



MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN
ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2016
CORUNNA CITY OF (7604)



Spring, 2017

Corunna City of

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

This report presents the results of the Annual Actuarial Valuation, prepared as of December 31, 2016. The report includes the determination of liabilities and contribution rates resulting from the participation of Corunna City of (7604) in the Municipal Employees' Retirement System of Michigan ("MERS"). MERS is a nonprofit organization, independent from the State, that has provided retirement plans for municipal employees for 70 years. Corunna City of is responsible for the employer contributions needed to provide MERS benefits for its employees and former employees under the Michigan Constitution and the MERS Plan Document.

The purpose of the December 31, 2016 annual actuarial valuation is to:

- Measure funding progress
- Establish contribution requirements for the fiscal year beginning July 1, 2018
- Provide actuarial information in connection with applicable Governmental Accounting Standards Board (GASB) statements

This valuation report should not be relied upon for any other purpose. Reliance on information contained in this report by anyone for anything other than the intended purpose could be misleading.

The valuation uses financial data, plan provision data, and participant data as of December 31, 2016 furnished by MERS. In accordance with Actuarial Standards of Practice No. 23, the data was checked for internal and year to year consistency as well as general reasonableness, but was not otherwise audited. CBIZ Retirement Plan Services does not assume responsibility for the accuracy or completeness of the data used in this valuation.

The actuarial assumptions and methods are adopted by the MERS Retirement Board, and are reviewed every five years in an Experience Study. The most recent study was completed in 2015. Please refer to the division-specific assumptions described in table(s) in this report, and to the Appendix on the MERS website at:
www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2016AnnualActuarialValuation-Appendix.pdf.



The actuarial assumptions used for this valuation produce results that we believe are reasonable.

To the best of our knowledge, this report is complete and accurate, was prepared in conformity with generally recognized actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and is in compliance with Act No. 220 of the Public Acts of 1996, as amended, and the MERS Plan Document as revised. All of the undersigned are members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. 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 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). CBIZ Retirement Plan Services is not responsible for the consequences of any unauthorized use.

You should notify MERS if you disagree with anything contained in the report or are aware of any information that would affect the results of the report that have not been communicated to us. 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,

Cathy Nagy, MAAA, FSA
Jim Koss, MAAA, ASA
Curtis Powell, MAAA, EA

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Executive Summary

Actuarial Assumptions and Methods Adopted with the December 31, 2015 Valuations

The actuarial assumptions and methods are adopted by the MERS Retirement Board, and are reviewed every five years in an Experience Study. The Experience Study is a comprehensive, detailed analysis that reviews MERS' funding policy and compares actual experience with the current actuarial assumptions; the study recommends adjustments as necessary. The most recent study was completed in 2015 and changes to the assumptions and methods based on the 2015 Experience Study were first reflected in the December 31, 2015 valuations. The impact of these changes is being phased-in over a 5 year period. The phase-in allows the employer to spread the impact of the new assumptions over 5 fiscal years. This report continues to provide contributions both with and without the phase-in adjustments.

The assumptions and methods are described in the [Appendix](#) on the MERS website.

As part of the recent Experience Study, the following changes are first reflected in the December 31, 2016 annual valuation:

- The asset smoothing was changed from 10 to 5 years. The gain (loss) recognized each year will be 20% of the current year's gain (loss) plus 20% of the gain (loss) from each of the 4 preceding years. The cumulative difference between the market value and valuation assets as of December 31, 2015 will be recognized over 4 years.
- Annual changes in Unfunded Accrued Liability (UAL) will be amortized over fixed periods, creating "layers" of UAL. This will require removing and creating "layers" of UAL on an annual basis.
 - o Once the amortization period drops below 15 years (10 years for closed divisions), any future liability and asset gains or losses will be spread over a 15-year fixed period for open divisions and a 10-year fixed period for closed divisions — creating "layers" of UAL on an annual basis.
 - o This transparent method allows tracking of what changed your UAL, and sets a fixed period in time in which that UAL change will be fully funded.

MERS created a dedicated resource page on their website for additional information on these topics (<http://www.mersofmich.com/Employer/Work-Scenarios/Unfunded-Liability>).

Funded Ratio and Required Employer Contributions

The MERS Defined Benefit Plan is an agent multiple-employer plan, meaning that assets are pooled for investment purposes but separate accounts are maintained for each individual employer. Each municipality is responsible for their own plan liabilities; MERS does not borrow from one municipality's account to pay for another.

The funded ratio of a plan is the percentage of the dollar value of the accrued benefits that is covered by the actuarial value of assets.

Your Funded Ratio:

	12/31/2016	12/31/2015
Funded Ratio	63%	61%

Michigan Law requires that pension plans be pre-funded, meaning money is set aside now to pay for future benefits. Pension plans are usually funded by employer and employee contributions, and investment income.

How quickly a plan attains the 100% funding goal depends on many factors such as:

- The current funded ratio
- The future experience of the plan
- The amortization period

It is more important to look at the trend in the funded ratio over a period of time than at a particular point in time.

Your Required Employer Contributions:

Your computed employer contributions are shown in the following table. Employee contributions, if any, are in addition to the computed employer contributions. Changes to the assumptions and methods based on the 2015 Experience Study were first reflected in the December 31, 2015 valuations. The impact of these changes is being phased-in over a 5 year period. The phase-in allows the employer to spread the impact of the new assumptions over 5 fiscal years. This valuation reflects the second year of the phase-in.

Your minimum required contribution is the amount in the "Phase-in" columns. By default, MERS will invoice you the phased-in contribution amount, but strongly encourages you to contribute more than the minimum required contribution. If for 2017 your municipality is making employer contributions based on rates without the phase-in applied, contact MERS to ensure this rate is used again for 2018 and not the defaulted phase-in rates.

	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:	12/31/2016	12/31/2016	12/31/2015	12/31/2015	12/31/2016	12/31/2016	12/31/2015	12/31/2015
Fiscal Year Beginning:	July 1, 2018	July 1, 2018	July 1, 2017	July 1, 2017	July 1, 2018	July 1, 2018	July 1, 2017	July 1, 2017
Division								
02 - Police	-	-	-	-	\$ 3,307	\$ 3,640	\$ 3,126	\$ 3,570
10 - Gnrl AFSCME	-	-	-	-	2,792	3,026	2,848	3,176
11 - Dept Heads	-	-	-	-	5,782	6,322	5,732	6,452
12 - All New Hire7/01	-	-	-	7.75%	1,654	1,810	2,460	2,668
20 - Police/Chief	-	-	-	-	5,027	5,303	4,395	4,763
22 - New Hires on/aft 7/1/1	8.48%	8.48%			1,100	1,100		
Municipality Total					\$ 19,662	\$ 21,201	\$ 18,561	\$ 20,629

Employee contribution rates reflected in the valuations are shown below:

Valuation Date:	Employee Contribution Rate	
	12/31/2016	12/31/2015
Division		
02 - Police	0.00%	0.00%
10 - Gnrl AFSCME	2.50%	0.00%
11 - Dept Heads	2.50%	2.50%
12 - All New Hire7/01	2.50%	2.50%
20 - Police/Chief	2.50%	2.50%
22 - New Hires on/aft 7/1/1	2.50%	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.

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 entire employer would be \$ 27,544, instead of \$ 21,201.

If you are interested in making additional contributions, please contact MERS and they can assist you with evaluating your options.

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. For example:
 - o Lower actual investment returns would result in higher required employer contributions, and vice-versa.
 - o Smaller than assumed pay increases would lower required employer contributions.
 - o Reductions in the number of active employees would lower required contribution dollars, but would usually increase the contribution rate expressed as a percentage of (the now lower) payroll.
 - o Retirements at earlier ages than assumed would usually increase required employer contributions.
 - o More non-vested terminations of employment than assumed would decrease required contributions.
 - o More disabilities or survivor (death) benefits than assumed would increase required contributions.
 - o Longer lifetimes after retirement than assumed would increase required employer contributions.

Actuarial valuations do not affect the ultimate cost of the plan; the benefit payments (current and future) determine the cost of the plan. Actuarial valuations only affect the timing of the contributions into the plan. Because assumptions are for the long term, plan experience will not match the actuarial assumptions in any given year (except by coincidence). Each annual actuarial valuation will adjust the required employer contributions up or down based on the prior year's actual experience.

Comments on Asset Smoothing

The actuarial value of assets, used to determine both your funded ratio and your required employer contribution, is based on a smoothed value of assets (10-year smoothing prior to 2016; 5-year smoothing beginning in 2016). A smoothing method reduces the volatility of the valuation results, which affects your required employer contribution and funded ratio. The smoothed actuarial rate of return for 2016 was 5.14%.

As of December 31, 2016 the actuarial value of assets is 108% of market value. This means that meeting the actuarial assumption in the next few years will require average annual market returns that exceed the 7.75% investment return assumption.

If the December 31, 2016 valuation results were based on market value on that date instead of smoothed funding value: i) the funded percent of your entire municipality would be 59% (instead of 63%); and ii) your total employer contribution requirement for the fiscal year starting July 1, 2018 would be \$ 280,764 (instead of \$ 254,412).

The asset smoothing method is a powerful tool for reducing the volatility of your required employer contributions. **However, if the current 8% difference between the smoothed value and the market value of assets is not made up, the result would be gradual increases in your employer contribution requirement over the next few years (to around the levels described above).**

Risk Characteristics of Defined Benefit Plans

It is important to understand that Defined Benefit retirement plans, the plan sponsor, and the plan participants are exposed to certain risks. While risks cannot be eliminated entirely, they can be managed through various strategies. Below are a few examples of risk (this is not an all-inclusive list):

- Economic - investment return, wage inflation, etc.
- Demographic - longevity, disability, retirement, etc.
- Plan Sponsor and Employees - contribution volatility, attract/retain employees, etc.

The MERS Retirement Board adopts certain assumptions and methods to manage the economic and demographic risks, and the contribution volatility risks. For example, the investment risk is the largest economic risk and is managed by having a balanced portfolio and a clearly defined investment strategy. Demographic risks are managed by preparing special studies called experience studies on a regular basis to determine if the assumptions used are reasonable compared to the experience. Risk may be managed through a plan design that provides benefits that are sustainable in the long run. An Experience Study is completed every five years to review the assumptions and methods. The next Experience Study will be completed in 2020.

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.

The analysis in this section is intended to review the potential volatility of the actuarial valuation results. 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.

Many assumptions are important in determining the required employer contributions. In the table below, we show the impact of varying one actuarial assumption: the future annual rate of investment return. Lower investment returns would result in higher required employer contributions, and vice-versa.

The relative impact of each investment return scenario 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, 2016 valuation, and are for the municipality in total, not by division. These results do not reflect a 5-year phase in of the impact of the new actuarial assumptions.

	Assumed Future Annual Smoothed Rate of Investment Return			
	Lower Future Annual Returns		Valuation Assumption	Higher Returns
	5.75%	6.75%	7.75%	8.75%
12/31/2016 Valuation Results				
Accrued Liability	\$ 7,379,688	\$ 6,611,828	\$ 5,965,353	\$ 5,416,919
Valuation Assets	\$ 3,779,188	\$ 3,779,188	\$ 3,779,188	\$ 3,779,188
Unfunded Accrued Liability	\$ 3,600,500	\$ 2,832,640	\$ 2,186,165	\$ 1,637,731
Funded Ratio	51%	57%	63%	70%
Monthly Normal Cost	\$ 8,753	\$ 6,894	\$ 5,427	\$ 4,276
Monthly Amortization Payment	\$ 23,174	\$ 19,371	\$ 15,774	\$ 12,065
Total Employer Contribution¹	\$ 31,927	\$ 26,265	\$ 21,201	\$ 16,341

¹ If assets exceed accrued liabilities for a division, the division's amortization payment is negative and is used to reduce the division's employer contribution requirement. If the overfunding credit is larger than the normal cost, the division's full credit is included in the municipality's amortization payment above but the division's total contribution requirement is zero. This can cause the displayed normal cost and amortization payment to not add up to the displayed total employer contribution.

Projection Scenarios

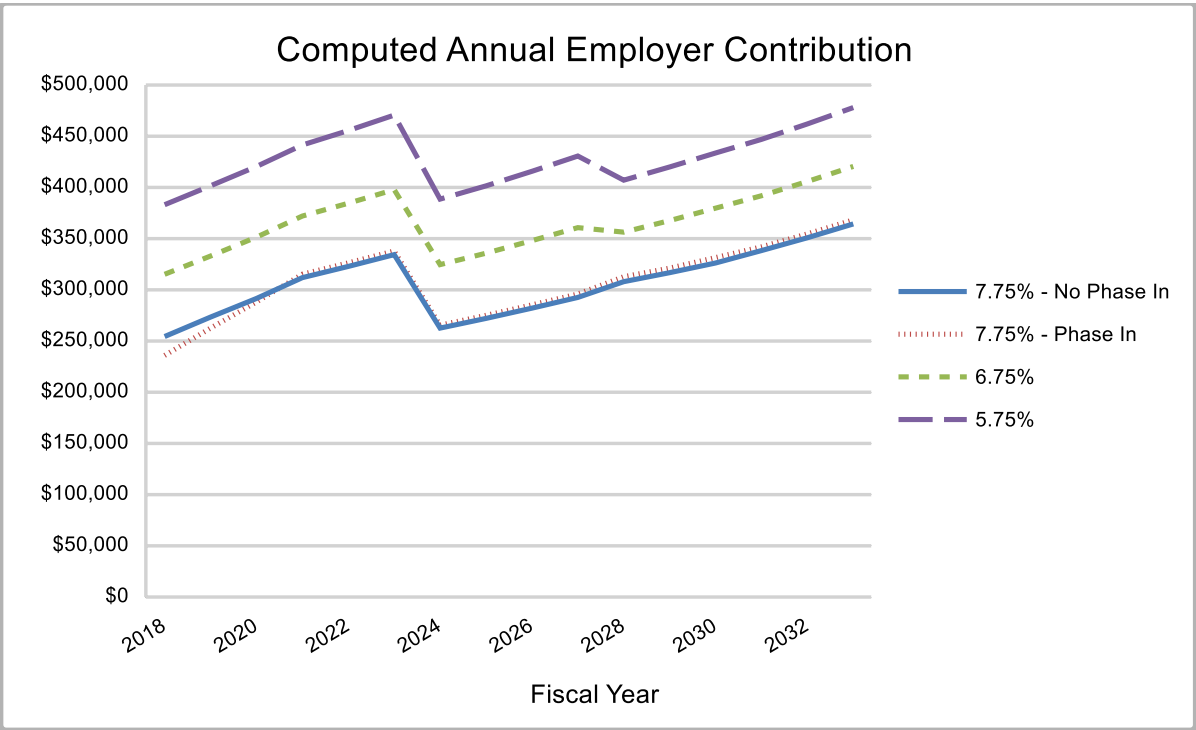
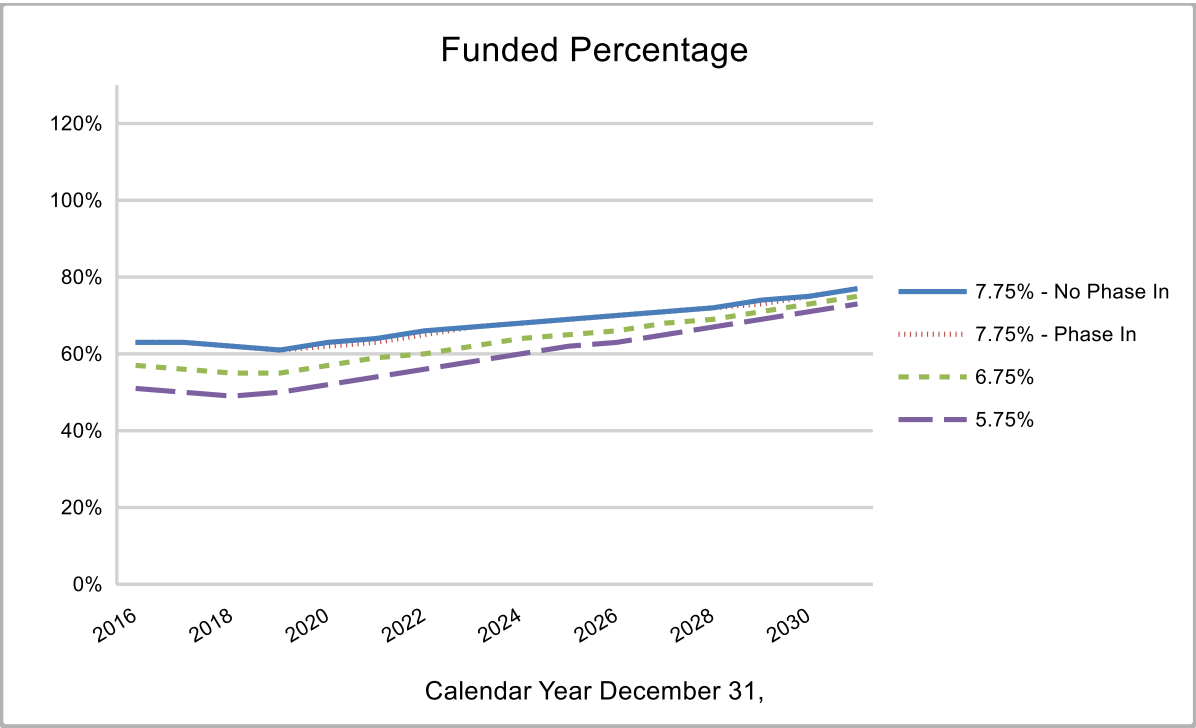
The next two pages show projections of the plan's funded ratio and computed employer contributions under the actuarial assumptions used in the valuation and alternate assumed long-term investment return scenarios. All four projections take into account the past investment losses that will continue to affect the smoothed rate of return in the short term. Under the 7.75% scenarios, two sets of projections are shown:

- Based on the phase-in over 5 fiscal years (beginning in 2017) of the increased contribution requirements associated with the new actuarial assumptions. This projects your minimum required contribution.
- Based on no phase-in of the increased contribution requirements.

The 7.75% scenarios provide an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.75% market return. The other two scenarios may be useful if the municipality chooses to budget more conservatively, and make contributions in addition to the minimum requirements. The 6.75% and 5.75% projections provide an indication of the potential required employer contribution if MERS were to realize investment returns of 6.75% and 5.75% over the long-term.

The projections are shown both in tabular and graphical form in total for the employer. The tables show projections for six years. The graphs show projections for fifteen years.

Valuation Year Ending 12/31	Fiscal Year Beginning 7/1	Actuarial Accrued Liability	Valuation Assets	Funded Percentage	Computed Annual Employer Contribution
7.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return					
WITH 5-YEAR PHASE-IN					
2016	2018	\$ 5,965,353	\$ 3,779,188	63%	\$ 235,944
2017	2019	6,110,000	3,820,000	63%	263,000
2018	2020	6,260,000	3,860,000	62%	288,000
2019	2021	6,390,000	3,890,000	61%	315,000
2020	2022	6,510,000	4,030,000	62%	326,000
2021	2023	6,620,000	4,190,000	63%	338,000
NO 5-YEAR PHASE-IN					
2016	2018	\$ 5,965,353	\$ 3,779,188	63%	\$ 254,412
2017	2019	6,110,000	3,820,000	63%	273,000
2018	2020	6,260,000	3,870,000	62%	292,000
2019	2021	6,390,000	3,920,000	61%	312,000
2020	2022	6,510,000	4,070,000	63%	323,000
2021	2023	6,620,000	4,230,000	64%	334,000
6.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return					
NO 5-YEAR PHASE-IN					
2016	2018	\$ 6,611,828	\$ 3,779,188	57%	\$ 315,180
2017	2019	6,760,000	3,780,000	56%	333,000
2018	2020	6,910,000	3,830,000	55%	351,000
2019	2021	7,050,000	3,900,000	55%	372,000
2020	2022	7,170,000	4,070,000	57%	385,000
2021	2023	7,280,000	4,260,000	59%	398,000
5.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return					
NO 5-YEAR PHASE-IN					
2016	2018	\$ 7,379,688	\$ 3,779,188	51%	\$ 383,124
2017	2019	7,530,000	3,750,000	50%	402,000
2018	2020	7,680,000	3,790,000	49%	420,000
2019	2021	7,820,000	3,890,000	50%	441,000
2020	2022	7,940,000	4,100,000	52%	456,000
2021	2023	8,040,000	4,320,000	54%	471,000



Employer Contribution Details For the Fiscal Year Beginning July 1, 2018

Table 1

Division	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. Rate	Employee Contribut. Conversion Factor ²
	Normal Cost	Payment of the Unfunded Accrued Liability ⁴	Computed Employer Contribut. No Phase-In					
Percentage of Payroll								
02 - Police	-	-	-	-	27.10%	24.95%	0.00%	
10 - Gnrl AFSCME	-	-	-	-	27.10%	24.95%	2.50%	
11 - Dept Heads	-	-	-	-	27.10%	24.95%	2.50%	
12 - All New Hire7/01	-	-	-	-	27.10%	24.95%	2.50%	
20 - Police/Chief	-	-	-	-			2.50%	
22 - New Hires on/aft 7	8.60%	-0.12%	8.48%	8.48%	27.10%	24.95%	2.50%	0.99%
Estimated Monthly Contribution³								
02 - Police	\$ 0	\$ 3,640	\$ 3,640	\$ 3,307				
10 - Gnrl AFSCME	729	2,297	3,026	2,792				
11 - Dept Heads	1,679	4,643	6,322	5,782				
12 - All New Hire7/01	1,904	(94)	1,810	1,654				
20 - Police/Chief	0	5,303	5,303	5,027				
22 - New Hires on/aft 7	1,115	(15)	1,100	1,100				
Total Municipality	\$ 5,427	\$ 15,774	\$ 21,201	\$ 19,662				
Estimated Annual Contribution³	\$ 65,124	\$ 189,288	\$ 254,412	\$ 235,944				

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 (ie 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 If projected assets exceed projected liabilities as of the beginning of the July 1, 2018 fiscal year, the negative unfunded accrued liability is treated as overfunding credit and is used to reduce the contribution. This amortization is used to reduce the employer contribution rate. 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 with 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 800-767-2308.

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

Benefit Provisions

Table 2

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

	2016 Valuation	2015 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)
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	0%	0%
RS50% Percentage:	50%	50%
Act 88:	Yes (Adopted 12/21/1970)	Yes (Adopted 12/21/1970)

10 - Gnrl AFSCME: Closed to new hires, linked to Division 22

	2016 Valuation	2015 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)
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	2.50%	0%
RS50% Percentage:	50%	50%
Act 88:	Yes (Adopted 12/21/1970)	Yes (Adopted 12/21/1970)

11 - Dept Heads: Closed to new hires, linked to Division 22

	2016 Valuation	2015 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)
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	2.50%	2.50%
RS50% Percentage:	50%	50%
Act 88:	Yes (Adopted 12/21/1970)	Yes (Adopted 12/21/1970)

Table 2 (continued)

12 - All New Hire7/01: Closed to new hires, linked to Division 22

	2016 Valuation	2015 Valuation
Benefit Multiplier:	2.00% Multiplier (no max)	2.00% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	2.50%	2.50%
Act 88:	Yes (Adopted 12/21/1970)	Yes (Adopted 12/21/1970)

20 - Police/Chief: Closed to new hires

	2016 Valuation	2015 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)
COLA for Current Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	2.50%	2.50%
RS50% Percentage:	50%	50%
Act 88:	Yes (Adopted 12/21/1970)	Yes (Adopted 12/21/1970)

22 - New Hires on/aft 7/1/13: Open Division, linked to Division 02, 10, 11, 12

	2016 Valuation	2015 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	-
Normal Retirement Age:	60	-
Vesting:	10 years	-
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25	-
	55/15	-
Final Average Compensation:	5 years	-
Employee Contributions:	2.50%	-
Act 88:	Yes (Adopted 12/21/1970)	-

Participant Summary

Table 3

Division	2016 Valuation		2015 Valuation		2016 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
02 - Police							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	1	5,438	1	5,438	46.7	6.1	17.6
Retirees and Beneficiaries	4	100,723	4	99,168	66.3		
10 - Gnrl AFSCME							
Active Employees	2	\$ 85,592	2	\$ 86,936	48.9	16.2	16.4
Vested Former Employees	1	3,850	1	3,850	53.0	4.4	10.3
Retirees and Beneficiaries	5	67,631	5	66,383	69.4		
11 - Dept Heads							
Active Employees	2	\$ 160,114	2	\$ 158,862	54.0	17.4	20.5
Vested Former Employees	1	10,553	1	10,553	57.9	16.0	16.0
Retirees and Beneficiaries	5	137,376	5	134,787	66.3		
12 - All New Hire7/01							
Active Employees	7	\$ 353,265	7	\$ 348,669	53.7	10.6	10.9
Vested Former Employees	1	5,918	1	5,918	55.1	6.9	12.7
Retirees and Beneficiaries	1	4,701	1	4,701	63.5		
20 - Police/Chief							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	2	69,617	2	68,407	74.4		
22 - New Hires on/aft 7/1							
Active Employees	1	\$ 42,830		\$	57.6	1.0	28.8
Vested Former Employees	0	0			0.0	0.0	0.0
Retirees and Beneficiaries	0	0			0.0		
Total Municipality							
Active Employees	12	\$ 641,801	11	\$ 594,467	53.3	11.9	14.9
Vested Former Employees	4	25,759	4	25,759	53.2	8.4	14.2
Retirees and Beneficiaries	17	380,048	17	373,446	68.0		
Total Participants	33		32				

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

² Description can be found under Miscellaneous and Technical Assumptions in the [Appendix](#).

Reported Assets (Market Value)

Table 4

Division	2016 Valuation		2015 Valuation	
	Employer and Retiree ¹	Employee ²	Employer and Retiree ¹	Employee ²
02 - Police	\$ 522,197	\$ 0	\$ 499,208	\$ 0
10 - Gnrl AFSCME	604,004	5,162	550,502	8,057
11 - Dept Heads	1,415,296	21,381	1,277,070	17,345
12 - All New Hire7/01	620,509	40,299	504,615	31,278
20 - Police/Chief	273,499	0	226,665	0
22 - New Hires on/aft 7/1/13	5,267	1,071		
Municipality Total	\$ 3,440,772	\$ 67,913	\$ 3,058,060	\$ 56,680
Combined Reserves	\$ 3,508,685		\$ 3,114,740	

¹ Reserve for Employer Contributions and Benefit Payments

² Reserve for Employee Contributions

The December 31, 2016 valuation assets are equal to 1.077095 times the reported market value of assets (compared to 1.135382 as of December 31, 2015). The derivation of valuation assets is described, and detailed calculations of valuation assets are shown, in the [Appendix](#).

Flow of Valuation Assets

Table 5

Year Ended 12/31	Employer Contributions		Employee Contributions	Investment Income	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
	Required	Additional						
2006	\$ 106,777		\$ 0	\$ 207,794	\$ (204,866)	\$ 0	\$ 0	\$ 2,726,295
2007	119,730		0	220,804	(208,649)	0	0	2,858,180
2008	126,364		0	120,002	(223,171)	0	0	2,881,375
2009	135,323		0	108,978	(241,988)	0	0	2,883,688
2010	156,298		0	146,799	(246,416)	0	0	2,940,369
2011	160,463	\$ 17,411	3,217	149,566	(251,857)	0	0	3,019,169
2012	148,393	45,183	9,525	139,547	(262,725)	0	0	3,099,092
2013	161,007	84,985	14,141	187,017	(314,320)	0	0	3,231,922
2014	174,832	126,160	16,481	188,639	(353,601)	0	0	3,384,433
2015	183,790	141,801	15,691	175,198	(364,494)	0	0	3,536,419
2016	198,802	202,052	15,849	199,512	(373,446)	0	0	3,779,188

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.

In the actuarial valuation additional employer contributions are combined with required contributions and used to reduce computed future required employer contributions.

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

Actuarial Accrued Liabilities and Valuation Assets As of December 31, 2016

Table 6

Division	Actuarial Accrued Liability	Valuation Assets ¹	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
02 - Police				
Active Employees	\$ 0	\$ 0	0.0%	\$ 0
Vested Former Employees	21,002	0	0.0%	21,002
Retirees And Beneficiaries	1,170,602	562,456	48.0%	608,146
Pending Refunds	0	0	0.0%	0
Total	\$ 1,191,604	\$ 562,456	47.2%	\$ 629,148
10 - Gnrl AFSCME				
Active Employees	\$ 329,763	\$ 5,162	1.6%	\$ 324,601
Vested Former Employees	30,852	0	0.0%	30,852
Retirees And Beneficiaries	693,006	650,968	93.9%	42,038
Pending Refunds	0	0	0.0%	0
Total	\$ 1,053,621	\$ 656,130	62.3%	\$ 397,491
11 - Dept Heads				
Active Employees	\$ 721,321	\$ 21,325	3.0%	\$ 699,996
Vested Former Employees	122,129	18,204	14.9%	103,925
Retirees And Beneficiaries	1,507,909	1,507,909	100.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 2,351,359	\$ 1,547,438	65.8%	\$ 803,921
12 - All New Hire7/01				
Active Employees	\$ 614,032	\$ 620,966	101.1%	\$ (6,934)
Vested Former Employees	43,489	43,489	100.0%	0
Retirees And Beneficiaries	47,298	47,298	100.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 704,819	\$ 711,753	101.0%	\$ (6,934)
20 - Police/Chief				
Active Employees	\$ 0	\$ 0	0.0%	\$ 0
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	659,079	294,584	44.7%	364,495
Pending Refunds	0	0	0.0%	0
Total	\$ 659,079	\$ 294,584	44.7%	\$ 364,495
22 - New Hires on/aft 7/1/13				
Active Employees	\$ 4,871	\$ 6,827	140.2%	\$ (1,956)
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 4,871	\$ 6,827	140.2%	\$ (1,956)

Table 6 (continued)

Division	Actuarial Accrued Liability	Valuation Assets ¹	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
Total Municipality				
Active Employees	\$ 1,669,987	\$ 654,280	39.2%	\$ 1,015,707
Vested Former Employees	217,472	61,693	28.4%	155,779
Retirees and Beneficiaries	4,077,894	3,063,215	75.1%	1,014,679
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total Participants	\$ 5,965,353	\$ 3,779,188	63.4%	\$ 2,186,165
The following results show the combined accrued liabilities and assets for each set of linked divisions. These results are already included in the table above.				
Linked Divisions 22, 02, 10, 11, 12				
Active Employees	\$ 1,669,987	\$ 654,280	39.2%	\$ 1,015,707
Vested Former Employees	217,472	61,693	28.4%	155,779
Retirees and Beneficiaries	3,418,815	2,768,631	81.0%	650,184
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	\$ 5,306,274	\$ 3,484,604	65.7%	\$ 1,821,670

¹ Includes both employer and employee assets.

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

See Section 46 of the Plan Document for MERS Fiscal Responsibility policy, on the MERS website at:
<https://employerportal.mersofmich.com/SharePointFormsService/Default.aspx?Publication=MERSPlanDocument.pdf>.

Actuarial Accrued Liabilities - Comparative Schedule

Table 7

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2002	\$ 3,142,582	\$ 2,329,389	74%	\$ 813,193
2003	3,391,065	2,435,989	72%	955,076
2004	3,361,549	2,535,490	75%	826,059
2005	3,579,958	2,616,590	73%	963,368
2006	3,777,769	2,726,295	72%	1,051,474
2007	4,002,017	2,858,180	71%	1,143,837
2008	4,293,014	2,881,375	67%	1,411,639
2009	4,385,113	2,883,688	66%	1,501,425
2010	4,506,012	2,940,369	65%	1,565,643
2011	4,734,834	3,019,169	64%	1,715,665
2012	4,897,450	3,099,092	63%	1,798,358
2013	5,120,619	3,231,922	63%	1,888,697
2014	5,391,117	3,384,433	63%	2,006,684
2015	5,824,965	3,536,419	61%	2,288,546
2016	5,965,353	3,779,188	63%	2,186,165

Notes: Actuarial assumptions were revised for the 2004, 2008, 2009, 2010, 2011, 2012 and 2015 actuarial valuations.

Division 02 - Police

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 807,902	\$ 571,441	71%	\$ 236,461
2007	857,018	609,174	71%	247,844
2008	975,065	612,356	63%	362,709
2009	979,479	593,052	61%	386,427
2010	997,932	592,181	59%	405,751
2011	1,065,435	595,477	56%	469,958
2012	1,067,983	596,799	56%	471,184
2013	1,125,854	584,822	52%	541,032
2014	1,125,203	576,791	51%	548,412
2015	1,192,703	566,792	48%	625,911
2016	1,191,604	562,456	47%	629,148

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012 and 2015 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		
2006	2	\$ 91,790	24.77%	0.00%
2007	2	95,906	24.59%	0.00%
2008	1	51,116	\$ 2,303	0.00%
2009	1	52,980	\$ 2,403	0.00%
2010	1	53,679	\$ 2,480	0.00%
2011	1	55,044	\$ 2,790	0.00%
2012	1	55,119	\$ 2,736	0.00%
2013	0	0	\$ 2,776	0.00%
2014	0	0	\$ 2,892	0.00%
2015	0	0	\$ 3,570	0.00%
2016	0	0	\$ 3,640	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. The contribution requirements including the 5-year phase-in are shown on page 7.

See the Benefit Provision History on page 38 for past benefit provision changes.

Division 10 - Gnrl AFSCME

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 672,564	\$ 568,822	85%	\$ 103,742
2007	699,067	584,431	84%	114,636
2008	738,261	577,451	78%	160,810
2009	784,294	567,049	72%	217,245
2010	810,105	566,903	70%	243,202
2011	844,309	574,029	68%	270,280
2012	864,972	576,922	67%	288,050
2013	901,995	598,657	66%	303,338
2014	953,156	620,007	65%	333,149
2015	1,034,654	634,178	61%	400,476
2016	1,053,621	656,130	62%	397,491

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012 and 2015 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		
2006	2	\$ 75,196	18.86%	0.00%
2007	2	77,410	19.31%	0.00%
2008	2	80,599	\$ 1,715	0.00%
2009	2	81,316	\$ 1,942	0.00%
2010	2	82,233	\$ 2,040	0.00%
2011	2	82,629	\$ 2,214	0.00%
2012	2	81,528	\$ 2,328	0.00%
2013	2	83,843	\$ 2,423	0.00%
2014	2	90,929	\$ 2,656	0.00%
2015	2	86,936	\$ 3,176	0.00%
2016	2	85,592	\$ 3,026	2.50%

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. The contribution requirements including the 5-year phase-in are shown on page 7.

See the Benefit Provision History on page 38 for past benefit provision changes.

Division 11 - Dept Heads

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 1,508,517	\$ 1,074,574	71%	\$ 433,943
2007	1,607,369	1,128,926	70%	478,443
2008	1,693,018	1,148,933	68%	544,085
2009	1,758,471	1,175,817	67%	582,654
2010	1,802,035	1,221,678	68%	580,357
2011	1,884,546	1,271,833	68%	612,713
2012	1,976,166	1,318,070	67%	658,096
2013	2,028,138	1,373,648	68%	654,490
2014	2,122,218	1,422,571	67%	699,647
2015	2,289,173	1,469,655	64%	819,518
2016	2,351,359	1,547,438	66%	803,921

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012 and 2015 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		
2006	3	\$ 139,984	30.02%	0.00%
2007	3	158,445	29.79%	0.00%
2008	3	163,225	\$ 4,681	0.00%
2009	3	166,437	\$ 4,753	0.00%
2010	3	165,200	\$ 4,640	0.00%
2011	2	142,746	\$ 4,400	2.50%
2012	2	147,515	\$ 4,804	2.50%
2013	2	155,033	\$ 4,966	2.50%
2014	2	162,160	\$ 5,455	2.50%
2015	2	158,862	\$ 6,452	2.50%
2016	2	160,114	\$ 6,322	2.50%

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. The contribution requirements including the 5-year phase-in are shown on page 7.

See the Benefit Provision History on page 38 for past benefit provision changes.

Division 12 - All New Hire7/01

Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 111,987	\$ 84,456	75%	\$ 27,531
2007	162,993	117,348	72%	45,645
2008	213,109	154,907	73%	58,202
2009	192,111	201,517	105%	(9,406)
2010	228,782	248,216	108%	(19,434)
2011	276,988	298,666	108%	(21,678)
2012	329,871	356,011	108%	(26,140)
2013	412,871	436,621	106%	(23,750)
2014	545,455	524,691	96%	20,764
2015	640,817	608,443	95%	32,374
2016	704,819	711,753	101%	(6,934)

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

Table 9-12: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2006	7	\$ 267,015	9.58%	0.00%
2007	7	279,493	10.48%	0.00%
2008	7	295,362	10.27%	0.00%
2009	6	261,064	8.62%	0.00%
2010	6	258,569	8.34%	0.00%
2011	6	264,453	6.18%	2.50%
2012	7	300,184	6.49%	2.50%
2013	8	361,403	6.69%	2.50%
2014	8	386,976	7.81%	2.50%
2015	7	348,669	7.75%	2.50%
2016	7	353,265	\$ 1,810	2.50%

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. The contribution requirements including the 5-year phase-in are shown on page 7.

See the Benefit Provision History on page 38 for past benefit provision changes.

Division 20 - Police/Chief

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 676,799	\$ 427,002	63%	\$ 249,797
2007	675,570	418,301	62%	257,269
2008	673,561	387,728	58%	285,833
2009	670,758	346,253	52%	324,505
2010	667,158	311,391	47%	355,767
2011	663,556	279,164	42%	384,392
2012	658,458	251,290	38%	407,168
2013	651,761	238,174	37%	413,587
2014	645,085	240,373	37%	404,712
2015	667,618	257,351	39%	410,267
2016	659,079	294,584	45%	364,495

Notes: Actuarial assumptions were revised for the 2008, 2009, 2010, 2011, 2012 and 2015 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		
2006	0	\$ 0	\$ 1,257	0.00%
2007	0	0	\$ 1,364	0.00%
2008	0	0	\$ 1,609	0.00%
2009	0	0	\$ 1,950	0.00%
2010	0	0	\$ 2,287	0.00%
2011	0	0	\$ 2,673	0.00%
2012	0	0	\$ 3,105	0.00%
2013	0	0	\$ 3,507	0.00%
2014	0	0	\$ 3,902	0.00%
2015	0	0	\$ 4,763	2.50%
2016	0	0	\$ 5,303	2.50%

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. The contribution requirements including the 5-year phase-in are shown on page 7.

See the Benefit Provision History on page 38 for past benefit provision changes.

Division 22 - New Hires on/aft 7/1/13

Table 8-22: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2016	\$ 4,871	\$ 6,827	140%	\$ (1,956)

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

Table 9-22: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2016	1	\$ 42,830	8.48%	2.50%

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. The contribution requirements including the 5-year phase-in are shown on page 7.

See the Benefit Provision History on page 38 for past benefit provision changes.

Division 02 - Police

Table 10-02: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 7/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 625,911	23	\$ 651,811	22	\$ 44,448
Gain/Loss	12/31/2016	(10,009)	22	(11,195)	22	(768)
Total				\$ 640,616		\$ 43,680

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

** Please see the [Appendix](#) on the MERS website for a description of the amortization policy.

The unfunded accrued liability as of December 31, 2016 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2016 valuation to take into account the expected future contributions that are based on past valuations. The projected unfunded accrued liability is amortized over the appropriate period.

Division 10 - Gnrl AFSCME

Table 10-10: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 7/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 400,476	23	\$ 420,889	22	\$ 28,704
Gain/Loss	12/31/2016	(13,754)	22	(15,384)	22	(1,044)
Plan Amendments	12/31/2016	(1,308)	22	(1,463)	22	(96)
Total				\$ 404,042		\$ 27,564

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

** Please see the [Appendix](#) on the MERS website for a description of the amortization policy.

The unfunded accrued liability as of December 31, 2016 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2016 valuation to take into account the expected future contributions that are based on past valuations. The projected unfunded accrued liability is amortized over the appropriate period.

Division 11 - Dept Heads

Table 10-11: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 7/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 819,518	23	\$ 857,389	22	\$ 58,476
Gain/Loss	12/31/2016	(36,164)	22	(40,449)	22	(2,760)
Total				\$ 816,940		\$ 55,716

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

** Please see the [Appendix](#) on the MERS website for a description of the amortization policy.

The unfunded accrued liability as of December 31, 2016 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2016 valuation to take into account the expected future contributions that are based on past valuations. The projected unfunded accrued liability is amortized over the appropriate period.

Division 12 - All New Hire7/01

Table 10-12: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 7/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Gain/Loss	12/31/2016	(11,311)	15	(12,651)	15	(1,128)
Total				\$ (12,651)		\$ (1,128)

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

** Please see the [Appendix](#) on the MERS website for a description of the amortization policy.

The unfunded accrued liability as of December 31, 2016 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2016 valuation to take into account the expected future contributions that are based on past valuations. The projected unfunded accrued liability is amortized over the appropriate period.

Division 20 - Police/Chief

Table 10-20: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 7/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 410,267	8	\$ 358,126	6	\$ 67,944
Gain/Loss	12/31/2016	(31,515)	10	(35,249)	10	(4,308)
Total				\$ 322,877		\$ 63,636

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

** Please see the [Appendix](#) on the MERS website for a description of the amortization policy.

The unfunded accrued liability as of December 31, 2016 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2016 valuation to take into account the expected future contributions that are based on past valuations. The projected unfunded accrued liability is amortized over the appropriate period.

Division 22 - New Hires on/aft 7/1/13

Table 10-22: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 7/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Gain/Loss	12/31/2016	(1,766)	15	(1,975)	15	(180)
Total				\$ (1,975)		\$ (180)

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

** Please see the [Appendix](#) on the MERS website for a description of the amortization policy.

The unfunded accrued liability as of December 31, 2016 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2016 valuation to take into account the expected future contributions that are based on past valuations. The projected unfunded accrued liability is amortized over the appropriate period.

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 www.mersofmich.com.

Actuarial Valuation Date:	12/31/2016
Measurement Date of Total Pension Liability (TPL):	12/31/2016

At 12/31/2016, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits:	17
Inactive employees entitled to but not yet receiving benefits:	4
Active employees:	<u>12</u>
	33

Total Pension Liability as of 12/31/2015 measurement date:	\$	5,680,638
Total Pension Liability as of 12/31/2016 measurement date:	\$	5,819,847
Service Cost for the year ending on the 12/31/2016 measurement date:	\$	71,716

Change in the Total Pension Liability due to:

- Benefit changes ¹ :	\$	(1,331)
- Differences between expected and actual experience ² :	\$	(43)
- Changes in assumptions ² :	\$	0

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.

Average expected remaining service lives of all employees (active and inactive):	3
Covered employee payroll: (Needed for Required Supplementary Information)	\$ 641,801

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

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Change in Net Pension Liability as of 12/31/2016:	\$ 619,994	-	\$ (526,974)

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.

02 - Police

12/1/2016	Service Credit Purchase Estimates - Yes
5/1/2008	Temporary Benefit F55 (With 20 Years of Service) (05/01/2008 - 07/31/2008)
1/1/2007	E2 2.5% COLA for future retirees (01/01/2006)
1/1/2006	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2006	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
9/15/1992	Temporary Benefit F55 (With 20 Years of Service) (09/15/1992 - 12/14/1992)
1/1/1992	E1 2.5% COLA for past retirees (07/01/1991)
7/1/1991	Benefit B-3 (80% max)
1/1/1991	Flexible E 2% COLA Adopted (01/01/1991)
7/1/1990	Benefit C-2/Base B-1
7/1/1990	Benefit F50 (With 25 Years of Service)
1/1/1990	Flexible E 2% COLA Adopted (01/01/1990)
10/1/1983	Member Contribution Rate 0.00%
12/21/1970	Covered by Act 88
6/1/1968	Benefit FAC-5 (5 Year Final Average Compensation)
6/1/1968	10 Year Vesting
6/1/1968	Benefit C (Old)
6/1/1968	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
6/1/1968	Fiscal Month - July

10 - Gnrl AFSCME

12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2015	Non Standard Compensation Definition
7/1/2015	Participant Contribution Rate 2.5%
11/15/2001	Temporary Benefit F55 (With 20 Years of Service) (11/15/2001 - 06/03/2002)
9/15/1992	Temporary Benefit F55 (With 20 Years of Service) (09/15/1992 - 12/14/1992)
1/1/1992	E1 2.5% COLA for past retirees (07/01/1991)
1/1/1992	E2 2.5% COLA for future retirees (07/01/1991)
7/1/1991	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/1991	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
7/1/1991	Benefit B-3 (80% max)
7/1/1991	Benefit F50 (With 25 Years of Service)
1/1/1991	Flexible E 2% COLA Adopted (01/01/1991)
7/1/1990	Benefit B-2
7/1/1990	E1 2.5% COLA for past retirees (07/01/1990)
1/1/1990	Flexible E 2% COLA Adopted (01/01/1990)
8/1/1985	Benefit FAC-5 (5 Year Final Average Compensation)
8/1/1985	10 Year Vesting
8/1/1985	Benefit C-1 (Old)
8/1/1983	Member Contribution Rate 0.00%

10 - Gnrl AFSCME

12/21/1970	Covered by Act 88
6/1/1968	Fiscal Month - July

11 - Dept Heads

12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2015	Non Standard Compensation Definition
7/1/2011	Member Contribution Rate 2.50%
9/15/1992	Temporary Benefit F55 (With 20 Years of Service) (09/15/1992 - 12/14/1992)
1/1/1992	E1 2.5% COLA for past retirees (07/01/1991)
1/1/1992	E2 2.5% COLA for future retirees (07/01/1991)
7/1/1991	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
7/1/1991	Benefit B-3 (80% max)
7/1/1991	Benefit F50 (With 25 Years of Service)
2/1/1991	Benefit FAC-3 (3 Year Final Average Compensation)
2/1/1991	10 Year Vesting
2/1/1991	Benefit B-2
2/1/1991	Member Contribution Rate 0.00%
1/1/1991	Flexible E 2% COLA Adopted (01/01/1991)
12/21/1970	Covered by Act 88
6/1/1968	Fiscal Month - July

12 - All New Hire7/01

12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2015	Non Standard Compensation Definition
7/1/2011	Member Contribution Rate 2.50%
7/1/2001	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/2001	10 Year Vesting
7/1/2001	Benefit B-2
7/1/2001	Benefit F55 (With 25 Years of Service)
7/1/2001	Member Contribution Rate 0.00%
12/21/1970	Covered by Act 88
6/1/1968	Fiscal Month - July

20 - Police/Chief

12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2015	Non Standard Compensation Definition
7/1/2011	Member Contribution Rate 2.50%
4/1/2005	Temporary 20 Years & Out (04/01/2005 - 06/03/2005)
9/15/1992	Temporary Benefit F55 (With 20 Years of Service) (09/15/1992 - 12/14/1992)
1/1/1992	E1 2.5% COLA for past retirees (07/01/1991)
1/1/1992	E2 2.5% COLA for future retirees (07/01/1991)
7/1/1991	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
7/1/1991	Benefit B-3 (80% max)
7/1/1991	Benefit F50 (With 25 Years of Service)
2/1/1991	Benefit FAC-3 (3 Year Final Average Compensation)

20 - Police/Chief

2/1/1991	Benefit B-2
1/1/1991	Flexible E 2% COLA Adopted (01/01/1991)
8/1/1985	Member Contribution Rate 0.00%
8/1/1985	Benefit FAC-5 (5 Year Final Average Compensation)
8/1/1985	10 Year Vesting
8/1/1985	Benefit C-1 (Old)
12/21/1970	Covered by Act 88
6/1/1968	Fiscal Month - July

22 - New Hires on/aft 7/1/13

12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2013	Day of Work defined as 10 8 hour days
7/1/2013	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/2013	Non Standard Compensation Definition
7/1/2013	10 Year Vesting
7/1/2013	Benefit C-1 (New)
7/1/2013	Participant Contribution Rate 2.5%
12/21/1970	Covered by Act 88
6/1/1968	Fiscal Month - July

Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

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

Increase in Final Average Compensation

Division	FAC Increase Assumption
10 - GnrI AFSCME	0.00%
11 - Dept Heads	0.00%
12 - All New Hire7/01	0.00%
22 - New Hires on/aft 7/1/13	2.30%

Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	100%

Miscellaneous and Technical Assumptions

Loads – None.

Amortization Policy for Closed Divisions

Closed Division	Amortization Option
All Closed Divisions	Accelerated to 5-Year Amortization