



Municipal Employees' Retirement System of Michigan

Annual Actuarial Valuation Report
December 31, 2021 - East Lansing, City of (3301)





Spring, 2022

East Lansing, 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 East Lansing, City of (3301) 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. East Lansing, 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.

Please refer to the supplemental letter attached at the end of this report for additional information related to your plan.

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 East Lansing, 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).

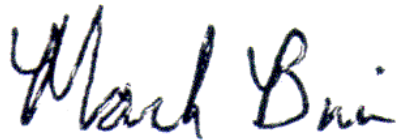
Sincerely,
Gabriel, Roeder, Smith & Company



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*	61%	54%

* Reflects assets from Surplus divisions, if any.

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

Required Employer Contributions

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

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

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

	Percentage of Payroll				Monthly \$ Based on Projected Payroll			
	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in
	Valuation Date:	12/31/2021	12/31/2021	12/31/2020	12/31/2020	12/31/2021	12/31/2021	12/31/2020
Fiscal Year Beginning:	July 1, 2023	July 1, 2023	July 1, 2022	July 1, 2022	July 1, 2023	July 1, 2023	July 1, 2022	July 1, 2022
Division								
01 - Gnl NonUnio	-	-	-	-	\$ 56,768	\$ 60,926	\$ 63,361	\$ 69,598
02 - Plc NonComm	-	-	-	-	54,180	58,868	53,838	60,870
05 - Fire	-	-	-	-	213,484	226,880	219,108	239,202
08 - NewHires 54B	-	-	-	-	1,827	2,413	1,688	2,567
10 - Gnl DPW	-	-	-	-	47,078	49,520	54,960	58,623
11 - Gnl Auxlry	-	-	-	-	16,727	17,997	16,608	18,513
12 - Gnl 54B Crt	-	-	-	-	46,216	48,340	46,627	49,813
13 - Jail Serv	-	-	-	-	1,907	2,105	1,978	2,275
14 - Water&Sewer	-	-	-	-	726	1,540	11,508	12,729
15 - Junior Empl	-	-	-	-	535	727	655	943
16 - Comm Devlpm	-	-	-	-	158	190	161	209
17 - Supervisory Independent Union	-	-	-	-	733	2,137	7,918	10,024
18 - UAW Non Sup	-	-	-	-	32,526	34,566	39,663	42,723
19 - UAW Jr Unit	-	-	-	-	1,204	1,374	2,107	2,362
20 - Plc Sprvrs	114.82%	120.98%	119.25%	129.32%	117,789	124,113	112,340	121,826
21 - Police/Fire	-	-	-	-	43,712	46,434	52,817	56,900
22 - Sup of Info & Tech/Records	-	-	-	-	3,471	3,845	1,441	2,002
23 - POAM aft 7/1/11-Officers Only	12.50%	12.83%	11.29%	11.75%	16,972	17,426	16,723	17,404
50 - Fire Hired after 7/1/2011	13.93%	14.40%	12.58%	13.34%	30,927	31,975	26,053	27,625
HA - New hires after 11/1/10	8.64%	8.77%	8.29%	8.49%	71,066	72,104	66,177	67,734
HB - Gen.Aux FOP-hired aft 7/1/201	3.62%	3.62%	3.67%	3.67%	910	910	766	766
Total Municipality -								
Estimated Monthly Contribution					\$ 758,916	\$ 804,390	\$ 796,497	\$ 864,708
Total Municipality -								
Estimated Annual Contribution					\$ 9,106,992	\$ 9,652,680	\$ 9,557,964	\$ 10,376,496

Employee contribution rates:



Valuation Date:	Employee Contribution Rate	
	12/31/2021	12/31/2020
Division		
01 - Gnl NonUnio	1.00%	1.00%
02 - Plc NonComm	2.00%	2.00%
05 - Fire	5.00%	5.00%
08 - NewHires 54B	1.00%	1.00%
10 - Gnl DPW	6.70%	6.70%
11 - Gnl Auxlry	1.00%	1.00%
12 - Gnl 54B Crt	1.00%	1.00%
13 - Jail Serv	1.00%	1.00%
14 - Water&Sewer	0.00%	0.00%
15 - Junior Empl	3.00%	3.00%
16 - Comm Devlpm	0.00%	0.00%
17 - Supervisory Independent Union	1.30%	1.30%
18 - UAW Non Sup	1.00%	1.00%
19 - UAW Jr Unit	3.00%	3.00%
20 - Plc Sprvsrs	3.00%	3.00%
21 - Police/Fire	4.00%	4.00%
22 - Sup of Info & Tech/Records	1.00%	1.00%
23 - POAM aft 7/1/11-Officers Only	0.00%	0.00%
50 - Fire Hired after 7/1/2011	0.00%	0.00%
HA - New hires after 11/1/10	0.00%	0.00%
HB - Gen.Aux FOP-hired aft 7/1/201	0.00%	0.00%

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

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

Assuming that experience of the plan meets actuarial assumptions:

- To accelerate to a 100% funding ratio in 10 years, estimated monthly employer contributions for the fiscal year beginning in 2023 for the entire employer would be \$1,057,740, instead of \$804,390.

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	\$ 288,746,701	\$ 255,856,041	\$ 228,839,994
Valuation Assets ¹	\$ 138,618,512	\$ 138,618,512	\$ 138,618,512
Unfunded Accrued Liability	\$ 150,128,189	\$ 117,237,529	\$ 90,221,482
Funded Ratio	48%	54%	61%
Monthly Normal Cost	\$ 302,511	\$ 229,729	\$ 175,400
Monthly Amortization Payment	\$ 929,376	\$ 778,691	\$ 628,990
Total Employer Contribution²	\$ 1,231,887	\$ 1,008,420	\$ 804,390

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

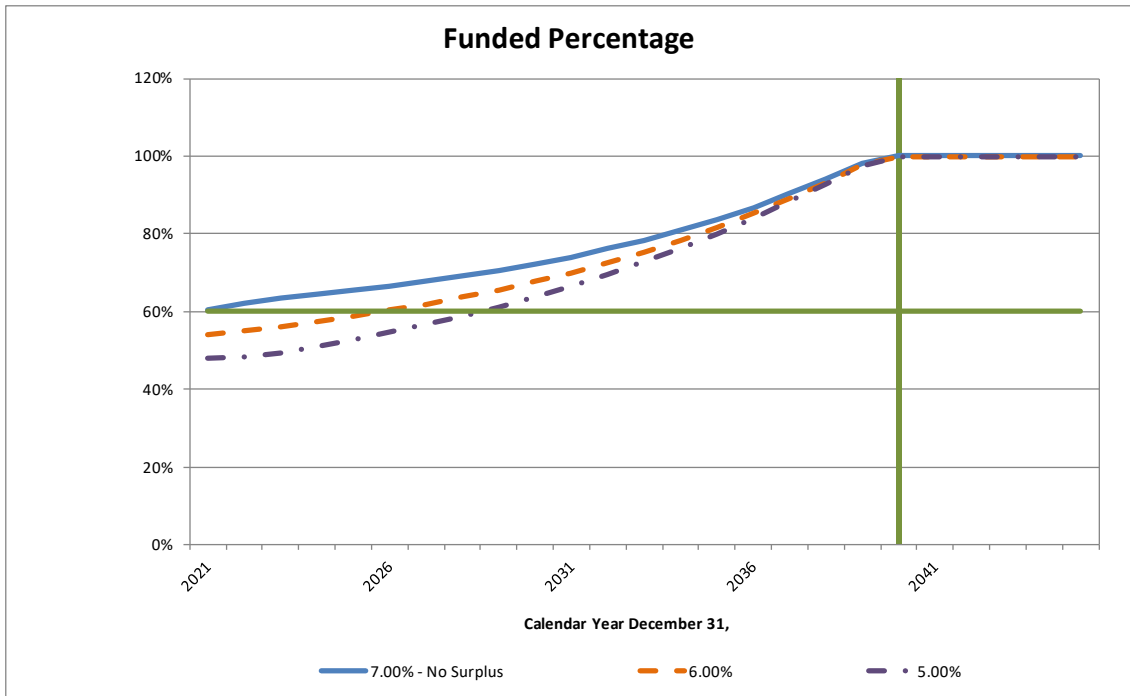
The next two pages show projections of the plan's funded ratio and computed employer contributions under the actuarial assumptions used in the valuation and alternate economic assumption scenarios. All three projections take into account the past investment experience that will continue to affect the 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	\$ 228,839,994	\$ 138,618,512	61%	\$ 9,652,680
2022	2024	\$ 231,600,000	\$ 143,600,000	62%	\$ 9,410,000
2023	2025	\$ 234,000,000	\$ 148,100,000	63%	\$ 9,690,000
2024	2026	\$ 236,300,000	\$ 152,000,000	64%	\$ 9,960,000
2025	2027	\$ 238,300,000	\$ 155,700,000	65%	\$ 10,200,000
2026	2028	\$ 239,900,000	\$ 159,500,000	66%	\$ 10,500,000
6.00%¹ - NO PHASE-IN					
2021	2023	\$ 255,856,041	\$ 138,618,512	54%	\$ 12,101,040
2022	2024	\$ 258,700,000	\$ 142,300,000	55%	\$ 12,000,000
2023	2025	\$ 261,200,000	\$ 146,600,000	56%	\$ 12,200,000
2024	2026	\$ 263,400,000	\$ 151,500,000	58%	\$ 12,500,000
2025	2027	\$ 265,500,000	\$ 156,300,000	59%	\$ 12,900,000
2026	2028	\$ 267,100,000	\$ 161,200,000	60%	\$ 13,300,000
5.00%¹ - NO PHASE-IN					
2021	2023	\$ 288,746,701	\$ 138,618,512	48%	\$ 14,782,644
2022	2024	\$ 291,600,000	\$ 141,000,000	48%	\$ 14,800,000
2023	2025	\$ 294,100,000	\$ 145,100,000	49%	\$ 15,100,000
2024	2026	\$ 296,400,000	\$ 151,300,000	51%	\$ 15,500,000
2025	2027	\$ 298,400,000	\$ 157,600,000	53%	\$ 16,000,000
2026	2028	\$ 300,100,000	\$ 164,100,000	55%	\$ 16,400,000

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

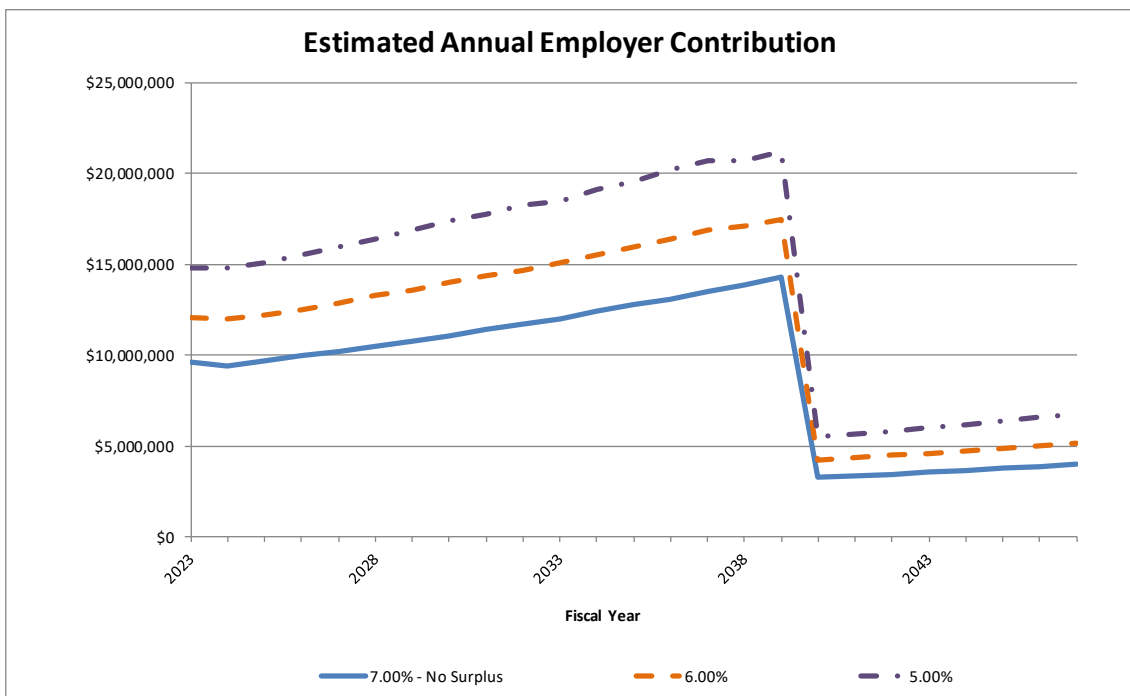
² Valuation Assets do not include assets from Surplus divisions, if any.



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 - Gnl NonUnio	9.04%	1.00%	-	-	-	-	30.65%	28.97%	
02 - Plc NonComm	20.76%	2.00%	-	-	-	-	43.58%	40.64%	
05 - Fire	21.19%	5.00%	-	-	-	-	73.99%	69.86%	
08 - NewHires 54B	10.85%	1.00%	-	-	-	-	30.65%	28.97%	
10 - Gnl DPW	12.88%	6.70%	-	-	-	-	30.65%	28.97%	
11 - Gnl Auxlry	11.82%	1.00%	-	-	-	-	54.88%	51.19%	
12 - Gnl 54B Crt	9.32%	1.00%	-	-	-	-			
13 - Jail Serv	0.00%	1.00%	-	-	-	-	30.65%	28.97%	
14 - Water&Sewer	11.54%	0.00%	-	-	-	-			
15 - Junior Empl	0.00%	3.00%	-	-	-	-	30.65%	28.97%	
16 - Comm Devlpm	0.00%	0.00%	-	-	-	-			
17 - Supervisory Independent Union	0.00%	1.30%	-	-	-	-	30.65%	28.97%	
18 - UAW Non Sup	9.33%	1.00%	-	-	-	-	30.65%	28.97%	
19 - UAW Jr Unit	11.34%	3.00%	-	-	-	-	30.65%	28.97%	
Estimated Monthly Contribution³									
01 - Gnl NonUnio			\$ 1,054	\$ 59,872	\$ 60,926	\$ 56,768			
02 - Plc NonComm			7,356	51,512	58,868	54,180			
05 - Fire			20,693	206,187	226,880	213,484			
08 - NewHires 54B			1,809	604	2,413	1,827			
10 - Gnl DPW			567	48,953	49,520	47,078			
11 - Gnl Auxlry			1,007	16,990	17,997	16,727			
12 - Gnl 54B Crt			229	48,111	48,340	46,216			
13 - Jail Serv			0	2,105	2,105	1,907			
14 - Water&Sewer			1,606	(66)	1,540	726			
15 - Junior Empl			0	727	727	535			
16 - Comm Devlpm			0	190	190	158			
17 - Supervisory Independent Union			0	2,137	2,137	733			
18 - UAW Non Sup			679	33,887	34,566	32,526			
19 - UAW Jr Unit			685	689	1,374	1,204			



Table 1 (continued)

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									
20 - Plc Sprvsrs	19.78%	3.00%	16.78%	104.20%	120.98%	114.82%			0.70%
21 - Police/Fire	18.91%	4.00%	-	-	-	-	30.65%	28.97%	
22 - Sup of Info & Tech/Records	0.00%	1.00%	-	-	-	-			
23 - POAM aft 7/1/11-Officers Only	12.68%	0.00%	12.68%	0.15%	12.83%	12.50%	43.58%	40.64%	0.97%
50 - Fire Hired after 7/1/2011	13.66%	0.00%	13.66%	0.74%	14.40%	13.93%	73.99%	69.86%	0.95%
HA - New hires after 11/1/10	8.77%	0.00%	8.77%	0.00%	8.77%	8.64%	30.65%	28.97%	
HB - Gen.Aux FOP-hired aft 7/1/201	5.79%	0.00%	5.79%	-2.17%	3.62%	3.62%	54.88%	51.19%	
Estimated Monthly Contribution³									
20 - Plc Sprvsrs			\$ 17,214	\$ 106,899	\$ 124,113	\$ 117,789			
21 - Police/Fire			1,380	45,054	46,434	43,712			
22 - Sup of Info & Tech/Records			0	3,845	3,845	3,471			
23 - POAM aft 7/1/11-Officers Only			17,228	198	17,426	16,972			
50 - Fire Hired after 7/1/2011			30,333	1,642	31,975	30,927			
HA - New hires after 11/1/10			72,104	0	72,104	71,066			
HB - Gen.Aux FOP-hired aft 7/1/201			1,456	(546)	910	910			
Total Municipality			\$ 175,400	\$ 628,990	\$ 804,390	\$ 758,916			
Estimated Annual Contribution³			\$ 2,104,800	\$ 7,547,880	\$ 9,652,680	\$ 9,106,992			

- 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 - Gnl NonUnio: Closed to new hires, linked to Division HA

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	1.00%	1.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

02 - Plc NonComm: Closed to new hires, linked to Division 23

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.75% Multiplier (80% max)	2.75% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	2.00%	2.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

05 - Fire: Closed to new hires, linked to Division 50

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.75% Multiplier (80% max)	2.75% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

08 - NewHires 54B: Closed to new hires, linked to Division HA

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	1.00%	1.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

10 - Gnl DPW: Closed to new hires, linked to Division HA

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	6.70%	6.70%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

11 - Gnl Auxlry: Closed to new hires, linked to Division HB

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	1.00%	1.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

12 - Gnl 54B Crt: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	1.00%	1.00%
DC Plan for New Hires:	7/1/2006	7/1/2006
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)



13 - Jail Serv: Closed to new hires, linked to Division HA

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	1.00%	1.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

14 - Water&Sewer: Closed to new hires

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
DC Plan for New Hires:	7/1/2007	7/1/2007
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

15 - Junior Empl: Closed to new hires, linked to Division HA

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	3.00%	3.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)



16 - Comm Devlpm: Open Division

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.00% Multiplier paid to Social Security Age, 1.70% Multiplier paid after Social Security Age (no max)	2.00% Multiplier paid to Social Security Age, 1.70% Multiplier paid after Social Security Age (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 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:	0.00%	0.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

17 - Supervisory Independent Union: Closed to new hires, linked to Division HA

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	1.30%	1.30%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

18 - UAW Non Sup: Closed to new hires, linked to Division HA

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	1.00%	1.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)



19 - UAW Jr Unit: Closed to new hires, linked to Division HA

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	3.00%	3.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

20 - Plc Sprvsrs: Open Division

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.75% Multiplier (80% max)	2.75% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	3.00%	3.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

21 - Police/Fire: Closed to new hires, linked to Division HA

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.75% Multiplier (80% max)	2.75% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	4.00%	4.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

22 - Sup of Info & Tech/Records: Open Division

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	1.00%	1.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)



23 - POAM aft 7/1/11-Officers Only: Open Division, linked to Division 02

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

50 - Fire Hired after 7/1/2011: Open Division, linked to Division 05

	2021 Valuation	2020 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

HA - New hires after 11/1/10: Open Division, linked to Division 01, 08, 10, 13, 15, 17, 18, 19, 21

	2021 Valuation	2020 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)

HB - Gen.Aux FOP-hired aft 7/1/201: Open Division, linked to Division 11

	2021 Valuation	2020 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 10/25/2016)	Yes (Adopted 10/25/2016)



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 - Gnl NonUnio							
Active Employees	2	\$ 198,659	2	\$ 200,044	55.2	30.5	30.5
Vested Former Employees	2	49,676	3	90,973	55.1	10.7	16.8
Retirees and Beneficiaries	79	1,960,464	80	1,927,846	74.9		
Pending Refunds	0		0				
02 - Plc NonComm							
Active Employees	6	\$ 466,296	7	\$ 532,736	44.5	18.4	19.2
Vested Former Employees	9	166,730	11	227,300	49.0	11.1	15.5
Retirees and Beneficiaries	34	1,567,461	31	1,424,497	66.6		
Pending Refunds	0		0				
05 - Fire							
Active Employees	19	\$ 1,780,507	20	\$ 1,748,631	46.9	20.2	20.6
Vested Former Employees	2	54,689	3	56,296	41.6	14.3	14.3
Retirees and Beneficiaries	78	4,226,091	77	4,176,931	70.5		
Pending Refunds	0		1				
08 - NewHires 54B							
Active Employees	4	\$ 230,816	4	\$ 220,136	54.4	21.9	21.9
Vested Former Employees	5	74,842	5	74,842	50.6	13.6	14.3
Retirees and Beneficiaries	2	13,779	2	13,605	67.7		
Pending Refunds	0		0				
10 - Gnl DPW							
Active Employees	2	\$ 157,275	3	\$ 228,995	52.0	25.4	25.4
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	42	1,174,640	42	1,136,380	69.3		
Pending Refunds	0		1				
11 - Gnl Auxlry							
Active Employees	3	\$ 156,577	4	\$ 192,177	57.1	27.8	28.6
Vested Former Employees	8	50,875	8	50,875	44.9	7.9	15.9
Retirees and Beneficiaries	21	442,124	20	408,847	66.4		
Pending Refunds	0		0				
12 - Gnl 54B Crt							
Active Employees	1	\$ 64,390	2	\$ 115,491	57.8	37.5	37.5
Vested Former Employees	2	25,886	3	32,448	58.1	15.1	22.4
Retirees and Beneficiaries	19	449,561	18	414,676	69.8		
Pending Refunds	0		0				

Table 3 (continued)

Division	2021 Valuation		2020 Valuation		2021 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
13 - Jail Serv							
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	3	75,846	3	75,846	57.3		
Pending Refunds	0		0				
14 - Water&Sewer							
Active Employees	3	\$ 223,099	4	\$ 305,707	53.8	25.4	29.2
Vested Former Employees	6	38,388	6	38,388	55.5	7.6	21.3
Retirees and Beneficiaries	10	277,166	9	214,079	63.7		
Pending Refunds	0		0				
15 - Junior Empl							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	1	23,846	1	23,846	47.1	17.1	17.1
Retirees and Beneficiaries	3	54,876	3	54,876	69.3		
Pending Refunds	4		28				
16 - Comm Devlpm							
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	1	5,973	1	5,973	63.9		
Pending Refunds	0		0				
17 - Supervisory Independent Union							
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	20	760,295	20	760,295	69.8		
Pending Refunds	0		0				
18 - UAW Non Sup							
Active Employees	2	\$ 124,869	2	\$ 116,554	59.2	35.0	35.0
Vested Former Employees	1	14,326	2	26,272	59.4	13.9	13.9
Retirees and Beneficiaries	38	969,541	37	949,719	71.2		
Pending Refunds	0		0				
19 - UAW Jr Unit							
Active Employees	2	\$ 136,970	2	\$ 147,969	54.4	24.4	24.4
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	2	30,343	2	30,343	64.4		
Pending Refunds	5		8				
20 - Plc Sprvsrs							
Active Employees	12	\$ 1,143,246	12	\$ 1,049,814	45.1	22.9	22.9
Vested Former Employees	1	25,542	2	76,362	53.4	14.0	14.0
Retirees and Beneficiaries	27	1,929,340	26	1,846,112	66.3		
Pending Refunds	0		0				

Table 3 (continued)

Division	2021 Valuation		2020 Valuation		2021 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
21 - Police/Fire							
Active Employees	1	\$ 106,184	2	\$ 223,693	46.8	25.8	25.8
Vested Former Employees	1	83,826	0	0	45.4	23.9	23.9
Retirees and Beneficiaries	12	1,001,445	12	982,377	65.1		
Pending Refunds	0		0				
22 - Sup of Info & Tech/Records							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	5	85,288	4	85,189	42.6	10.9	13.2
Retirees and Beneficiaries	2	76,721	2	76,721	63.2		
Pending Refunds	0		0				
23 - POAM aft 7/1/11-Officers Only							
Active Employees	25	\$ 1,484,784	27	\$ 1,590,441	31.1	5.6	6.5
Vested Former Employees	6	41,915	3	25,483	32.3	5.4	6.8
Retirees and Beneficiaries	1	9,770	1	9,770	56.1		
Pending Refunds	0		0				
50 - Fire Hired after 7/1/2011							
Active Employees	36	\$ 2,118,453	32	\$ 1,964,624	34.5	4.5	6.8
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	0		0				
HA - New hires after 11/1/10							
Active Employees	149	\$ 8,946,068	143	\$ 8,673,005	42.5	5.3	8.7
Vested Former Employees	42	143,231	38	136,664	45.9	3.9	12.2
Retirees and Beneficiaries	14	83,471	10	47,500	67.6		
Pending Refunds	0		0				
HB - Gen.Aux FOP-hired aft 7/1/201							
Active Employees	7	\$ 227,369	6	\$ 160,346	32.2	3.9	4.2
Vested Former Employees	6	6,812	7	7,988	36.4	2.6	10.1
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	0		0				
Total Municipality							
Active Employees	274	\$ 17,565,562	272	\$ 17,470,363	41.5	8.9	11.2
Vested Former Employees	97	885,872	96	952,926	45.9	7.1	13.6
Retirees and Beneficiaries	408	15,108,907	396	14,556,393	69.8		
Pending Refunds	9		38				
Total Participants	788		802				

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 - Gnl NonUnio	\$ 10,574,357	\$ 25,736	\$ 9,598,117	\$ 29,895
02 - Plc NonComm	16,860,395	252,753	15,388,223	263,939
05 - Fire	33,092,959	1,221,637	29,009,412	1,196,447
08 - NewHires 54B	1,784,738	29,950	1,557,230	27,535
10 - Gnl DPW	6,369,945	196,213	5,060,442	275,819
11 - Gnl Auxlry	3,722,892	18,260	3,476,847	21,101
12 - Gnl 54B Crt	3,751,330	6,474	3,204,038	10,805
13 - Jail Serv	655,607	0	625,556	0
14 - Water&Sewer	4,451,259	0	3,927,964	0
15 - Junior Empl	575,283	31,122	545,757	46,192
16 - Comm Devlpm	51,492	0	47,947	0
17 - Supervisory Independent Union	7,483,162	239	6,025,694	239
18 - UAW Non Sup	5,576,254	12,400	4,477,901	11,108
19 - UAW Jr Unit	976,904	108,552	842,552	107,188
20 - Plc Sprvsrs	18,913,681	951,906	16,748,372	933,758
21 - Police/Fire	7,719,772	153,728	6,623,847	143,822
22 - Sup of Info & Tech/Records	1,050,716	1,242	962,469	1,237
23 - POAM aft 7/1/11-Officers Only	1,678,360	14,522	1,323,298	14,466
50 - Fire Hired after 7/1/2011	1,471,146	104,844	1,073,127	0
HA - New hires after 11/1/10	8,754,635	0	7,040,119	0
HB - Gen.Aux FOP-hired aft 7/1/201	179,087	0	144,096	0
Municipality Total³	\$ 135,693,976	\$ 3,129,578	\$ 117,703,008	\$ 3,083,551
Combined Assets³	\$138,823,554		\$120,786,558	

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	\$ 4,758,607	\$ 60,489	\$ 168,721	\$ 4,557,810	\$ (9,463,412)	\$ 0	\$ (9,383)	\$ 99,227,169
2012	5,339,237	40,326	253,023	4,028,779	(10,312,446)	0	0	98,576,088
2013	5,688,698	0	243,464	5,347,999	(10,760,384)	0	(918,225)	98,177,640
2014	5,788,683	0	246,570	5,389,258	(11,030,534)	0	0	98,571,617
2015	5,863,235	2,062,725	255,686	4,833,627	(11,354,535)	0	0	100,232,355
2016	6,183,576	254,800	236,080	4,768,479	(12,230,658)	(135)	0	99,444,497
2017	6,722,775	2,062,238	204,106	5,815,398	(12,828,067)	(222)	499,173	101,919,898
2018	7,169,391	2,705,510	203,234	3,764,981	(13,070,143)	0	556,168	103,249,039
2019	7,692,389	3,820,844	198,043	4,858,517	(13,298,965)	(15,275)	104,228	106,608,820
2020	8,824,946	7,032,073	185,874	8,611,458	(14,058,593)	0	243,078	117,447,656
2021	9,492,394	6,106,176	174,659	19,951,551	(14,692,826)	(20,607)	159,509	138,618,512

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 - Gnl NonUnio	\$ 1,524,073	\$ 378,240	\$ 17,906,915	\$ 0	\$ 19,809,228	\$ 10,584,437	53.4%	\$ 9,224,791
02 - Plc NonComm	3,188,652	1,264,494	20,425,307	0	24,878,453	17,087,872	68.7%	7,790,581
05 - Fire	13,523,390	215,310	51,759,125	0	65,497,825	34,263,914	52.3%	31,233,911
08 - NewHires 54B	1,248,479	499,840	141,937	0	1,890,256	1,812,008	95.9%	78,248
10 - Gnl DPW	1,168,736	0	12,901,716	0	14,070,452	6,556,461	46.6%	7,513,991
11 - Gnl Auxlry	949,279	272,056	5,075,372	0	6,296,707	3,735,627	59.3%	2,561,080
12 - Gnl 54B Crt	553,439	282,165	4,606,626	0	5,442,230	3,752,253	68.9%	1,689,977
13 - Jail Serv	0	0	973,681	0	973,681	654,639	67.2%	319,042
14 - Water&Sewer	1,149,232	349,277	3,125,783	0	4,624,292	4,444,685	96.1%	179,607
15 - Junior Empl	0	118,842	573,970	2,906	695,718	605,509	87.0%	90,209
16 - Comm Devlpm	0	0	67,469	0	67,469	51,416	76.2%	16,053
17 - Supervisory Independent Union	0	0	8,065,657	0	8,065,657	7,472,348	92.6%	593,309
18 - UAW Non Sup	850,541	155,160	9,804,710	0	10,810,411	5,580,399	51.6%	5,230,012
19 - UAW Jr Unit	854,966	0	335,716	14,582	1,205,264	1,083,853	89.9%	121,411
20 - Plc Sprvrs	10,470,568	237,196	25,130,061	0	35,837,825	19,836,246	55.4%	16,001,579
21 - Police/Fire	1,082,768	424,167	13,278,307	0	14,785,242	7,861,871	53.2%	6,923,371
22 - Sup of Info & Tech/Records	0	679,334	917,136	0	1,596,470	1,050,404	65.8%	546,066
23 - POAM aft 7/1/11-Officers Only	1,509,722	87,077	117,657	0	1,714,456	1,690,382	98.6%	24,074
50 - Fire Hired after 7/1/2011	1,814,998	0	0	0	1,814,998	1,573,662	86.7%	241,336
HA - New hires after 11/1/10	6,893,389	836,874	918,496	0	8,648,759	8,741,704	101.1%	(92,945)
HB - Gen.Aux FOP-hired aft 7/1/201	85,355	29,246	0	0	114,601	178,822	156.0%	(64,221)
Total	\$ 46,867,587	\$ 5,829,278	\$ 176,125,641	\$ 17,488	\$ 228,839,994	\$ 138,618,512	60.6%	\$ 90,221,482



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

Table 6 (continued)

Division	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
Linked Divisions 23, 02	\$ 4,698,374	\$ 1,351,571	\$ 20,542,964	\$ 0	\$ 26,592,909	\$ 18,778,254	70.6%	\$ 7,814,655
Linked Divisions 50, 05	15,338,388	215,310	51,759,125	0	67,312,823	35,837,576	53.2%	31,475,247
Linked Divisions HA, 01, 08, 10, 13, 15, 17, 18, 19, 21	13,622,952	2,413,123	64,901,105	17,488	80,954,668	50,953,229	62.9%	30,001,439
Linked Divisions HB, 11	1,034,634	301,302	5,075,372	0	6,411,308	3,914,449	61.1%	2,496,859

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	\$ 136,758,375	\$ 99,370,034	73%	\$ 37,388,341
2008	141,681,794	99,491,624	70%	42,190,170
2009	146,543,143	98,981,582	68%	47,561,561
2010	151,237,873	99,154,337	66%	52,083,536
2011	157,959,599	99,227,169	63%	58,732,430
2012	161,482,472	98,576,088	61%	62,906,384
2013	164,533,111	98,177,640	60%	66,355,471
2014	169,548,861	98,571,617	58%	70,977,244
2015	182,024,044	100,232,355	55%	81,791,689
2016	187,115,599	99,444,497	53%	87,671,102
2017	190,063,681	101,919,898	54%	88,143,783
2018	193,930,903	103,249,039	53%	90,681,864
2019	204,299,504	106,608,820	52%	97,690,684
2020	217,224,424	117,447,656	54%	99,776,768
2021	228,839,994	138,618,512	61%	90,221,482

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 - Gnl NonUnio

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 20,449,610	\$ 14,420,331	71%	\$ 6,029,279
2012	20,350,691	13,538,212	67%	6,812,479
2013	19,998,697	12,923,936	65%	7,074,761
2014	19,237,541	12,277,183	64%	6,960,358
2015	20,005,653	11,286,453	56%	8,719,200
2016	19,795,890	10,401,379	53%	9,394,511
2017	19,482,888	9,548,007	49%	9,934,881
2018	19,203,283	8,576,583	45%	10,626,700
2019	19,456,808	7,682,255	39%	11,774,553
2020	19,859,149	9,361,865	47%	10,497,284
2021	19,809,228	10,584,437	53%	9,224,791

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	13	\$ 817,547	\$ 65,371	1.00%
2012	9	574,825	\$ 83,814	1.00%
2013	8	541,763	\$ 36,505	1.00%
2014	7	437,240	\$ 38,114	1.00%
2015	6	359,223	\$ 52,517	1.00%
2016	6	420,722	\$ 57,531	1.00%
2017	5	370,956	\$ 61,564	1.00%
2018	5	381,674	\$ 67,573	1.00%
2019	3	250,967	\$ 78,084	1.00%
2020	2	200,044	\$ 69,598	1.00%
2021	2	198,659	\$ 60,926	1.00%

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 - Plc NonComm

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 18,967,800	\$ 14,567,054	77%	\$ 4,400,746
2012	18,829,106	14,659,964	78%	4,169,142
2013	19,171,104	14,757,268	77%	4,413,836
2014	20,086,792	15,323,093	76%	4,763,699
2015	22,434,283	16,852,310	75%	5,581,973
2016	23,190,714	17,138,677	74%	6,052,037
2017	22,671,455	16,198,231	71%	6,473,224
2018	23,206,869	16,317,490	70%	6,889,379
2019	23,314,856	15,446,561	66%	7,868,295
2020	23,282,102	15,219,489	65%	8,062,613
2021	24,878,453	17,087,872	69%	7,790,581

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	37	\$ 2,348,547	\$ 52,832	1.00%
2012	29	1,859,066	\$ 45,326	1.00%
2013	27	1,760,196	\$ 46,115	1.00%
2014	27	1,775,259	\$ 48,673	1.50%
2015	23	1,541,578	\$ 52,246	2.00%
2016	19	1,312,506	\$ 53,544	2.00%
2017	14	1,001,396	\$ 53,189	2.00%
2018	14	1,005,372	\$ 56,648	2.00%
2019	11	808,024	\$ 61,709	2.00%
2020	7	532,736	\$ 60,870	2.00%
2021	6	466,296	\$ 58,868	2.00%

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 05 - Fire

Table 8-05: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 43,303,796	\$ 24,202,131	56%	\$ 19,101,665
2012	45,078,129	23,894,591	53%	21,183,538
2013	46,003,416	24,041,383	52%	21,962,033
2014	48,586,633	24,245,075	50%	24,341,558
2015	52,016,770	25,425,179	49%	26,591,591
2016	54,938,634	25,133,818	46%	29,804,816
2017	54,970,602	25,473,836	46%	29,496,766
2018	56,140,571	26,899,460	48%	29,241,111
2019	59,404,985	28,230,690	48%	31,174,295
2020	62,519,199	29,370,879	47%	33,148,320
2021	65,497,825	34,263,914	52%	31,233,911

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 9-05: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	47	\$ 3,241,288	\$ 130,126	4.00%
2012	43	2,963,188	\$ 139,439	4.00%
2013	43	2,985,505	\$ 143,950	4.00%
2014	40	2,926,149	\$ 158,683	4.50%
2015	37	2,766,652	\$ 178,993	5.00%
2016	28	2,177,493	\$ 197,763	5.00%
2017	28	2,120,448	\$ 197,098	5.00%
2018	27	2,140,357	\$ 199,628	5.00%
2019	22	1,744,625	\$ 219,160	5.00%
2020	20	1,748,631	\$ 239,202	5.00%
2021	19	1,780,507	\$ 226,880	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 08 - NewHires 54B

Table 8-08: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 795,945	\$ 807,365	101%	\$ (11,420)
2012	882,664	873,087	99%	9,577
2013	983,943	948,586	96%	35,357
2014	1,107,625	1,030,921	93%	76,704
2015	1,130,111	1,114,756	99%	15,355
2016	1,127,148	1,209,877	107%	(82,729)
2017	1,196,858	1,307,375	109%	(110,517)
2018	1,282,385	1,359,293	106%	(76,908)
2019	1,434,443	1,423,185	99%	11,258
2020	1,648,946	1,540,957	93%	107,989
2021	1,890,256	1,812,008	96%	78,248

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 9-08: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	7	\$ 335,363	\$ 2,672	1.00%
2012	7	347,505	\$ 3,011	1.00%
2013	7	350,693	\$ 3,192	1.00%
2014	7	357,997	\$ 3,573	1.00%
2015	5	256,717	\$ 2,162	1.00%
2016	4	208,983	\$ 1,022	1.00%
2017	4	211,191	\$ 929	1.00%
2018	4	213,616	\$ 1,184	1.00%
2019	4	218,297	\$ 1,975	1.00%
2020	4	220,136	\$ 2,567	1.00%
2021	4	230,816	\$ 2,413	1.00%

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 - Gnl DPW

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 13,144,739	\$ 8,454,200	64%	\$ 4,690,539
2012	13,325,156	8,244,265	62%	5,080,891
2013	13,623,198	8,013,636	59%	5,609,562
2014	13,808,012	7,656,206	55%	6,151,806
2015	14,129,151	7,159,715	51%	6,969,436
2016	14,025,020	6,665,997	48%	7,359,023
2017	13,756,477	6,277,037	46%	7,479,440
2018	13,574,955	5,786,104	43%	7,788,851
2019	13,754,261	5,385,985	39%	8,368,276
2020	13,895,937	5,188,751	37%	8,707,186
2021	14,070,452	6,556,461	47%	7,513,991

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	13	\$ 738,045	\$ 25,482	6.70%
2012	10	564,489	\$ 27,705	6.70%
2013	7	416,945	\$ 30,997	6.70%
2014	6	385,278	\$ 34,549	6.70%
2015	4	253,621	\$ 41,079	6.70%
2016	3	200,260	\$ 43,942	6.70%
2017	3	201,285	\$ 45,500	6.70%
2018	3	223,388	\$ 48,751	6.70%
2019	3	222,648	\$ 55,110	6.70%
2020	3	228,995	\$ 58,623	6.70%
2021	2	157,275	\$ 49,520	6.70%

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 - Gnl Auxlry

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 4,471,936	\$ 3,293,412	74%	\$ 1,178,524
2012	4,536,628	3,283,029	72%	1,253,599
2013	4,619,662	3,304,485	72%	1,315,177
2014	5,035,417	3,448,208	69%	1,587,209
2015	5,406,367	3,413,735	63%	1,992,632
2016	5,488,123	3,394,311	62%	2,093,812
2017	5,569,794	3,417,012	61%	2,152,782
2018	5,560,777	3,378,539	61%	2,182,238
2019	5,763,585	3,326,484	58%	2,437,101
2020	6,019,211	3,401,254	57%	2,617,957
2021	6,296,707	3,735,627	59%	2,561,080

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	12	\$ 475,869	\$ 9,693	1.00%
2012	11	437,356	\$ 9,779	1.00%
2013	10	407,660	\$ 10,035	1.00%
2014	9	372,337	\$ 11,731	1.00%
2015	9	376,267	\$ 14,731	1.00%
2016	9	376,797	\$ 15,201	1.00%
2017	9	382,501	\$ 15,569	1.00%
2018	9	387,919	\$ 15,913	1.00%
2019	7	313,989	\$ 17,810	1.00%
2020	4	192,177	\$ 18,513	1.00%
2021	3	156,577	\$ 17,997	1.00%

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 - Gnl 54B Crt

Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 4,456,075	\$ 2,787,499	63%	\$ 1,668,576
2012	4,527,153	2,680,489	59%	1,846,664
2013	4,588,733	2,635,128	57%	1,953,605
2014	4,637,785	2,619,925	57%	2,017,860
2015	4,931,489	2,609,490	53%	2,321,999
2016	4,980,107	2,605,148	52%	2,374,959
2017	5,031,901	2,651,901	53%	2,380,000
2018	5,032,975	2,681,687	53%	2,351,288
2019	5,210,265	2,820,245	54%	2,390,020
2020	5,411,157	3,125,975	58%	2,285,182
2021	5,442,230	3,752,253	69%	1,689,977

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

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

Table 9-12: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	4	\$ 188,823	\$ 12,860	1.00%
2012	4	193,613	\$ 15,065	1.00%
2013	4	194,583	\$ 17,062	1.00%
2014	4	196,422	\$ 19,600	1.00%
2015	4	200,366	\$ 26,493	1.00%
2016	3	152,492	\$ 31,191	1.00%
2017	2	110,624	\$ 38,563	1.00%
2018	2	112,327	\$ 41,464	1.00%
2019	2	114,431	\$ 46,188	1.00%
2020	2	115,491	\$ 49,813	1.00%
2021	1	64,390	\$ 48,340	1.00%

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 13 - Jail Serv

Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 680,081	\$ 485,390	71%	\$ 194,691
2012	695,698	527,409	76%	168,289
2013	779,791	576,983	74%	202,808
2014	618,378	478,894	77%	139,484
2015	664,868	518,891	78%	145,977
2016	713,735	560,015	79%	153,720
2017	759,701	600,786	79%	158,915
2018	842,172	629,116	75%	213,056
2019	928,759	621,177	67%	307,582
2020	946,059	608,264	64%	337,795
2021	973,681	654,639	67%	319,042

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

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

Table 9-13: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	3	\$ 153,393	\$ 2,137	1.00%
2012	3	147,906	\$ 1,988	1.00%
2013	3	154,878	\$ 2,296	1.00%
2014	2	102,972	\$ 1,532	1.00%
2015	2	97,316	\$ 1,589	1.00%
2016	2	100,874	\$ 1,623	1.00%
2017	2	103,822	\$ 1,556	1.00%
2018	1	53,703	\$ 1,615	1.00%
2019	0	0	\$ 2,052	1.00%
2020	0	0	\$ 2,275	1.00%
2021	0	0	\$ 2,105	1.00%

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

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

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

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

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

Division 14 - Water&Sewer

Table 8-14: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 2,775,293	\$ 2,435,606	88%	\$ 339,687
2012	2,888,641	2,499,514	87%	389,127
2013	3,053,214	2,588,910	85%	464,304
2014	3,231,348	2,685,585	83%	545,763
2015	3,567,681	2,775,268	78%	792,413
2016	3,768,249	3,154,924	84%	613,325
2017	3,885,899	3,345,187	86%	540,712
2018	3,943,595	3,432,557	87%	511,038
2019	4,125,169	3,561,466	86%	563,703
2020	4,312,811	3,819,383	89%	493,428
2021	4,624,292	4,444,685	96%	179,607

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

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

Table 9-14: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	7	\$ 425,230	\$ 5,903	0.00%
2012	7	429,664	\$ 6,491	0.00%
2013	6	379,136	\$ 7,002	0.00%
2014	6	383,241	\$ 8,200	0.00%
2015	5	315,535	\$ 10,963	0.00%
2016	5	344,379	\$ 10,170	0.00%
2017	4	282,765	\$ 10,758	0.00%
2018	4	287,794	\$ 11,263	0.00%
2019	4	289,033	\$ 12,675	0.00%
2020	4	305,707	\$ 12,729	0.00%
2021	3	223,099	\$ 1,540	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 15 - Junior Empl

Table 8-15: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 563,673	\$ 609,754	108%	\$ (46,081)
2012	651,793	641,939	99%	9,854
2013	701,939	649,471	93%	52,468
2014	730,077	657,244	90%	72,833
2015	660,082	660,809	100%	(727)
2016	657,390	660,052	100%	(2,662)
2017	653,272	647,394	99%	5,878
2018	647,674	614,221	95%	33,453
2019	667,801	586,134	88%	81,667
2020	690,430	575,586	83%	114,844
2021	695,718	605,509	87%	90,209

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

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

Table 9-15: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	2	\$ 156,544	\$ 593	3.00%
2012	1	60,278	\$ 460	3.00%
2013	1	60,578	\$ 714	3.00%
2014	1	61,419	\$ 845	3.00%
2015	0	0	\$ 0	0.00%
2016	0	0	\$ 0	3.00%
2017	0	0	\$ 65	3.00%
2018	0	0	\$ 275	3.00%
2019	0	0	\$ 675	3.00%
2020	0	0	\$ 943	3.00%
2021	0	0	\$ 727	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 16 - Comm Devlpm

Table 8-16: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 35,321	\$ 29,164	83%	\$ 6,157
2012	38,262	31,072	81%	7,190
2013	41,135	33,744	82%	7,391
2014	44,592	36,709	82%	7,883
2015	50,642	39,921	79%	10,721
2016	54,844	43,755	80%	11,089
2017	59,396	48,431	82%	10,965
2018	62,518	46,895	75%	15,623
2019	63,582	45,665	72%	17,917
2020	66,435	46,622	70%	19,813
2021	67,469	51,416	76%	16,053

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

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

Table 9-16: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	0	\$ 0	\$ 63	0.00%
2012	0	0	\$ 85	0.00%
2013	0	0	\$ 107	0.00%
2014	0	0	\$ 129	0.00%
2015	0	0	\$ 221	0.00%
2016	0	0	\$ 241	0.00%
2017	0	0	\$ 265	0.00%
2018	0	0	\$ 349	0.00%
2019	0	0	\$ 156	0.00%
2020	0	0	\$ 209	0.00%
2021	0	0	\$ 190	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 17 - Supervisory Independent Union

Table 8-17: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 8,467,855	\$ 4,173,593	49%	\$ 4,294,262
2012	8,691,641	4,089,188	47%	4,602,453
2013	8,750,964	3,934,536	45%	4,816,428
2014	8,712,964	3,620,907	42%	5,092,057
2015	8,856,694	3,262,346	37%	5,594,348
2016	8,371,292	2,784,971	33%	5,586,321
2017	8,248,702	2,474,724	30%	5,773,978
2018	8,117,616	2,118,693	26%	5,998,923
2019	7,981,766	2,401,160	30%	5,580,606
2020	7,977,512	5,859,358	73%	2,118,154
2021	8,065,657	7,472,348	93%	593,309

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 9-17: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	5	\$ 374,444	\$ 22,076	1.30%
2012	3	221,859	\$ 24,235	1.30%
2013	2	140,341	\$ 25,816	1.30%
2014	1	64,884	\$ 27,455	1.30%
2015	1	65,289	\$ 32,326	1.30%
2016	0	0	\$ 32,251	1.30%
2017	0	0	\$ 34,269	1.30%
2018	0	0	\$ 67,129	1.30%
2019	0	0	\$ 33,081	1.30%
2020	0	0	\$ 10,024	1.30%
2021	0	0	\$ 2,137	1.30%

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 18 - UAW Non Sup

Table 8-18: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 9,874,441	\$ 6,161,203	62%	\$ 3,713,238
2012	9,424,480	6,102,784	65%	3,321,696
2013	9,658,601	6,132,453	64%	3,526,148
2014	9,560,924	6,062,205	63%	3,498,719
2015	10,318,083	5,873,598	57%	4,444,485
2016	10,300,493	5,592,531	54%	4,707,962
2017	10,304,795	5,353,803	52%	4,950,992
2018	10,293,969	4,980,386	48%	5,313,583
2019	10,534,515	4,619,053	44%	5,915,462
2020	10,676,666	4,364,919	41%	6,311,747
2021	10,810,411	5,580,399	52%	5,230,012

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 9-18: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	11	\$ 555,665	\$ 21,004	1.00%
2012	11	553,399	\$ 19,729	1.00%
2013	10	517,746	\$ 21,527	1.00%
2014	9	485,268	\$ 21,545	1.00%
2015	6	313,654	\$ 27,683	1.00%
2016	5	273,070	\$ 29,226	1.00%
2017	4	233,372	\$ 30,896	1.00%
2018	3	152,132	\$ 33,571	1.00%
2019	3	137,999	\$ 39,237	1.00%
2020	2	116,554	\$ 42,723	1.00%
2021	2	124,869	\$ 34,566	1.00%

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 19 - UAW Jr Unit

Table 8-19: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 642,120	\$ 593,874	93%	\$ 48,246
2012	684,070	656,624	96%	27,446
2013	794,104	701,202	88%	92,902
2014	846,159	729,180	86%	116,979
2015	991,463	753,284	76%	238,179
2016	994,157	781,501	79%	212,656
2017	1,024,382	816,400	80%	207,982
2018	1,077,338	830,503	77%	246,835
2019	1,143,008	853,531	75%	289,477
2020	1,173,795	923,487	79%	250,308
2021	1,205,264	1,083,853	90%	121,411

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 9-19: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	4	\$ 224,335	\$ 1,523	3.00%
2012	3	182,927	\$ 1,419	3.00%
2013	2	128,880	\$ 1,405	3.00%
2014	2	128,625	\$ 1,585	3.00%
2015	2	143,641	\$ 2,536	3.00%
2016	2	132,293	\$ 2,251	3.00%
2017	2	132,918	\$ 2,243	3.00%
2018	2	137,111	\$ 2,556	3.00%
2019	2	134,988	\$ 2,800	3.00%
2020	2	147,969	\$ 2,362	3.00%
2021	2	136,970	\$ 1,374	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 20 - Plc Sprvsrs

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 18,285,627	\$ 10,352,264	57%	\$ 7,933,363
2012	18,078,990	9,837,916	54%	8,241,074
2013	19,463,731	10,454,697	54%	9,009,034
2014	20,022,646	10,645,366	53%	9,377,280
2015	20,995,235	10,413,357	50%	10,581,878
2016	21,694,036	10,466,168	48%	11,227,868
2017	23,819,442	12,126,359	51%	11,693,083
2018	24,511,832	13,144,596	54%	11,367,236
2019	28,122,605	15,068,431	54%	13,054,174
2020	33,099,910	17,193,343	52%	15,906,567
2021	35,837,825	19,836,246	55%	16,001,579

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	11	\$ 875,018	65.08%	1.00%
2012	11	836,271	73.40%	3.00%
2013	13	1,018,126	67.19%	3.00%
2014	13	1,060,198	67.18%	3.00%
2015	12	987,216	82.88%	3.00%
2016	12	1,017,853	85.94%	3.00%
2017	12	1,012,022	90.64%	3.00%
2018	11	959,701	94.25%	3.00%
2019	14	1,248,598	91.38%	3.00%
2020	12	1,049,814	129.32%	3.00%
2021	12	1,143,246	120.98%	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 21 - Police/Fire

Table 8-21: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 8,485,781	\$ 3,792,670	45%	\$ 4,693,111
2012	10,176,299	4,386,632	43%	5,789,667
2013	9,865,867	4,236,241	43%	5,629,626
2014	10,071,397	4,074,292	41%	5,997,105
2015	11,604,954	4,210,058	36%	7,394,896
2016	11,737,330	3,930,077	34%	7,807,253
2017	12,384,948	4,516,248	37%	7,868,700
2018	13,053,884	5,336,677	41%	7,717,207
2019	13,792,532	6,086,865	44%	7,705,667
2020	14,731,247	6,580,590	45%	8,150,657
2021	14,785,242	7,861,871	53%	6,923,371

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	1	\$ 100,081	\$ 23,066	4.00%
2012	3	284,706	\$ 31,964	4.00%
2013	2	197,469	\$ 30,748	4.00%
2014	2	205,329	\$ 32,869	4.00%
2015	2	186,521	\$ 44,207	4.00%
2016	2	198,677	\$ 47,158	4.00%
2017	2	191,825	\$ 48,667	4.00%
2018	3	295,172	\$ 49,945	4.00%
2019	3	308,851	\$ 52,476	4.00%
2020	2	223,693	\$ 56,900	4.00%
2021	1	106,184	\$ 46,434	4.00%

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 - Sup of Info & Tech/Records

Table 8-22: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 2,374,925	\$ 1,825,498	77%	\$ 549,427
2012	1,995,716	1,960,105	98%	35,611
2013	1,155,863	942,711	82%	213,152
2014	1,193,032	926,470	78%	266,562
2015	1,292,875	909,342	70%	383,533
2016	1,315,475	902,507	69%	412,968
2017	1,344,790	907,630	68%	437,160
2018	1,374,950	896,465	65%	478,485
2019	1,174,227	898,576	77%	275,651
2020	1,242,805	937,066	75%	305,739
2021	1,596,470	1,050,404	66%	546,066

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	\$ 790,618	17.00%	0.00%
2012	12	454,606	13.37%	0.00%
2013	1	63,306	35.57%	0.00%
2014	1	66,753	38.34%	0.00%
2015	1	71,682	47.80%	0.00%
2016	1	71,629	50.82%	0.00%
2017	1	72,658	53.16%	0.00%
2018	1	73,567	56.90%	1.00%
2019	0	0	\$ 1,626	1.00%
2020	0	0	\$ 2,002	1.00%
2021	0	0	\$ 3,845	1.00%

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 23 - POAM aft 7/1/11-Officers Only

Table 8-23: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 5,993	\$ 2,496	42%	\$ 3,497
2012	54,475	41,902	77%	12,573
2013	181,879	145,880	80%	35,999
2014	295,103	246,444	84%	48,659
2015	421,028	374,413	89%	46,615
2016	622,494	541,633	87%	80,861
2017	648,246	736,948	114%	(88,702)
2018	788,302	860,082	109%	(71,780)
2019	1,045,057	1,091,550	104%	(46,493)
2020	1,342,317	1,300,784	97%	41,533
2021	1,714,456	1,690,382	99%	24,074

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

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

Table 9-23: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	3	\$ 113,149	11.53%	0.00%
2012	13	524,707	11.43%	0.00%
2013	15	705,284	11.52%	0.00%
2014	14	719,632	11.60%	0.00%
2015	17	912,248	11.48%	0.00%
2016	21	1,155,000	11.60%	0.00%
2017	21	1,213,855	10.57%	0.00%
2018	21	1,177,867	10.76%	0.00%
2019	24	1,316,954	10.73%	0.00%
2020	27	1,590,441	11.75%	0.00%
2021	25	1,484,784	12.83%	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 50 - Fire Hired after 7/1/2011

Table 8-50: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ (1,002)	\$ 2,066	-206%	\$ (3,068)
2012	2,941	19,000	646%	(16,059)
2013	35,529	51,836	146%	(16,307)
2014	89,996	94,072	105%	(4,076)
2015	163,959	155,486	95%	8,473
2016	307,236	266,868	87%	40,368
2017	469,973	424,878	90%	45,095
2018	585,657	543,176	93%	42,481
2019	808,977	734,204	91%	74,773
2020	1,277,566	1,043,462	82%	234,104
2021	1,814,998	1,573,662	87%	241,336

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	2	\$ 107,303	10.79%	0.00%
2012	5	216,832	10.53%	0.00%
2013	6	298,544	10.79%	0.00%
2014	8	400,438	11.23%	0.00%
2015	10	539,317	11.41%	0.00%
2016	21	1,041,449	11.47%	0.00%
2017	20	1,142,844	11.49%	0.00%
2018	22	1,051,358	11.49%	0.00%
2019	27	1,432,959	11.54%	0.00%
2020	32	1,964,624	13.34%	0.00%
2021	36	2,118,453	14.40%	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 HA - New hires after 11/1/10

Table 8-HA: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 180,114	\$ 230,291	128%	\$ (50,177)
2012	564,646	597,740	106%	(33,094)
2013	1,050,051	1,083,659	103%	(33,608)
2014	1,609,814	1,679,828	104%	(70,014)
2015	2,343,546	2,375,362	101%	(31,816)
2016	2,978,253	3,144,851	106%	(166,598)
2017	3,720,480	3,949,831	106%	(229,351)
2018	4,558,774	4,715,885	103%	(157,111)
2019	5,488,415	5,607,076	102%	(118,661)
2020	6,959,978	6,845,509	98%	114,469
2021	8,648,759	8,741,704	101%	(92,945)

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

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

Table 9-HA: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	78	\$ 4,066,941	9.33%	0.00%
2012	82	4,411,956	9.21%	0.00%
2013	96	4,856,376	9.01%	0.00%
2014	111	5,544,114	8.61%	0.00%
2015	118	6,140,823	9.02%	0.00%
2016	117	6,222,488	8.62%	0.00%
2017	123	6,671,058	8.42%	0.00%
2018	122	6,930,251	8.37%	0.00%
2019	140	7,830,818	8.28%	0.00%
2020	143	8,673,005	8.49%	0.00%
2021	149	8,946,068	8.77%	0.00%

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

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

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

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

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

Division HB - Gen.Aux FOP-hired aft 7/1/201

Table 8-HB: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ (524)	\$ 1,308	-250%	\$ (1,832)
2012	5,293	10,626	201%	(5,333)
2013	11,690	20,895	179%	(9,205)
2014	22,626	33,810	149%	(11,184)
2015	39,110	48,582	124%	(9,472)
2016	54,979	65,437	119%	(10,458)
2017	59,680	85,318	143%	(25,638)
2018	70,807	100,631	142%	(29,824)
2019	83,888	118,527	141%	(34,639)
2020	91,192	140,113	154%	(48,921)
2021	114,601	178,822	156%	(64,221)

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

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

Table 9-HB: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	4	\$ 92,267	6.60%	0.00%
2012	5	111,071	5.95%	0.00%
2013	6	122,780	5.64%	0.00%
2014	8	191,653	6.47%	0.00%
2015	8	201,084	6.82%	0.00%
2016	8	202,773	6.82%	0.00%
2017	7	182,590	6.48%	0.00%
2018	5	152,479	6.68%	0.00%
2019	7	191,063	5.22%	0.00%
2020	6	160,346	3.67%	0.00%
2021	7	227,369	3.62%	0.00%

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

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

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

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

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

Table 10: Division-Based Layered Amortization Schedule

Division 01 - Gnl NonUnio

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	\$ 8,719,200	23	\$ 9,149,979	17	\$ 742,020
(Gain)/Loss	12/31/2016	433,985	22	484,185	17	39,264
(Gain)/Loss	12/31/2017	341,218	21	378,161	17	30,672
(Gain)/Loss	12/31/2018	569,129	20	627,890	17	50,916
(Gain)/Loss	12/31/2019	491,682	19	538,290	17	43,656
Assumption	12/31/2019	545,446	19	531,640	17	43,116
Experience	12/31/2020	(1,369,642)	18	(1,509,145)	17	(122,388)
Experience	12/31/2021	(1,212,101)	17	(1,341,574)	17	(108,792)
Total				\$ 8,859,426		\$ 718,464

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

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

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

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

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

Division 02 - Plc NonComm

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
Initial	12/31/2015	\$ 5,581,973	23	\$ 5,773,766	17	\$ 468,228
(Gain)/Loss	12/31/2016	348,691	22	389,021	17	31,548
(Gain)/Loss	12/31/2017	338,979	21	375,666	17	30,468
(Gain)/Loss	12/31/2018	325,670	20	359,304	17	29,136
(Gain)/Loss	12/31/2019	24,904	19	27,268	17	2,208
Assumption	12/31/2019	879,304	19	921,964	17	74,772
Experience	12/31/2020	118,948	18	131,068	17	10,632
Experience	12/31/2021	(321,460)	17	(355,797)	17	(28,848)
Total				\$ 7,622,260		\$ 618,144

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 05 - Fire

Table 10-05: 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	\$ 26,591,591	23	\$ 27,576,956	17	\$ 2,236,356
(Gain)/Loss	12/31/2016	2,631,385	22	2,935,766	17	238,080
(Gain)/Loss	12/31/2017	(843,680)	21	(934,999)	17	(75,828)
(Gain)/Loss	12/31/2018	(539,121)	20	(594,786)	17	(48,240)
(Gain)/Loss	12/31/2019	(270,259)	19	(295,869)	17	(23,988)
Assumption	12/31/2019	2,107,671	19	2,138,717	17	173,436
Experience	12/31/2020	1,874,646	18	2,065,586	17	167,508
Experience	12/31/2021	(2,151,094)	17	(2,380,867)	17	(193,080)
Total				\$ 30,510,504		\$ 2,474,244

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 08 - NewHires 54B

Table 10-08: 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	\$ 23,437	15	\$ 24,886	13	\$ 2,460
Experience	12/31/2020	86,466	15	94,187	14	8,808
Experience	12/31/2021	(40,937)	15	(45,310)	15	(4,020)
Total				\$ 73,763		\$ 7,248

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

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

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

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

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

Division 10 - Gnl DPW

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	\$ 6,969,436	23	\$ 7,236,556	17	\$ 586,848
(Gain)/Loss	12/31/2016	238,498	22	266,086	17	21,576
(Gain)/Loss	12/31/2017	4,582	21	5,084	17	408
(Gain)/Loss	12/31/2018	237,872	20	262,444	17	21,288
(Gain)/Loss	12/31/2019	73,606	19	80,583	17	6,540
Assumption	12/31/2019	445,132	19	441,214	17	35,784
Experience	12/31/2020	295,701	18	325,821	17	26,424
Experience	12/31/2021	(1,241,414)	17	(1,374,018)	17	(111,432)
Total				\$ 7,243,770		\$ 587,436

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 11 - Gnl Auxlry

Table 10-11: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 1,992,632	23	\$ 2,096,124	17	\$ 169,980
(Gain)/Loss	12/31/2016	39,304	22	43,852	17	3,552
(Gain)/Loss	12/31/2017	19,694	21	21,814	17	1,764
(Gain)/Loss	12/31/2018	8,652	20	9,545	17	780
(Gain)/Loss	12/31/2019	52,819	19	57,817	17	4,692
Assumption	12/31/2019	188,698	19	193,509	17	15,696
Experience	12/31/2020	163,930	18	180,623	17	14,652
Experience	12/31/2021	(80,622)	17	(89,234)	17	(7,236)
Total				\$ 2,514,050		\$ 203,880

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

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

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

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

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

Table 10-12: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 2,321,999	9	\$ 477,011	1	\$ 493,332
(Gain)/Loss	12/31/2016	79,152	10	57,586	5	12,840
(Gain)/Loss	12/31/2017	91,543	10	75,626	6	14,304
(Gain)/Loss	12/31/2018	131,257	10	119,732	7	19,776
(Gain)/Loss	12/31/2019	121,194	10	118,926	8	17,496
Assumption	12/31/2019	160,777	10	147,392	8	21,696
Experience	12/31/2020	209,652	10	220,380	9	29,352
Experience	12/31/2021	(232,921)	10	(257,801)	10	(31,464)
Total				\$ 958,852		\$ 577,332

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

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

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

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

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

Division 13 - Jail Serv

Table 10-13: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 145,977	23	\$ 145,612	17	\$ 11,808
(Gain)/Loss	12/31/2016	10,330	22	11,514	17	936
(Gain)/Loss	12/31/2017	2,543	21	2,822	17	228
(Gain)/Loss	12/31/2018	52,266	20	57,661	17	4,680
(Gain)/Loss	12/31/2019	54,933	19	60,141	17	4,872
Assumption	12/31/2019	34,856	19	36,540	17	2,964
Experience	12/31/2020	21,747	18	23,964	17	1,944
Experience	12/31/2021	(24,186)	17	(26,770)	17	(2,172)
Total				\$ 311,484		\$ 25,260

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.

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

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

Division 14 - Water&Sewer

Table 10-14: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2021	\$ (5,839)	10	\$ (6,463)	10	\$ (792)
Total				\$ (6,463)		\$ (792)

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

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

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

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

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

Division 15 - Junior Empl

Table 10-15: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2017	\$ 7,862	15	\$ 7,916	11	\$ 900
(Gain)/Loss	12/31/2018	24,981	15	25,988	12	2,736
(Gain)/Loss	12/31/2019	22,025	15	23,386	13	2,316
Assumption	12/31/2019	24,117	15	25,277	13	2,508
Experience	12/31/2020	29,267	15	31,885	14	2,988
Experience	12/31/2021	(27,755)	15	(30,720)	15	(2,724)
Total				\$ 83,732		\$ 8,724

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

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

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

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

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

Division 16 - Comm Devlpm

Table 10-16: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2016	\$ 1,005	10	\$ 744	5	\$ 168
(Gain)/Loss	12/31/2017	1,186	10	970	6	180
(Gain)/Loss	12/31/2018	6,678	10	6,095	7	1,008
(Gain)/Loss	12/31/2019	2,234	10	2,193	8	324
Assumption	12/31/2019	2,009	10	1,900	8	276
Experience	12/31/2020	4,388	10	4,618	9	612
Experience	12/31/2021	(2,138)	10	(2,366)	10	(288)
Total				\$ 14,154		\$ 2,280

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 17 - Supervisory Independent Union

Table 10-17: 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	\$ 5,594,348	23	\$ 5,421,257	17	\$ 439,632
(Gain)/Loss	12/31/2016	(119,604)	22	(133,450)	17	(10,824)
(Gain)/Loss	12/31/2017	123,458	21	136,827	17	11,100
(Gain)/Loss	12/31/2018	172,396	20	190,201	17	15,420
(Gain)/Loss	12/31/2019	(721,586)	19	(789,983)	17	(64,068)
Assumption	12/31/2019	248,574	19	242,036	17	19,632
Experience	12/31/2020	(3,245,849)	18	(3,576,458)	17	(290,028)
Experience	12/31/2021	(1,060,858)	17	(1,174,175)	17	(95,220)
Total				\$ 316,255		\$ 25,644

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 18 - UAW Non Sup

Table 10-18: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 4,444,485	23	\$ 4,639,847	17	\$ 376,272
(Gain)/Loss	12/31/2016	154,599	22	172,467	17	13,992
(Gain)/Loss	12/31/2017	156,641	21	173,604	17	14,076
(Gain)/Loss	12/31/2018	304,629	20	336,090	17	27,252
(Gain)/Loss	12/31/2019	227,890	19	249,486	17	20,232
Assumption	12/31/2019	317,614	19	315,062	17	25,548
Experience	12/31/2020	347,351	18	382,728	17	31,032
Experience	12/31/2021	(1,133,783)	17	(1,254,890)	17	(101,760)
Total				\$ 5,014,394		\$ 406,644

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 19 - UAW Jr Unit

Table 10-19: 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	\$ 238,179	23	\$ 259,913	17	\$ 21,084
(Gain)/Loss	12/31/2016	(39,522)	22	(44,089)	17	(3,576)
(Gain)/Loss	12/31/2017	(8,718)	21	(9,668)	17	(780)
(Gain)/Loss	12/31/2018	39,161	20	43,200	17	3,504
(Gain)/Loss	12/31/2019	3,219	19	3,520	17	288
Assumption	12/31/2019	35,563	19	37,441	17	3,036
Experience	12/31/2020	(43,391)	18	(47,805)	17	(3,876)
Experience	12/31/2021	(127,174)	17	(140,758)	17	(11,412)
Total				\$ 101,754		\$ 8,268

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 20 - Plc Sprvsrs

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	\$ 10,581,878	23	\$ 11,061,181	17	\$ 897,012
(Gain)/Loss	12/31/2016	376,994	22	420,607	17	34,104
(Gain)/Loss	12/31/2017	254,402	21	281,931	17	22,860
(Gain)/Loss	12/31/2018	(455,100)	20	(502,088)	17	(40,716)
(Gain)/Loss	12/31/2019	640,581	19	701,295	17	56,868
Assumption	12/31/2019	1,009,139	19	1,034,688	17	83,904
Experience	12/31/2020	2,754,762	18	3,035,353	17	246,156
Experience	12/31/2021	(193,879)	17	(214,589)	17	(17,400)
Total				\$ 15,818,378		\$ 1,282,788

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 21 - Police/Fire

Table 10-21: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 7,394,896	23	\$ 7,749,473	17	\$ 628,440
(Gain)/Loss	12/31/2016	211,870	22	236,368	17	19,164
(Gain)/Loss	12/31/2017	(89,172)	21	(98,826)	17	(8,016)
(Gain)/Loss	12/31/2018	(218,773)	20	(241,365)	17	(19,572)
(Gain)/Loss	12/31/2019	(564,508)	19	(618,014)	17	(50,124)
Assumption	12/31/2019	525,450	19	533,750	17	43,284
Experience	12/31/2020	460,007	18	506,856	17	41,100
Experience	12/31/2021	(1,265,962)	17	(1,401,188)	17	(113,628)
Total				\$ 6,667,054		\$ 540,648

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

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

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

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

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

Division 22 - Sup of Info & Tech/Records

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	\$ 383,533	23	\$ 403,719	17	\$ 32,736
(Gain)/Loss	12/31/2016	17,791	22	19,840	17	1,608
(Gain)/Loss	12/31/2017	15,326	21	16,996	17	1,380
(Gain)/Loss	12/31/2018	35,646	20	39,319	17	3,192
Amendment	12/31/2018	306	20	344	17	24
(Gain)/Loss	12/31/2019	(266,333)	19	(291,570)	17	(23,640)
Assumption	12/31/2019	56,159	19	60,283	17	4,884
Experience	12/31/2020	44,284	18	48,796	17	3,960
Experience	12/31/2021	245,028	17	271,201	17	21,996
Total				\$ 568,928		\$ 46,140

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 23 - POAM aft 7/1/11-Officers Only

Table 10-23: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2020	\$ 49,140	15	\$ 53,525	14	\$ 5,004
Experience	12/31/2021	(26,740)	15	(29,596)	15	(2,628)
Total				\$ 23,929		\$ 2,376

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 50 - Fire Hired after 7/1/2011

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	\$ 8,473	23	\$ 12,685	17	\$ 1,032
(Gain)/Loss	12/31/2016	28,370	22	31,653	17	2,568
(Gain)/Loss	12/31/2017	1,902	21	2,112	17	168
(Gain)/Loss	12/31/2018	(4,162)	20	(4,592)	17	(372)
(Gain)/Loss	12/31/2019	33,523	19	36,693	17	2,976
Assumption	12/31/2019	(1,062)	19	(1,604)	17	(132)
Experience	12/31/2020	157,138	18	173,148	17	14,040
Experience	12/31/2021	(6,443)	17	(7,131)	17	(576)
Total				\$ 242,964		\$ 19,704

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

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

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

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

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

Division HA - New hires after 11/1/10

Table 10-HA: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2023		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Experience	12/31/2021	\$ (99,392)	15	\$ (110,009)	15	\$ (9,768)
Total				\$ (110,009)		\$ (9,768)

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

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

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

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

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

Division HB - Gen.Aux FOP-hired aft 7/1/201

Table 10-HB: 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	\$ (9,472)	10	\$ (5,174)	9	\$ (684)
(Gain)/Loss	12/31/2016	(2,795)	15	(2,711)	10	(336)
(Gain)/Loss	12/31/2017	(15,696)	15	(15,803)	11	(1,788)
(Gain)/Loss	12/31/2018	(3,212)	15	(3,339)	12	(348)
(Gain)/Loss	12/31/2019	(6,392)	15	(6,789)	13	(672)
Assumption	12/31/2019	1,924	15	2,251	13	228
Experience	12/31/2020	(14,649)	15	(15,961)	14	(1,488)
Experience	12/31/2021	(14,843)	15	(16,429)	15	(1,464)
Total				\$ (63,955)		\$ (6,552)

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

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

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

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

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

GASB Statement No. 68 Information

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

Actuarial Valuation Date:	12/31/2021
Measurement Date of the Total Pension Liability (TPL):	12/31/2021
At 12/31/2021, the following employees were covered by the benefit terms:	
Inactive employees or beneficiaries currently receiving benefits:	408
Inactive employees entitled to but not yet receiving benefits (including refunds):	106
Active employees:	<u>274</u>
	788
Total Pension Liability as of 12/31/2020 measurement date:	\$ 211,651,913
Total Pension Liability as of 12/31/2021 measurement date:	\$ 222,843,749
Service Cost for the year ending on the 12/31/2021 measurement date:	\$ 1,859,910
Change in the Total Pension Liability due to:	
- Benefit changes ¹ :	\$ 0
- Differences between expected and actual experience ² :	\$ 499,898
- Changes in assumptions ² :	\$ 7,948,351
Average expected remaining service lives of all employees (active and inactive):	4

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

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

Covered employee payroll (Needed for Required Supplementary Information):	\$ 17,565,562
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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:	\$ 25,764,863	\$ 0	\$ (21,458,042)

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 - Gnl NonUnio

1/1/2021	Part Time Employees - Included
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2011	Member Contribution Rate 1.00%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
7/1/2000	Benefit B-3 (80% max)
7/1/1998	Benefit B-2
7/1/1990	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1988	Benefit C-2/Base B-1
7/1/1987	Blanket Resolution (All Service)
7/1/1987	Benefit F55 (With 25 Years of Service)
7/1/1983	Member Contribution Rate 0.00%
11/1/1970	Benefit C-1 (Old)
11/1/1947	Benefit FAC-5 (5 Year Final Average Compensation)
11/1/1947	10 Year Vesting
11/1/1947	Benefit C (Old)
11/1/1947	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

02 - Plc NonComm

1/1/2021	Part Time Employees - Included
1/1/2021	Public Safety Employees - Yes
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2015	Participant Contribution Rate 2%
7/1/2014	Member Contribution Rate 1.50%
7/1/2011	Member Contribution Rate 1.00%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
7/1/1997	2.75% Multiplier (80% max)
1/1/1994	Benefit B-4 (80% max)
1/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1992	Benefit B-3 (80% max)



02 - Plc NonComm

1/1/1988	E2 2.5% COLA for future retirees (07/01/1987)
7/1/1987	Blanket Resolution (All Service)
1/1/1987	Benefit F50 (With 25 Years of Service)
1/1/1987	Member Contribution Rate 0.00%
3/1/1980	Benefit B-2
11/1/1969	Benefit B-1
11/1/1947	Benefit FAC-5 (5 Year Final Average Compensation)
11/1/1947	10 Year Vesting
11/1/1947	Benefit B
11/1/1947	Member Contribution Rate 5.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

05 - Fire

1/1/2021	Part Time Employees - Included
1/1/2021	Public Safety Employees - Yes
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2015	Participant Contribution Rate 5%
7/1/2014	Member Contribution Rate 4.50%
7/1/2011	Member Contribution Rate 4.00%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
7/1/1997	Member Contribution Rate 3.00%
1/1/1996	2.75% Multiplier (80% max)
1/1/1996	Member Contribution Rate 2.50%
3/1/1993	Blanket Resolution (All Service)
1/1/1993	Benefit B-4 (80% max)
1/1/1989	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1989	Benefit B-3 (80% max)
1/1/1989	Benefit F50 (With 25 Years of Service)
1/1/1989	E2 2.5% COLA for future retirees (07/01/1988)
7/1/1984	Member Contribution Rate 0.00%
1/1/1984	Member Contribution Rate 1.00%
11/1/1969	Benefit B-1
11/1/1947	Benefit FAC-5 (5 Year Final Average Compensation)
11/1/1947	10 Year Vesting
11/1/1947	Benefit B
11/1/1947	Member Contribution Rate 5.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

08 - NewHires 54B

1/1/2021	Part Time Employees - Included
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08 - NewHires 54B

1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2011	Member Contribution Rate 1.00%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
10/1/1997	Benefit FAC-3 (3 Year Final Average Compensation)
10/1/1997	10 Year Vesting
10/1/1997	Benefit B-3 (80% max)
10/1/1997	Benefit F55 (With 25 Years of Service)
10/1/1997	Member Contribution Rate 0.00%
7/1/1987	Blanket Resolution (All Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

10 - Gnl DPW

1/1/2021	Part Time Employees - Included
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
7/1/1999	Benefit B-4 (80% max)
7/1/1999	Member Contribution Rate 6.70%
7/1/1993	Benefit B-2
7/1/1993	Member Contribution Rate 2.00%
7/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/1992	Member Contribution Rate 1.00%
7/1/1987	Blanket Resolution (All Service)
7/1/1987	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1987	10 Year Vesting
7/1/1987	Benefit C-2/Base B-1
7/1/1987	Benefit F50 (With 25 Years of Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

11 - Gnl Auxlry

1/1/2021	Part Time Employees - Included
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88



11 - Gnl Auxlry

7/1/2011	Member Contribution Rate 1.00%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
5/1/2001	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1994	Benefit B-3 (80% max)
1/1/1992	Benefit C-2/Base B-1
7/1/1987	Blanket Resolution (All Service)
7/1/1987	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1987	10 Year Vesting
7/1/1987	Benefit F50 (With 25 Years of Service)
7/1/1983	Member Contribution Rate 0.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

12 - Gnl 54B Crt

1/1/2021	Part Time Employees - Included
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2020	Non-Accelerated Amortization
12/31/2018	Accelerated to 5-year Amortization
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2011	Member Contribution Rate 1.00%
7/1/2006	DC Adoption Date 07-01-2006
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
10/1/1997	Benefit B-3 (80% max)
7/1/1996	Benefit B-2
7/1/1993	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/1991	Benefit F50 (With 25 Years of Service)
7/1/1987	Blanket Resolution (All Service)
7/1/1983	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1983	10 Year Vesting
7/1/1983	Benefit C-1 (Old)
7/1/1983	Member Contribution Rate 0.00%
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

13 - Jail Serv

12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2011	Member Contribution Rate 1.00%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
4/1/2001	Benefit B-3 (80% max)
1/1/1991	Benefit FAC-5 (5 Year Final Average Compensation)



13 - Jail Serv

1/1/1991	10 Year Vesting
1/1/1991	Benefit C-2/Base B-1
1/1/1991	Benefit F55 (With 25 Years of Service)
1/1/1991	Member Contribution Rate 0.00%
7/1/1987	Blanket Resolution (All Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

14 - Water&Sewer

1/1/2021	Part Time Employees - Included
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2020	Non-Accelerated Amortization
12/31/2018	Accelerated to 5-year Amortization
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2007	DC Adoption Date 07-01-2007
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
9/1/2000	Benefit B-3 (80% max)
7/1/1998	Benefit B-2
1/1/1991	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1991	10 Year Vesting
1/1/1991	Benefit C-2/Base B-1
1/1/1991	Benefit F55 (With 25 Years of Service)
1/1/1991	Member Contribution Rate 0.00%
7/1/1987	Blanket Resolution (All Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

15 - Junior Empl

12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
7/1/2000	Benefit B-3 (80% max)
7/1/1998	Benefit B-2
9/1/1994	Benefit FAC-3 (3 Year Final Average Compensation)
9/1/1994	10 Year Vesting
9/1/1994	Benefit C-2/Base B-1
9/1/1994	Benefit F55 (With 25 Years of Service)
9/1/1994	Member Contribution Rate 3.00%
7/1/1987	Blanket Resolution (All Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July



16 - Comm Devlpm

1/1/2021	Part Time Employees - Included
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Base Wages
12/1/2020	Non-Accelerated Amortization
12/31/2018	Accelerated to 5-year Amortization
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
6/18/1996	Benefit FAC-3 (3 Year Final Average Compensation)
6/18/1996	6 Year Vesting
6/18/1996	Benefit C-2/Base B-1
6/18/1996	Benefit F55 (With 25 Years of Service)
6/18/1996	Member Contribution Rate 0.00%
7/1/1987	Blanket Resolution (All Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

17 - Supervisory Independent Union

12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2011	Member Contribution Rate 1.30%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
10/1/2000	Benefit B-3 (80% max)
7/1/1998	Benefit B-2
7/1/1998	Member Contribution Rate 0.30%
10/1/1996	Benefit FAC-3 (3 Year Final Average Compensation)
10/1/1996	10 Year Vesting
10/1/1996	Benefit C-2/Base B-1
10/1/1996	Benefit F55 (With 25 Years of Service)
10/1/1996	Member Contribution Rate 0.00%
7/1/1987	Blanket Resolution (All Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

18 - UAW Non Sup

1/1/2021	Part Time Employees - Included
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2011	Member Contribution Rate 1.00%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.



18 - UAW Non Sup

7/1/2001	Benefit B-3 (80% max)
3/1/1998	Benefit B-2
10/1/1996	Benefit FAC-3 (3 Year Final Average Compensation)
10/1/1996	10 Year Vesting
10/1/1996	Benefit C-2/Base B-1
10/1/1996	Benefit F55 (With 25 Years of Service)
10/1/1996	Member Contribution Rate 0.00%
7/1/1987	Blanket Resolution (All Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

19 - UAW Jr Unit

1/1/2021	Part Time Employees - Included
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
7/1/2001	Benefit B-3 (80% max)
3/1/1998	Benefit B-2
10/1/1996	Benefit FAC-3 (3 Year Final Average Compensation)
10/1/1996	10 Year Vesting
10/1/1996	Benefit C-2/Base B-1
10/1/1996	Benefit F55 (With 25 Years of Service)
10/1/1996	Member Contribution Rate 3.00%
7/1/1987	Blanket Resolution (All Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

20 - Plc Sprvsrs

1/1/2021	Part Time Employees - Included
1/1/2021	Public Safety Employees - Yes
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2012	Member Contribution Rate 3.00%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
1/1/2000	Member Contribution Rate 1.00%
7/1/1996	2.75% Multiplier (80% max)
6/1/1994	Member Contribution Rate 2.00%
5/31/1994	Member Contribution Rate 0.00%
10/1/1993	Blanket Resolution (All Service)



20 - Plc Sprvsrs

7/1/1992	Benefit B-4 (80% max)
7/1/1990	Member Contribution Rate 3.00%
2/1/1989	Benefit FAC-3 (3 Year Final Average Compensation)
2/1/1989	Member Contribution Rate 5.00%
1/1/1989	2.25% Multiplier (no max)
4/1/1987	Benefit F50 (With 25 Years of Service)
1/1/1987	E2 2.5% COLA for future retirees (07/01/1986)
7/1/1986	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1986	10 Year Vesting
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

21 - Police/Fire

1/1/2021	Part Time Employees - Included
1/1/2021	Public Safety Employees - Yes
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2011	Member Contribution Rate 4.00%
2/1/2004	Part-time Full-time Conversion
1/14/2004	Day of work defined as 80 Hours a Month for All employees.
5/1/2000	Temporary 8 Year Vesting (05/01/2000 - 10/03/2000)
5/1/1997	2.75% Multiplier (80% max)
1/1/1993	Benefit B-4 (80% max)
7/1/1992	Member Contribution Rate 3.00%
7/1/1991	Member Contribution Rate 4.00%
7/1/1990	Member Contribution Rate 7.00%
7/1/1988	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/1988	10 Year Vesting
7/1/1988	Benefit B-3 (80% max)
7/1/1988	Benefit F50 (With 25 Years of Service)
7/1/1988	Member Contribution Rate 8.00%
1/1/1988	E2 2.5% COLA for future retirees (01/01/1988)
12/1/1987	Blanket Resolution (All Service)
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Fiscal Month - July

22 - Sup of Info & Tech/Records

1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Base Wages
7/1/2018	Participant Contribution Rate 1%
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
9/1/2006	Benefit B-4 (80% max)
1/1/2006	Blanket Resolution (All Service)



22 - Sup of Info & Tech/Records

1/1/2006	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2006	Part-time Full-time Conversion
1/1/2006	10 Year Vesting
1/1/2006	Benefit B-3 (80% max)
1/1/2006	Benefit F50 (With 25 Years of Service)
1/1/2006	Member Contribution Rate 0.00%
1/14/2004	Day of work defined as 80 Hours a Month for All employees. Defined Benefit Normal Retirement Age - 60 Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years Fiscal Month - July

23 - POAM aft 7/1/11-Officers Only

1/1/2021	Part Time Employees - Included
1/1/2021	Public Safety Employees - Yes
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2011	Day of work defined as 80 Hours a Month for All employees.
7/1/2011	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2011	Non Standard Compensation Definition
7/1/2011	Exclude Temporary Employees requiring less than 12 months
7/1/2011	10 Year Vesting
7/1/2011	Benefit B-3 (80% max)
7/1/2011	Benefit F55 (With 25 Years of Service)
7/1/2011	Member Contribution Rate 0.00% Defined Benefit Normal Retirement Age - 60 Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years Fiscal Month - July

50 - Fire Hired after 7/1/2011

1/1/2021	Part Time Employees - Included
1/1/2021	Public Safety Employees - Yes
1/1/2021	Workers Compensation - Service Granted
1/1/2021	Service Credit Qualification - 80 hours
1/1/2021	Custom Wages
12/1/2016	Service Credit Purchase Estimates - Yes
10/25/2016	Covered by Act 88
7/1/2011	Day of work defined as 80 Hours a Month for All employees.
7/1/2011	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2011	Non Standard Compensation Definition
7/1/2011	Exclude Temporary Employees requiring less than 12 months
7/1/2011	10 Year Vesting
7/1/2011	Benefit B-3 (80% max)
7/1/2011	Benefit F55 (With 25 Years of Service)
7/1/2011	Member Contribution Rate 0.00% Fiscal Month - July Defined Benefit Normal Retirement Age - 60



50 - Fire Hired after 7/1/2011

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

HA - New hires after 11/1/10

1/1/2021	Workers Compensation - Service Granted
1/1/2021	Custom Wages
1/1/2021	Part Time Employees - Included
1/1/2021	Service Credit Qualification - 80 hours
10/25/2016	Covered by ACT 88
11/1/2010	Day of work defined as 80 Hours a Month for Group employees.
11/1/2010	Benefit FAC-3 (3 Year Final Average Compensation)
11/1/2010	6 Year Vesting
11/1/2010	1.5% Multiplier
	Defined Benefit Normal Retirement Age - 60
	No Early Reduced Conditions
	Fiscal Month - July

HB - Gen.Aux FOP-hired aft 7/1/2011

1/1/2021	Workers Compensation - Service Granted
1/1/2021	Custom Wages
1/1/2021	Part Time Employees - Included
1/1/2021	Service Credit Qualification - 80 hours
10/25/2016	Covered by ACT 88
7/1/2011	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2011	6 Year Vesting
7/1/2011	1.5% Multiplier
	Defined Benefit Normal Retirement Age - 60
	No Early Reduced Conditions
	Fiscal Month - July

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	5.00%

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	7.9	6.9	6.4	6.0
2. Ratio of actuarial accrued liability to payroll	13.0	12.4	12.3	12.3
3. Ratio of actives to retirees and beneficiaries	0.7	0.7	0.7	0.7
4. Ratio of market value of assets to benefit payments	9.4	8.6	7.9	7.2
5. Ratio of net cash flow to market value of assets (boy)	1.0%	2.1%	-1.6%	-2.4%

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	274
12	Indicate number of inactive members (excluding pending refunds)	97
13	Indicate number of retirees and beneficiaries	408
14	Investment Performance for Calendar Year Ending December 31, 2021¹	
15	Enter actual rate of return - prior 1-year period	14.13%
16	Enter actual rate of return - prior 5-year period	9.96%
17	Enter actual rate of return - prior 10-year period	9.11%
18	Actuarial Assumptions	
19	Actuarial assumed rate of investment return ²	7.00%
20	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Level Percent
21	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any ³	17
22	Is each division within the system closed to new employees? ⁴	No
23	Uniform Assumptions	
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$128,322,521
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions ⁵	\$232,573,054
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending June 30, 2022	\$10,193,904

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%.



Spring 2022

East Lansing, City of

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

Re: East Lansing, City of (3301) – December 31, 2021 Annual Actuarial Valuation Special Letter

We have published the Annual Actuarial Valuation Report as of December 31, 2021 for East Lansing, City of (3301). This employer has requested an alternate presentation of the State Reporting disclosures segregating Division 14 from all other divisions. This alternate presentation is included below.

Restated State Reporting

The following information has been prepared to provide some of the information necessary to complete the 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	Division 14	All Others
10	Membership as of December 31, 2021		
11	Indicate number of active members	3	271
12	Indicate number of inactive members (excluding pending refunds)	6	91
13	Indicate number of retirees and beneficiaries	10	398
14	Investment Performance for Calendar Year Ending December 31, 2021¹		
15	Enter actual rate of return - prior 1-year period	14.13%	14.13%
16	Enter actual rate of return - prior 5-year period	9.96%	9.96%
17	Enter actual rate of return - prior 10-year period	9.11%	9.11%
18	Actuarial Assumptions		
19	Actuarial assumed rate of investment return ²	7.00%	7.00%
20	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Level Percent	Level Percent
21	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any ³	10	17
22	Is each division within the system closed to new employees? ⁴	Yes	No
23	Uniform Assumptions		
24	Enter retirement pension system's actuarial value of assets using uniform assumptions	\$4,114,553	\$124,207,968
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions ⁵	\$4,694,682	\$227,878,372
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending June 30, 2022	\$79,332	\$10,114,572

- The Municipal Employees' Retirement System's investment performance has been provided to GRS from MERS Investment Staff and included here for reporting purposes. This 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.
- Net of administrative and investment expenses.
- 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.
- If all divisions within the employer are closed, "yes." If at least one division is open (including shadow divisions) indicate "no."
- 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%.

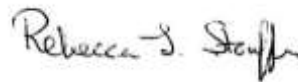
Additional information can be found in the December 31, 2021 Annual Actuarial Valuation Report.

David T. Kausch, Rebecca L. Stouffer, and Mark Buis are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

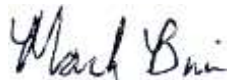
Sincerely,
Gabriel, Roeder, Smith & Company



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



Rebecca L. Stouffer, ASA, FCA, MAAA



Mark Buis, FSA, FCA, EA, MAAA