police Comm: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	3.00% Multiplier (75% max)	3.00% Multiplier (75% max)
Normal Retirement Age:	55	55
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	6.00%	6.00%
RS50% Percentage:	50%	50%
D-2:	D2 (25%)	D2 (25%)
DC Plan for New Hires:	4/1/2013 Annuity Withdrawal (Valuation Interest Rate)	4/1/2013 Annuity Withdrawal (Valuation Interest Rate)
Act 88:	Yes (Adopted 11/10/1964)	Yes (Adopted 11/10/1964)



50 - FF Local 370: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.75% Multiplier (85% max)	2.75% Multiplier (85% max)
Normal Retirement Age:	55	55
Vesting:	10 years	10 years
Early Retirement (Unreduced):	53/25	53/25
Early Retirement (Reduced):	50/25	50/25
Final Average Compensation:	3 years	3 years
Employee Contributions:	6.00%	6.00%
RS50% Percentage:	50%	50%
D-2:	D2 (25%)	D2 (25%)
DC Plan for New Hires:	5/1/2007	5/1/2007
	Annuity Withdrawal (Valuation Interest Rate)	Annuity Withdrawal (Valuation Interest Rate)
Act 88:	Yes (Adopted 11/10/1964)	Yes (Adopted 11/10/1964)

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 - NonUnion Gen							
Active Employees	13	\$ 1,164,971	16	\$ 1,478,551	52.9	26.6	27.3
Vested Former Employees	5	77,764	4	67,990	51.7	8.5	17.5
Retirees and Beneficiaries	35	1,344,276	31	1,176,111	66.4		
Pending Refunds	0		0				
02 - NonUn Police							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	2	36,018	2	36,018	67.2		
Pending Refunds	0		0				
10 - General Ret							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	2	7,929	4	27,071	56.1	0.0	8.7
Retirees and Beneficiaries	82	1,046,511	87	1,112,314	79.7		
Pending Refunds	1		1				
11 - Clerical							
Active Employees	5	\$ 211,460	5	\$ 230,886	54.2	23.4	23.4
Vested Former Employees	4	43,016	4	43,016	44.4	13.2	13.2
Retirees and Beneficiaries	13	240,531	13	240,531	63.3		
Pending Refunds	0		0				
12 - DPW 517M							
Active Employees	20	\$ 1,033,601	22	\$ 1,135,127	55.5	25.6	25.9
Vested Former Employees	4	72,664	6	103,137	54.1	18.3	21.1
Retirees and Beneficiaries	34	847,887	30	780,268	67.4		
Pending Refunds	1		1				
20 - PLC/Fire Ret							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	2	26,376	2	26,376	55.5	0.0	12.6
Retirees and Beneficiaries	90	2,003,836	93	2,089,264	78.7		
Pending Refunds	0		0				
21 - PolicePatrol							
Active Employees	12	\$ 966,939	15	\$ 1,235,556	46.9	21.2	21.3
Vested Former Employees	9	247,850	9	247,850	47.7	14.3	15.7
Retirees and Beneficiaries	26	1,105,126	23	944,157	56.5		
Pending Refunds	2		2				

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
22 - Police Comm							
Active Employees	11	\$ 1,135,614	12	\$ 1,214,725	45.7	20.6	20.6
Vested Former Employees	1	26,241	2	88,378	38.4	11.7	11.7
Retirees and Beneficiaries	18	1,040,631	16	911,560	57.6		
Pending Refunds	0		0				
50 - FF Local 370							
Active Employees	1	\$ 96,231	1	\$ 113,423	54.1	21.7	21.7
Vested Former Employees	2	49,916	2	49,916	52.2	13.9	21.0
Retirees and Beneficiaries	37	1,903,303	37	1,903,303	57.7		
Pending Refunds	0		0				
Total Municipality							
Active Employees	62	\$ 4,608,816	71	\$ 5,408,268	51.4	23.8	24.1
Vested Former Employees	29	551,756	33	653,734	49.9	11.6	15.9
Retirees and Beneficiaries	337	9,568,119	332	9,193,526	70.7		
Pending Refunds	4		4				
Total Participants	432		440				

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 - NonUnion Gen	\$ 14,749,000	\$ 1,482,701	\$ 13,152,659	\$ 1,616,797
02 - NonUn Police	388,037	0	370,918	0
10 - General Ret	5,201,929	35,517	5,088,694	81,617
11 - Clerical	3,313,590	299,875	3,072,461	288,506
12 - DPW 517M	11,026,278	1,436,833	10,336,034	1,521,522
20 - PLC/Fire Ret	9,773,520	77,409	9,435,885	77,108
21 - PolicePatrol	17,534,626	1,593,543	15,388,928	1,959,866
22 - Police Comm	12,625,739	1,199,829	11,135,190	1,241,866
50 - FF Local 370	19,045,064	205,962	17,968,062	199,411
Municipality Total³	\$ 93,657,784	\$ 6,331,670	\$ 85,948,830	\$ 6,986,692
Combined Assets³	\$99,989,453		\$92,935,522	

¹ Reserve for Employer Contributions and Benefit Payments.

² Reserve for Employee Contributions.

³ Totals may not add due to rounding.

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

Table 5: Flow of Valuation Assets

Year Ended 12/31	Employer Contributions		Employee Contributions	Investment Income (Valuation Assets)	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
	Required	Additional						
2011	\$ 1,183,329	\$ 0	\$ 642,901	\$ 4,207,086	\$ (5,311,426)	\$ (140,832)	\$ 109,227	\$ 89,500,639
2012	1,091,561	0	587,649	3,728,234	(5,734,235)	(45,520)	70,910	89,199,238
2013	1,045,925	500,000	552,706	5,013,341	(6,007,642)	(256,400)	152,529	90,199,697
2014	1,166,652	0	539,016	4,951,932	(6,347,201)	(60,729)	25,394	90,474,761
2015	1,420,218	0	530,620	4,233,378	(6,363,249)	0	35,426	90,331,154
2016	1,789,680	206,832	512,216	4,452,424	(6,417,825)	0	51,682	90,926,163
2017	1,746,565	54,451	490,775	5,309,471	(6,822,093)	(115,450)	196,616	91,786,498
2018	2,292,133	379,043	402,162	3,273,216	(7,512,609)	0	446,399	91,066,842
2019	2,712,204	0	354,933	4,115,396	(8,218,688)	0	136,881	90,167,568
2020	2,378,640	0	291,483	6,659,952	(8,923,707)	(290,755)	83,323	90,366,504
2021	3,313,056	89,671	249,652	15,053,780	(9,285,922)	0	55,027	99,841,768

Notes:

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

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

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

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



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

Division	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
01 - NonUnion Gen	\$ 5,332,484	\$ 705,737	\$ 15,418,192	\$ 0	\$ 21,456,413	\$ 16,207,727	75.5%	\$ 5,248,686
02 - NonUn Police	0	0	433,987	0	433,987	387,464	89.3%	46,523
10 - General Ret	0	64,802	8,138,033	9,804	8,212,639	5,229,710	63.7%	2,982,929
11 - Clerical	938,686	255,812	2,796,387	0	3,990,885	3,608,128	90.4%	382,757
12 - DPW 517M	4,583,311	685,539	9,593,529	23,112	14,885,491	12,444,703	83.6%	2,440,788
20 - PLC/Fire Ret	0	268,289	16,385,508	0	16,653,797	9,836,379	59.1%	6,817,418
21 - PolicePatrol	5,395,761	2,095,824	14,199,903	34,550	21,726,038	19,099,917	87.9%	2,626,121
22 - Police Comm	7,402,216	109,536	13,543,023	0	21,054,775	13,805,148	65.6%	7,249,627
50 - FF Local 370	834,938	493,167	24,430,294	0	25,758,399	19,222,592	74.6%	6,535,807
Total	\$ 24,487,396	\$ 4,678,706	\$ 104,938,856	\$ 67,466	\$ 134,172,424	\$ 99,841,768	74.4%	\$ 34,330,656

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	\$ 83,118,204	\$ 86,157,824	104%	\$ (3,039,620)
2008	86,794,286	86,928,232	100%	(133,946)
2009	87,394,951	86,681,601	99%	713,350
2010	88,391,392	88,810,354	100%	(418,962)
2011	92,614,337	89,500,639	97%	3,113,698
2012	95,219,730	89,199,238	94%	6,020,492
2013	98,938,366	90,199,697	91%	8,738,669
2014	102,505,577	90,474,761	88%	12,030,816
2015	109,748,525	90,331,154	82%	19,417,371
2016	111,081,478	90,926,163	82%	20,155,315
2017	110,312,106	91,786,498	83%	18,525,608
2018	115,434,233	91,066,842	79%	24,367,391
2019	122,644,056	90,167,568	74%	32,476,488
2020	128,868,018	90,366,504	70%	38,501,514
2021	134,172,424	99,841,768	74%	34,330,656

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 - NonUnion Gen

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 12,885,628	\$ 12,419,996	96%	\$ 465,632
2012	13,415,381	12,725,281	95%	690,100
2013	14,473,668	13,084,818	90%	1,388,850
2014	15,039,864	13,265,999	88%	1,773,865
2015	16,341,876	13,320,489	82%	3,021,387
2016	16,852,181	13,460,431	80%	3,391,750
2017	16,161,067	13,612,136	84%	2,548,931
2018	17,335,476	14,162,253	82%	3,173,223
2019	18,616,052	14,165,872	76%	4,450,180
2020	19,792,712	14,361,183	73%	5,431,529
2021	21,456,413	16,207,727	76%	5,248,686

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	29	\$ 1,945,514	\$ 12,476	5.00%
2012	27	1,876,350	\$ 13,619	5.00%
2013	21	1,431,491	\$ 18,211	5.00%
2014	21	1,475,712	\$ 23,544	5.00%
2015	19	1,405,622	\$ 41,829	5.00%
2016	18	1,383,599	\$ 50,588	5.00%
2017	15	1,116,352	\$ 9,581	5.00%
2018	18	1,368,936	\$ 21,227	5.00%
2019	18	1,527,542	\$ 37,706	5.00%
2020	16	1,478,551	\$ 46,556	5.00%
2021	13	1,164,971	\$ 43,071	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 02 - NonUn Police

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 417,698	\$ 338,944	81%	\$ 78,754
2012	414,246	323,309	78%	90,937
2013	410,352	311,869	76%	98,483
2014	406,510	299,595	74%	106,915
2015	417,810	284,951	68%	132,859
2016	413,747	417,399	101%	(3,652)
2017	409,470	411,028	100%	(1,558)
2018	405,139	388,731	96%	16,408
2019	414,500	369,337	89%	45,163
2020	425,350	360,665	85%	64,685
2021	433,987	387,464	89%	46,523

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	0	\$ 0	\$ 550	0.00%
2012	0	0	\$ 678	0.00%
2013	0	0	\$ 794	0.00%
2014	0	0	\$ 976	0.00%
2015	0	0	\$ 1,461	0.00%
2016	0	0	\$ 0	6.00%
2017	0	0	\$ 0	6.00%
2018	0	0	\$ 200	6.00%
2019	0	0	\$ 510	6.00%
2020	0	0	\$ 726	6.00%
2021	0	0	\$ 527	6.00%

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

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

Note: The contributions shown in Table 9 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 - General Ret

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 11,653,883	\$ 11,323,119	97%	\$ 330,764
2012	11,340,591	10,457,494	92%	883,097
2013	10,910,229	9,710,048	89%	1,200,181
2014	10,594,429	8,943,389	84%	1,651,040
2015	10,696,256	8,094,540	76%	2,601,716
2016	10,259,115	7,319,115	71%	2,940,000
2017	9,866,469	6,718,602	68%	3,147,867
2018	9,446,987	6,030,836	64%	3,416,151
2019	9,277,700	5,416,975	58%	3,860,725
2020	8,788,197	5,027,387	57%	3,760,810
2021	8,212,639	5,229,710	64%	2,982,929

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	0	\$ 0	\$ 1,339	0.00%
2012	0	0	\$ 6,644	0.00%
2013	0	0	\$ 10,118	0.00%
2014	0	0	\$ 15,546	0.00%
2015	0	0	\$ 29,500	0.00%
2016	0	0	\$ 37,728	0.00%
2017	0	0	\$ 31,536	0.00%
2018	0	0	\$ 37,734	0.00%
2019	0	0	\$ 46,334	0.00%
2020	0	0	\$ 48,256	0.00%
2021	0	0	\$ 43,091	0.00%

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

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

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

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

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

Division 11 - Clerical

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 2,286,487	\$ 2,366,323	104%	\$ (79,836)
2012	2,437,122	2,497,738	103%	(60,616)
2013	2,612,840	2,633,873	101%	(21,033)
2014	2,856,008	2,778,150	97%	77,858
2015	3,163,913	2,904,606	92%	259,307
2016	3,338,872	3,099,370	93%	239,502
2017	3,341,934	3,239,017	97%	102,917
2018	3,185,984	3,193,093	100%	(7,109)
2019	3,462,656	3,210,296	93%	252,360
2020	3,818,792	3,268,059	86%	550,733
2021	3,990,885	3,608,128	90%	382,757

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	20	\$ 696,626	\$ 2,624	5.00%
2012	18	636,515	\$ 2,414	5.00%
2013	16	569,642	\$ 2,412	5.00%
2014	16	587,290	\$ 3,515	5.00%
2015	14	515,981	\$ 5,740	5.00%
2016	12	457,471	\$ 5,465	5.00%
2017	10	396,484	\$ 1,274	5.00%
2018	8	323,230	\$ 1,254	5.00%
2019	7	302,104	\$ 4,045	5.00%
2020	5	230,886	\$ 7,059	5.00%
2021	5	211,460	\$ 5,040	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 12 - DPW 517M

Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 10,764,406	\$ 10,809,127	100%	\$ (44,721)
2012	11,293,450	11,145,163	99%	148,287
2013	12,373,662	11,600,543	94%	773,119
2014	13,014,198	11,840,662	91%	1,173,536
2015	13,529,528	11,929,963	88%	1,599,565
2016	13,969,141	12,087,650	87%	1,881,491
2017	13,184,407	12,269,974	93%	914,433
2018	12,980,691	11,635,928	90%	1,344,763
2019	13,576,867	11,359,953	84%	2,216,914
2020	14,298,423	11,529,777	81%	2,768,646
2021	14,885,491	12,444,703	84%	2,440,788

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	47	\$ 2,131,366	\$ 9,321	5.00%
2012	42	1,742,781	\$ 8,208	5.00%
2013	37	1,582,863	\$ 13,365	5.00%
2014	33	1,462,519	\$ 17,512	5.00%
2015	30	1,298,221	\$ 23,809	5.00%
2016	30	1,374,817	\$ 30,218	5.00%
2017	30	1,498,623	\$ 0	5.00%
2018	26	1,262,975	\$ 0	5.00%
2019	25	1,238,200	\$ 4,132	5.00%
2020	22	1,135,127	\$ 7,007	5.00%
2021	20	1,033,601	\$ 543	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 20 - PLC/Fire Ret

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 24,176,713	\$ 20,611,640	85%	\$ 3,565,073
2012	23,374,479	18,889,394	81%	4,485,085
2013	22,336,742	17,385,233	78%	4,951,509
2014	21,202,764	15,950,760	75%	5,252,004
2015	20,592,249	14,530,218	71%	6,062,031
2016	19,937,637	13,218,525	66%	6,719,112
2017	19,303,841	12,130,036	63%	7,173,805
2018	18,475,847	10,854,654	59%	7,621,193
2019	17,928,483	9,871,320	55%	8,057,163
2020	17,299,640	9,250,025	53%	8,049,615
2021	16,653,797	9,836,379	59%	6,817,418

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

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

Table 9-20: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	0	\$ 0	\$ 21,319	0.00%
2012	0	0	\$ 32,209	0.00%
2013	0	0	\$ 40,422	0.00%
2014	0	0	\$ 47,828	0.00%
2015	0	0	\$ 65,891	0.00%
2016	0	0	\$ 85,126	0.00%
2017	0	0	\$ 72,033	0.00%
2018	0	0	\$ 84,140	0.00%
2019	0	0	\$ 97,122	0.00%
2020	0	0	\$ 104,284	0.00%
2021	0	0	\$ 98,230	0.00%

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

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

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

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

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

Division 21 - PolicePatrol

Table 8-21: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 11,346,649	\$ 12,184,667	107%	\$ (838,018)
2012	12,161,071	13,004,686	107%	(843,615)
2013	13,398,328	13,965,309	104%	(566,981)
2014	14,195,642	14,532,472	102%	(336,830)
2015	16,993,298	15,453,521	91%	1,539,777
2016	16,825,030	16,050,888	95%	774,142
2017	16,995,170	16,925,976	100%	69,194
2018	17,213,659	16,395,205	95%	818,454
2019	18,791,406	16,607,138	88%	2,184,268
2020	19,937,745	16,869,222	85%	3,068,523
2021	21,726,038	19,099,917	88%	2,626,121

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	49	\$ 2,985,318	\$ 15,663	6.00%
2012	48	2,955,348	\$ 15,309	6.00%
2013	46	2,925,453	\$ 18,058	6.00%
2014	39	2,543,835	\$ 15,948	6.50%
2015	39	2,721,206	\$ 41,749	6.50%
2016	33	2,137,711	\$ 29,095	6.50%
2017	27	1,853,067	\$ 14,544	4.00%
2018	21	1,492,055	\$ 23,105	3.00%
2019	17	1,253,773	\$ 36,539	3.00%
2020	15	1,235,556	\$ 46,413	3.00%
2021	12	966,939	\$ 40,171	3.00%

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 22 - Police Comm

Table 8-22: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 6,815,385	\$ 6,751,393	99%	\$ 63,992
2012	7,255,083	7,080,385	98%	174,698
2013	8,067,001	7,586,029	94%	480,972
2014	9,101,368	8,278,138	91%	823,230
2015	10,455,299	8,593,227	82%	1,862,072
2016	11,688,341	9,307,817	80%	2,380,524
2017	12,478,932	9,804,918	79%	2,674,014
2018	14,749,462	10,811,999	73%	3,937,463
2019	16,587,301	11,005,818	66%	5,581,483
2020	19,563,991	12,034,917	62%	7,529,074
2021	21,054,775	13,805,148	66%	7,249,627

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	15	\$ 1,071,507	9.86%	6.00%
2012	14	1,027,127	10.65%	6.00%
2013	12	859,926	\$ 9,825	6.00%
2014	15	1,087,192	\$ 14,770	6.00%
2015	15	1,164,031	\$ 25,559	6.00%
2016	16	1,247,952	\$ 31,833	6.00%
2017	14	1,135,670	\$ 26,379	6.00%
2018	15	1,221,688	\$ 43,280	6.00%
2019	14	1,254,761	\$ 63,790	6.00%
2020	12	1,214,725	\$ 86,860	6.00%
2021	11	1,135,614	\$ 84,613	6.00%

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

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

Note: The contributions shown in Table 9 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 50 - FF Local 370

Table 8-50: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 12,267,488	\$ 12,695,430	104%	\$ (427,942)
2012	13,528,307	13,075,788	97%	452,519
2013	14,355,544	13,921,975	97%	433,569
2014	16,094,794	14,585,596	91%	1,509,198
2015	17,558,296	15,219,639	87%	2,338,657
2016	17,797,414	15,964,968	90%	1,832,446
2017	18,570,816	16,674,811	90%	1,896,005
2018	21,640,988	17,594,143	81%	4,046,845
2019	23,989,091	18,160,859	76%	5,828,232
2020	24,943,168	17,665,269	71%	7,277,899
2021	25,758,399	19,222,592	75%	6,535,807

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 9-50: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	27	\$ 1,820,659	\$ 10,235	6.00%
2012	27	1,947,304	\$ 18,349	6.00%
2013	26	1,829,563	\$ 16,884	6.00%
2014	26	2,014,963	\$ 29,804	6.00%
2015	26	2,003,887	\$ 41,834	6.00%
2016	25	1,858,528	\$ 37,802	6.00%
2017	22	1,645,593	\$ 17,490	6.00%
2018	10	896,285	\$ 40,079	6.00%
2019	4	534,570	\$ 57,716	6.00%
2020	1	113,423	\$ 70,872	6.00%
2021	1	96,231	\$ 62,805	6.00%

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

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

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

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

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

Table 10: Division-Based Layered Amortization Schedule

Division 01 - NonUnion Gen

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	\$ 3,021,387	9	\$ 2,169,777	8	\$ 319,296
(Gain)/Loss	12/31/2016	300,600	10	218,654	5	48,732
(Gain)/Loss	12/31/2017	550,418	10	454,694	6	86,028
Amendment	12/31/2017	(1,343,359)	5	(370,868)	1	(383,556)
(Gain)/Loss	12/31/2018	912,277	10	832,179	7	137,436
(Gain)/Loss	12/31/2019	648,566	10	636,457	8	93,660
Assumption	12/31/2019	695,124	10	661,998	8	97,416
Experience	12/31/2020	782,754	10	822,813	9	109,584
Experience	12/31/2021	(312,728)	10	(346,132)	10	(42,240)
Total				\$ 5,079,572		\$ 466,356

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

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

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

Note:

Based on the results of a study as required by the Actuarial Policy this division adopted to extend the amortization period, as allowed by the MERS Board.

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

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



Division 02 - NonUn Police

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	12/31/2018	\$ 17,566	10	\$ 16,022	7	\$ 2,652
(Gain)/Loss	12/31/2019	12,189	10	11,963	8	1,764
Assumption	12/31/2019	14,115	10	13,687	8	2,016
Experience	12/31/2020	17,426	10	18,319	9	2,436
Experience	12/31/2021	(18,829)	10	(20,840)	10	(2,544)
Total				\$ 39,151		\$ 6,324

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

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

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

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

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

Division 10 - General Ret

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	\$ 2,601,716	9	\$ 1,542,509	5	\$ 343,824
(Gain)/Loss	12/31/2016	295,914	10	215,252	5	47,976
(Gain)/Loss	12/31/2017	259,129	10	214,063	6	40,500
(Gain)/Loss	12/31/2018	439,992	10	401,352	7	66,288
(Gain)/Loss	12/31/2019	386,270	10	379,067	8	55,788
Assumption	12/31/2019	227,915	10	205,341	8	30,216
Experience	12/31/2020	46,365	10	48,732	9	6,492
Experience	12/31/2021	(547,784)	10	(606,296)	10	(73,992)
Total				\$ 2,400,020		\$ 517,092

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.

Note:

Based on the results of a study as required by the Actuarial Policy this division adopted to extend the amortization period, as allowed by the MERS Board.

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 11 - Clerical

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
(Gain)/Loss	12/31/2019	\$ 255,944	10	\$ 251,169	8	\$ 36,960
Experience	12/31/2020	275,984	10	290,104	9	38,640
Experience	12/31/2021	(193,128)	10	(213,757)	10	(26,088)
Total				\$ 327,516		\$ 49,512

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 12 - DPW 517M

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	\$ 1,599,565	9	\$ 1,377,372	19	\$ 103,380
(Gain)/Loss	12/31/2016	274,463	10	199,658	5	44,508
(Gain)/Loss	12/31/2017	651,934	10	538,555	6	101,892
Amendment	12/31/2017	(1,588,351)	5	(438,522)	1	(453,528)
(Gain)/Loss	12/31/2018	618,190	10	563,903	7	93,132
(Gain)/Loss	12/31/2019	214,259	10	210,262	8	30,936
Assumption	12/31/2019	517,315	10	498,093	8	73,296
Experience	12/31/2020	326,300	10	343,006	9	45,684
Experience	12/31/2021	(574,947)	10	(636,361)	10	(77,652)
Total				\$ 2,655,966		\$ (38,352)

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.

Note:

Based on the results of a study as required by the Actuarial Policy this division adopted to extend the amortization period, as allowed by the MERS Board.

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 20 - PLC/Fire Ret

Table 10-20: 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	\$ 6,062,031	9	\$ 3,445,308	5	\$ 767,940
(Gain)/Loss	12/31/2016	736,220	10	535,534	5	119,364
(Gain)/Loss	12/31/2017	640,568	10	529,164	6	100,116
(Gain)/Loss	12/31/2018	824,986	10	752,537	7	124,284
(Gain)/Loss	12/31/2019	364,279	10	357,478	8	52,608
Assumption	12/31/2019	463,647	10	416,964	8	61,356
Experience	12/31/2020	370,002	10	388,943	9	51,804
Experience	12/31/2021	(730,855)	10	(808,923)	10	(98,712)
Total				\$ 5,617,005		\$ 1,178,760

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.

Note:

Based on the results of a study as required by the Actuarial Policy this division adopted to extend the amortization period, as allowed by the MERS Board.

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 21 - PolicePatrol

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
(Gain)/Loss	12/31/2018	\$ 768,749	10	\$ 701,241	7	\$ 115,812
(Gain)/Loss	12/31/2019	501,661	10	492,307	8	72,444
Assumption	12/31/2019	869,867	10	846,543	8	124,572
Experience	12/31/2020	763,553	10	802,634	9	106,896
Experience	12/31/2021	(474,516)	10	(525,202)	10	(64,092)
Total				\$ 2,317,523		\$ 355,632

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

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

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

The unfunded accrued liability (UAL) as of December 31, 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 10-22: 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	\$ 1,862,072	14	\$ 1,940,052	19	\$ 145,608
(Gain)/Loss	12/31/2016	409,020	12	286,361	4	78,324
(Gain)/Loss	12/31/2017	230,333	10	190,287	6	36,000
(Gain)/Loss	12/31/2018	1,285,962	10	1,173,041	7	193,728
(Gain)/Loss	12/31/2019	1,008,687	10	989,869	8	145,668
Assumption	12/31/2019	580,683	10	543,562	8	79,992
Experience	12/31/2020	1,854,751	10	1,949,682	9	259,668
Experience	12/31/2021	(324,084)	10	(358,701)	10	(43,776)
Total				\$ 6,714,153		\$ 895,212

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.

Note:

Based on the results of a study as required by the Actuarial Policy this division adopted to extend the amortization period, as allowed by the MERS Board.

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 10-50: 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	\$ 2,338,657	9	\$ 2,091,826	19	\$ 156,996
(Gain)/Loss	12/31/2016	(601,932)	10	(437,842)	5	(97,596)
(Gain)/Loss	12/31/2017	183,163	10	151,300	6	28,620
(Gain)/Loss	12/31/2018	2,325,524	10	2,121,319	7	350,352
(Gain)/Loss	12/31/2019	778,633	10	764,102	8	112,440
Assumption	12/31/2019	889,420	10	846,568	8	124,584
Experience	12/31/2020	1,264,453	10	1,329,167	9	177,024
Experience	12/31/2021	(771,153)	10	(853,525)	10	(104,160)
Total				\$ 6,012,915		\$ 748,260

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.

Note:

Based on the results of a study as required by the Actuarial Policy this division adopted to extend the amortization period, as allowed by the MERS Board.

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:	337
Inactive employees entitled to but not yet receiving benefits (including refunds):	33
Active employees:	<u>62</u>
	432
Total Pension Liability as of 12/31/2020 measurement date:	\$ 125,918,365
Total Pension Liability as of 12/31/2021 measurement date:	\$ 131,052,803
Service Cost for the year ending on the 12/31/2021 measurement date:	\$ 529,832
Change in the Total Pension Liability due to:	
- Benefit changes ¹ :	\$ 0
- Differences between expected and actual experience ² :	\$ 256,636
- Changes in assumptions ² :	\$ 4,396,829
Average expected remaining service lives of all employees (active and inactive):	1

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

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

Covered employee payroll (Needed for Required Supplementary Information):	\$ 4,608,816
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Note: Covered employee payroll may differ from the GASB Statement No. 68 definition.

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

	1% Decrease <u>(6.25%)</u>	Current Discount Rate <u>(7.25%)</u>	1% Increase <u>(8.25%)</u>
Change in Net Pension Liability as of 12/31/2021:	\$ 14,154,294	\$ 0	\$ (11,903,997)

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 - NonUnion Gen

1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 150 hours
1/1/2021	Custom Wages
9/1/2017	Temporary Eligible at Age 53 (With 25 Years of Service) (09/01/2017 - 10/31/2017)
7/1/2017	Extended Amortization to 14 yrs (based off 2015 AAV)
2/1/2017	Benefit B-2
1/31/2017	Frozen FAC
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2010	Fiscal Month - July
3/1/2006	Blanket Resolution (All Service)
2/1/2006	Accelerated to 5-year Amortization
2/1/2006	DC Adoption Date 02-01-2006
1/1/2006	Annuity Withdrawal - MERS Rate
1/1/2006	Day of work defined as 150 Hours a Month for All employees.
1/1/2006	Benefit D2 Plan
1/1/2006	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2006	Non Standard Compensation Definition
1/1/2006	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
1/1/2006	Exclude Temporary Employees
1/1/2006	5 Year Vesting
1/1/2006	Benefit B-3 (80% max)
1/1/2006	Benefit F55 (With 25 Years of Service)
1/1/2006	Member Contribution Rate 5.00%
11/10/1964	Covered by Act 88
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

02 - NonUn Police

7/1/2017	Extended Amortization to 25 yrs (based off 2015 AAV)
12/1/2016	Service Credit Purchase Estimates - Yes
8/1/2011	3.0% Multiplier (80% max)
8/1/2011	Benefit F55 (With 10 Years of Service)
7/1/2010	Fiscal Month - July
3/1/2006	Blanket Resolution (All Service)
2/1/2006	DC Adoption Date 02-01-2006
1/1/2006	Annuity Withdrawal - MERS Rate
1/1/2006	DB Exempt from Social Security
1/1/2006	Day of work defined as 150 Hours a Month for All employees.
1/1/2006	Benefit D2 Plan
1/1/2006	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2006	Benefit RS 50 (50% Post-Ret. Spouse Benefits)



02 - NonUn Police

1/1/2006	Exclude Temporary Employees
1/1/2006	10 Year Vesting
1/1/2006	2.75% Multiplier (80% max)
1/1/2006	Eligible at Age 53 (With 25 Years of Service)
1/1/2006	Member Contribution Rate 6.00%
11/10/1964	Covered by Act 88
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

10 - General Ret

7/1/2017	Extended Amortization to 11 yrs (based off 2015 AAV)
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2010	Fiscal Month - July
1/1/2009	Flexible E .5% COLA Adopted (01/01/2009)
1/1/2008	Flexible E .9% COLA Adopted (01/01/2008)
8/1/2007	Flexible E .9% COLA Adopted (08/01/2007)
8/1/2006	Benefit FAC-3 (3 Year Final Average Compensation)
8/1/2006	Exclude Temporary Employees
8/1/2006	5 Year Vesting
8/1/2006	Accelerated to 5-year Amortization
8/1/2006	Benefit B-3 (80% max)
3/1/2006	Blanket Resolution (Generic Service)
11/10/1964	Covered by Act 88
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

11 - Clerical

1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 150 hours
1/1/2021	Custom Wages
12/1/2020	Non-Accelerated Amortization
1/1/2019	Benefit B-2
1/1/2019	Benefit F55 (With 25 Years of Service)
12/31/2018	Frozen FAC
7/1/2017	Extended Amortization to 25 yrs (based off 2015 AAV)
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2010	Fiscal Month - July
11/1/2006	Accelerated to 5-year Amortization
11/1/2006	DC Adoption Date 11-01-2006
10/1/2006	Blanket Resolution (All Service)
10/1/2006	Day of work defined as 150 Hours a Month for All employees.
10/1/2006	Benefit D2 Plan
10/1/2006	Benefit FAC-3 (3 Year Final Average Compensation)
10/1/2006	Non Standard Compensation Definition
10/1/2006	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
10/1/2006	Exclude Temporary Employees
10/1/2006	5 Year Vesting
10/1/2006	Benefit B-3 (80% max)



11 - Clerical

10/1/2006	Benefit F55 (With 30 Years of Service)
10/1/2006	Member Contribution Rate 5.00%
11/10/1964	Covered by Act 88
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

12 - DPW 517M

1/1/2021	Other Leave - Service Granted
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 150 hours
1/1/2021	Custom Wages
7/1/2017	Extended Amortization to 25 yrs (based off 2015 AAV)
1/1/2017	2.0% multiplier (80% max)
12/31/2016	Frozen FAC
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2010	Fiscal Month - July
5/1/2007	Exclude Temporary Employees
5/1/2007	Accelerated to 5-year Amortization
5/1/2007	DC Adoption Date 05-01-2007
4/1/2007	Day of work defined as 150 Hours a Month for All employees.
4/1/2007	Benefit D2 Plan
4/1/2007	Benefit FAC-3 (3 Year Final Average Compensation)
4/1/2007	Non Standard Compensation Definition
4/1/2007	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
4/1/2007	10 Year Vesting
4/1/2007	Benefit B-3 (80% max)
4/1/2007	Benefit F55 (With 30 Years of Service)
4/1/2007	Member Contribution Rate 5.00%
3/1/2006	Blanket Resolution (Generic Service)
11/10/1964	Covered by Act 88
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

20 - PLC/Fire Ret

7/1/2017	Extended Amortization to 11 yrs (based off 2015 AAV)
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2010	Fiscal Month - July
1/1/2009	Flexible E .5% COLA Adopted (01/01/2009)
1/1/2008	Flexible E .9% COLA Adopted (01/01/2008)
8/1/2007	Flexible E .9% COLA Adopted (08/01/2007)
8/1/2006	Annuity Withdrawal - MERS Rate
8/1/2006	Benefit FAC-3 (3 Year Final Average Compensation)
8/1/2006	Exclude Temporary Employees
8/1/2006	10 Year Vesting
8/1/2006	Accelerated to 5-year Amortization
8/1/2006	2.75% Multiplier (80% max)
8/1/2006	Benefit F55 (With 10 Years of Service)
3/1/2006	Blanket Resolution (Generic Service)
11/10/1964	Covered by Act 88



20 - PLC/Fire Ret

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

21 - PolicePatrol

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 - 150 hours
1/1/2021	Custom Wages
1/1/2019	Participant Contribution Rate 3%
1/1/2018	Participant Contribution Rate 4%
7/1/2017	Extended Amortization to 25 yrs (based off 2015 AAV)
1/1/2017	2.67% multiplier (75% max)
12/31/2016	Frozen FAC
12/1/2016	Service Credit Purchase Estimates - Yes
4/1/2014	Member Contribution Rate 6.50%
7/1/2010	Fiscal Month - July
1/1/2009	3.0% Multiplier (75% max)
1/1/2009	Benefit F50 (With 25 Years of Service)
7/1/2007	Non Standard Compensation Definition
1/1/2007	2.75% Multiplier (75% max)
8/1/2006	DC Adoption Date 08-01-2006
7/1/2006	Annuity Withdrawal - MERS Rate
7/1/2006	DB Exempt from Social Security
7/1/2006	Day of work defined as 150 Hours a Month for All employees.
7/1/2006	Benefit D2 Plan
7/1/2006	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2006	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
7/1/2006	Exclude Temporary Employees
7/1/2006	10 Year Vesting
7/1/2006	Benefit B-4 (75% max)
7/1/2006	Eligible at Age 51 (With 25 Years of Service)
7/1/2006	Benefit F55 (With 10 Years of Service)
7/1/2006	Member Contribution Rate 6.00%
3/1/2006	Blanket Resolution (Generic Service)
11/10/1964	Covered by Act 88
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

22 - Police Comm

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 - 150 hours
1/1/2021	Custom Wages
1/1/2019	Non Standard Compensation Definition
7/1/2017	Extended Amortization to 25 yrs (based off 2015 AAV)
12/1/2016	Service Credit Purchase Estimates - Yes
4/1/2013	Accelerated to 5-year Amortization



22 - Police Comm

4/1/2013	DC Adoption Date 04-01-2013
3/1/2013	Non Standard Compensation Definition
1/1/2013	3.0% Multiplier (75% max)
1/1/2013	Benefit F50 (With 25 Years of Service)
7/1/2010	Fiscal Month - July
1/1/2007	3.0% Multiplier (80% max)
7/1/2006	Annuity Withdrawal - MERS Rate
7/1/2006	DB Exempt from Social Security
7/1/2006	Day of work defined as 150 Hours a Month for All employees.
7/1/2006	Benefit D2 Plan
7/1/2006	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2006	Non Standard Compensation Definition
7/1/2006	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
7/1/2006	Exclude Temporary Employees
7/1/2006	10 Year Vesting
7/1/2006	Benefit B-4 (80% max)
7/1/2006	Eligible at Age 53 (With 25 Years of Service)
7/1/2006	Benefit F55 (With 10 Years of Service)
7/1/2006	Member Contribution Rate 6.00%
3/1/2006	Blanket Resolution (Generic Service)
11/10/1964	Covered by Act 88
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

50 - FF Local 370

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 - 203 hours
1/1/2021	Custom Wages
11/1/2019	Temporary 20 Years & Out (11/01/2019 - 04/30/2020)
11/1/2018	Temporary Eligible at Age 49 (With 22 Years of Service) (11/01/2018 - 12/31/2018)
7/1/2017	Extended Amortization to 25 yrs (based off 2015 AAV)
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2010	Fiscal Month - July
5/1/2007	Exclude Temporary Employees
5/1/2007	Accelerated to 5-year Amortization
5/1/2007	DC Adoption Date 05-01-2007
4/1/2007	Annuity Withdrawal - MERS Rate
4/1/2007	Day of work defined as 150 Hours a Month for All employees.
4/1/2007	Benefit D2 Plan
4/1/2007	Benefit FAC-3 (3 Year Final Average Compensation)
4/1/2007	Non Standard Compensation Definition
4/1/2007	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
4/1/2007	10 Year Vesting
4/1/2007	Defined Benefit Normal Retirement Age - 55
4/1/2007	2.75% Multiplier (85% max)
4/1/2007	Eligible at Age 53 (With 25 Years of Service)
4/1/2007	Member Contribution Rate 6.00%



50 - FF Local 370

3/1/2006
11/10/1964

Blanket Resolution (Generic Service)
Covered by Act 88
Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

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

Increase in Final Average Compensation

Division	FAC Increase Assumption
All Divisions	2.00%

Miscellaneous and Technical Assumptions

Loads – None.

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

Risk Commentary

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

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

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

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

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

PLAN MATURITY MEASURES

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

	<u>12/31/2021</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	21.7	17.2	14.6	12.7
2. Ratio of actuarial accrued liability to payroll	29.1	23.8	20.1	17.6
3. Ratio of actives to retirees and beneficiaries	0.2	0.2	0.3	0.3
4. Ratio of market value of assets to benefit payments	10.8	10.1	10.8	11.1
5. Ratio of net cash flow to market value of assets (boy)	-6.0%	-7.3%	-6.0%	-4.4%

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	62
12	Indicate number of inactive members (excluding pending refunds)	29
13	Indicate number of retirees and beneficiaries	337
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	19
22	Is each division within the system closed to new employees? ⁴	Yes
23	Uniform Assumptions	
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$92,425,952
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions ⁵	\$136,218,348
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending June 30, 2022	\$4,571,892

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%.

