MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN

ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2016

FLUSHING, CHTR TWP OF (2515)

Spring, 2017

Flushing, Chtr Twp 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 Flushing, Chtr Twp of (2515) 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. Flushing, Chtr Twp 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 April 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.
    - 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.
    - 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	65%	56%

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:	April 1, 2018	April 1, 2018	April 1, 2017	April 1, 2017	April 1, 2018	April 1, 2018	April 1, 2017	April 1, 2017
Division								
01 - Teamsters-Union	56.74%	60.23%	60.50%	65.81%	$ 8,919	$ 9,468	$ 8,928	$ 9,712
02 - Plc Offcrs	13.71%	14.89%	12.13%	13.64%	3,592	3,901	3,305	3,717
20 - Command	9.84%	16.90%	85.23%	94.49%	653	1,121	5,741	6,365
Municipality Total					**$ 13,164**	**$ 14,490**	**$ 17,974**	**$ 19,794**

Employee contribution rates reflected in the valuations are shown below:

	Employee Contribution Rate			
	Phase-in	No Phase-in	Phase-in	No Phase-in
Valuation Date:	**12/31/2016**	**12/31/2016**	**12/31/2015**	**12/31/2015**
Fiscal Year Beginning:	**April 1, 2018**	**April 1, 2018**	**April 1, 2017**	**April 1, 2017**
Division				
01 - Teamsters-Union	8.00%	8.00%	3.00%	3.00%
02 - Plc Offcrs	8.00%	8.00%	8.00%	8.00%
20 - Command	4.00%	4.00%	2.00%	2.00%

Allocation of the phase-in contributions between the employer and members was done in a manner which the actuaries believe to be equitable, based on information provided by MERS. The actuaries assume no responsibility if the allocation method conflicts with any particular employer cap agreement.

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 $ 23,454, instead of $ 14,490.
- To accelerate to a 100% funding ratio in 20 years, estimated monthly employer contributions for the entire employer would be $ 15,219, instead of $ 14,490.

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.

- Retirements at earlier ages than assumed would usually increase required employer contributions.
- More non-vested terminations of employment than assumed would decrease required contributions.
- More disabilities or survivor (death) benefits than assumed would increase required contributions.
- 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 60% (instead of 65%); and ii) your total employer contribution requirement for the fiscal year starting April 1, 2018 would be $ 193,836 (instead of $ 173,880).

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
12/31/2016 Valuation Results	**5.75%**	**6.75%**	**7.75%**	**8.75%**
Accrued Liability	$ 7,133,062	$ 6,390,626	$ 5,761,639	$ 5,225,153
Valuation Assets	$ 3,729,028	$ 3,729,028	$ 3,729,028	$ 3,729,028
Unfunded Accrued Liability	$ 3,404,034	$ 2,661,598	$ 2,032,611	$ 1,496,125
Funded Ratio	52%	58%	65%	71%
Monthly Normal Cost	$ 6,877	$ 4,779	$ 3,197	$ 1,989
Monthly Amortization Payment	$ 16,440	$ 13,941	$ 11,293	$ 8,731
Total Employer Contribution[1,2]	$ 23,317	$ 18,720	$ 14,490	$ 10,720

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.

2 The above total employer contributions for the 5.75%, 6.75% and 8.75% scenarios do not reflect changes in the employee contribution rates due to the impact of a cap, if any, on employer contributions. Those scenarios are based on the same employee contribution rates as the 7.75% scenario.

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:

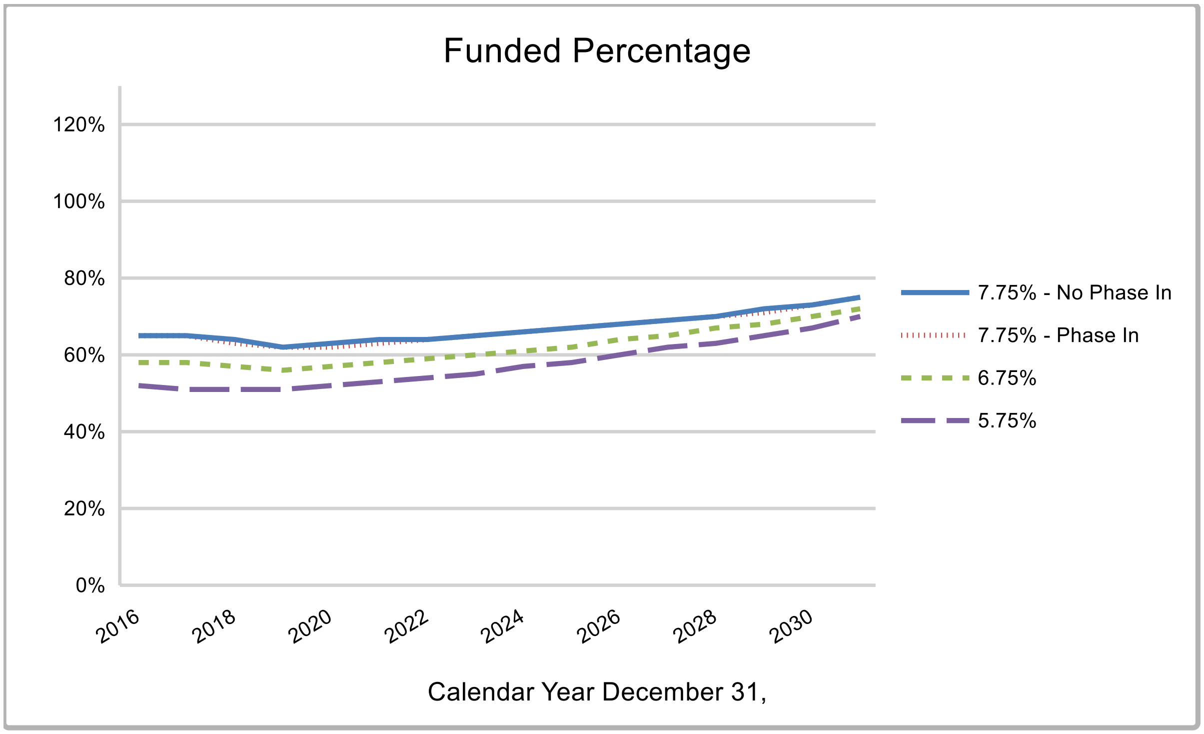
- Based on the phase-in over 5 fiscal years (beginning in 2017) of the increased contribution requirements associated with the new actuarial assumptions. This projects your minimum required contribution.
- Based on no phase-in of the increased contribution requirements.

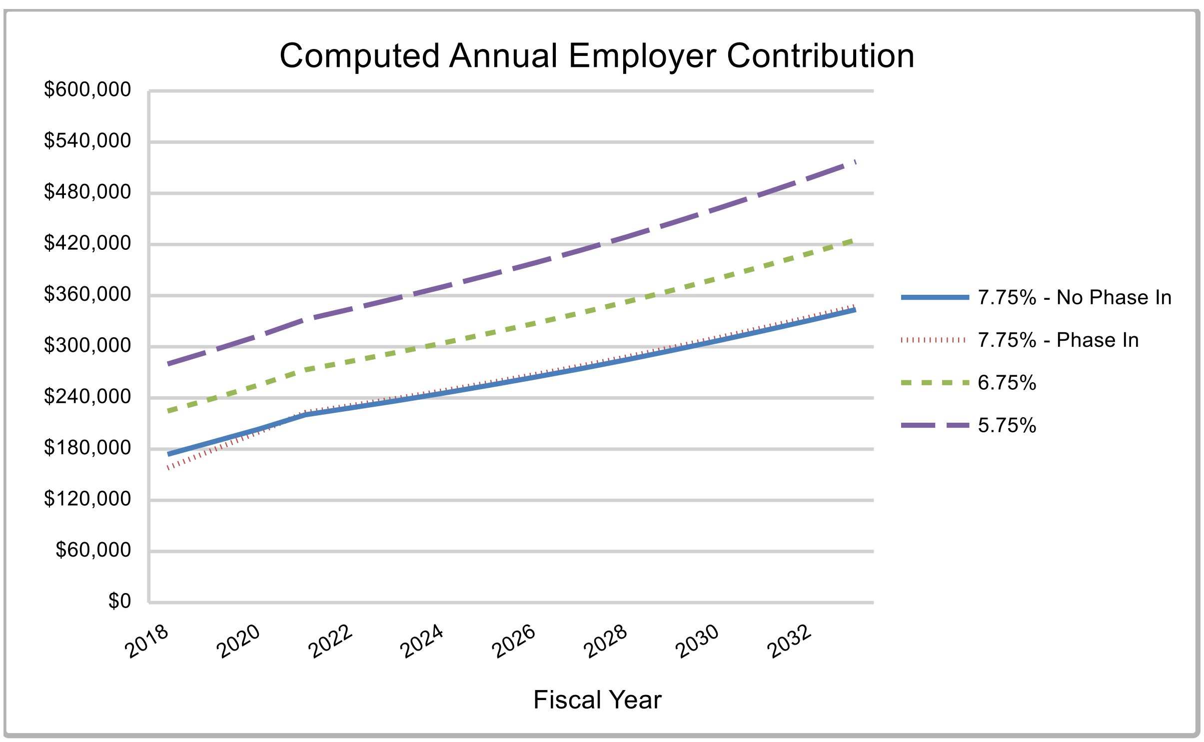
The 7.75% scenarios provide an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.75% market return. The other two scenarios may be useful if the municipality chooses to budget more conservatively, and make contributions in addition to the minimum requirements. 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 4/1	Actuarial Accrued Liability	Valuation Assets	Funded Percentage	Computed Annual Employer Contribution [1]
7.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return					
WITH 5-YEAR PHASE-IN					
2016	2018	$ 5,761,639	$ 3,729,028	65%	$ 157,968
2017	2019	5,940,000	3,830,000	65%	179,000
2018	2020	6,100,000	3,870,000	63%	200,000
2019	2021	6,240,000	3,870,000	62%	223,000
2020	2022	6,380,000	3,980,000	62%	231,000
2021	2023	6,510,000	4,110,000	63%	239,000
NO 5-YEAR PHASE-IN					
2016	2018	$ 5,761,639	$ 3,729,028	65%	$ 173,880
2017	2019	5,940,000	3,830,000	65%	189,000
2018	2020	6,100,000	3,880,000	64%	204,000
2019	2021	6,240,000	3,890,000	62%	220,000
2020	2022	6,380,000	4,010,000	63%	228,000
2021	2023	6,510,000	4,140,000	64%	237,000
6.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return					
NO 5-YEAR PHASE-IN					
2016	2018	$ 6,390,626	$ 3,729,028	58%	$ 224,640
2017	2019	6,570,000	3,800,000	58%	239,000
2018	2020	6,740,000	3,850,000	57%	255,000
2019	2021	6,880,000	3,870,000	56%	273,000
2020	2022	7,020,000	4,010,000	57%	283,000
2021	2023	7,160,000	4,150,000	58%	294,000
5.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return					
NO 5-YEAR PHASE-IN					
2016	2018	$ 7,133,062	$ 3,729,028	52%	$ 279,804
2017	2019	7,320,000	3,760,000	51%	296,000
2018	2020	7,490,000	3,810,000	51%	313,000
2019	2021	7,640,000	3,860,000	51%	332,000
2020	2022	7,780,000	4,020,000	52%	344,000
2021	2023	7,920,000	4,180,000	53%	357,000

[1] The above required annual employer contribution does not reflect future changes in the employee contribution rates due to the impact of a cap, if any, on employer contributions.





[1] The above required annual employer contribution does not reflect future changes in the employee contribution rates due to the impact of a cap, if any, on employer contributions.

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

Table 1

Division	Employer Contributions[1] Normal Cost	Payment of the Unfunded Accrued Liability[4]	Computed Employer Contribut. No Phase-In	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]
Percentage of Payroll								
01 - Teamsters-Union	7.23%	53.00%	60.23%	56.74%			8.00%	0.89%
02 - Plc Offcrs	5.29%	9.60%	14.89%	13.71%			8.00%	0.76%
20 - Command	10.16%	6.74%	16.90%	9.84%			4.00%	0.50%
Estimated Monthly Contribution[3]								
01 - Teamsters-Union	$ 1,137	$ 8,331	$ 9,468	$ 8,919				
02 - Plc Offcrs	1,386	2,515	3,901	3,592				
20 - Command	674	447	1,121	653				
Total Municipality	**$ 3,197**	**$ 11,293**	**$ 14,490**	**$ 13,164**				
Estimated Annual Contribution[3]	**$ 38,364**	**$ 135,516**	**$ 173,880**	**$ 157,968**				

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 April 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.

Note that employer contribution caps are in effect for Division(s): 02. For these divisions the employee contribution rates in Table 1 do **not** reflect phase-in over 5 fiscal years (beginning in 2017) of the increased employee contribution requirements associated with the new actuarial assumptions. The full employee contribution rate without phase-in is shown in Table 1 above. The employee contribution requirements including the 5-year phase-in are shown on page 8.

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

Benefit Provisions

Table 2

01 - Teamsters-Union: Open Division

	2016 Valuation	2015 Valuation
Benefit Multiplier:	Bridged Benefit: 3.00% Multiplier (80% max) Frozen FAC; to 2.50% Multiplier (80% max)	Bridged Benefit: 3.00% Multiplier (80% max) Frozen FAC; to 2.50% Multiplier (80% max)
Bridged Benefit Date:	12/31/2011	12/31/2011
Normal Retirement Age:	60	60
Vesting:	8 years	8 years
Early Retirement (Unreduced):	55/15	55/15
Early Retirement (Reduced):	50/25	50/25
Final Average Compensation:	3 years	3 years
Employee Contributions:	8%	3%
Act 88:	Yes (Adopted 11/9/2006)	Yes (Adopted 11/9/2006)

02 - Plc Offcrs: Open Division

	2016 Valuation	2015 Valuation
Benefit Multiplier:	Bridged Benefit: 3.00% Multiplier (80% max) Frozen FAC; to 2.50% Multiplier (80% max)	Bridged Benefit: 3.00% Multiplier (80% max) Frozen FAC; to 2.50% Multiplier (80% max)
Bridged Benefit Date:	05/31/2012	05/31/2012
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	8%	8%
Act 88:	Yes (Adopted 11/9/2006)	Yes (Adopted 11/9/2006)

20 - Command: Open Division

	2016 Valuation	2015 Valuation
Benefit Multiplier:	Bridged Benefit: 3.00% Multiplier (80% max) Frozen FAC; to 2.50% Multiplier (80% max)	Bridged Benefit: 3.00% Multiplier (80% max) Frozen FAC; to 2.50% Multiplier (80% max)
Bridged Benefit Date:	04/30/2013	04/30/2013
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	4%	2%
Act 88:	Yes (Adopted 11/9/2006)	Yes (Adopted 11/9/2006)

Note that employer contribution caps are in effect for Division(s): 02. For these divisions the 2016 Valuation employee contribution rates in Table 2 do **not** reflect phase-in over 5 fiscal years (beginning in 2017) of the increased employee contribution requirements associated with the new actuarial assumptions. The full employee contribution rate without phase-in is shown in Table 2 above. The employee contribution requirements including the 5-year phase-in are shown on page 8.

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]
01 - Teamsters-Union							
Active Employees	4	$ 173,621	4	$ 162,992	49.9	13.6	19.1
Vested Former Employees	1	402	1	402	32.6	1.3	6.0
Retirees and Beneficiaries	11	215,614	11	215,614	73.8		
02 - Plc Offcrs							
Active Employees	5	$ 289,280	5	$ 300,971	48.4	17.5	17.5
Vested Former Employees	3	15,729	3	15,729	47.5	4.3	15.5
Retirees and Beneficiaries	1	46,547	1	46,547	55.1		
20 - Command							
Active Employees	1	$ 73,236	1	$ 74,399	58.4	26.6	26.6
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	1	63,348	2	136,345	61.0		
Total Municipality							
Active Employees	**10**	**$ 536,137**	**10**	**$ 538,362**	**50.0**	**16.9**	**19.1**
Vested Former Employees	**4**	**16,131**	**4**	**16,131**	**43.8**	**3.6**	**13.1**
Retirees and Beneficiaries	**13**	**325,509**	**14**	**398,506**	**71.4**		
Total Participants	**27**		**28**				

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]
01 - Teamsters-Union	$ 725,332	$ 79,503	$ 716,819	$ 67,033
02 - Plc Offcrs	1,106,369	238,729	994,756	213,770
20 - Command	1,259,618	52,565	1,105,886	49,766
Municipality Total	**$ 3,091,319**	**$ 370,797**	**$ 2,817,461**	**$ 330,569**
Combined Reserves	**$ 3,462,116**		**$ 3,148,030**	

[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 Required	Employer Contributions Additional	Employee Contributions	Investment Income	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
2006	$ 231,570		$ 11,696	$ 147,095	$ (19,773)	$ (813)	$ 0	$ 2,135,073
2007	345,709		10,932	173,770	(64,687)	(4,759)	0	2,596,038
2008	342,728		12,603	166,926	(75,406)	0	12,068	3,054,957
2009	150,044		29,253	151,549	(218,140)	0	0	3,167,663
2010	126,100		30,544	171,030	(295,873)	0	77,683	3,277,147
2011	132,330	$ 230,000	22,376	189,992	(343,208)	0	0	3,508,637
2012	192,628	0	20,957	138,746	(389,268)	0	0	3,471,700
2013	88,014	50,000	17,389	183,505	(391,141)	0	0	3,419,467
2014	143,520	111,396	38,841	193,859	(394,135)	0	0	3,512,948
2015	190,342	80,000	30,456	172,476	(397,129)	(14,877)	0	3,574,216
2016	198,317	75,529	37,417	186,679	(343,130)	0	0	3,729,028

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
01 - Teamsters-Union				
Active Employees	$ 494,372	$ 79,503	16.1%	$ 414,869
Vested Former Employees	539	0	0.0%	539
Retirees And Beneficiaries	1,820,165	787,381	43.3%	1,032,784
Pending Refunds	0	0	0.0%	0
Total	**$ 2,315,076**	**$ 866,884**	**37.4%**	**$ 1,448,192**
02 - Plc Offcrs				
Active Employees	$ 1,257,326	$ 827,557	65.8%	$ 429,769
Vested Former Employees	72,646	72,646	100.0%	0
Retirees And Beneficiaries	548,595	548,595	100.0%	0
Pending Refunds	0	0	0.0%	0
Total	**$ 1,878,567**	**$ 1,448,798**	**77.1%**	**$ 429,769**
20 - Command				
Active Employees	$ 726,963	$ 572,313	78.7%	$ 154,650
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	841,033	841,033	100.0%	0
Pending Refunds	0	0	0.0%	0
Total	**$ 1,567,996**	**$ 1,413,346**	**90.1%**	**$ 154,650**
Total Municipality				
Active Employees	**$ 2,478,661**	**$ 1,479,373**	**59.7%**	**$ 999,288**
Vested Former Employees	**73,185**	**72,646**	**99.3%**	**539**
Retirees and Beneficiaries	**3,209,793**	**2,177,009**	**67.8%**	**1,032,784**
Pending Refunds	**0**	**0**	**0.0%**	**0**
Total Participants	**$ 5,761,639**	**$ 3,729,028**	**64.7%**	**$ 2,032,611**

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	$ 819,377	$ 596,775	73%	$ 222,602
2003	1,035,184	719,144	69%	316,040
2004	2,463,464	1,501,446	61%	962,018
2005	3,086,437	1,765,298	57%	1,321,139
2006	4,195,751	2,135,073	51%	2,060,678
2007	4,378,201	2,596,038	59%	1,782,163
2008	4,997,997	3,054,957	61%	1,943,040
2009	5,166,921	3,167,663	61%	1,999,258
2010	5,588,191	3,277,147	59%	2,311,044
2011	5,908,136	3,508,637	59%	2,399,499
2012	6,113,489	3,471,700	57%	2,641,789
2013	6,027,706	3,419,467	57%	2,608,239
2014	6,069,132	3,512,948	58%	2,556,184
2015	6,380,643	3,574,216	56%	2,806,427
2016	5,761,639	3,729,028	65%	2,032,611

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

Division 01 - Teamsters-Union

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	$ 1,799,352	$ 923,512	51%	$ 875,840
2007	2,017,857	1,156,319	57%	861,538
2008	2,193,588	1,361,323	62%	832,265
2009	2,244,320	1,254,937	56%	989,383
2010	2,238,290	1,106,952	49%	1,131,338
2011	2,263,503	1,113,253	49%	1,150,250
2012	2,277,874	1,014,159	45%	1,263,715
2013	2,185,832	955,306	44%	1,230,526
2014	2,191,410	936,206	43%	1,255,204
2015	2,300,908	889,971	39%	1,410,937
2016	2,315,076	866,884	37%	1,448,192

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

Table 9-01: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees Number	Active Employees Annual Payroll	Computed Employer Contribution[1]	Employee Contribution Rate[2]
2006	14	$ 491,493	25.53%	0.00%
2007	15	492,827	24.41%	0.00%
2008	9	317,102	29.04%	0.00%
2009	4	149,381	50.78%	0.00%
2010	4	149,564	54.76%	0.00%
2011	4	155,159	56.69%	0.00%
2012	4	160,257	63.67%	0.00%
2013	4	164,216	55.48%	3.00%
2014	4	159,559	58.30%	3.00%
2015	4	162,992	65.81%	3.00%
2016	4	173,621	60.23%	8.00%

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 32 for past benefit provision changes.

Division 02 - Plc Offcrs

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	$ 779,388	$ 496,926	64%	$ 282,462
2007	911,443	599,221	66%	312,222
2008	1,029,667	705,732	69%	323,935
2009	1,049,960	843,390	80%	206,570
2010	1,176,289	1,025,954	87%	150,335
2011	1,311,033	1,171,399	89%	139,634
2012	1,439,429	1,222,480	85%	216,949
2013	1,410,344	1,251,231	89%	159,113
2014	1,374,271	1,307,136	95%	67,135
2015	1,752,934	1,372,139	78%	380,795
2016	1,878,567	1,448,798	77%	429,769

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	7	$ 354,912	16.26%	2.00%
2007	7	371,452	16.03%	2.00%
2008	7	374,144	17.39%	2.00%
2009	6	355,858	9.97%	8.00%
2010	5	302,810	9.68%	8.00%
2011	3	189,678	11.97%	8.00%
2012	3	199,547	14.49%	8.00%
2013	5	292,043	8.22%	8.00%
2014	5	290,909	6.56%	8.00%
2015	5	300,971	13.64%	8.00%
2016	5	289,280	14.89%	8.00%

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 32 for past benefit provision changes.

Division 20 - Command

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2006	$ 1,617,011	$ 714,635	44%	$ 902,376
2007	1,448,901	840,498	58%	608,403
2008	1,774,742	987,902	56%	786,840
2009	1,872,641	1,069,336	57%	803,305
2010	2,173,612	1,144,241	53%	1,029,371
2011	2,333,600	1,223,985	53%	1,109,615
2012	2,396,186	1,235,061	52%	1,161,125
2013	2,431,530	1,212,930	50%	1,218,600
2014	2,503,451	1,269,606	51%	1,233,845
2015	2,326,801	1,312,106	56%	1,014,695
2016	1,567,996	1,413,346	90%	154,650

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	3	$ 229,914	34.33%	2.00%
2007	3	217,375	27.98%	2.00%
2008	3	252,979	30.57%	2.00%
2009	2	142,570	44.18%	2.00%
2010	1	72,449	91.32%	2.00%
2011	1	86,778	82.46%	2.00%
2012	1	89,153	90.97%	2.00%
2013	1	69,263	117.81%	2.00%
2014	1	70,824	115.18%	2.00%
2015	1	74,399	94.49%	2.00%
2016	1	73,236	16.90%	4.00%

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

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

Note: The contributions shown in Table 9 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 32 for past benefit provision changes.

Division 01 - Teamsters-Union

Table 10-01: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 4/1/2018: Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	$ 1,410,937	23	$ 1,459,378	22	$ 99,528
Gain/Loss	12/31/2016	12,198	22	13,391	22	912
Plan Amendments	12/31/2016	(6,171)	22	(6,774)	22	(468)
Total				**$ 1,465,995**		**$ 99,972**

* 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 02 - Plc Offcrs

Table 10-02: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance	Original Amortization Period**	Amounts for Fiscal Year Beginning 4/1/2018: Outstanding UAL Balance*	Amortization Period**	Amortization Payment
Initial	12/31/2015	$ 380,795	23	$ 415,165	22	$ 28,308
Gain/Loss	12/31/2016	25,040	22	27,489	22	1,872
Total				**$ 442,654**		**$ 30,180**

* 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.

Division 20 - Command

Table 10-20: Layered Amortization Schedule

Type of UAL	Date Established		Original Balance	Original Amortiza-tion Period**	Amounts for Fiscal Year Beginning 4/1/2018				
						Outstanding UAL Balance*	Amortiza-tion Period**		Amortization Payment
Initial	12/31/2015	$	1,014,695	23	$	1,017,303	22	$	69,372
Gain/Loss	12/31/2016		(859,572)	22		(943,635)	22		(64,356)
Plan Amendments	12/31/2016		4,588	22		5,037	22		348
Total					**$**	**78,705**		**$**	**5,364**

* 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:	13
Inactive employees entitled to but not yet receiving benefits:	4
Active employees:	10
	27

Total Pension Liability as of 12/31/2015 measurement date:	$	6,224,767
Total Pension Liability as of 12/31/2016 measurement date:	$	5,619,533
Service Cost for the year ending on the 12/31/2016 measurement date:	$	70,183

Change in the Total Pension Liability due to:

- Benefit changes[1]:	$	(1,852)
- Differences between expected and actual experience[2]:	$	(817,499)
- 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):		2
Covered employee payroll: (Needed for Required Supplementary Information)	$	536,137

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:	$ 604,111	-	$ (515,994)

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:		13
Inactive employees entitled to but not yet receiving benefits:		4
Active employees:		10
		27
Total Pension Liability as of 12/31/2016 measurement date:	$	6,372,678
Total Pension Liability as of 12/31/2017 measurement date:	$	5,794,512
Service Cost for the year ending on the 12/31/2017 measurement date:	$	72,665
Change in the Total Pension Liability due to:		
- Benefit changes[1]:	$	(372)
- Differences between expected and actual experience[2]:	$	(811,397)
- 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):		2
Covered employee payroll: (Needed for Required Supplementary Information)	$	536,137

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:	$ 609,108	-	$ (521,044)

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

Benefit Provision History

The following benefit provision history is provided by MERS. Any corrections to this history or discrepancies between this information and information displayed elsewhere in the valuation report should be reported to MERS. All provisions are listed by date of adoption.

01 - Teamsters-Union

12/1/2016	Service Credit Purchase Estimates - Yes
4/1/2016	Participant Contribution Rate 8%
1/1/2012	Day of work defined as 150 Hours a Month for All employees.
1/1/2012	Benefit B-4 (80% max)
1/1/2012	Member Contribution Rate 3.00%
12/31/2011	Frozen FAC
11/9/2006	Covered by Act 88
4/1/2006	3.0% Multiplier (80% max)
4/1/2004	Day of work defined as 7 Hours a Day for All employees.
4/1/2004	Benefit FAC-3 (3 Year Final Average Compensation)
4/1/2004	8 Year Vesting
4/1/2004	Benefit B-4 (80% max)
4/1/2004	Benefit F55 (With 15 Years of Service)
4/1/2004	Member Contribution Rate 0.00%
4/1/1996	Fiscal Month - April

02 - Plc Offcrs

12/1/2016	Service Credit Purchase Estimates - Yes
6/1/2012	Day of work defined as 150 Hours a Month for All employees.
6/1/2012	Benefit B-4 (80% max)
5/31/2012	Frozen FAC
4/1/2009	Member Contribution Rate 8.00%
11/9/2006	Covered by Act 88
4/1/2006	3.0% Multiplier (80% max)
4/1/1996	Benefit FAC-3 (3 Year Final Average Compensation)
4/1/1996	10 Year Vesting
4/1/1996	Benefit B-4 (80% max)
4/1/1996	Benefit F50 (With 25 Years of Service)
4/1/1996	Member Contribution Rate 2.00%
4/1/1996	Fiscal Month - April

20 - Command

12/1/2016	Service Credit Purchase Estimates - Yes
6/1/2016	Participant Contribution Rate 4%
5/1/2013	Day of work defined as 150 Hours a Month for All employees.
5/1/2013	Benefit B-4 (80% max)
4/30/2013	Frozen FAC
1/1/2007	E2 2.5% COLA for future retirees (04/01/2006)
11/9/2006	Covered by Act 88
4/1/2006	3.0% Multiplier (80% max)

20 - Command

1/1/2005	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2005	10 Year Vesting
1/1/2005	3.2% Multiplier (80% max)
1/1/2005	Benefit F50 (With 25 Years of Service)
1/1/2005	Member Contribution Rate 2.00%
4/1/1996	Fiscal Month - April

Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

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

Increase in Final Average Compensation

Division	FAC Increase Assumption
All Divisions	1.00%

Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	100%

Miscellaneous and Technical Assumptions

Loads – None.