



MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN
ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2016
LAPEER CO (4403)



Spring, 2017

Lapeer Co

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 Lapeer Co (4403) 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. Lapeer Co 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 January 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

TABLE OF CONTENTS

	Page
Executive Summary	5
Employer Contribution Details	15
Table 1	
Benefit Provisions	17
Table 2	
Participant Summary	20
Table 3	
Reported Assets (Market Value)	22
Table 4	
Flow of Valuation Assets	23
Table 5	
Actuarial Accrued Liabilities and Valuation Assets	24
Table 6	
Actuarial Accrued Liabilities - Comparative Schedule	26
Table 7	
Division-Based Comparative Schedules	27
Tables 8 and 9	
Division-Based Layered Amortization Schedule	37
Table 10	
GASB 68 Information	47
Benefit Provision History	49
Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method	52

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	83%	82%

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:	January 1, 2018	January 1, 2018	January 1, 2017	January 1, 2017	January 1, 2018	January 1, 2018	January 1, 2017	January 1, 2017
Division								
02 - POLC Sheriff	16.35%	17.52%	16.37%	17.95%	\$ 58,055	\$ 62,213	\$ 57,260	\$ 62,804
04 - S.T.A.R.S.	7.83%	8.12%	7.97%	8.32%	50,397	52,245	55,767	58,231
06 - CMH Union	9.52%	10.01%	9.74%	10.37%	22,084	23,230	23,491	25,019
10 - AFSCME	10.47%	11.57%	10.61%	12.14%	12,938	14,294	12,550	14,358
11 - Gnrl Non Union	10.13%	10.90%	10.12%	11.15%	20,817	22,407	20,760	22,880
12 - Gnrl Teamsters	9.83%	10.68%	10.06%	11.11%	21,379	23,230	23,710	26,178
13 - Elected & Appt. Dept H	8.61%	10.13%	8.79%	10.63%	8,159	9,596	9,159	11,075
20 - COAM/POAM Disp	10.29%	10.97%	11.80%	12.63%	6,321	6,738	7,893	8,449
40 - MCF Non Union	17.42%	18.23%	16.82%	18.01%	80,249	83,978	70,121	75,093
60 - CMH Non Union	10.36%	11.19%	9.94%	11.08%	8,232	8,889	7,603	8,479
Municipality Total					\$ 288,631	\$ 306,820	\$ 288,314	\$ 312,566

Employee contribution rates reflected in the valuations are shown below:

Valuation Date:	Employee Contribution Rate	
	12/31/2016	12/31/2015
Division		
02 - POLC Sheriff	2.49%	2.49%
04 - S.T.A.R.S.	1.27%	1.27%
06 - CMH Union	0.00%	0.00%
10 - AFSCME	0.00%	0.00%
11 - Gnrl Non Union	0.00%	0.00%
12 - Gnrl Teamsters	0.00%	0.00%
13 - Elected & Appt. Dept H	2.53%	2.53%

Valuation Date:	Employee Contribution Rate	
	12/31/2016	12/31/2015
Division		
20 - COAM/POAM Disp	0.00%	0.00%
40 - MCF Non Union	0.00%	0.00%
60 - CMH Non Union	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. **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 \$ 395,011, instead of \$ 306,820.
- To accelerate to a 100% funding ratio in 20 years, estimated monthly employer contributions for the entire employer would be \$ 313,979, instead of \$ 306,820.

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 77% (instead of 83%); and ii) your total employer contribution requirement for the fiscal year starting January 1, 2018 would be \$ 4,197,624 (instead of \$ 3,681,840).

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	\$ 148,806,268	\$ 131,685,972	\$ 117,376,217	\$ 105,335,587
Valuation Assets	\$ 97,895,537	\$ 97,895,537	\$ 97,895,537	\$ 97,895,537
Unfunded Accrued Liability	\$ 50,910,731	\$ 33,790,435	\$ 19,480,680	\$ 7,440,050
Funded Ratio	66%	74%	83%	93%
Monthly Normal Cost	\$ 334,867	\$ 255,667	\$ 195,688	\$ 150,208
Monthly Amortization Payment	\$ 256,950	\$ 185,276	\$ 111,132	\$ 32,963
Total Employer Contribution¹	\$ 591,817	\$ 440,943	\$ 306,820	\$ 183,171

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

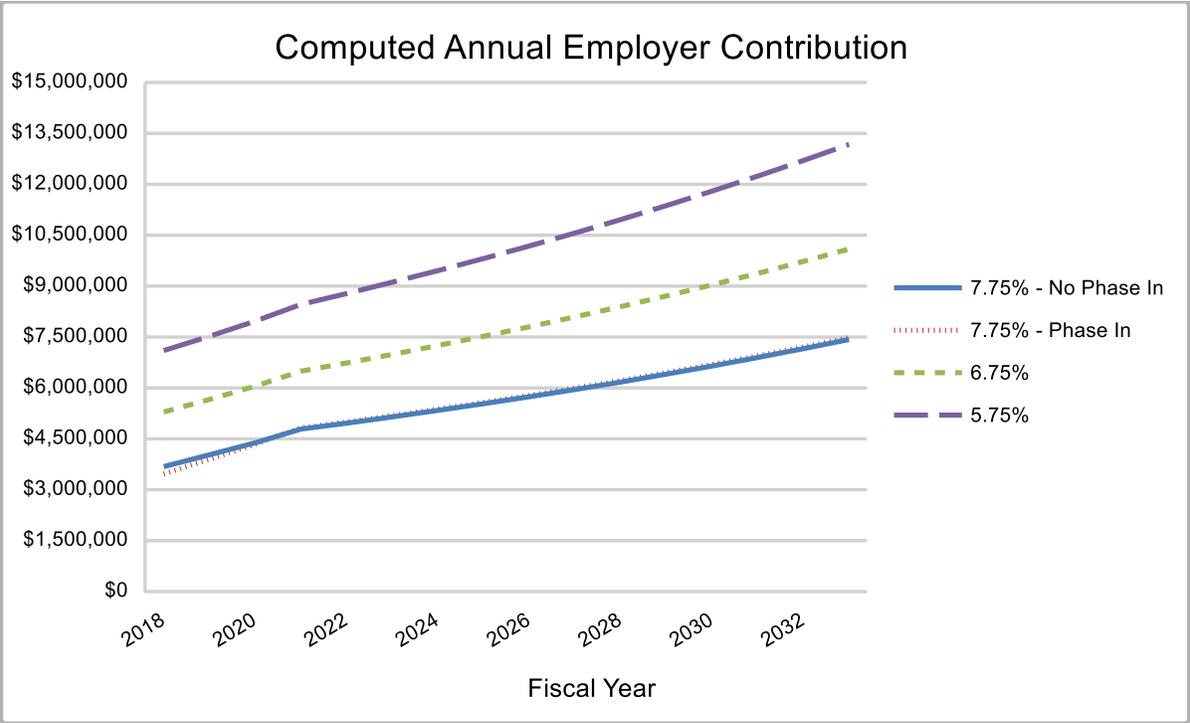
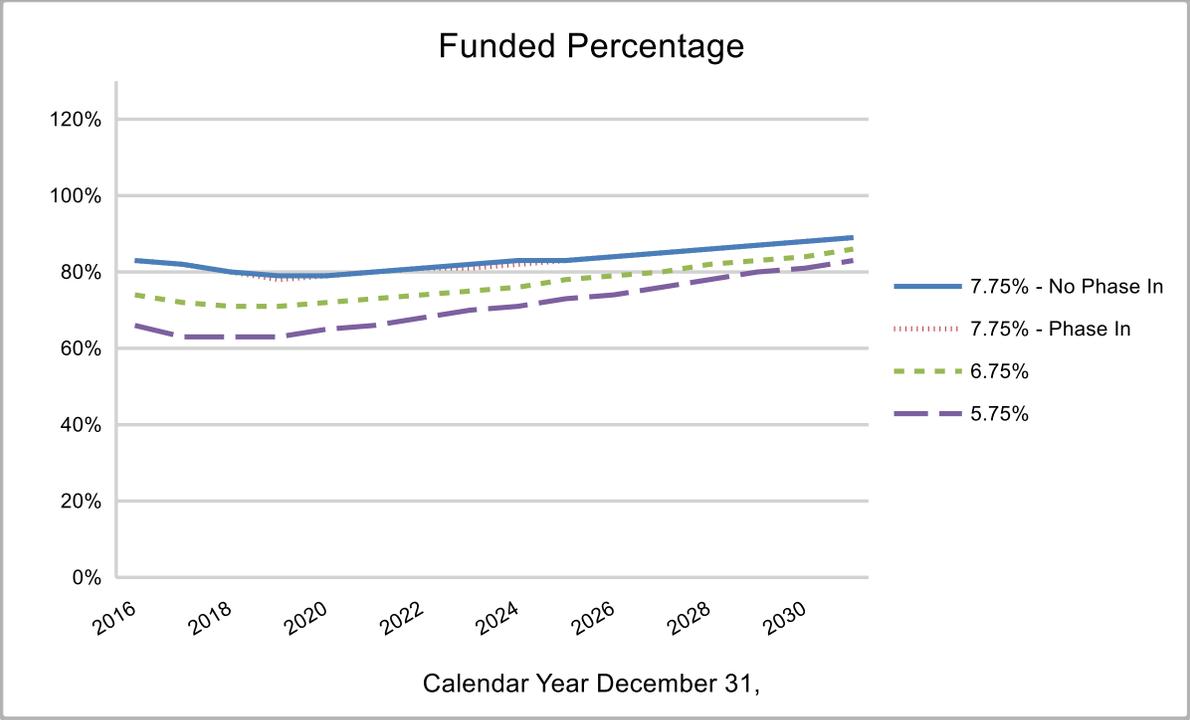
The next two pages show projections of the plan's funded ratio and computed employer contributions under the actuarial assumptions used in the valuation and alternate assumed long-term investment return scenarios. All four projections take into account the past investment losses that will continue to 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 1/1	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	\$ 117,376,217	\$ 97,895,537	83%	\$ 3,463,572
2017	2019	122,800,000	100,400,000	82%	3,900,000
2018	2020	128,300,000	102,700,000	80%	4,340,000
2019	2021	133,900,000	104,900,000	78%	4,820,000
2020	2022	139,500,000	110,100,000	79%	5,000,000
2021	2023	145,200,000	115,800,000	80%	5,180,000
NO 5-YEAR PHASE-IN					
2016	2018	\$ 117,376,217	\$ 97,895,537	83%	\$ 3,681,840
2017	2019	122,800,000	100,400,000	82%	4,030,000
2018	2020	128,300,000	103,000,000	80%	4,380,000
2019	2021	133,900,000	105,200,000	79%	4,790,000
2020	2022	139,500,000	110,600,000	79%	4,960,000
2021	2023	145,200,000	116,300,000	80%	5,150,000
6.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return					
NO 5-YEAR PHASE-IN					
2016	2018	\$ 131,685,972	\$ 97,895,537	74%	\$ 5,291,316
2017	2019	137,600,000	99,400,000	72%	5,660,000
2018	2020	143,700,000	102,700,000	71%	6,050,000
2019	2021	149,800,000	105,700,000	71%	6,490,000
2020	2022	156,000,000	111,700,000	72%	6,740,000
2021	2023	162,300,000	118,200,000	73%	6,990,000
5.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return					
NO 5-YEAR PHASE-IN					
2016	2018	\$ 148,806,268	\$ 97,895,537	66%	\$ 7,101,804
2017	2019	155,400,000	98,500,000	63%	7,520,000
2018	2020	162,100,000	102,600,000	63%	7,970,000
2019	2021	168,900,000	106,600,000	63%	8,460,000
2020	2022	175,800,000	113,600,000	65%	8,780,000
2021	2023	182,700,000	121,100,000	66%	9,110,000



Employer Contribution Details For the Fiscal Year Beginning January 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 - POLC Sheriff	7.99%	9.53%	17.52%	16.35%			2.49%	0.82%
04 - S.T.A.R.S.	6.50%	1.62%	8.12%	7.83%			1.27%	0.83%
06 - CMH Union	8.06%	1.95%	10.01%	9.52%			0.00%	0.81%
10 - AFSCME	8.38%	3.19%	11.57%	10.47%			0.00%	0.80%
11 - Gnrl Non Union	8.11%	2.79%	10.90%	10.13%			0.00%	0.81%
12 - Gnrl Teamsters	7.97%	2.71%	10.68%	9.83%			0.00%	0.79%
13 - Elected & Appt. De	8.07%	2.06%	10.13%	8.61%			2.53%	0.76%
20 - COAM/POAM Disp	8.90%	2.07%	10.97%	10.29%			0.00%	0.83%
40 - MCF Non Union	9.39%	8.84%	18.23%	17.42%			0.00%	0.81%
60 - CMH Non Union	7.58%	3.61%	11.19%	10.36%			0.00%	0.78%
Estimated Monthly Contribution³								
02 - POLC Sheriff	\$ 28,374	\$ 33,839	\$ 62,213	\$ 58,055				
04 - S.T.A.R.S.	41,841	10,404	52,245	50,397				
06 - CMH Union	18,714	4,516	23,230	22,084				
10 - AFSCME	10,355	3,939	14,294	12,938				
11 - Gnrl Non Union	16,679	5,728	22,407	20,817				
12 - Gnrl Teamsters	17,337	5,893	23,230	21,379				
13 - Elected & Appt. De	7,645	1,951	9,596	8,159				
20 - COAM/POAM Disp	5,467	1,271	6,738	6,321				
40 - MCF Non Union	43,255	40,723	83,978	80,249				
60 - CMH Non Union	6,021	2,868	8,889	8,232				
Total Municipality	\$ 195,688	\$ 111,132	\$ 306,820	\$ 288,631				
Estimated Annual Contribution³	\$ 2,348,256	\$ 1,333,584	\$ 3,681,840	\$ 3,463,572				

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 January 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 - POLC Sheriff: Open Division

	2016 Valuation	2015 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	2.49%	2.49%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)

04 - S.T.A.R.S.: Open Division

	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:	1.27%	1.27%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)

06 - CMH Union: Open Division

	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):	-	-
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	0%	0%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)

Table 2 (continued)

10 - AFSCME: Open Division		
	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):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	0%	0%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)
11 - Gnrl Non Union: Open Division		
	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):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	0%	0%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)
12 - Gnrl Teamsters: Open Division		
	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):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	0%	0%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)
13 - Elected & Appt. Dept Heads: Open Division		
	2016 Valuation	2015 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	2.53%	2.53%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)

Table 2 (continued)

20 - COAM/POAM Disp: Open Division		
	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:	5 years	5 years
Employee Contributions:	0%	0%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)
40 - MCF Non Union: Open Division		
	2016 Valuation	2015 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):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	0%	0%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)
60 - CMH Non Union: Open Division		
	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):	-	-
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	0%	0%
Act 88:	Yes (Adopted 10/30/1970)	Yes (Adopted 10/30/1970)

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 - POLC Sheriff							
Active Employees	74	\$ 3,958,957	75	\$ 3,900,580	42.1	12.3	12.7
Vested Former Employees	15	88,625	17	137,194	45.9	5.8	16.2
Retirees and Beneficiaries	56	1,344,018	53	1,270,571	66.7		
04 - S.T.A.R.S.							
Active Employees	264	\$ 7,176,151	288	\$ 7,802,578	36.5	5.8	5.9
Vested Former Employees	47	266,237	39	218,328	46.5	11.5	12.8
Retirees and Beneficiaries	73	536,412	71	517,471	71.2		
06 - CMH Union							
Active Employees	62	\$ 2,588,429	64	\$ 2,689,589	45.1	9.8	9.8
Vested Former Employees	8	55,241	9	48,522	49.9	8.7	11.8
Retirees and Beneficiaries	26	391,261	21	314,446	66.8		
10 - AFSCME							
Active Employees	37	\$ 1,377,505	36	\$ 1,318,531	51.2	13.7	13.8
Vested Former Employees	17	137,994	17	142,765	52.8	10.9	14.2
Retirees and Beneficiaries	42	414,966	41	405,523	69.3		
11 - Gnrl Non Union							
Active Employees	48	\$ 2,292,774	49	\$ 2,287,567	48.9	13.6	13.9
Vested Former Employees	12	185,119	11	168,264	51.4	14.1	15.4
Retirees and Beneficiaries	32	495,140	31	458,805	72.9		
12 - Gnrl Teamsters							
Active Employees	65	\$ 2,425,005	70	\$ 2,626,856	49.1	13.5	13.5
Vested Former Employees	14	150,489	12	123,369	46.6	12.8	14.4
Retirees and Beneficiaries	42	567,171	40	493,536	71.7		
13 - Elected & Appt. Dept							
Active Employees	22	\$ 1,056,163	24	\$ 1,161,536	62.1	19.6	21.2
Vested Former Employees	7	129,016	5	88,414	54.6	11.3	19.3
Retirees and Beneficiaries	21	384,098	19	334,867	74.7		
20 - COAM/POAM Disp							
Active Employees	15	\$ 684,837	16	\$ 745,795	43.0	11.4	11.8
Vested Former Employees	3	33,425	3	33,425	49.1	11.5	15.1
Retirees and Beneficiaries	4	91,660	3	63,504	62.0		
40 - MCF Non Union							
Active Employees	93	\$ 5,135,406	91	\$ 4,648,259	43.7	10.0	10.0
Vested Former Employees	13	173,533	15	205,811	49.5	12.0	13.3
Retirees and Beneficiaries	60	1,047,673	54	912,705	68.6		

Table 3 (continued)

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
60 - CMH Non Union							
Active Employees	14	\$ 885,501	14	\$ 853,145	49.1	16.5	16.5
Vested Former Employees	4	54,596	4	54,596	52.9	13.0	22.5
Retirees and Beneficiaries	6	140,590	6	140,590	72.8		
Total Municipality							
Active Employees	694	\$ 27,580,728	727	\$ 28,034,436	42.9	9.9	10.0
Vested Former Employees	140	1,274,275	132	1,220,688	48.8	11.1	14.4
Retirees and Beneficiaries	362	5,412,989	339	4,912,018	69.9		
Total Participants	1196		1198				

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 - POLC Sheriff	\$ 16,751,814	\$ 1,171,406	\$ 15,229,142	\$ 1,205,401
04 - S.T.A.R.S.	10,071,777	491,348	9,080,928	427,657
06 - CMH Union	7,153,541	30,926	6,202,789	49,707
10 - AFSCME	7,107,501	45,616	6,477,530	45,758
11 - Gnrl Non Union	9,709,842	26,414	8,465,538	26,312
12 - Gnrl Teamsters	10,143,359	13,618	9,386,175	45,130
13 - Elected & Appt. Dept Heads	7,785,755	396,430	6,764,171	397,780
20 - COAM/POAM Disp	2,451,710	0	2,036,262	0
40 - MCF Non Union	13,906,391	84,044	12,562,249	81,961
60 - CMH Non Union	3,531,973	15,022	3,149,391	14,895
Municipality Total	\$ 88,613,663	\$ 2,274,824	\$ 79,354,175	\$ 2,294,601
Combined Reserves	\$ 90,888,487		\$ 81,648,776	

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	\$ 4,689,470		\$ 233,928	\$ 4,031,129	\$ (1,879,765)	\$ (11,276)	\$ 0	\$ 55,548,007
2007	3,268,463		153,907	4,504,185	(2,144,291)	(8,522)	0	61,321,749
2008	2,820,446		121,929	2,983,475	(2,357,504)	(5,875)	0	64,884,220
2009	3,356,569		127,565	3,719,493	(2,592,458)	(7,466)	0	69,487,923
2010	2,701,704		120,400	4,108,154	(2,887,422)	(3,985)	0	73,526,774
2011	2,392,517	\$ 1,276,817	118,290	4,243,170	(3,227,971)	(18,286)	0	78,311,311
2012	2,469,808	12,604	118,808	3,720,946	(3,576,831)	(2,462)	11,703	81,065,887
2013	2,427,970	104,953	201,995	4,942,034	(3,871,478)	(12,924)	0	84,858,437
2014	2,590,936	1,456,298	213,190	5,008,867	(4,315,512)	(3,232)	2,842	89,811,826
2015	2,866,216	0	224,327	4,518,511	(4,713,623)	(1,488)	(3,220)	92,702,549
2016	3,002,820	1,914,751	222,970	5,202,130	(5,116,753)	(32,929)	(1)	97,895,537

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 - POLC Sheriff				
Active Employees	\$ 10,722,728	\$ 4,793,038	44.7%	\$ 5,929,690
Vested Former Employees	470,960	470,960	100.0%	0
Retirees And Beneficiaries	13,994,228	13,994,228	100.0%	0
Pending Refunds	<u>46,785</u>	<u>46,785</u>	100.0%	<u>0</u>
Total	\$ 25,234,701	\$ 19,305,011	76.5%	\$ 5,929,690
04 - S.T.A.R.S.				
Active Employees	\$ 6,757,672	\$ 4,914,526	72.7%	\$ 1,843,146
Vested Former Employees	1,556,312	1,556,312	100.0%	0
Retirees And Beneficiaries	4,787,468	4,787,468	100.0%	0
Pending Refunds	<u>119,183</u>	<u>119,183</u>	100.0%	<u>0</u>
Total	\$ 13,220,635	\$ 11,377,489	86.1%	\$ 1,843,146
06 - CMH Union				
Active Employees	\$ 4,227,916	\$ 3,424,568	81.0%	\$ 803,348
Vested Former Employees	328,719	328,719	100.0%	0
Retirees And Beneficiaries	3,978,359	3,978,359	100.0%	0
Pending Refunds	<u>6,707</u>	<u>6,707</u>	100.0%	<u>0</u>
Total	\$ 8,541,701	\$ 7,738,353	90.6%	\$ 803,348
10 - AFSCME				
Active Employees	\$ 3,607,638	\$ 2,912,172	80.7%	\$ 695,466
Vested Former Employees	952,755	952,755	100.0%	0
Retirees And Beneficiaries	3,831,494	3,831,494	100.0%	0
Pending Refunds	<u>8,166</u>	<u>8,166</u>	100.0%	<u>0</u>
Total	\$ 8,400,053	\$ 7,704,587	91.7%	\$ 695,466
11 - Gnrl Non Union				
Active Employees	\$ 5,656,692	\$ 4,647,801	82.2%	\$ 1,008,891
Vested Former Employees	1,134,787	1,134,787	100.0%	0
Retirees And Beneficiaries	4,703,560	4,703,560	100.0%	0
Pending Refunds	<u>725</u>	<u>725</u>	100.0%	<u>0</u>
Total	\$ 11,495,764	\$ 10,486,873	91.2%	\$ 1,008,891
12 - Gnrl Teamsters				
Active Employees	\$ 6,162,590	\$ 5,112,495	83.0%	\$ 1,050,095
Vested Former Employees	656,437	656,437	100.0%	0
Retirees And Beneficiaries	5,171,097	5,171,097	100.0%	0
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	\$ 11,990,124	\$ 10,940,029	91.2%	\$ 1,050,095

Table 6 (continued)

Division	Actuarial Accrued Liability	Valuation Assets¹	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
13 - Elected & Appt. Dept Heads				
Active Employees	\$ 4,666,402	\$ 4,315,514	92.5%	\$ 350,888
Vested Former Employees	938,914	938,914	100.0%	0
Retirees And Beneficiaries	3,556,452	3,556,452	100.0%	0
Pending Refunds	<u>2,111</u>	<u>2,111</u>	100.0%	<u>0</u>
Total	\$ 9,163,879	\$ 8,812,991	96.2%	\$ 350,888
20 - COAM/POAM Disp				
Active Employees	\$ 1,614,814	\$ 1,378,217	85.3%	\$ 236,597
Vested Former Employees	262,103	262,103	100.0%	0
Retirees And Beneficiaries	1,000,405	1,000,405	100.0%	0
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	\$ 2,877,322	\$ 2,640,725	91.8%	\$ 236,597
40 - MCF Non Union				
Active Employees	\$ 10,770,198	\$ 3,706,805	34.4%	\$ 7,063,393
Vested Former Employees	1,029,022	1,029,022	100.0%	0
Retirees And Beneficiaries	10,331,372	10,331,372	100.0%	0
Pending Refunds	<u>1,829</u>	<u>1,829</u>	100.0%	<u>0</u>
Total	\$ 22,132,421	\$ 15,069,028	68.1%	\$ 7,063,393
60 - CMH Non Union				
Active Employees	\$ 2,660,952	\$ 2,161,786	81.2%	\$ 499,166
Vested Former Employees	432,742	432,742	100.0%	0
Retirees And Beneficiaries	1,225,923	1,225,923	100.0%	0
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	\$ 4,319,617	\$ 3,820,451	88.4%	\$ 499,166
Total Municipality				
Active Employees	\$ 56,847,602	\$ 37,366,922	65.7%	\$ 19,480,680
Vested Former Employees	7,762,751	7,762,751	100.0%	0
Retirees and Beneficiaries	52,580,358	52,580,358	100.0%	0
Pending Refunds	<u>185,506</u>	<u>185,506</u>	100.0%	<u>0</u>
Total Participants	\$ 117,376,217	\$ 97,895,537	83.4%	\$ 19,480,680

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	\$ 47,793,702	\$ 37,275,307	78%	\$ 10,518,395
2003	49,842,139	40,320,750	81%	9,521,389
2004	53,364,956	44,605,818	84%	8,759,138
2005	57,449,535	48,484,521	84%	8,965,014
2006	62,191,494	55,548,007	89%	6,643,487
2007	67,484,457	61,321,749	91%	6,162,708
2008	72,924,490	64,884,220	89%	8,040,270
2009	75,451,001	69,487,923	92%	5,963,078
2010	79,860,857	73,526,774	92%	6,334,083
2011	85,385,423	78,311,311	92%	7,074,112
2012	89,282,225	81,065,887	91%	8,216,338
2013	94,903,895	84,858,437	89%	10,045,458
2014	101,824,866	89,811,826	88%	12,013,040
2015	112,789,127	92,702,549	82%	20,086,578
2016	117,376,217	97,895,537	83%	19,480,680

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

Division 02 - POLC Sheriff

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 15,603,182	\$ 13,742,142	88%	\$ 1,861,040
2007	16,729,281	14,670,860	88%	2,058,421
2008	17,581,765	14,978,476	85%	2,603,289
2009	18,248,875	15,931,563	87%	2,317,312
2010	18,864,025	16,376,070	87%	2,487,955
2011	19,600,877	16,856,101	86%	2,744,776
2012	20,140,990	17,176,086	85%	2,964,904
2013	21,155,855	17,829,275	84%	3,326,580
2014	22,552,782	18,334,793	81%	4,217,989
2015	24,783,267	18,659,484	75%	6,123,783
2016	25,234,701	19,305,011	77%	5,929,690

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	78	\$ 3,492,975	10.26%	2.49%
2007	77	3,540,996	10.76%	2.49%
2008	76	3,597,122	11.88%	2.49%
2009	76	3,860,058	11.30%	2.49%
2010	74	3,549,868	12.17%	2.49%
2011	73	3,563,819	12.05%	2.49%
2012	73	3,622,005	12.73%	2.49%
2013	73	3,623,507	13.43%	2.49%
2014	73	3,771,938	14.75%	2.49%
2015	75	3,900,580	17.95%	2.49%
2016	74	3,958,957	17.52%	2.49%

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 49 for past benefit provision changes.

Division 04 - S.T.A.R.S.

Table 8-04: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 6,591,302	\$ 5,638,412	86%	\$ 952,890
2007	7,324,970	6,226,954	85%	1,098,016
2008	7,953,439	6,673,168	84%	1,280,271
2009	8,026,964	7,220,033	90%	806,931
2010	8,555,727	7,741,169	90%	814,558
2011	9,432,054	8,301,368	88%	1,130,686
2012	9,947,561	8,889,986	89%	1,057,575
2013	11,055,158	9,554,589	86%	1,500,569
2014	11,568,898	10,114,388	87%	1,454,510
2015	12,981,167	10,795,876	83%	2,185,291
2016	13,220,635	11,377,489	86%	1,843,146

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

Table 9-04: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2006	228	\$ 4,903,116	5.98%	2.33%
2007	238	5,286,231	8.01%	0.00%
2008	239	5,520,840	8.24%	0.00%
2009	245	5,700,181	7.73%	0.00%
2010	237	5,527,623	7.99%	0.00%
2011	304	7,210,900	7.75%	0.00%
2012	306	7,290,485	7.78%	0.00%
2013	301	7,164,177	7.89%	1.27%
2014	288	7,237,326	7.79%	1.27%
2015	288	7,802,578	8.32%	1.27%
2016	264	7,176,151	8.12%	1.27%

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 49 for past benefit provision changes.

Division 06 - CMH Union

Table 8-06: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 3,495,191	\$ 2,874,782	82%	\$ 620,409
2007	4,019,542	3,581,079	89%	438,463
2008	4,514,708	3,953,621	88%	561,087
2009	4,760,194	4,400,022	92%	360,172
2010	5,152,176	4,946,375	96%	205,801
2011	5,712,715	5,626,574	99%	86,141
2012	6,186,499	6,006,035	97%	180,464
2013	6,545,267	6,325,525	97%	219,742
2014	7,293,162	6,889,317	95%	403,845
2015	8,080,012	7,098,971	88%	981,041
2016	8,541,701	7,738,353	91%	803,348

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

Table 9-06: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2006	61	\$ 1,913,430	10.83%	0.00%
2007	63	2,120,601	10.20%	0.00%
2008	61	2,159,843	9.90%	0.00%
2009	61	2,370,711	9.24%	0.00%
2010	64	2,438,785	9.21%	0.00%
2011	62	2,411,865	8.57%	0.00%
2012	63	2,399,198	8.71%	0.00%
2013	60	2,362,295	8.72%	0.00%
2014	66	2,650,699	8.95%	0.00%
2015	64	2,689,589	10.37%	0.00%
2016	62	2,588,429	10.01%	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 49 for past benefit provision changes.

Division 10 - 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	\$ 5,281,718	\$ 5,095,846	96%	\$ 185,872
2007	5,581,134	5,474,019	98%	107,115
2008	5,844,132	5,790,661	99%	53,471
2009	6,169,658	6,052,906	98%	116,752
2010	6,282,205	6,221,094	99%	61,111
2011	6,641,977	6,539,902	99%	102,075
2012	6,907,582	6,605,789	96%	301,793
2013	7,150,032	6,724,524	94%	425,508
2014	7,485,077	7,306,241	98%	178,836
2015	8,175,205	7,406,424	91%	768,781
2016	8,400,053	7,704,587	92%	695,466

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	53	\$ 1,758,585	9.43%	0.00%
2007	46	1,536,793	9.34%	0.00%
2008	42	1,408,252	8.53%	0.00%
2009	40	1,464,689	8.80%	0.00%
2010	35	1,243,956	8.85%	0.00%
2011	36	1,238,602	8.62%	0.00%
2012	35	1,236,547	9.73%	0.00%
2013	35	1,204,007	10.44%	0.00%
2014	36	1,294,086	9.05%	0.00%
2015	36	1,318,531	12.14%	0.00%
2016	37	1,377,505	11.57%	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 49 for past benefit provision changes.

Division 11 - Grnl Non Union

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 5,827,279	\$ 5,635,618	97%	\$ 191,661
2007	6,482,106	6,251,012	96%	231,094
2008	7,197,635	6,973,554	97%	224,081
2009	7,267,054	7,812,263	108%	(545,209)
2010	7,765,800	8,327,804	107%	(562,004)
2011	8,256,330	8,680,352	105%	(424,022)
2012	8,689,048	8,919,726	103%	(230,678)
2013	8,995,568	9,176,982	102%	(181,414)
2014	9,690,233	9,460,139	98%	230,094
2015	10,724,425	9,641,494	90%	1,082,931
2016	11,495,764	10,486,873	91%	1,008,891

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	65	\$ 2,690,032	9.05%	0.00%
2007	64	2,771,502	9.25%	0.00%
2008	62	2,736,869	8.86%	0.00%
2009	58	2,699,285	5.98%	0.00%
2010	56	2,515,211	6.25%	0.00%
2011	53	2,388,523	6.39%	0.00%
2012	52	2,334,269	7.22%	0.00%
2013	45	2,085,028	7.19%	0.00%
2014	47	2,142,519	8.86%	0.00%
2015	49	2,287,567	11.15%	0.00%
2016	48	2,292,774	10.90%	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 49 for past benefit provision changes.

Division 12 - Gnrl Teamsters

Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 7,056,035	\$ 6,500,719	92%	\$ 555,316
2007	7,510,004	7,038,360	94%	471,644
2008	7,966,585	7,350,686	92%	615,899
2009	8,124,274	7,811,903	96%	312,371
2010	8,573,000	8,288,251	97%	284,749
2011	9,094,428	8,919,341	98%	175,087
2012	9,477,282	9,157,210	97%	320,072
2013	10,042,023	9,518,699	95%	523,324
2014	10,754,376	10,415,100	97%	339,276
2015	12,000,053	10,708,134	89%	1,291,919
2016	11,990,124	10,940,029	91%	1,050,095

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	79	\$ 2,604,302	8.99%	0.00%
2007	78	2,635,934	8.83%	0.00%
2008	78	2,654,706	9.19%	0.00%
2009	74	2,665,630	8.47%	0.00%
2010	68	2,434,100	8.75%	0.00%
2011	66	2,349,500	8.17%	0.00%
2012	66	2,370,512	8.64%	0.00%
2013	67	2,421,245	9.15%	0.00%
2014	68	2,518,253	8.60%	0.00%
2015	70	2,626,856	11.11%	0.00%
2016	65	2,425,005	10.68%	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 49 for past benefit provision changes.

Division 13 - Elected & Appt. Dept Heads

Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 5,687,804	\$ 5,217,257	92%	\$ 470,547
2007	5,988,163	6,071,842	101%	(83,679)
2008	6,316,152	6,299,285	100%	16,867
2009	6,509,265	6,493,331	100%	15,934
2010	6,911,978	6,745,462	98%	166,516
2011	7,159,028	7,370,412	103%	(211,384)
2012	7,416,706	7,533,800	102%	(117,094)
2013	7,688,872	7,768,762	101%	(79,890)
2014	7,945,278	7,966,793	100%	(21,515)
2015	8,598,243	8,131,550	95%	466,693
2016	9,163,879	8,812,991	96%	350,888

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

Table 9-13: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2006	25	\$ 1,144,909	9.62%	2.53%
2007	27	1,201,441	6.82%	2.53%
2008	25	1,087,404	7.63%	2.53%
2009	26	1,183,905	7.61%	2.53%
2010	24	1,083,981	8.68%	2.53%
2011	24	1,058,033	5.09%	2.53%
2012	23	1,033,001	6.40%	2.53%
2013	23	1,059,325	7.20%	2.53%
2014	23	1,089,442	7.81%	2.53%
2015	24	1,161,536	10.63%	2.53%
2016	22	1,056,163	10.13%	2.53%

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 49 for past benefit provision changes.

Division 20 - COAM/POAM Disp

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 1,305,872	\$ 795,241	61%	\$ 510,631
2007	1,398,310	919,935	66%	478,375
2008	1,541,693	1,037,678	67%	504,015
2009	1,566,343	1,229,516	78%	336,827
2010	1,709,932	1,408,578	82%	301,354
2011	1,877,994	1,587,521	85%	290,473
2012	2,010,409	1,706,187	85%	304,222
2013	2,201,118	1,863,562	85%	337,556
2014	2,434,881	2,170,995	89%	263,886
2015	2,753,847	2,311,935	84%	441,912
2016	2,877,322	2,640,725	92%	236,597

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	16	\$ 655,631	13.45%	0.00%
2007	15	639,262	13.42%	0.00%
2008	16	695,634	13.26%	0.00%
2009	16	727,271	11.84%	0.00%
2010	16	692,364	11.67%	0.00%
2011	16	705,498	11.21%	0.00%
2012	16	708,848	11.55%	0.00%
2013	16	714,011	11.84%	0.00%
2014	13	619,208	11.45%	0.00%
2015	16	745,795	12.63%	0.00%
2016	15	684,837	10.97%	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 49 for past benefit provision changes.

Division 40 - MCF Non Union

Table 8-40: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 9,041,058	\$ 7,993,524	88%	\$ 1,047,534
2007	9,974,903	8,799,434	88%	1,175,469
2008	11,401,936	9,463,994	83%	1,937,942
2009	12,140,501	10,075,912	83%	2,064,589
2010	13,313,568	10,837,700	81%	2,475,868
2011	14,665,104	11,561,516	79%	3,103,588
2012	15,454,455	12,140,833	79%	3,313,622
2013	16,800,339	12,973,786	77%	3,826,553
2014	18,601,707	13,764,128	74%	4,837,579
2015	20,642,980	14,356,008	70%	6,286,972
2016	22,132,421	15,069,028	68%	7,063,393

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

Table 9-40: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2006	89	\$ 3,450,225	10.70%	0.00%
2007	92	3,840,560	10.71%	0.00%
2008	89	3,855,445	12.49%	0.00%
2009	93	4,164,596	12.43%	0.00%
2010	96	4,288,706	13.18%	0.00%
2011	95	4,459,948	13.32%	0.00%
2012	93	4,361,594	13.98%	0.00%
2013	97	4,558,300	14.46%	0.00%
2014	95	4,580,417	15.79%	0.00%
2015	91	4,648,259	18.01%	0.00%
2016	93	5,135,406	18.23%	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 49 for past benefit provision changes.

Division 60 - CMH Non Union

Table 8-60: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	\$ 2,302,053	\$ 2,054,466	89%	\$ 247,587
2007	2,476,044	2,288,254	92%	187,790
2008	2,606,445	2,363,097	91%	243,348
2009	2,637,873	2,460,474	93%	177,399
2010	2,732,446	2,634,271	96%	98,175
2011	2,944,916	2,868,224	97%	76,692
2012	3,051,693	2,930,235	96%	121,458
2013	3,269,663	3,122,733	96%	146,930
2014	3,498,472	3,389,932	97%	108,540
2015	4,049,928	3,592,673	89%	457,255
2016	4,319,617	3,820,451	88%	499,166

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

Table 9-60: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2006	9	\$ 492,632	10.17%	0.00%
2007	9	522,479	9.68%	0.00%
2008	9	529,886	11.12%	0.00%
2009	9	546,753	9.19%	0.00%
2010	10	582,803	8.77%	0.00%
2011	9	537,109	8.23%	0.00%
2012	9	546,357	8.85%	0.00%
2013	11	638,867	9.12%	0.00%
2014	12	721,577	8.62%	0.00%
2015	14	853,145	11.08%	0.00%
2016	14	885,501	11.19%	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 49 for past benefit provision changes.

Division 02 - POLC Sheriff

Table 10-02: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 6,123,783	23	\$ 6,368,492	22	\$ 434,304
Gain/Loss	12/31/2016	(384,286)	22	(414,068)	22	(28,236)
Total				\$ 5,954,424		\$ 406,068

* 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 04 - S.T.A.R.S.

Table 10-04: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 2,185,291	23	\$ 2,268,662	22	\$ 154,716
Gain/Loss	12/31/2016	(406,460)	22	(437,961)	22	(29,868)
Total				\$ 1,830,701		\$ 124,848

* 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 06 - CMH Union

Table 10-06: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 981,041	23	\$ 1,038,694	22	\$ 70,836
Gain/Loss	12/31/2016	(226,508)	22	(244,062)	22	(16,644)
Total				\$ 794,632		\$ 54,192

* 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 - AFSCME

Table 10-10: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 768,781	23	\$ 825,092	22	\$ 56,268
Gain/Loss	12/31/2016	(122,547)	22	(132,044)	22	(9,000)
Total				\$ 693,048		\$ 47,268

* 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 - Gnrl Non Union

Table 10-11: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 1,082,931	23	\$ 1,157,034	22	\$ 78,900
Gain/Loss	12/31/2016	(138,278)	22	(148,995)	22	(10,164)
Total				\$ 1,008,039		\$ 68,736

* 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 - Gnrl Teamsters

Table 10-12: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 1,291,919	23	\$ 1,383,741	22	\$ 94,368
Gain/Loss	12/31/2016	(321,890)	22	(346,836)	22	(23,652)
Total				\$ 1,036,905		\$ 70,716

* 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 13 - Elected & Appt. Dept Heads

Table 10-13: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 466,693	23	\$ 508,935	22	\$ 34,704
Gain/Loss	12/31/2016	(153,740)	22	(165,655)	22	(11,292)
Total				\$ 343,280		\$ 23,412

* 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 - COAM/POAM Disp

Table 10-20: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 441,912	23	\$ 459,384	22	\$ 31,332
Gain/Loss	12/31/2016	(218,840)	22	(235,800)	22	(16,080)
Total				\$ 223,584		\$ 15,252

* 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 40 - MCF Non Union

Table 10-40: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 6,286,972	23	\$ 6,512,319	22	\$ 444,108
Gain/Loss	12/31/2016	606,588	22	653,599	22	44,568
Total				\$ 7,165,918		\$ 488,676

* 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 60 - CMH Non Union

Table 10-60: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 1/1/2018		
				Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	\$ 457,255	23	\$ 487,393	22	\$ 33,240
Gain/Loss	12/31/2016	15,929	22	17,164	22	1,176
Total				\$ 504,557		\$ 34,416

* 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:	362
Inactive employees entitled to but not yet receiving benefits:	140
Active employees:	<u>694</u>
	1,196

Total Pension Liability as of 12/31/2015 measurement date:	\$ 109,669,422
Total Pension Liability as of 12/31/2016 measurement date:	\$ 114,171,757
Service Cost for the year ending on the 12/31/2016 measurement date:	\$ 2,258,824

Change in the Total Pension Liability due to:

- Benefit changes ¹ :	\$ 0
- Differences between expected and actual experience ² :	\$ (1,264,727)
- 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):	5
Covered employee payroll: (Needed for Required Supplementary Information)	\$ 27,580,728

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:	\$ 13,696,736	-	\$ (11,543,985)

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:	12/31/2016
Measurement Date of Total Pension Liability (TPL):	12/31/2017

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

Inactive employees or beneficiaries currently receiving benefits:	362
Inactive employees entitled to but not yet receiving benefits:	140
Active employees:	<u>694</u>
	1,196

Total Pension Liability as of 12/31/2016 measurement date:	\$ 115,147,251
Total Pension Liability as of 12/31/2017 measurement date:	\$ 119,663,872
Service Cost for the year ending on the 12/31/2017 measurement date:	\$ 2,343,842
Change in the Total Pension Liability due to:	
- Benefit changes ¹ :	\$ 0
- Differences between expected and actual experience ² :	\$ (1,053,532)
- 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):	5
Covered employee payroll: (Needed for Required Supplementary Information)	\$ 27,580,728

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 12/31/2017:	\$ 14,201,006	-	\$ (11,973,973)

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 - POLC Sheriff

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/1999	Benefit B-4 (80% max)
1/1/1999	Member Contribution Rate 2.49%
1/1/1994	Benefit B-3 (80% max)
1/1/1991	Benefit B-2
1/1/1991	Benefit F50 (With 25 Years of Service)
1/1/1988	Benefit C-2/Base B-1
6/1/1985	Member Contribution Rate 0.00%
1/1/1981	Benefit F55 (With 25 Years of Service)
1/1/1981	Member Contribution Rate 5.00%
4/6/1978	Exclude Temporary Employees
1/1/1973	Benefit C-1 (Old)
10/30/1970	Covered by Act 88
6/1/1966	Benefit FAC-5 (5 Year Final Average Compensation)
6/1/1966	10 Year Vesting
6/1/1966	Benefit C (Old)
6/1/1966	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
	Fiscal Month - January

04 - S.T.A.R.S.

12/1/2016	Service Credit Purchase Estimates - Yes
2/1/2013	Benefit F55 (With 25 Years of Service)
2/1/2013	Member Contribution Rate 1.27%
5/1/2007	Member Contribution Rate 0.00%
10/1/2005	Benefit B-2
10/1/2005	Member Contribution Rate 2.33%
1/1/1987	Member Contribution Rate 0.00%
1/1/1973	Benefit C-1 (Old)
10/30/1970	Covered by Act 88
6/1/1966	Fiscal Month - January
6/1/1966	Benefit FAC-5 (5 Year Final Average Compensation)
6/1/1966	10 Year Vesting
6/1/1966	Benefit C (Old)
6/1/1966	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%

06 - CMH Union

12/1/2016	Service Credit Purchase Estimates - Yes
4/1/2003	Benefit B-3 (80% max)
5/1/2001	Member Contribution Rate 0.00%
1/1/2001	Member Contribution Rate 4.14%

06 - CMH Union

1/1/2000	Member Contribution Rate 4.41%
1/1/1999	Member Contribution Rate 0.23%
11/1/1998	Benefit FAC-5 (5 Year Final Average Compensation)
11/1/1998	10 Year Vesting
11/1/1998	Benefit B-2
11/1/1998	Member Contribution Rate 0.00%
4/6/1978	Exclude Temporary Employees
10/30/1970	Covered by Act 88
	Fiscal Month - January

10 - AFSCME

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2000	Benefit B-3 (80% max)
3/1/1991	Benefit B-2
1/1/1986	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1986	10 Year Vesting
1/1/1986	Member Contribution Rate 0.00%
10/30/1970	Covered by Act 88
	Fiscal Month - January

11 - Gnrl Non Union

12/1/2016	Service Credit Purchase Estimates - Yes
12/31/2000	Benefit B-3 (80% max)
12/1/1990	Benefit B-2
1/1/1986	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1986	10 Year Vesting
1/1/1986	Member Contribution Rate 0.00%
4/6/1978	Exclude Temporary Employees
10/30/1970	Covered by Act 88
	Fiscal Month - January

12 - Gnrl Teamsters

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2000	Benefit B-3 (80% max)
1/1/1991	Benefit B-2
1/1/1986	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1986	10 Year Vesting
1/1/1986	Member Contribution Rate 0.00%
4/6/1978	Exclude Temporary Employees
10/30/1970	Covered by Act 88
	Fiscal Month - January

13 - Elected & Appt. Dept Heads

12/1/2016	Service Credit Purchase Estimates - Yes
-----------	---

13 - Elected & Appt. Dept Heads

1/1/2005	Benefit B-4 (80% max)
1/1/2005	Member Contribution Rate 2.53%
1/1/2001	Benefit B-3 (80% max)
12/1/1990	Benefit B-2
6/1/1985	Benefit FAC-5 (5 Year Final Average Compensation)
6/1/1985	10 Year Vesting
6/1/1985	Member Contribution Rate 0.00%
4/6/1978	Exclude Temporary Employees
10/30/1970	Covered by Act 88
	Fiscal Month - January

20 - COAM/POAM Disp

12/1/2016	Service Credit Purchase Estimates - Yes
12/31/2000	Benefit FAC-5 (5 Year Final Average Compensation)
12/31/2000	10 Year Vesting
12/31/2000	Benefit B-3 (80% max)
12/31/2000	Benefit F50 (With 25 Years of Service)
12/31/2000	Member Contribution Rate 0.00%
4/6/1978	Exclude Temporary Employees
10/30/1970	Covered by Act 88
	Fiscal Month - January

40 - MCF Non Union

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2008	Benefit B-4 (80% max)
1/1/1999	Benefit B-3 (80% max)
1/1/1999	Benefit F55 (With 25 Years of Service)
1/1/1991	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1991	10 Year Vesting
1/1/1991	Benefit B-2
1/1/1991	Benefit F55 (With 30 Years of Service)
1/1/1991	Member Contribution Rate 0.00%
10/30/1970	Covered by Act 88
6/1/1966	Fiscal Month - January

60 - CMH Non Union

12/1/2016	Service Credit Purchase Estimates - Yes
5/1/2001	Benefit B-3 (80% max)
11/1/1998	Benefit FAC-5 (5 Year Final Average Compensation)
11/1/1998	10 Year Vesting
11/1/1998	Benefit B-2
11/1/1998	Member Contribution Rate 0.00%
4/6/1978	Exclude Temporary Employees
10/30/1970	Covered by Act 88
	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	2.00%

Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	123%

Miscellaneous and Technical Assumptions

Loads – None.