



Municipal Employees' Retirement System of Michigan

Annual Actuarial Valuation Report
December 31, 2019 - Pittsfield Chtr Twp (8110)





Spring, 2020

Pittsfield Chtr Twp

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 Pittsfield Chtr Twp (8110) as of December 31, 2019. 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, and the Michigan Constitution and governing statutes. Pittsfield Chtr Twp 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, 2019,
- Establish contribution requirements for the fiscal year beginning January 1, 2021,
- Provide information regarding the identification and assessment of risk,
- Provide actuarial information in connection with applicable Governmental Accounting Standards Board (GASB) statements, and
- Provide information to assist the local unit of government with state reporting requirements.

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

The findings in this report are based on data and other information through December 31, 2019. The valuation was based upon information furnished by MERS concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by MERS.

The Municipal Employees' Retirement Act, PA 427 of 1984 and the MERS' Plan Document Article VI sec. 71 (1)(d), provides the MERS Board with the authority to set actuarial assumptions and methods after consultation with the actuary. As the fiduciary of the plan, MERS Retirement Board sets certain assumptions for funding and GASB purposes. These assumptions are checked regularly through a comprehensive study, called an Experience Study. A study was completed in 2015, as prepared by the prior actuary, and is the basis of the demographic assumptions and methods currently in place. At the February 28, 2019 board meeting, the MERS Retirement Board adopted new economic assumptions effective with the December 31, 2019 annual actuarial valuation, which will impact contributions beginning in 2021. **At the February 27, 2020 board meeting, the MERS Retirement Board adopted demographic assumptions effective with the December 31, 2020 annual actuarial valuation, which will impact contributions beginning in 2022.** An illustration of the potential impact is found in this report.

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

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

<http://www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2019AnnualActuarialValuation-Appendix.pdf>

The actuarial assumptions used for this valuation are reasonable for purposes of the measurement.

This report does not reflect the recent and still developing 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 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 Pittsfield Chtr Twp as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and with applicable statutes.

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

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



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

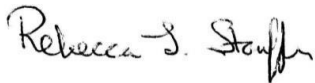
This report was prepared at the request of the MERS Retirement Board and may be provided only in its entirety by the municipality to other interested parties (MERS customarily provides the full report on request to associated third parties such as the auditor for the municipality). GRS is not responsible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

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


Sincerely,



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



Rebecca L. Stouffer, ASA, FCA, MAAA



Mark Buis, FSA, FCA, EA, MAAA



Table of Contents

Executive Summary	1
Table 1: Employer Contribution Details For the Fiscal Year Beginning January 1, 2021	9
Table 2: Benefit Provisions	11
Table 3: Participant Summary	15
Table 4: Reported Assets (Market Value)	17
Table 5: Flow of Valuation Assets	18
Table 6: Actuarial Accrued Liabilities and Valuation Assets as of December 31, 2019.....	19
Table 7: Actuarial Accrued Liabilities - Comparative Schedule	21
Tables 8 and 9: Division-Based Comparative Schedules	22
Table 10: Division-Based Layered Amortization Schedule	37
GASB 68 Information.....	51
Benefit Provision History.....	53
Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method	58
Risk Commentary	59
State Reporting	61



Executive Summary

Funded Ratio

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

	12/31/2019	12/31/2018
Funded Ratio*	69%	72%

* 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. Changes to the actuarial assumptions and methods based on the 2015 Experience Study are fully phased-in with this valuation.

Effective this valuation, the MERS Retirement Board has adopted a reduction in the investment rate of return assumption from 7.75% to 7.35% and a reduction in the rate of wage inflation from 3.75% to 3.00%. Changes to these assumptions are effective for contributions beginning in 2021 and may be phased-in. This valuation reflects the first year of phase-in.

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. Please note that this approach is different than in years past.

	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:	12/31/2019	12/31/2019	12/31/2018	12/31/2018	12/31/2019	12/31/2019	12/31/2018	12/31/2018
Fiscal Year Beginning:	January 1, 2021	January 1, 2021	January 1, 2020	January 1, 2020	January 1, 2021	January 1, 2021	January 1, 2020	January 1, 2020
Division								
01 - TPOAM	-	-	-	-	\$ 5,420	\$ 5,693	\$ 5,117	\$ 5,256
02 - Pol Ptrl	-	-	-	-	28,724	30,701	24,014	24,648
05 - Fire Fght	-	-	-	-	20,205	20,982	17,365	17,689
10 - Elctd Ofc	-	-	-	-	5,534	5,783	4,923	5,065
11 - Dsptrchr	-	-	-	-	0	0	0	0
14 - Adm/NonUnion	-	-	-	-	17,276	18,497	14,508	15,033
15 - Utilities Dr	-	-	-	-	1,131	1,209	909	924
20 - Pol Cmnd	-	-	-	-	52,996	56,380	47,275	48,229
HA - POLC/cler/Dispatch aft 7/1/14	-	-	-	-	0	0	0	0
HB - IAFF ee's hired on/aft 1/1/14	7.15%	7.08%	6.88%	6.91%	1,315	1,303	1,181	1,186
HD - POAM on/aft 1/1/2015	7.01%	6.88%	6.59%	6.62%	4,685	4,595	3,728	3,743
HE - Non-union on/aft 1/1/2015	7.75%	7.72%	7.31%	7.35%	6,322	6,295	5,552	5,583
HF - TPOAM on/aft 3/30/15	7.60%	7.56%	7.74%	7.76%	4,696	4,672	3,949	3,960
HG - Elctd Ofc on/aft 1/1/15	9.04%	9.06%	8.84%	8.84%	1,379	1,382	1,337	1,337
Municipality Total					\$ 149,683	\$ 157,492	\$ 129,858	\$ 132,653

Employee contribution rates:

Valuation Date:	Employee Contribution Rate	
	12/31/2019	12/31/2018
Division		
01 - TPOAM	3.00%	2.00%
02 - Pol Ptrl	6.17%	6.17%
05 - Fire Fght	5.00%	5.00%
10 - Elctd Ofc	6.93%	6.93%
11 - Dsptrchr	5.00%	5.00%
14 - Adm/NonUnion	5.00%	5.00%
15 - Utilities Dr	6.00%	6.00%
20 - Pol Cmnd	9.06%	9.06%
HA - POLC/cler/Dispatch aft 7/1/14	0.00%	0.00%
HB - IAFF ee's hired on/aft 1/1/14	0.00%	0.00%
HD - POAM on/aft 1/1/2015	0.00%	0.00%
HE - Non-union on/aft 1/1/2015	0.00%	0.00%
HF - TPOAM on/aft 3/30/15	0.00%	0.00%
HG - Elctd Ofc on/aft 1/1/15	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.

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 2021 for the entire employer would be \$216,587, instead of \$157,492.

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)
- Experience of the plan (investment experience and demographic experience); this is the difference between actual experience of the plan and the actuarial assumptions.

Comments on Investment Rate of Return Assumption

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

The MERS Investment Return Assumption is **7.35%** per year. This, along with all of our other actuarial assumptions, is reviewed at least every five years in an Experience Study that compares the assumptions used against actual experience and recommends adjustments if necessary. If your municipality would like to explore contributions at lower assumed investment return assumptions, please review the “what if” projection scenarios later in this report.

Assumption Change in 2019

At the February 28, 2019 board meeting, the MERS Retirement Board adjusted key economic assumptions. These assumptions, in particular the investment return assumption, have a significant effect on a plan’s required contribution and funding level. Historically low interest rates, along with high equity market valuations, have led to reductions in projected returns for most asset classes. This has resulted in a Board



adopted reduction in the investment rate of return assumption from 7.75% to 7.35%, effective with the December 31, 2019 valuation, first impacting 2021 contributions. The Board also changed the assumed rate of wage inflation from 3.75% to 3.00%, with the same effective date.

Assumption Change in 2020

A 5-year experience study analyzing historical experience from 2013 through 2018 was completed in February 2020. In addition to changes to the economic assumptions which will take effect with the Fiscal year 2021 contribution rates, the experience study recommends updated demographic assumptions, including adjustments to the following actuarial assumptions: mortality, retirement, disability, and termination rates. A complete description of the proposed assumptions may be found in the Appendix to the valuation. Changes to the demographic assumptions resulting from the experience study have been approved by the MERS Retirement Board and are to be effective beginning with the December 31, 2020 actuarial valuation first impacting 2022 contributions. This report includes a “What If” scenario of the approved 2020 assumption changes in an effort to show employers the anticipated impact on contribution rates.

Comments on Asset Smoothing

To avoid dramatic spikes and dips in annual contribution requirements due to short term fluctuations in asset markets, MERS applies a technique called **asset smoothing**. This spreads out each year’s investment gains or losses over the prior year and the following four years. This smoothing method is used to determine your actuarial value of assets (valuation assets), which is then used to determine both your funded ratio and your required contributions. The (smoothed) **actuarial rate of return for 2019 was 4.77%, while the actual market rate of return was 13.41%**. 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, 2019, the actuarial value of assets is 101% of market value due to asset smoothing. This means that meeting the actuarial assumption in the next few years will require average annual market returns that exceed the 7.35% investment return assumption, or contribution requirements will continue to increase.

If the December 31, 2019 valuation results were based on market value instead of actuarial value:

- The funded percent of your entire municipality would be 69% (instead of 69%); and
- Your total employer contribution requirement for the fiscal year starting January 1, 2021 would be \$1,922,304 (instead of \$1,889,904).

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 and the demographic assumptions. Lower investment returns would result in higher required employer contributions, and vice-versa. Alternate demographic assumptions may result in higher or lower employer contributions depending on the demographic characteristics of the plan participants.

The relative impact of the economic and demographic 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, 2019 valuation, and are for the municipality in total, not by division. These results do not reflect a phase in of the impact of the new actuarial assumptions.

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

In addition to economic assumption changes effective with Fiscal Year 2021 contributions, the Retirement Board has also adopted a change to certain demographic and other assumptions effective for the December 31, 2020 valuation which will impact the Fiscal Year 2022 contributions. Please see the section labeled "Assumption Change in 2020" for more information. The scenario shown using these assumptions as of December 31, 2019 is illustrative only. The actual impact of this change when reflected in the 2020 Annual Actuarial Valuation report will be different.

12/31/2019 Valuation Results	Assumed Future Annual Smoothed Rate of Investment Return		
	Lower Future Annual Returns ³	2020 Adopted Demographic Assumptions	Valuation Assumptions
Investment Return Assumption	5.35%	7.35%	7.35%
Wage Increase Assumption	3.00%	3.00%	3.00%
Accrued Liability	\$ 60,573,885	\$ 47,357,736	\$ 45,783,766
Valuation Assets ¹	\$ 31,811,464	\$ 31,811,464	\$ 31,811,464
Unfunded Accrued Liability	\$ 28,762,421	\$ 15,546,272	\$ 13,972,302
Funded Ratio	53%	67%	69%
Monthly Normal Cost	\$ 115,379	\$ 60,527	\$ 58,568
Monthly Amortization Payment	\$ 166,794	\$ 106,000	\$ 94,934
Total Employer Contribution²	\$ 282,375	\$ 170,110	\$ 157,492

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.

³ Based on current demographic assumptions.

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 and demographic assumption scenarios. All three projections take into account the past investment losses that will continue to affect the actuarial rate of return in the short term.

The 7.35%/3.00% scenario provides an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.35% market return. The other two scenarios may be useful if the municipality chooses to budget more conservatively, and make contributions in addition to the minimum requirements. The 2020 adopted demographic assumption and 5.35%/3.00% projection scenarios provide an indication of the potential required employer contribution if these assumptions were met over the long-term.

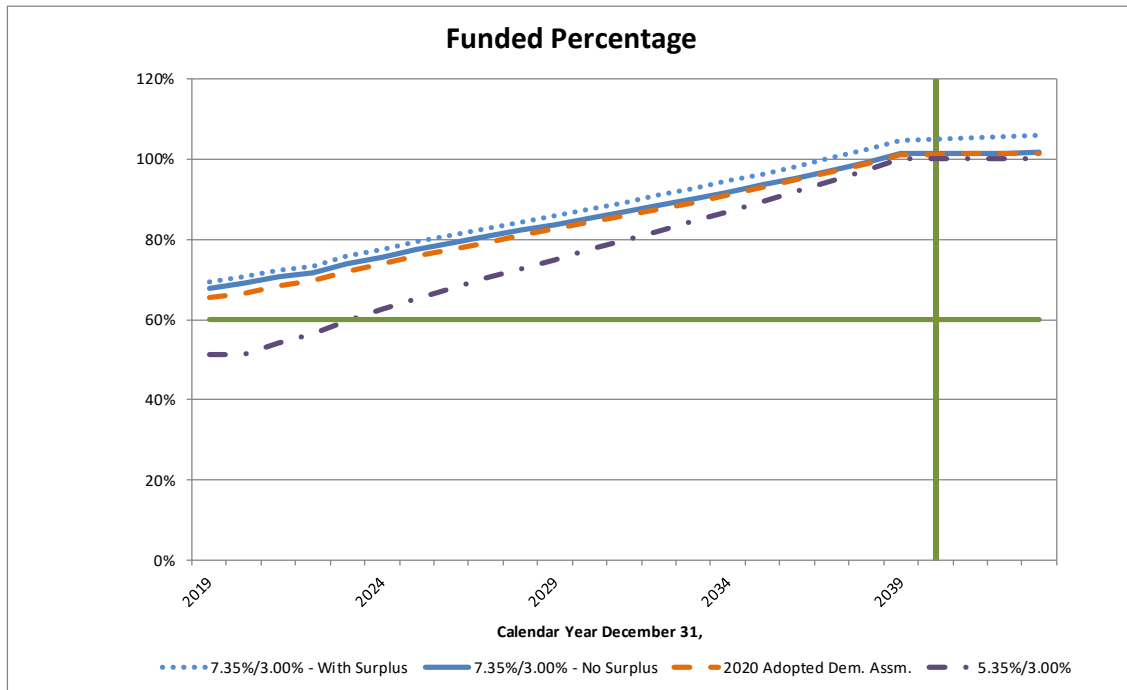
Your municipality includes one or more Surplus divisions. The assets in a Surplus division may be used to reduce future employer contributions or to accelerate the date by which the municipality becomes 100% funded. The timing and use of these Surplus assets is discretionary.

The Funded Percentage graph shows projections of funded status under the 7.35% investment return assumption, both including the Surplus assets (contributed as of the valuation date), and without the Surplus assets. The graph including the Surplus assets assumes these Surplus assets grow with interest and are not used to lower future employer contributions. We modeled the projections including the Surplus assets in this fashion because the use of these assets is discretionary by the employer and we do not know when and how the employer will use them. Once the employer uses these Surplus assets, any future employer contributions are expected to be lower than those shown in the projections.

Valuation Year Ending 12/31	Fiscal Year Beginning 1/1	Actuarial Accrued Liability	Valuation Assets ²	Funded Percentage	Computed Annual Employer Contribution
7.35%¹/3.00% - Current Demographic Assumptions					
NO 5-YEAR PHASE-IN					
2019	2021	\$ 45,783,766	\$ 30,973,845	68%	\$ 1,889,904
2020	2022	\$ 48,400,000	\$ 33,400,000	69%	\$ 1,980,000
2021	2023	\$ 51,200,000	\$ 36,100,000	71%	\$ 2,060,000
2022	2024	\$ 54,100,000	\$ 38,700,000	72%	\$ 2,170,000
2023	2025	\$ 57,000,000	\$ 42,100,000	74%	\$ 2,220,000
2024	2026	\$ 59,900,000	\$ 45,300,000	76%	\$ 2,290,000
7.35%¹/3.00% - Adopted 2020 Demographic Assumptions					
NO 5-YEAR PHASE-IN					
2019	2021	\$ 47,357,736	\$ 30,973,845	65%	\$ 2,041,320
2020	2022	\$ 50,100,000	\$ 33,400,000	67%	\$ 2,140,000
2021	2023	\$ 53,100,000	\$ 36,300,000	68%	\$ 2,230,000
2022	2024	\$ 56,200,000	\$ 39,100,000	70%	\$ 2,340,000
2023	2025	\$ 59,200,000	\$ 42,600,000	72%	\$ 2,390,000
2024	2026	\$ 62,300,000	\$ 46,100,000	74%	\$ 2,460,000
5.35%¹/3.00% - Current Demographic Assumptions					
NO 5-YEAR PHASE-IN					
2019	2021	\$ 60,573,885	\$ 30,973,845	51%	\$ 3,388,500
2020	2022	\$ 63,800,000	\$ 32,800,000	51%	\$ 3,580,000
2021	2023	\$ 67,200,000	\$ 36,400,000	54%	\$ 3,690,000
2022	2024	\$ 70,700,000	\$ 39,900,000	56%	\$ 3,840,000
2023	2025	\$ 74,100,000	\$ 44,300,000	60%	\$ 3,920,000
2024	2026	\$ 77,600,000	\$ 48,500,000	63%	\$ 4,040,000

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

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

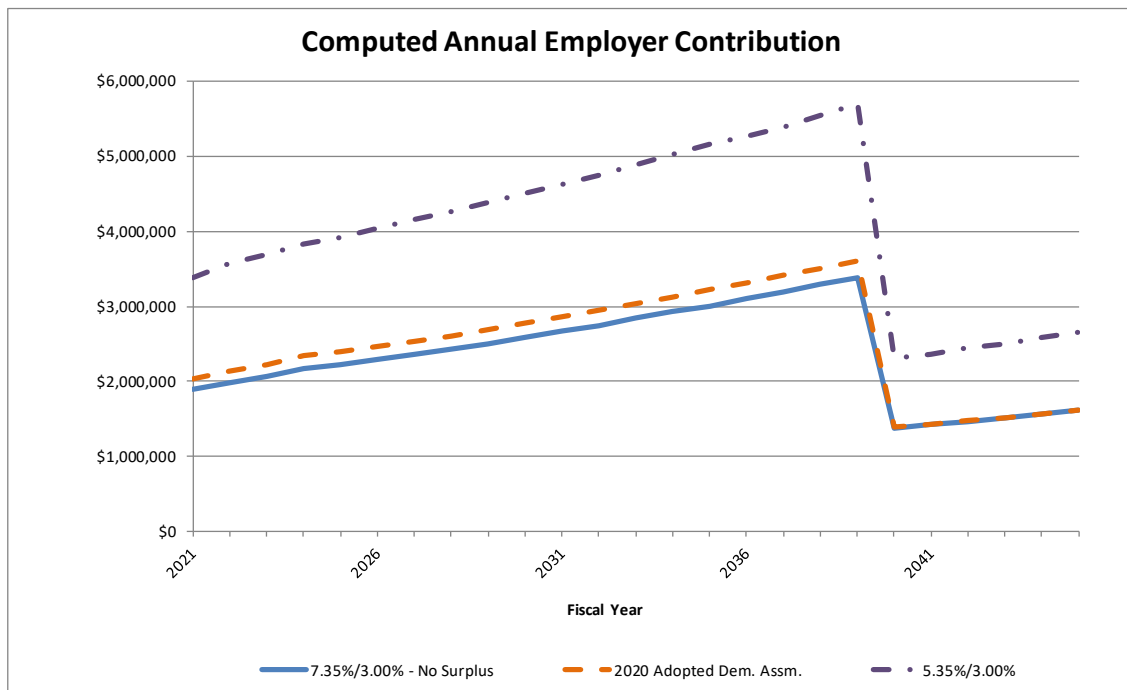


Notes:

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

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

The green indicator lines have been added at 60% funded and 21 years following the valuation date for PA 202 purposes.



Notes:

All projected contributions are shown with no phase-in.

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

Table 1: Employer Contribution Details For the Fiscal Year Beginning January 1, 2021

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	Payment of the Unfunded Accrued Liability ⁴	Computed Employer Contribut. No Phase-In				
Percentage of Payroll									
01 - TPOAM	9.55%	3.00%	-	-	-	-	9.39%	9.16%	
02 - Pol Ptrl	14.73%	6.17%	-	-	-	-	17.63%	16.69%	
05 - Fire Fght	11.36%	5.00%	-	-	-	-	12.06%	11.65%	
10 - Elctd Ofc	14.70%	6.93%	-	-	-	-	31.68%	30.56%	
11 - Dsptchr	0.00%	5.00%	-	-	-	-			
14 - Adm/NonUnion	11.53%	5.00%	-	-	-	-	12.49%	11.89%	
15 - Utilities Dr	0.00%	6.00%	-	-	-	-			
20 - Pol Cmnd	17.96%	9.06%	-	-	-	-			
HA - POLC/cler/Dispatch aft 7/1/14	0.00%	0.00%	-	-	-	-			
HB - IAFF ee's hired on/aft 1/1/14	6.50%	0.00%	6.50%	0.58%	7.08%	7.15%	12.06%	11.65%	
HD - POAM on/after 1/1/2015	6.47%	0.00%	6.47%	0.41%	6.88%	7.01%	17.63%	16.69%	
HE - Non-union on/after 1/1/2015	8.02%	0.00%	8.02%	-0.30%	7.72%	7.75%	12.49%	11.89%	
HF - TPOAM on/aft 3/30/15	7.26%	0.00%	7.26%	0.30%	7.56%	7.60%	9.39%	9.16%	
Estimated Monthly Contribution ³									
01 - TPOAM			\$ 3,188	\$ 2,505	\$ 5,693	\$ 5,420			
02 - Pol Ptrl			11,423	19,278	30,701	28,724			
05 - Fire Fght			10,580	10,402	20,982	20,205			
10 - Elctd Ofc			572	5,211	5,783	5,534			
11 - Dsptchr			0	(3,721)	0	0			
14 - Adm/NonUnion			7,632	10,865	18,497	17,276			
15 - Utilities Dr			0	1,209	1,209	1,131			
20 - Pol Cmnd			7,274	49,106	56,380	52,996			
HA - POLC/cler/Dispatch aft 7/1/14			0	(269)	0	0			
HB - IAFF ee's hired on/aft 1/1/14			1,196	107	1,303	1,315			
HD - POAM on/after 1/1/2015			4,321	274	4,595	4,685			
HE - Non-union on/after 1/1/2015			6,541	(246)	6,295	6,322			
HF - TPOAM on/aft 3/30/15			4,484	188	4,672	4,696			

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	Payment of the Unfunded Accrued Liability ⁴	Computed Employer Contribut. No Phase-In				
Percentage of Payroll									
HG - Elctd Ofc on/aft 1/1/15	8.90%	0.00%	8.90%	0.16%	9.06%	9.04%	31.68%	30.56%	
Estimated Monthly Contribution³									
HG - Elctd Ofc on/aft 1/1/15			\$ 1,357	\$ 25	\$ 1,382	\$ 1,379			
Total Municipality			\$ 58,568	\$ 94,934	\$ 157,492	\$ 149,683			
Estimated Annual Contribution³			\$ 702,816	\$ 1,139,208	\$ 1,889,904	\$ 1,796,196			

¹ The above employer contribution requirements are in addition to the employee contributions, if any.

² If employee contributions are increased/decreased by 1.00% of pay, the employer contribution requirement will decrease/increase by the Employee Contribution Conversion Factor. The conversion factor is usually under 1%, because employee contributions may be refunded at termination of employment, and not used to fund retirement pensions. Employer contributions will all be used to fund pensions.

³ For divisions that are open to new hires, estimated contributions are based on projected fiscal year payroll. Actual contributions will be based on actual reported monthly pays, and will be different from the above amounts. For divisions that will have no new hires (i.e., closed divisions), invoices will be based on the above dollar amounts which are based on projected fiscal year payroll. See description of Open Divisions and Closed Divisions in the Appendix.

⁴ Note that if the overfunding credit is larger than the normal cost, the full credit is shown above but the total contribution requirement is zero. This will cause the displayed normal cost and unfunded accrued liability contributions to not add across.

⁵ For linked divisions, the employer will be invoiced the Computed Employer Contribution No Phase-in rate shown above for each linked division (a contribution rate for the open division; a contribution dollar for the closed-but-linked division), unless the employer elects to contribute the Blended Employer Contribution rate shown above, by contacting MERS at 800-767-MERS (6377).

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

Table 2: Benefit Provisions

01 - TPOAM: Closed to new hires, linked to Division HF

	2019 Valuation	2018 Valuation
Benefit Multiplier:	2.00% Multiplier (no max)	2.00% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	3.00%	2.00%
Act 88:	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

02 - Pol Ptrl: Closed to new hires, linked to Division HD

	2019 Valuation	2018 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
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	6.17%	6.17%
Act 88:	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

05 - Fire Fght: Closed to new hires, linked to Division HB

	2019 Valuation	2018 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):	55/15	55/15
Early Retirement (Reduced):	50/25	50/25
Final Average Compensation:	3 years	3 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

10 - Elctd Ofc: Closed to new hires, linked to Division HG

	2019 Valuation	2018 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	8 years	8 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	6.93%	6.93%
Act 88:	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

11 - Dsptrchr: Closed to new hires

	2019 Valuation	2018 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):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

14 - Adm/NonUnion: Closed to new hires, linked to Division HE

	2019 Valuation	2018 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):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	5.00%	5.00%
Act 88:	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

15 - Utilities Dr: Open Division

	2019 Valuation	2018 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:	6.00%	6.00%
Act 88:	Yes (Adopted 10/1/2007)	Yes (Adopted 10/1/2007)

20 - Pol Cmnd: Closed to new hires, linked to Division HC

	2019 Valuation	2018 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	9.06%	9.06%
Act 88:	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

HA - POLC/cler/Dispatch aft 7/1/14: Closed to new hires

	2019 Valuation	2018 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 11/10/2003)	Yes (Adopted 11/10/2003)

HB - IAFF ee's hired on/aft 1/1/14: Open Division, linked to Division 05

	2019 Valuation	2018 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)



HD - POAM on/after 1/1/2015: Open Division, linked to Division 02

	2019 Valuation	2018 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0.00%	0.00%
Act 88:	No	No

HE - Non-union on/after 1/1/2015: Open Division, linked to Division 14

	2019 Valuation	2018 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:	No	No

HF - TPOAM on/aft 3/30/15: Open Division, linked to Division 01

	2019 Valuation	2018 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:	No	No

HG - Elctd Ofc on/aft 1/1/15: Open Division, linked to Division 10

	2019 Valuation	2018 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:	No	No



Table 3: Participant Summary

Division	2019 Valuation		2018 Valuation		2019 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
01 - TPOAM							
Active Employees	11	\$ 581,758	11	\$ 557,979	45.7	10.8	12.1
Vested Former Employees	9	58,097	9	58,097	44.4	8.0	14.6
Retirees and Beneficiaries	10	86,582	10	86,581	70.3		
Pending Refunds	17		17				
02 - Pol Ptrl							
Active Employees	20	\$ 1,594,550	21	\$ 1,609,322	42.7	17.2	17.6
Vested Former Employees	3	20,014	3	20,014	40.3	4.4	10.1
Retirees and Beneficiaries	8	215,809	7	156,694	58.9		
Pending Refunds	5		5				
05 - Fire Fght							
Active Employees	24	\$ 1,965,075	24	\$ 1,867,173	42.5	15.6	16.1
Vested Former Employees	1	27,754	1	27,754	53.1	14.0	14.0
Retirees and Beneficiaries	5	123,060	5	123,060	60.3		
Pending Refunds	2		2				
10 - Elctd Ofc							
Active Employees	2	\$ 172,189	2	\$ 168,193	63.2	11.1	11.8
Vested Former Employees	1	14,444	1	14,444	59.1	8.0	8.0
Retirees and Beneficiaries	5	88,070	5	86,844	80.9		
Pending Refunds	1		1				
11 - Dsptrchr							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	11	160,920	11	160,920	44.9	12.4	15.3
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	6		6				
14 - Adm/NonUnion							
Active Employees	20	\$ 1,548,740	20	\$ 1,478,235	50.8	14.6	17.0
Vested Former Employees	5	76,137	6	78,588	48.0	10.9	13.0
Retirees and Beneficiaries	21	404,482	20	398,511	67.8		
Pending Refunds	17		18				
15 - Utilities Dr							
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	19,167	1	19,167	62.7		
Pending Refunds	0		0				

Table 3 (continued)

Division	2019 Valuation		2018 Valuation		2019 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
20 - Pol Cmnd							
Active Employees	10	\$ 1,013,120	10	\$ 968,461	45.7	21.0	23.4
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	14	570,540	14	559,326	60.6		
Pending Refunds	0		0				
HA - POLC/cler/Dispatch aft 7/1/14							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	2	2,655	2	2,655	35.1	1.9	8.0
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	0		0				
HB - IAFF ee's hired on/aft 1/1/14							
Active Employees	2	\$ 124,680	2	\$ 116,297	39.7	3.6	3.7
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	0		0				
HD - POAM on/after 1/1/2015							
Active Employees	10	\$ 670,320	10	\$ 539,542	28.1	2.8	3.1
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				
HE - Non-union on/after 1/1/2015							
Active Employees	13	\$ 695,791	13	\$ 678,770	44.8	3.1	7.0
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				
HF - TPOAM on/aft 3/30/15							
Active Employees	18	\$ 667,415	15	\$ 541,871	41.2	1.9	1.9
Vested Former Employees	1	1,586	0	0	31.4	2.5	2.5
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	0		0				
HG - Elctd Ofc on/aft 1/1/15							
Active Employees	1	\$ 83,643	1	\$ 81,745	50.0	3.3	3.3
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
Pending Refunds	0		0				
Total Municipality							
Active Employees	131	\$ 9,117,281	129	\$ 8,607,588	43.6	11.3	12.5
Vested Former Employees	33	361,609	33	362,472	44.5	9.2	13.2
Retirees and Beneficiaries	64	1,507,710	62	1,430,183	65.9		
Pending Refunds	48		49				
Total Participants	276		273				

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	2019 Valuation		2018 Valuation	
	Employer and Retiree ¹	Employee ²	Employer and Retiree ¹	Employee ²
01 - TPOAM	\$ 1,426,790	\$ 327,889	\$ 1,249,591	\$ 305,578
02 - Pol Ptrl	5,728,117	1,673,330	4,606,946	1,772,522
05 - Fire Fght	4,285,378	1,494,498	3,581,377	1,274,876
10 - Elctd Ofc	286,206	197,048	264,800	182,218
11 - Dsptrchr	681,552	357,317	563,711	351,725
14 - Adm/NonUnion	5,549,777	1,334,789	4,984,927	1,254,663
15 - Utilities Dr	131,921	0	126,000	0
20 - Pol Cmnd	5,199,097	1,320,629	4,500,992	1,209,607
HA - POLC/clcr/Dispatch aft 7/1/14	26,937	0	19,117	0
HB - IAFF ee's hired on/aft 1/1/14	30,257	0	18,654	0
HD - POAM on/after 1/1/2015	132,484	0	76,078	0
HE - Non-union on/after 1/1/2015	238,903	0	162,868	0
HF - TPOAM on/aft 3/30/15	121,114	0	58,314	0
HG - Elctd Ofc on/aft 1/1/15	26,916	0	16,610	0
S1 - Surplus Unassociated	826,724	0	542,347	0
Municipality Total³	\$ 24,692,175	\$ 6,705,501	\$ 20,772,332	\$ 6,351,189
Combined Assets³	\$31,397,676		\$27,123,521	

¹ Reserve for Employer Contributions and Benefit Payments.

² Reserve for Employee Contributions.

³ Totals may not add due to rounding.

The December 31, 2019 valuation assets (actuarial value of assets) are equal to 1.013179 times the reported market value of assets (compared to 1.095342 as of December 31, 2018). Refer to the Appendix for a description of the valuation asset derivation and a detailed calculation of valuation assets.

Assets in the Surplus division(s) are employer assets that have been reserved to be used by the employer at some point in the future to stabilize increases in contributions. These assets are not used in calculating the employer contribution for the fiscal year beginning January 1, 2021.

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						
2009	\$ 503,828		\$ 365,468	\$ 803,796	\$ (310,482)	\$ (84,863)	\$ 34,825	\$ 12,828,020
2010	742,471		432,920	1,032,060	(448,528)	(69,956)	312,836	14,829,823
2011	784,130	\$ 0	413,860	972,208	(482,536)	(39,475)	5,514	16,483,524
2012	751,402	0	415,425	929,886	(580,364)	(51,588)	26,952	17,975,237
2013	815,893	0	444,508	1,210,749	(715,656)	(15,986)	0	19,714,745
2014	808,039	0	427,000	1,197,131	(817,351)	(66,658)	0	21,262,906
2015	992,973	0	433,629	1,178,970	(911,658)	(2,733)	26,929	22,981,016
2016	1,026,766	200,000	433,666	1,382,167	(982,566)	(33,253)	216,138	25,223,934
2017	1,246,097	155,036	415,787	1,654,468	(1,094,800)	(39,880)	561,312	28,121,954
2018	1,275,922	212,042	386,496	1,089,670	(1,374,077)	(5,744)	3,267	29,709,530
2019	1,360,962	207,050	413,219	1,504,552	(1,468,561)	(16,386)	101,098	31,811,464

Notes:

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

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

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

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

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

**Table 6: Actuarial Accrued Liabilities and Valuation Assets
as of December 31, 2019**

Division	Actuarial Accrued Liability					Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
	Active Employees	Vested Former Employees	Retirees and Beneficiaries	Pending Refunds	Total			
01 - TPOAM	\$ 956,924	\$ 341,568	\$ 823,475	\$ 38,692	\$ 2,160,659	\$ 1,777,804	82.3%	\$ 382,855
02 - Pol Ptrl	7,084,895	66,175	3,273,039	22,318	10,446,427	7,498,991	71.8%	2,947,436
05 - Fire Fght	5,852,487	183,792	1,409,333	2,301	7,447,913	5,856,050	78.6%	1,591,863
10 - Elctd Ofc	396,146	182,129	696,238	22,676	1,297,189	489,623	37.7%	807,566
11 - Dsptrchr	0	726,750	0	20,253	747,003	1,052,560	140.9%	(305,557)
14 - Adm/NonUnion	4,074,896	442,104	4,009,896	108,651	8,635,547	6,975,298	80.8%	1,660,249
15 - Utilities Dr	0	0	237,913	0	237,913	133,660	56.2%	104,253
20 - Pol Cmnd	6,439,026	0	7,761,901	0	14,200,927	6,605,649	46.5%	7,595,278
HA - POLC/cler/Dispatch aft 7/1/14	0	4,645	0	0	4,645	27,292	587.6%	(22,647)
HB - IAFF ee's hired on/aft 1/1/14	46,957	0	0	0	46,957	30,656	65.3%	16,301
HD - POAM on/after 1/1/2015	168,302	0	0	0	168,302	134,230	79.8%	34,072
HE - Non-union on/after 1/1/2015	213,187	0	0	0	213,187	242,051	113.5%	(28,864)
HF - TPOAM on/aft 3/30/15	144,592	2,164	0	0	146,756	122,710	83.6%	24,046
HG - Elctd Ofc on/aft 1/1/15	30,341	0	0	0	30,341	27,271	89.9%	3,070
S1 - Surplus Unassociated	0	0	0	0	0	837,619		(837,619)
Total	\$ 25,407,753	\$ 1,949,327	\$ 18,211,795	\$ 214,891	\$ 45,783,766	\$ 31,811,464	69.5%	\$ 13,972,302

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 HB, 05	\$ 5,899,444	\$ 183,792	\$ 1,409,333	\$ 2,301	\$ 7,494,870	\$ 5,886,706	78.5%	\$ 1,608,164
Linked Divisions HD, 02	7,253,197	66,175	3,273,039	22,318	10,614,729	7,633,221	71.9%	2,981,508
Linked Divisions HE, 14	4,288,083	442,104	4,009,896	108,651	8,848,734	7,217,349	81.6%	1,631,385
Linked Divisions HF, 01	1,101,516	343,732	823,475	38,692	2,307,415	1,900,514	82.4%	406,901
Linked Divisions HG, 10	426,487	182,129	696,238	22,676	1,327,530	516,894	38.9%	810,636

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

Table 7: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 10,943,440	\$ 7,755,416	71%	\$ 3,188,024
2006	12,681,900	9,015,922	71%	3,665,978
2007	14,059,796	10,278,963	73%	3,780,833
2008	15,441,447	11,515,448	75%	3,925,999
2009	16,665,216	12,828,020	77%	3,837,196
2010	18,841,079	14,829,823	79%	4,011,256
2011	21,644,476	16,483,524	76%	5,160,952
2012	23,384,220	17,975,237	77%	5,408,983
2013	26,862,373	19,714,745	73%	7,147,628
2014	28,683,079	21,262,906	74%	7,420,173
2015	32,970,609	22,981,016	70%	9,989,593
2016	35,375,796	25,223,934	71%	10,151,862
2017	38,319,574	28,121,954	73%	10,197,620
2018	41,097,409	29,709,530	72%	11,387,879
2019	45,783,766	31,811,464	69%	13,972,302

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

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 959,704	\$ 967,623	101%	\$ (7,919)
2010	1,000,313	1,082,521	108%	(82,208)
2011	1,072,912	1,139,443	106%	(66,531)
2012	1,061,861	1,165,917	110%	(104,056)
2013	1,192,711	1,244,550	104%	(51,839)
2014	1,307,912	1,335,534	102%	(27,622)
2015	1,594,249	1,418,774	89%	175,475
2016	1,783,908	1,560,966	88%	222,942
2017	1,852,461	1,675,550	90%	176,911
2018	1,979,876	1,703,442	86%	276,434
2019	2,160,659	1,777,804	82%	382,855

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

Table 9-01: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	21	\$ 697,600	4.23%	5.00%
2010	18	633,150	2.86%	5.00%
2011	17	602,922	4.51%	4.00%
2012	15	528,807	4.17%	3.00%
2013	20	731,576	5.40%	3.00%
2014	20	729,745	6.72%	2.00%
2015	20	822,799	\$ 5,946	2.00%
2016	16	741,752	\$ 5,707	2.00%
2017	13	645,141	\$ 5,039	2.00%
2018	11	557,979	\$ 5,256	2.00%
2019	11	581,758	\$ 5,693	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 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 3,131,111	\$ 2,459,798	79%	\$ 671,313
2010	3,564,633	3,303,703	93%	260,930
2011	4,885,018	3,652,191	75%	1,232,827
2012	5,203,705	3,893,073	75%	1,310,632
2013	6,076,136	4,444,933	73%	1,631,203
2014	6,051,815	4,665,236	77%	1,386,579
2015	6,849,961	5,069,260	74%	1,780,701
2016	7,436,278	5,692,248	77%	1,744,030
2017	8,240,320	6,650,921	81%	1,589,399
2018	9,121,451	6,987,700	77%	2,133,751
2019	10,446,427	7,498,991	72%	2,947,436

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

Table 9-02: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	31	\$ 1,827,777	7.28%	6.17%
2010	30	1,872,798	5.85%	6.17%
2011	30	1,860,017	11.47%	6.17%
2012	31	1,908,525	11.59%	6.17%
2013	29	1,997,648	12.58%	6.17%
2014	25	1,686,802	\$ 17,642	6.17%
2015	24	1,680,414	\$ 21,983	6.17%
2016	23	1,689,595	\$ 21,924	6.17%
2017	22	1,648,289	\$ 20,864	6.17%
2018	21	1,609,322	\$ 24,648	6.17%
2019	20	1,594,550	\$ 30,701	6.17%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Division 05 - Fire Fght

Table 8-05: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 2,149,803	\$ 1,849,791	86%	\$ 300,012
2010	2,522,564	2,164,526	86%	358,038
2011	2,949,361	2,489,043	84%	460,318
2012	3,288,692	2,821,512	86%	467,180
2013	3,787,941	3,230,511	85%	557,430
2014	4,136,363	3,608,244	87%	528,119
2015	4,794,809	3,994,893	83%	799,916
2016	5,256,937	4,546,416	87%	710,521
2017	5,907,246	5,046,262	85%	860,984
2018	6,491,784	5,319,257	82%	1,172,527
2019	7,447,913	5,856,050	79%	1,591,863

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

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		
2009	21	\$ 1,270,865	7.32%	5.00%
2010	23	1,517,003	7.42%	5.00%
2011	23	1,579,022	7.84%	5.00%
2012	23	1,614,967	7.96%	5.00%
2013	26	1,792,762	8.16%	5.00%
2014	25	1,734,496	\$ 11,804	5.00%
2015	25	1,767,537	\$ 14,521	5.00%
2016	25	1,772,309	\$ 13,921	5.00%
2017	24	1,781,459	\$ 15,124	5.00%
2018	24	1,867,173	\$ 17,689	5.00%
2019	24	1,965,075	\$ 20,982	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 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 755,823	\$ 382,227	51%	\$ 373,596
2010	791,255	387,897	49%	403,358
2011	825,575	394,931	48%	430,644
2012	867,718	401,319	46%	466,399
2013	924,647	419,643	45%	505,004
2014	970,282	439,268	45%	531,014
2015	1,086,334	457,917	42%	628,417
2016	1,163,655	484,937	42%	678,718
2017	1,195,603	509,129	43%	686,474
2018	1,228,626	489,637	40%	738,989
2019	1,297,189	489,623	38%	807,566

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

Table 9-10: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	3	\$ 234,513	15.83%	6.93%
2010	3	234,513	16.45%	6.93%
2011	3	234,513	18.10%	6.93%
2012	3	234,513	19.87%	6.93%
2013	3	243,533	20.46%	6.93%
2014	3	235,013	21.80%	6.93%
2015	3	235,634	26.71%	6.93%
2016	2	164,298	\$ 4,423	6.93%
2017	2	164,902	\$ 4,570	6.93%
2018	2	168,193	\$ 5,065	6.93%
2019	2	172,189	\$ 5,783	6.93%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 341,413	\$ 383,701	112%	\$ (42,288)
2010	400,978	452,270	113%	(51,292)
2011	480,487	541,624	113%	(61,137)
2012	527,855	611,780	116%	(83,925)
2013	591,020	684,209	116%	(93,189)
2014	637,549	735,554	115%	(98,005)
2015	781,066	801,787	103%	(20,721)
2016	808,497	880,042	109%	(71,545)
2017	728,202	969,613	133%	(241,411)
2018	653,614	1,002,715	153%	(349,101)
2019	747,003	1,052,560	141%	(305,557)

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

Table 9-11: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	9	\$ 390,756	1.87%	5.00%
2010	8	355,745	2.50%	5.00%
2011	9	395,048	2.54%	5.00%
2012	9	398,795	1.73%	5.00%
2013	8	381,680	1.52%	5.00%
2014	7	346,807	\$ 281	5.00%
2015	7	378,771	\$ 1,353	5.00%
2016	7	355,374	\$ 784	5.00%
2017	3	158,953	\$ 0	5.00%
2018	0	0	\$ 0	5.00%
2019	0	0	\$ 0	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 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Table 8-14: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 3,794,301	\$ 3,593,171	95%	\$ 201,130
2010	4,010,400	4,094,239	102%	(83,839)
2011	4,240,151	4,384,685	103%	(144,534)
2012	4,778,491	4,815,785	101%	(37,294)
2013	5,298,463	5,273,961	100%	24,502
2014	5,796,065	5,539,436	96%	256,629
2015	6,645,837	5,930,022	89%	715,815
2016	7,123,332	6,394,697	90%	728,635
2017	7,629,452	6,795,743	89%	833,709
2018	8,022,651	6,834,485	85%	1,188,166
2019	8,635,547	6,975,298	81%	1,660,249

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

Table 9-14: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	33	\$ 1,800,059	6.11%	5.00%
2010	34	1,981,088	5.45%	5.00%
2011	33	1,942,390	5.35%	5.00%
2012	34	1,908,244	5.52%	5.00%
2013	34	2,026,959	6.46%	5.00%
2014	35	2,111,436	\$ 11,872	5.00%
2015	32	2,025,795	\$ 15,246	5.00%
2016	26	1,723,713	\$ 12,887	5.00%
2017	23	1,619,640	\$ 13,467	5.00%
2018	20	1,478,235	\$ 15,033	5.00%
2019	20	1,548,740	\$ 18,497	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 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Table 8-15: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 183,689	\$ 160,991	88%	\$ 22,698
2010	148,318	186,488	126%	(38,170)
2011	233,539	192,594	83%	40,945
2012	232,326	179,491	77%	52,835
2013	231,296	171,997	74%	59,299
2014	229,922	165,260	72%	64,662
2015	236,208	157,220	67%	78,988
2016	234,687	149,707	64%	84,980
2017	233,070	145,143	62%	87,927
2018	230,975	138,013	60%	92,962
2019	237,913	133,660	56%	104,253

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

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		
2009	1	\$ 88,664	10.94%	6.00%
2010	0	0	\$ 0	0.00%
2011	0	0	\$ 227	0.00%
2012	0	0	\$ 295	0.00%
2013	0	0	\$ 351	0.00%
2014	0	0	\$ 411	0.00%
2015	0	0	\$ 566	0.00%
2016	0	0	\$ 660	6.00%
2017	0	0	\$ 761	6.00%
2018	0	0	\$ 924	6.00%
2019	0	0	\$ 1,209	6.00%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 5,349,372	\$ 3,030,718	57%	\$ 2,318,654
2010	6,402,618	3,158,179	49%	3,244,439
2011	6,957,433	3,689,013	53%	3,268,420
2012	7,423,572	4,086,360	55%	3,337,212
2013	8,760,159	4,244,941	49%	4,515,218
2014	9,553,198	4,773,789	50%	4,779,409
2015	10,956,409	5,117,852	47%	5,838,557
2016	11,507,522	5,420,558	47%	6,086,964
2017	12,342,206	6,081,797	49%	6,260,409
2018	13,004,017	6,255,059	48%	6,748,958
2019	14,200,927	6,605,649	47%	7,595,278

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

Table 9-20: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	5	\$ 391,489	38.28%	9.06%
2010	7	559,006	37.18%	9.06%
2011	8	646,496	33.90%	9.06%
2012	9	714,115	34.63%	9.06%
2013	8	690,649	47.79%	9.06%
2014	10	830,122	\$ 30,807	9.06%
2015	11	958,619	\$ 40,054	9.06%
2016	11	989,066	\$ 41,874	9.06%
2017	10	930,835	\$ 43,623	9.06%
2018	10	968,461	\$ 48,229	9.06%
2019	10	1,013,120	\$ 56,380	9.06%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Table 8-HA: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 0	\$ 0	0%	\$ 0
2010	0	0	0%	0
2011	0	0	0%	0
2012	0	0	0%	0
2013	0	0	0%	0
2014	(27)	585	0%	(612)
2015	0	2,367	0%	(2,367)
2016	2,639	6,227	236%	(3,588)
2017	5,813	16,633	286%	(10,820)
2018	3,795	20,940	552%	(17,145)
2019	4,645	27,292	588%	(22,647)

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

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		
2009	0	\$ 0	\$ 0	0.00%
2010	0	0	\$ 0	0.00%
2011	0	0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	1	33,995	5.99%	0.00%
2015	1	35,002	5.16%	0.00%
2016	2	87,059	5.96%	0.00%
2017	2	90,378	\$ 389	0.00%
2018	0	0	\$ 0	0.00%
2019	0	0	\$ 0	0.00%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Division HB - IAFF ee's hired on/aft 1/1/14

Table 8-HB: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 0	\$ 0	0%	\$ 0
2010	0	0	0%	0
2011	0	0	0%	0
2012	0	0	0%	0
2013	0	0	0%	0
2014	0	0	0%	0
2015	3,331	1,977	59%	1,354
2016	8,263	5,924	72%	2,339
2017	18,157	12,393	68%	5,764
2018	31,344	20,432	65%	10,912
2019	46,957	30,656	65%	16,301

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

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		
2009	0	\$ 0	\$ 0	0.00%
2010	0	0	\$ 0	0.00%
2011	0	0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	1	45,728	6.41%	0.00%
2016	1	51,875	6.45%	0.00%
2017	2	106,206	6.72%	0.00%
2018	2	116,297	6.91%	0.00%
2019	2	124,680	7.08%	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 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Division HD - POAM on/after 1/1/2015

Table 8-HD: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 0	\$ 0	0%	\$ 0
2010	0	0	0%	0
2011	0	0	0%	0
2012	0	0	0%	0
2013	0	0	0%	0
2014	0	0	0%	0
2015	11,692	13,467	115%	(1,775)
2016	18,222	29,847	164%	(11,625)
2017	47,316	54,030	114%	(6,714)
2018	88,387	83,331	94%	5,056
2019	168,302	134,230	80%	34,072

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

Table 9-HD: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	0	\$ 0	\$ 0	0.00%
2010	0	0	\$ 0	0.00%
2011	0	0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	5	240,367	6.79%	0.00%
2016	5	216,567	6.24%	0.00%
2017	6	315,041	6.36%	0.00%
2018	10	539,542	6.62%	0.00%
2019	10	670,320	6.88%	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 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Division HE - Non-union on/after 1/1/2015

Table 8-HE: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 0	\$ 0	0%	\$ 0
2010	0	0	0%	0
2011	0	0	0%	0
2012	0	0	0%	0
2013	0	0	0%	0
2014	0	0	0%	0
2015	10,713	12,882	120%	(2,169)
2016	19,752	39,860	202%	(20,108)
2017	74,362	102,994	139%	(28,632)
2018	139,864	178,396	128%	(38,532)
2019	213,187	242,051	114%	(28,864)

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

Table 9-HE: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	0	\$ 0	\$ 0	0.00%
2010	0	0	\$ 0	0.00%
2011	0	0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	5	218,662	7.28%	0.00%
2016	9	391,660	8.16%	0.00%
2017	14	679,581	7.50%	0.00%
2018	13	678,770	7.35%	0.00%
2019	13	695,791	7.72%	0.00%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Table 8-HF: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 0	\$ 0	0%	\$ 0
2010	0	0	0%	0
2011	0	0	0%	0
2012	0	0	0%	0
2013	0	0	0%	0
2014	0	0	0%	0
2015	0	2,598	0%	(2,598)
2016	12,104	12,505	103%	(401)
2017	37,202	38,557	104%	(1,355)
2018	83,035	63,874	77%	19,161
2019	146,756	122,710	84%	24,046

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

Table 9-HF: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	0	\$ 0	\$ 0	0.00%
2010	0	0	\$ 0	0.00%
2011	0	0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	2	66,861	9.14%	0.00%
2016	7	241,720	7.44%	0.00%
2017	11	411,892	7.15%	0.00%
2018	15	541,871	7.76%	0.00%
2019	18	667,415	7.56%	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 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Table 8-HG: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 0	\$ 0	0%	\$ 0
2010	0	0	0%	0
2011	0	0	0%	0
2012	0	0	0%	0
2013	0	0	0%	0
2014	0	0	0%	0
2015	0	0	0%	0
2016	0	0	0%	0
2017	8,164	23,189	284%	(15,025)
2018	17,990	18,194	101%	(204)
2019	30,341	27,271	90%	3,070

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

Table 9-HG: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2009	0	\$ 0	\$ 0	0.00%
2010	0	0	\$ 0	0.00%
2011	0	0	\$ 0	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	0	0	\$ 0	0.00%
2016	0	0	\$ 0	0.00%
2017	1	80,142	8.15%	0.00%
2018	1	81,745	8.84%	0.00%
2019	1	83,643	9.06%	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 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above.

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

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

Division S1 - Surplus Unassociated

Table 8-S1: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2009	\$ 0	\$ 0		\$ 0
2010	0	0		0
2011	0	0		0
2012	0	0		0
2013	0	0		0
2014	0	0		0
2015	0	0		0
2016	0	0		0
2017	0	0		0
2018	0	594,055		(594,055)
2019	0	837,619		(837,619)

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

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

Table 10: Division-Based Layered Amortization Schedule

Division 01 - TPOAM

Table 10-01: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 175,475	23	\$ 204,716	19	\$ 15,792
(Gain)/Loss	12/31/2016	22,656	22	24,738	19	1,908
(Gain)/Loss	12/31/2017	(49,510)	21	(53,711)	19	(4,140)
(Gain)/Loss	12/31/2018	101,850	20	109,975	19	8,484
(Gain)/Loss	12/31/2019	50,682	19	54,407	19	4,200
Assumption	12/31/2019	54,255	19	56,940	19	4,392
Amendment	12/31/2019	(7,002)	19	(7,517)	19	(576)
Total				\$ 389,548		\$ 30,060

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-02: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 1,780,701	23	\$ 1,887,417	19	\$ 145,548
(Gain)/Loss	12/31/2016	(102,473)	22	(111,894)	19	(8,628)
(Gain)/Loss	12/31/2017	(162,626)	21	(176,399)	19	(13,608)
(Gain)/Loss	12/31/2018	545,243	20	588,750	19	45,408
(Gain)/Loss	12/31/2019	410,699	19	440,885	19	33,996
Assumption	12/31/2019	355,074	19	371,109	19	28,620
Total				\$ 2,999,868		\$ 231,336

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 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 10-05: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 799,916	23	\$ 856,521	19	\$ 66,048
(Gain)/Loss	12/31/2016	(127,431)	22	(139,146)	19	(10,728)
(Gain)/Loss	12/31/2017	153,111	21	166,074	19	12,804
(Gain)/Loss	12/31/2018	294,954	20	318,484	19	24,564
(Gain)/Loss	12/31/2019	235,662	19	252,983	19	19,512
Assumption	12/31/2019	157,711	19	163,734	19	12,624
Total				\$ 1,618,650		\$ 124,824

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-10: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 628,417	23	\$ 661,033	19	\$ 50,976
(Gain)/Loss	12/31/2016	32,200	22	35,160	19	2,712
(Gain)/Loss	12/31/2017	(507)	21	(556)	19	(48)
(Gain)/Loss	12/31/2018	47,965	20	51,788	19	3,996
(Gain)/Loss	12/31/2019	30,141	19	32,356	19	2,496
Assumption	12/31/2019	31,711	19	31,043	19	2,400
Total				\$ 810,824		\$ 62,532

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-11: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ (20,721)	10	\$ (6,522)	10	\$ (804)
(Gain)/Loss	12/31/2016	(63,538)	15	(64,420)	12	(6,912)
(Gain)/Loss	12/31/2017	(165,343)	10	(158,989)	8	(23,688)
(Gain)/Loss	12/31/2018	(96,287)	10	(98,608)	9	(13,320)
(Gain)/Loss	12/31/2019	(47,492)	10	(50,983)	10	(6,312)
Assumption	12/31/2019	46,668	10	51,507	10	6,384
Total				\$ (328,015)		\$ (44,652)

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 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 10-14: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 715,815	23	\$ 786,834	19	\$ 60,684
(Gain)/Loss	12/31/2016	(41,144)	22	(44,934)	19	(3,468)
(Gain)/Loss	12/31/2017	101,618	21	110,231	19	8,496
(Gain)/Loss	12/31/2018	341,688	20	368,955	19	28,452
(Gain)/Loss	12/31/2019	223,468	19	239,893	19	18,504
Assumption	12/31/2019	219,140	19	229,653	19	17,712
Total				\$ 1,690,632		\$ 130,380

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 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 - Utilities Dr

Table 10-15: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 78,988	16	\$ 71,354	8	\$ 10,632
(Gain)/Loss	12/31/2016	4,991	14	4,855	8	720
(Gain)/Loss	12/31/2017	3,415	12	3,395	8	504
(Gain)/Loss	12/31/2018	6,445	10	6,599	9	888
(Gain)/Loss	12/31/2019	4,786	10	5,138	10	636
Assumption	12/31/2019	8,800	10	9,086	10	1,128
Total				\$ 100,427		\$ 14,508

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Table 10-20: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 5,838,557	23	\$ 6,127,344	19	\$ 472,524
(Gain)/Loss	12/31/2016	92,446	22	100,956	19	7,788
(Gain)/Loss	12/31/2017	114,535	21	124,230	19	9,576
(Gain)/Loss	12/31/2018	438,629	20	473,630	19	36,528
(Gain)/Loss	12/31/2019	266,945	19	286,565	19	22,104
Assumption	12/31/2019	517,807	19	528,509	19	40,752
Total				\$ 7,641,234		\$ 589,272

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 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-HA: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ (2,367)	10	\$ (2,166)	10	\$ (264)
(Gain)/Loss	12/31/2016	(938)	15	(942)	12	(96)
(Gain)/Loss	12/31/2017	(7,290)	10	(7,012)	8	(1,044)
(Gain)/Loss	12/31/2018	(5,911)	10	(6,053)	9	(816)
(Gain)/Loss	12/31/2019	(8,223)	10	(8,827)	10	(1,092)
Assumption	12/31/2019	555	10	688	10	84
Total				\$ (24,312)		\$ (3,228)

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 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 - IAFF ee's hired on/aft 1/1/14

Table 10-HB: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 1,354	23	\$ 1,492	19	\$ 120
(Gain)/Loss	12/31/2016	881	22	960	19	72
(Gain)/Loss	12/31/2017	3,343	21	3,626	19	276
(Gain)/Loss	12/31/2018	4,863	20	5,247	19	408
(Gain)/Loss	12/31/2019	4,929	19	5,291	19	408
Assumption	12/31/2019	82	19	25	19	0
Total				\$ 16,641		\$ 1,284

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 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 HD - POAM on/after 1/1/2015

Table 10-HD: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2018	\$ 5,680	15	\$ 6,034	14	\$ 576
(Gain)/Loss	12/31/2019	29,601	15	31,777	15	2,880
Assumption	12/31/2019	(1,540)	15	(1,794)	15	(168)
Total				\$ 36,017		\$ 3,288

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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

Division HE - Non-union on/after 1/1/2015

Table 10-HE: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ (2,169)	10	\$ (1,902)	10	\$ (240)
(Gain)/Loss	12/31/2016	(17,771)	15	(18,020)	12	(1,932)
(Gain)/Loss	12/31/2017	(7,252)	15	(7,546)	13	(768)
(Gain)/Loss	12/31/2018	(9,738)	15	(10,334)	14	(984)
(Gain)/Loss	12/31/2019	8,217	15	8,821	15	804
Assumption	12/31/2019	1,639	15	1,875	15	168
Total				\$ (27,106)		\$ (2,952)

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

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

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

The unfunded accrued liability (UAL) as of December 31, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 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-HF: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2018	\$ 19,346	15	\$ 20,529	14	\$ 1,956
(Gain)/Loss	12/31/2019	1,522	15	1,634	15	144
Assumption	12/31/2019	1,685	15	1,723	15	156
Total				\$ 23,886		\$ 2,256

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 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-HG: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 1/1/2021		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2018	\$ 1,183	15	\$ 1,262	14	\$ 120
(Gain)/Loss	12/31/2019	1,317	15	1,414	15	132
Assumption	12/31/2019	482	15	508	15	48
Total				\$ 3,184		\$ 300

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, 2019 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2019 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 68 Information

The following information has been prepared to provide some of the information necessary to complete GASB Statement No. 68 disclosures. Statement 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:	12/31/2019
Measurement Date of the Total Pension Liability (TPL):	12/31/2019
At 12/31/2019, the following employees were covered by the benefit terms:	
Inactive employees or beneficiaries currently receiving benefits:	64
Inactive employees entitled to but not yet receiving benefits (including refunds):	81
Active employees:	<u>131</u>
	276
Total Pension Liability as of 12/31/2018 measurement date:	\$ 39,796,219
Total Pension Liability as of 12/31/2019 measurement date:	\$ 44,313,063
Service Cost for the year ending on the 12/31/2019 measurement date:	\$ 1,002,337
Change in the Total Pension Liability due to:	
- Benefit changes ¹ :	\$ (6,992)
- Differences between expected and actual experience ² :	\$ 525,704
- Changes in assumptions ² :	\$ 1,316,350
Average expected remaining service lives of all employees (active and inactive):	5

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)	\$ 9,117,281
---	--------------

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

	1% Decrease (6.60%)	Current Discount Rate (7.60%)	1% Increase (8.60%)
Change in Net Pension Liability as of 12/31/2019:	\$ 6,346,651	\$ -	\$ (5,228,025)

Note: The current discount rate shown for GASB 68 purposes is higher than the MERS assumed rate of return. This is because for GASB 68 purposes, the discount rate must be gross of administrative expenses, whereas for funding purposes it is net of administrative expenses.

GASB 68 Information

This page is for those municipalities who need to “roll-forward” their total pension liability due to the timing of completion of the actuarial valuation in relation to their fiscal year-end.

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

Actuarial Valuation Date:	12/31/2019
Measurement Date of the Total Pension Liability (TPL):	12/31/2020

At 12/31/2019, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits:	64
Inactive employees entitled to but not yet receiving benefits (including refunds):	81
Active employees:	<u>131</u>
	276

Total Pension Liability as of 12/31/2019 measurement date:	\$ 42,178,549
--	---------------

Total Pension Liability as of 12/31/2020 measurement date:	\$ 46,855,555
--	---------------

Service Cost for the year ending on the 12/31/2020 measurement date:	\$ 1,028,555
--	--------------

Change in the Total Pension Liability due to:

- Benefit changes ¹ :	\$ (6,478)
- Differences between expected and actual experience ² :	\$ 891,166
- Changes in assumptions ² :	\$ 1,237,596

Average expected remaining service lives of all employees (active and inactive):	5
--	---

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)	\$ 9,117,281
---	--------------

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

	1% Decrease (6.60%)	Current Discount Rate (7.60%)	1% Increase (8.60%)
Change in Net Pension Liability as of 12/31/2020:	\$ 6,604,910	\$ -	\$ (5,449,175)

Note: The current discount rate shown for GASB 68 purposes is higher than the MERS assumed rate of return. This is because for GASB 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 - TPOAM

1/1/2019	Participant Contribution Rate 3%
12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2014	Member Contribution Rate 2.00%
1/1/2012	Member Contribution Rate 3.00%
1/1/2011	Member Contribution Rate 4.00%
1/1/2004	Benefit B-2
11/10/2003	Covered by Act 88
7/11/1995	Blanket Resolution (All Service)
8/1/1991	Benefit FAC-3 (3 Year Final Average Compensation)
8/1/1991	10 Year Vesting
8/1/1991	Benefit C-2/Base B-1
8/1/1991	Member Contribution Rate 5.00%
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

02 - Pol Ptrl

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2010	E2 2.5% COLA for future retirees (12/01/2009)
12/1/2009	Benefit F50 (With 25 Years of Service)
12/1/2009	Member Contribution Rate 6.17%
12/1/2006	Benefit B-3 (80% max)
8/1/2006	Temporary Benefit B-3 (80% max) (08/01/2006 - 09/30/2006)
8/1/2006	E2 2.5% Window COLA for future retirees (08/01/2006) to (09/30/2006)
11/10/2003	Covered by Act 88
1/1/2001	Benefit B-2
7/11/1995	Blanket Resolution (All Service)
8/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
8/1/1992	10 Year Vesting
8/1/1992	Benefit C-2/Base B-1
8/1/1992	Benefit F55 (With 15 Years of Service)
8/1/1992	Member Contribution Rate 5.00%
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

05 - Fire Fght

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2007	Benefit B-3 (80% max)
11/10/2003	Covered by Act 88
3/1/2003	Benefit B-2
7/11/1995	Blanket Resolution (All Service)



05 - Fire Fight

8/1/1992	Day of work defined as 96 Hours a Month for All employees.
8/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
8/1/1992	10 Year Vesting
8/1/1992	Benefit C-2/Base B-1
8/1/1992	Benefit F55 (With 15 Years of Service)
8/1/1992	Member Contribution Rate 5.00%
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

10 - Elctd Ofc

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2005	E2 2.5% COLA for future retirees (11/01/2004)
11/10/2003	Covered by Act 88
5/1/1996	Benefit B-3 (80% max)
5/1/1996	Member Contribution Rate 6.93%
4/30/1996	Member Contribution Rate 0.00%
4/1/1996	2.0% multiplier (80% max)
7/11/1995	Blanket Resolution (All Service)
8/1/1991	Benefit FAC-3 (3 Year Final Average Compensation)
8/1/1991	8 Year Vesting
8/1/1991	Benefit B-2
8/1/1991	Member Contribution Rate 5.00%
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

11 - Dsptrchr

12/1/2016	Service Credit Purchase Estimates - Yes
12/1/2009	Benefit B-3 (80% max)
11/10/2003	Covered by Act 88
1/1/2003	Benefit B-2
7/11/1995	Blanket Resolution (All Service)
10/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
10/1/1992	10 Year Vesting
10/1/1992	Benefit C-2/Base B-1
10/1/1992	Member Contribution Rate 5.00%
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

14 - Adm/NonUnion

12/1/2016	Service Credit Purchase Estimates - Yes
8/1/2008	Member Contribution Rate 5.00%
8/1/2005	Temporary 25 Years & Out (08/01/2005 - 11/03/2005)
1/1/2005	Benefit B-3 (80% max)
1/1/2005	Member Contribution Rate 6.00%
11/10/2003	Covered by Act 88
1/1/2000	Benefit FAC-3 (3 Year Final Average Compensation)



14 - Adm/NonUnion

1/1/2000	10 Year Vesting
1/1/2000	Benefit B-2
1/1/2000	Member Contribution Rate 5.00%
7/11/1995	Blanket Resolution (All Service)
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

15 - Utilities Dr

12/31/2018	Accelerated to 5-year Amortization
12/1/2016	Service Credit Purchase Estimates - Yes
10/1/2007	Blanket Resolution (All Service)
10/1/2007	Covered by Act 88
10/1/2007	Benefit FAC-3 (3 Year Final Average Compensation)
10/1/2007	10 Year Vesting
10/1/2007	Benefit B-3 (80% max)
10/1/2007	Benefit F55 (With 25 Years of Service)
10/1/2007	Member Contribution Rate 6.00%
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

20 - Pol Cmnd

12/1/2016	Service Credit Purchase Estimates - Yes
10/1/2009	Temporary 20 Years & Out (10/01/2009 - 01/31/2010)
2/1/2007	Member Contribution Rate 9.06%
7/1/2005	Member Contribution Rate 10.06%
11/10/2003	Covered by Act 88
1/1/2001	E2 2.5% COLA for future retirees (01/01/2001)
1/1/1999	Benefit B-4 (80% max)
1/1/1999	Benefit F50 (With 25 Years of Service)
1/1/1999	Member Contribution Rate 11.06%
7/11/1995	Blanket Resolution (All Service)
6/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
6/1/1992	10 Year Vesting
6/1/1992	Benefit C-2/Base B-1
6/1/1992	Benefit F55 (With 15 Years of Service)
6/1/1992	Member Contribution Rate 5.00%
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

HA - POLC/cler/Dispatch aft 7/1/14

7/1/2014	Day of work defined as 8 Hours a Day for All employees.
7/1/2014	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2014	6 Year Vesting
7/1/2014	1.5% Multiplier
11/10/2003	Covered by ACT 88
8/1/1991	Fiscal Month - January



HA - POLC/cler/Dispatch aft 7/1/14

Defined Benefit Normal Retirement Age - 60

No Early Reduced Conditions

HB - IAFF ee's hired on/aft 1/1/14

1/1/2014	Day of work defined as 96 Hours a Month for All employees.
1/1/2014	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2014	6 Year Vesting
1/1/2014	1.5% Multiplier
1/1/2014	Benefit F55 (With 25 Years of Service)
11/10/2003	Covered by ACT 88
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	No Early Reduced Conditions

HD - POAM on/after 1/1/2015

1/1/2015	Day of work defined as 8 Hours a Day for All employees.
1/1/2015	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2015	6 Year Vesting
1/1/2015	1.5% Multiplier
1/1/2015	Benefit F55 (With 25 Years of Service)
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	No Early Reduced Conditions

HE - Non-union on/after 1/1/2015

1/1/2015	Day of work defined as 8 Hours a Day for All employees.
1/1/2015	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2015	6 Year Vesting
1/1/2015	1.5% Multiplier
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	No Early Reduced Conditions

HF - TPOAM on/aft 3/30/15

4/1/2015	Day of work defined as 8 Hours a Day for All employees.
4/1/2015	Benefit FAC-3 (3 Year Final Average Compensation)
4/1/2015	6 Year Vesting
4/1/2015	1.5% Multiplier
8/1/1991	Fiscal Month - January
	Defined Benefit Normal Retirement Age - 60
	No Early Reduced Conditions

HG - Elctd Ofc on/aft 1/1/15

1/1/2015	Day of work defined as 8 Hours a Day for All employees.
1/1/2015	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2015	Non Standard Compensation Definition
1/1/2015	6 Year Vesting
1/1/2015	1.5% Multiplier
8/1/1991	Fiscal Month - January



HG - Elctd Ofc on/aft 1/1/15

Defined Benefit Normal Retirement Age - 60
No Early Reduced Conditions

S1 - Surplus Unassociated

8/1/1991

Fiscal Month - January

Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

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

Increase in Final Average Compensation

Division	FAC Increase Assumption
All Divisions	1.00%

Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	94%

Miscellaneous and Technical Assumptions

Loads – None.

Amortization Policy for Closed Divisions

Closed Division	Amortization Option
15 - Utilities Dr	Accelerated to 5-Year Amortization

Please see the Appendix on MERS website for a detailed description of the amortization options available for closed divisions within an open municipality.

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>12/31/2019</u>	<u>12/31/2018</u>
1. Ratio of the market value of assets to total payroll	3.4	3.2
2. Ratio of actuarial accrued liability to payroll	5.0	4.8
3. Ratio of actives to retirees and beneficiaries	2.0	2.1
4. Ratio of market value of assets to benefit payments	21.1	19.7
5. Ratio of net cash flow to market value of assets (boy)	2.2%	1.8%

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 active 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 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, 2019	
11	Indicate number of active members	131
12	Indicate number of inactive members (excluding pending refunds)	33
13	Indicate number of retirees and beneficiaries	64
14	Investment Performance for Calendar Year Ending December 31, 2019¹	
15	Enter actual rate of return - prior 1-year period	14.02%
16	Enter actual rate of return - prior 5-year period	6.39%
17	Enter actual rate of return - prior 10-year period	7.97%
18	Actuarial Assumptions	
19	Actuarial assumed rate of investment return ²	7.35%
20	Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any	Level Percent
21	Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any ³	19
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	\$31,627,226
25	Enter retirement pension system's actuarial accrued liabilities using uniform assumptions	\$49,695,254
27	Actuarially Determined Contribution (ADC) using uniform assumptions, Fiscal Year Ending December 31, 2020	\$2,246,856

- ¹. 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.
- ². Net of administrative and investment expenses.
- ³. Populated with the longest amortization period remaining in the amortization schedule, across all divisions in the plan. This is when each division and the plan in total is expected to reach 100% funded if all assumptions are met.
- ⁴. If all divisions within the employer are closed, "yes." If at least one division is open (including shadow divisions) indicate "no."