



**MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN**  
ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2015  
PITTSFIELD CHTR TWP (8110)



Spring, 2016

Pittsfield Chtr Twp

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

This report presents the results of the Annual Actuarial Valuation, prepared as of December 31, 2015. The report includes the determination of liabilities and contribution rates resulting from the participation of Pittsfield Chtr Twp (8110) 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 more than 65 years. Pittsfield Chtr Twp 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, 2015 annual actuarial valuation is to:

- Measure funding progress
- Establish contribution requirements for the fiscal year beginning January 1, 2017
- 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, 2015 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, and this December 31, 2015 valuation report reflects changes in assumptions and methods. 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-2015AnnualActuarialValuation-Appendix.pdf](http://www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2015AnnualActuarialValuation-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  
Alan Sonnanstine, MAAA, ASA

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## Executive Summary

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### New Actuarial Assumptions and Methods

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 this December 31, 2015 valuation report reflects several changes in actuarial assumptions.

The main assumption and method changes were:

- The mortality table was adjusted to reflect longer lifetimes.
- The assumed annual rate of investment return, net of all expenses, was lowered from 8% to 7.75%.
- The asset smoothing was changed from 10 to 5 years.
- The amortization period was moved to a fixed period amortization for the December 31, 2014 annual valuations.
  - o The period will continue to gradually decrease for both open and closed divisions until the current unfunded accrued liability (UAL) is completely paid off.
  - o Moving to this type of "fixed period amortization" means that all unfunded liabilities will be fully funded by a specific date in the future.
  - 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.

Various other actuarial assumptions were revised, but the revisions had a smaller impact than the two assumption changes above (first two bullets). For a summary of all of the actuarial assumptions and methods, please refer to the division-specific assumptions described on the last page of this report, and to the [Appendix](#).

The new amortization period layers and the new 5-year asset smoothing do not impact this 2015 annual valuation, other than the 6 year projections. These method changes will first impact the December 31, 2016 annual valuations.

The impacts of the assumption changes on the funded ratio and the required employer contributions are displayed on the next few pages. While these changes in assumptions will mean larger liabilities and contributions than anticipated by the prior assumptions for most employers, they will ensure each employer makes reasonable progress towards funding the unfunded liabilities of the employer. When

discussing changes in assumptions it is important to remember that, although the assumptions used impact the annual contributions, the true cost of the plan will be based on what will actually happen in the future – independent of the assumptions used. MERS recognizes that many municipalities are already taking steps to reduce their UAL. The MERS Board approved a “phase in” of the total impact of the assumption changes over the next 5 years (impacting fiscal years beginning 2017 – 2021) as an option for you. Of course, if the employer pays less in the first 4 years, they will likely have to pay somewhat more in later years.

MERS created a dedicated resource page on their website, [www.mersofmich.com](http://www.mersofmich.com), regarding this topic, with links to frequently asked questions, upcoming events and additional details.

### **Impacts from the Assumption Changes**

The new actuarial assumptions changed your December 31, 2015 percent funded from 73% to 70%, a change of -3%.

The new assumptions changed your total monthly employer contribution requirement, before any phase-in, from \$98,481 to \$112,764, a change of \$14,283 (a 15% increase). Under the 5-year phase-in the first year increase is instead 3% (from \$98,481 to \$101,336 monthly).

Additional detail is shown on the following pages.

## 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:

For comparison purposes, we have included your December 31, 2015 funded ratio if it had been calculated under the previous assumptions. Note: Your actual funded level as of December 31, 2015 is the amount listed under the new assumptions.

	New Assumptions	Previous Assumptions	
	12/31/2015	12/31/2015	12/31/2014
<b>Funded Ratio</b>	70%	73%	74%

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. Note: Your minimum required contribution is the amount listed under the new assumptions, with phase-in. For comparison purposes, we have included your computed employer contribution if it had been calculated under the previous assumptions.

	Percentage of Payroll				Monthly \$ Based on Valuation Payroll			
	New Assumptions		Previous Assumptions		New Assumptions		Previous Assumptions	
	Phase-in	Full Impact			Phase-in	Full Impact		
Valuation Date:	12/31/2015	12/31/2015	12/31/2015	12/31/2014	12/31/2015	12/31/2015	12/31/2015	12/31/2014
Fiscal Year Beginning:	January 1, 2017	January 1, 2017	January 1, 2017	January 1, 2016	January 1, 2017	January 1, 2017	January 1, 2017	January 1, 2016
<b>Division</b>								
01 - TPOAM	-	-	-	6.72%	\$ 5,390	\$ 5,946	\$ 5,251	\$ 4,087
02 - Pol Ptrl	-	-	-	-	19,447	21,983	18,813	17,642
05 - Fire Fght	-	-	-	-	13,225	14,521	12,902	11,804
10 - Elctd Ofc	24.02%	26.71%	23.36%	21.80%	5,077	5,645	4,937	4,270
11 - Dspchr	-	-	-	-	1,109	1,353	1,046	281
14 - Adm/NonUnion	-	-	-	-	13,146	15,246	12,622	11,872
15 - Utilities Dr	-	-	-	-	506	566	492	411
20 - Pol Cmnd	-	-	-	-	36,238	40,054	35,283	30,807
HA - POLC/cler/Dispatch aft	5.07%	5.16%	5.01%	5.99%	232	236	229	169
HB - IAFF ee's hired on/aft	6.23%	6.41%	6.21%	-	697	717	694	-
HD - POAM on/after 1/1/2015	6.59%	6.79%	6.54%	-	1,966	2,026	1,951	-
HE - Non-union on/after 1/1	7.01%	7.28%	6.94%	-	3,213	3,337	3,180	-
HF - TPOAM on/aft 3/30/15	8.79%	9.14%	8.71%	-	1,090	1,134	1,081	-
<b>Municipality Total</b>					<b>\$ 101,336</b>	<b>\$ 112,764</b>	<b>\$ 98,481</b>	<b>\$ 81,343</b>

Under the new assumptions, both the full impact and the phased in employer contribution requirements are shown in the table above. The phase in allows the employer to spread the increase of the new actuarial assumptions over 5 fiscal years. By default, MERS will invoice you the phased in contribution amount. However, MERS strongly encourages employers to contribute more than the minimum required contribution, including paying the full amount of the impact of the changes, if possible.

Employee contribution rates reflected in the valuations are shown below:

Valuation Date:	Employee Contribution Rate	
	12/31/2015	12/31/2014
<b>Division</b>		
01 - TPOAM	2.00%	2.00%
02 - Pol Ptrl	6.17%	6.17%
05 - Fire Fght	5.00%	5.00%
10 - Elctd Ofc	6.93%	6.93%



Valuation Date:	Employee Contribution Rate	
	12/31/2015	12/31/2014
<b>Division</b>		
11 - Dspchr	5.00%	5.00%
14 - Adm/NonUnion	5.00%	5.00%
15 - Utilities Dr	6.00%	6.00%
20 - Pol Cmnd	9.06%	9.06%
HA - POLC/cler/Dispatch aft	0.00%	0.00%
HB - IAFF ee's hired on/aft	0.00%	0.00%
HD - POAM on/after 1/1/2015	0.00%	0.00%
HE - Non-union on/after 1/1	0.00%	0.00%
HF - TPOAM on/aft 3/30/15	0.00%	0.00%

The employer may contribute more than the minimum required contributions, as these additional contributions will earn investment income and may result in lower future contribution requirements. **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 \$ 161,078, instead of \$ 112,764.
- To accelerate to a 100% funding ratio in 20 years, estimated monthly employer contributions for the entire employer would be \$ 118,160, instead of \$ 112,764.

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

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 2015 was 5.21%.

As of December 31, 2015 the actuarial value of assets is 113% 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, 2015 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 61% (instead of 70%); and ii) your total employer contribution requirement for the fiscal year starting January 1, 2017 would be \$ 1,549,920 (instead of \$ 1,353,168).

The asset smoothing method is a powerful tool for reducing the volatility of your required employer contributions. **However, if the current 13% 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 retirement plans, by their nature, are exposed to certain risks. While risks cannot be eliminated entirely, they can be mitigated 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 mitigate the economic and demographic risks, and the contribution volatility risks. For example, the investment risk is the largest economic risk and is mitigated by having a balanced portfolio and a clearly defined investment strategy. Demographic risks vary based on the age of the workforce and are mitigated 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 mitigated 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.

For example:

- Lower investment returns would result in higher required employer contributions, and vice-versa.

- Smaller than projected pay increases would lower required employer contributions.
- 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 projected would usually increase required employer contributions.
- More non-vested terminations of employment than projected would decrease required contributions.
- More disabilities or survivor (death) benefits than projected would increase required contributions.
- Longer lifetimes after retirement than projected would increase 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, 2015 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%
<b>12/31/2015 Valuation Results</b>				
Accrued Liability	\$ 44,167,529	\$ 38,005,722	\$ 32,970,609	\$ 28,851,171
Valuation Assets	\$ 22,981,016	\$ 22,981,016	\$ 22,981,016	\$ 22,981,016
Unfunded Accrued Liability	\$ 21,186,513	\$ 15,024,706	\$ 9,989,593	\$ 5,870,155
<b>Funded Ratio</b>	52%	61%	70%	80%
Monthly Normal Cost	\$ 109,709	\$ 78,736	\$ 55,484	\$ 37,913
Monthly Amortization Payment	\$ 103,562	\$ 80,256	\$ 57,280	\$ 33,943
<b>Total Employer Contribution<sup>1</sup></b>	\$ 213,271	\$ 158,992	\$ 112,764	\$ 72,693

<sup>1</sup> 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.

## Six Year Projection Scenarios

The table on the following page illustrates the plan's projected liabilities and computed employer contributions for the next six fiscal years, under the new actuarial assumptions and under three future economic/assumption scenarios. All four projections take into account the past financial losses that will continue to affect the smoothed rate of return for the next four years. 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.

Valuation Year Ending 12/31	Fiscal Year Beginning 1/1	Actuarial Accrued Liability	Valuation Assets	Funded Percentage	Computed Annual Employer Contribution
<b>7.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return</b>					
<b>WITH 5-YEAR PHASE-IN</b>					
2015	2017	\$ 32,970,609	\$ 22,981,016	70%	\$ 1,226,700
2016	2018	35,345,354	24,366,596	69%	1,372,524
2017	2019	37,973,828	26,021,852	69%	1,524,120
2018	2020	40,660,884	27,667,635	68%	1,688,784
2019	2021	43,474,620	29,371,230	68%	1,867,320
2020	2022	46,424,878	32,056,961	69%	1,954,656
<b>NO 5-YEAR PHASE-IN</b>					
2015	2017	\$ 32,970,609	\$ 22,981,016	70%	\$ 1,363,836
2016	2018	35,345,354	24,366,596	69%	1,465,524
2017	2019	37,973,828	26,175,021	69%	1,574,016
2018	2020	40,660,884	27,928,583	69%	1,698,480
2019	2021	43,474,620	29,695,974	68%	1,839,288
2020	2022	46,424,878	32,415,415	70%	1,926,060
<b>6.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return</b>					
<b>NO 5-YEAR PHASE-IN</b>					
2015	2017	\$ 38,005,722	\$ 22,981,016	61%	\$ 1,921,440
2016	2018	40,677,545	24,141,639	59%	2,036,532
2017	2019	43,605,784	26,317,778	60%	2,154,180
2018	2020	46,594,631	28,425,949	61%	2,289,084
2019	2021	49,711,842	30,522,784	61%	2,443,968
2020	2022	52,966,076	33,624,187	64%	2,546,292
<b>5.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return</b>					
<b>NO 5-YEAR PHASE-IN</b>					
2015	2017	\$ 44,167,529	\$ 22,981,016	52%	\$ 2,576,724
2016	2018	47,192,464	23,916,643	51%	2,708,748
2017	2019	50,476,302	26,566,637	53%	2,840,364
2018	2020	53,822,631	29,131,014	54%	2,990,016
2019	2021	57,298,854	31,653,607	55%	3,162,072
2020	2022	60,912,362	35,082,408	58%	3,295,572

## Employer Contribution Details (Without a 5-year Phase-In) For the Fiscal Year Beginning January 1, 2017

Table 1

Division	Amort. Period for Unfund. Liab. <sup>4,5</sup>	Employer Contributions <sup>1</sup>			Blended Employer Contribut. <sup>6</sup>	Employee Contribution Rate	Employee Contribut. Conversion Factor <sup>2</sup>
		Normal Cost	Unfunded Accrued Liability	Total Computed Employer Contribut.			
<b>Percentage of Payroll</b>							
01 - TPOAM	23	-	-	-	8.88%	2.00%	
02 - Pol Ptrl	23	-	-	-	13.94%	6.17%	
05 - Fire Fght	23	-	-	-	9.37%	5.00%	
10 - Elctd Ofc	23	9.81%	16.90%	26.71%		6.93%	0.90%
11 - Dsptchr	23	-	-	-	4.28%	5.00%	
14 - Adm/NonUnion	23	-	-	-	9.24%	5.00%	
15 - Utilities Dr	16	-	-	-		6.00%	
20 - Pol Cmnd	23	-	-	-		9.06%	
HA - POLC/cler/Dispatch	23	5.75%	-0.59%	5.16%	4.28%	0.00%	0.90%
HB - IAFF ee's hired on	23	6.34%	0.07%	6.41%	9.37%	0.00%	0.88%
HD - POAM on/after 1/1/	23	6.86%	-0.07%	6.79%	13.94%	0.00%	0.91%
HE - Non-union on/after	23	7.33%	-0.05%	7.28%	9.24%	0.00%	0.92%
HF - TPOAM on/aft 3/30/	23	9.33%	-0.19%	9.14%	8.88%	0.00%	0.84%
<b>Estimated Monthly Contribution<sup>3</sup></b>							
01 - TPOAM	23	\$ 4,839	\$ 1,107	\$ 5,946			
02 - Pol Ptrl	23	11,781	10,202	21,983			
05 - Fire Fght	23	9,891	4,630	14,521			
10 - Elctd Ofc	23	2,073	3,572	5,645			
11 - Dsptchr	23	1,435	(82)	1,353			
14 - Adm/NonUnion	23	10,993	4,253	15,246			
15 - Utilities Dr	16	0	566	566			
20 - Pol Cmnd	23	6,935	33,119	40,054			
HA - POLC/cler/Dispatch	23	263	(27)	236			
HB - IAFF ee's hired on	23	709	8	717			
HD - POAM on/after 1/1/	23	2,047	(21)	2,026			
HE - Non-union on/after	23	3,360	(23)	3,337			
HF - TPOAM on/aft 3/30/	23	1,158	(24)	1,134			
<b>Total Municipality</b>		<b>\$ 55,484</b>	<b>\$ 57,280</b>	<b>\$ 112,764</b>			
<b>Estimated Annual Contribution<sup>3</sup></b>		<b>\$ 665,808</b>	<b>\$ 687,360</b>	<b>\$ 1,353,168</b>			

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

<sup>2</sup> 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.

<sup>3</sup> 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, 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](#).

- <sup>4</sup> If projected assets exceed projected liabilities as of the beginning of the January 1, 2017 fiscal year, the negative unfunded accrued liability is amortized (spread) over 10 years. 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.
- <sup>5</sup> If the division is closed to new hires, with new hires not covered by MERS Defined Benefit Plan or Hybrid Plan provisions, the amortization period will decrease as follows: Under Amortization Option A, the period will decrease by 2 years each valuation year, until it reaches 6 or 5 years. Then it decreases by 1 year each valuation year until the UAL is paid off. Under Amortization Option B, the period will decrease by 2 years each valuation year, until it reaches 16 or 15 years. Thereafter, the period will reduce by 1 year each valuation year, until the UAL is paid off. This will result in amortization payments that increase faster than the usual 3.75% each year. If the division is closed to new hires, with new hires (and transfers) covered by MERS Defined Benefit Plan or Hybrid Plan provisions, the standard open division amortization period will apply.
- <sup>6</sup> For linked divisions, the employer will be invoiced the Total Required Employer Contribution 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 the Employer Contribution Details shown in Table 1 do **not** reflect phase-in over 5 fiscal years (beginning in 2017) of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 1 above. The contribution requirements including the 5-year phase-in are shown on page 8.

**Please see the Comments on Asset Smoothing.**



## Benefit Provisions

Table 2

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

	2015 Valuation	2014 Valuation
<b>Benefit Multiplier:</b>	2.00% Multiplier (no max)	2.00% Multiplier (no max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	-	-
<b>Early Retirement (Reduced):</b>	50/25 55/15	50/25 55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>Employee Contributions:</b>	2%	2%
<b>Act 88:</b>	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

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

	2015 Valuation	2014 Valuation
<b>Benefit Multiplier:</b>	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	50/25	50/25
<b>Early Retirement (Reduced):</b>	55/15	55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)	2.50% (Non-Compound)
<b>Employee Contributions:</b>	6.17%	6.17%
<b>Act 88:</b>	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

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

	2015 Valuation	2014 Valuation
<b>Benefit Multiplier:</b>	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	55/15	55/15
<b>Early Retirement (Reduced):</b>	50/25	50/25
<b>Final Average Compensation:</b>	3 years	3 years
<b>Employee Contributions:</b>	5%	5%
<b>Act 88:</b>	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

Table 2 (continued)

<b>10 - Elctd Ofc: Open Division</b>		
	<b>2015 Valuation</b>	<b>2014 Valuation</b>
<b>Benefit Multiplier:</b>	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	8 years	8 years
<b>Early Retirement (Unreduced):</b>	-	-
<b>Early Retirement (Reduced):</b>	50/25 55/15	50/25 55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)	2.50% (Non-Compound)
<b>Employee Contributions:</b>	6.93%	6.93%
<b>Act 88:</b>	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)
<b>11 - Dsptrchr: Closed to new hires, linked to Division HA</b>		
	<b>2015 Valuation</b>	<b>2014 Valuation</b>
<b>Benefit Multiplier:</b>	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	-	-
<b>Early Retirement (Reduced):</b>	50/25 55/15	50/25 55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>Employee Contributions:</b>	5%	5%
<b>Act 88:</b>	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)
<b>14 - Adm/NonUnion: Closed to new hires, linked to Division HE</b>		
	<b>2015 Valuation</b>	<b>2014 Valuation</b>
<b>Benefit Multiplier:</b>	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	-	-
<b>Early Retirement (Reduced):</b>	50/25 55/15	50/25 55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>Employee Contributions:</b>	5%	5%
<b>Act 88:</b>	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

Table 2 (continued)

<b>15 - Utilities Dr: Closed to new hires</b>		
	<b>2015 Valuation</b>	<b>2014 Valuation</b>
<b>Benefit Multiplier:</b>	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	55/25	55/25
<b>Early Retirement (Reduced):</b>	50/25	50/25
	55/15	55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>Employee Contributions:</b>	6%	6%
<b>Act 88:</b>	Yes (Adopted 10/1/2007)	Yes (Adopted 10/1/2007)
<b>20 - Pol Cmnd: Closed to new hires, linked to Division HC</b>		
	<b>2015 Valuation</b>	<b>2014 Valuation</b>
<b>Benefit Multiplier:</b>	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	10 years	10 years
<b>Early Retirement (Unreduced):</b>	50/25	50/25
<b>Early Retirement (Reduced):</b>	55/15	55/15
<b>Final Average Compensation:</b>	3 years	3 years
<b>COLA for Future Retirees:</b>	2.50% (Non-Compound)	2.50% (Non-Compound)
<b>Employee Contributions:</b>	9.06%	9.06%
<b>Act 88:</b>	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)
<b>HA - POLC/cler/Dispatch aft 7/1/14: Open Division, linked to Division 11</b>		
	<b>2015 Valuation</b>	<b>2014 Valuation</b>
<b>Benefit Multiplier:</b>	Hybrid Plan - 1.50% Multiplier	Hybrid Plan - 1.50% Multiplier
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	6 years	6 years
<b>Early Retirement (Unreduced):</b>	-	-
<b>Early Retirement (Reduced):</b>	-	-
<b>Final Average Compensation:</b>	3 years	3 years
<b>Employee Contributions:</b>	0%	0%
<b>Act 88:</b>	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)
<b>HB - IAFF ee's hired on/aft 1/1/14: Open Division, linked to Division 05</b>		
	<b>2015 Valuation</b>	<b>2014 Valuation</b>
<b>Benefit Multiplier:</b>	Hybrid Plan - 1.50% Multiplier	Hybrid Plan - 1.50% Multiplier
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	6 years	6 years
<b>Early Retirement (Unreduced):</b>	55/25	55/25
<b>Early Retirement (Reduced):</b>	-	-
<b>Final Average Compensation:</b>	3 years	3 years
<b>Employee Contributions:</b>	0%	0%
<b>Act 88:</b>	Yes (Adopted 11/10/2003)	Yes (Adopted 11/10/2003)

Table 2 (continued)

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

	2015 Valuation	2014 Valuation
<b>Benefit Multiplier:</b>	Hybrid Plan - 1.50% Multiplier	Hybrid Plan - 1.50% Multiplier
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	6 years	6 years
<b>Early Retirement (Unreduced):</b>	55/25	55/25
<b>Early Retirement (Reduced):</b>	-	-
<b>Final Average Compensation:</b>	3 years	3 years
<b>Employee Contributions:</b>	0%	0%
<b>Act 88:</b>	No	No

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

	2015 Valuation	2014 Valuation
<b>Benefit Multiplier:</b>	Hybrid Plan - 1.50% Multiplier	Hybrid Plan - 1.50% Multiplier
<b>Normal Retirement Age:</b>	60	60
<b>Vesting:</b>	6 years	6 years
<b>Early Retirement (Unreduced):</b>	-	-
<b>Early Retirement (Reduced):</b>	-	-
<b>Final Average Compensation:</b>	3 years	3 years
<b>Employee Contributions:</b>	0%	0%
<b>Act 88:</b>	No	No

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

	2015 Valuation	2014 Valuation
<b>Benefit Multiplier:</b>	Hybrid Plan - 1.50% Multiplier	-
<b>Normal Retirement Age:</b>	60	-
<b>Vesting:</b>	6 years	-
<b>Early Retirement (Unreduced):</b>	-	-
<b>Early Retirement (Reduced):</b>	-	-
<b>Final Average Compensation:</b>	3 years	-
<b>Employee Contributions:</b>	0%	-
<b>Act 88:</b>	No	-

## Participant Summary

**Table 3**

Division	2015 Valuation		2014 Valuation		2015 Valuation		
	Number	Annual Payroll <sup>1</sup>	Number	Annual Payroll <sup>1</sup>	Average Age	Average Benefit Service <sup>2</sup>	Average Eligibility Service <sup>2</sup>
01 - TPOAM							
Active Employees	20	\$ 822,799	20	\$ 729,745	41.4	6.2	7.6
Vested Former Employees	5	34,536	8	67,215	43.3	8.5	14.0
Retirees and Beneficiaries	9	64,609	5	24,206	66.6		
02 - Pol Ptrl							
Active Employees	24	\$ 1,680,414	25	\$ 1,686,802	39.2	13.4	13.6
Vested Former Employees	2	3,206	2	3,206	35.9	1.6	8.2
Retirees and Beneficiaries	5	98,652	5	96,785	57.3		
05 - Fire Fght							
Active Employees	25	\$ 1,767,537	25	\$ 1,734,496	39.4	11.0	11.6
Vested Former Employees	2	68,138	2	68,138	51.3	19.6	19.6
Retirees and Beneficiaries	3	57,566	3	57,566	55.8		
10 - Elctd Ofc							
Active Employees	3	\$ 235,634	3	\$ 235,013	61.4	7.1	14.3
Vested Former Employees	1	14,444	1	14,444	55.1	8.0	8.0
Retirees and Beneficiaries	4	69,407	4	68,533	79.7		
11 - Dsptrchr							
Active Employees	7	\$ 378,771	7	\$ 346,807	41.1	12.8	12.8
Vested Former Employees	4	32,910	4	32,910	40.4	8.5	14.3
Retirees and Beneficiaries	0	0	0	0	0.0		
14 - Adm/NonUnion							
Active Employees	32	\$ 2,025,795	35	\$ 2,111,436	49.2	10.7	13.3
Vested Former Employees	8	124,200	8	166,592	49.0	10.4	17.4
Retirees and Beneficiaries	11	191,372	9	147,132	65.0		
15 - Utilities Dr							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	1	19,167	1	19,167	58.7		
20 - Pol Cmnd							
Active Employees	11	\$ 958,619	10	\$ 830,122	42.5	16.9	19.1
Vested Former Employees	1	23,169	1	23,169	59.3	16.8	16.8
Retirees and Beneficiaries	11	458,637	11	448,879	57.1		
HA - POLC/cler/Dispatch a							
Active Employees	1	\$ 35,002	1	\$ 33,995	28.0	0.4	0.4
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		

Table 3 (continued)

Division	2015 Valuation		2014 Valuation		2015 Valuation		
	Number	Annual Payroll <sup>1</sup>	Number	Annual Payroll <sup>1</sup>	Average Age	Average Benefit Service <sup>2</sup>	Average Eligibility Service <sup>2</sup>
HB - IAFF ee's hired on/a							
Active Employees	1	\$ 45,728		\$	35.9	0.6	0.7
Vested Former Employees	0	0			0.0	0.0	0.0
Retirees and Beneficiaries	0	0			0.0		
HD - POAM on/after 1/1/20							
Active Employees	5	\$ 240,367		\$	30.8	0.7	0.7
Vested Former Employees	0	0			0.0	0.0	0.0
Retirees and Beneficiaries	0	0			0.0		
HE - Non-union on/after 1							
Active Employees	5	\$ 218,662		\$	37.7	0.6	2.6
Vested Former Employees	0	0			0.0	0.0	0.0
Retirees and Beneficiaries	0	0			0.0		
HF - TPOAM on/aft 3/30/15							
Active Employees	2	\$ 66,861		\$	51.8	0.5	0.5
Vested Former Employees	0	0			0.0	0.0	0.0
Retirees and Beneficiaries	0	0			0.0		
<b>Total Municipality</b>							
<b>Active Employees</b>	<b>136</b>	<b>\$ 8,476,189</b>	<b>126</b>	<b>\$ 7,708,416</b>	<b>42.5</b>	<b>10.1</b>	<b>11.4</b>
<b>Vested Former Employees</b>	<b>23</b>	<b>300,603</b>	<b>26</b>	<b>375,674</b>	<b>46.0</b>	<b>9.9</b>	<b>15.1</b>
<b>Retirees and Beneficiaries</b>	<b>44</b>	<b>959,410</b>	<b>38</b>	<b>862,268</b>	<b>63.0</b>		
<b>Total Participants</b>	<b>203</b>		<b>190</b>				

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

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

## Reported Assets (Market Value)

**Table 4**

Division	2015 Valuation		2014 Valuation	
	Employer and Retiree <sup>1</sup>	Employee <sup>2</sup>	Employer and Retiree <sup>1</sup>	Employee <sup>2</sup>
01 - TPOAM	\$ 998,885	\$ 250,716	\$ 953,747	\$ 306,266
02 - Pol Ptrl	3,236,566	1,228,240	3,197,676	1,203,752
05 - Fire Fght	2,567,091	951,454	2,546,098	858,108
10 - Elctd Ofc	225,533	177,782	254,018	160,410
11 - Dsptrchr	405,932	300,251	414,464	279,496
14 - Adm/NonUnion	3,935,055	1,287,876	3,965,474	1,260,720
15 - Utilities Dr	138,473	0	155,915	0
20 - Pol Cmnd	3,570,503	937,101	3,744,964	758,878
HA - POLC/cler/Dispatch aft 7/1/14	2,085	0	552	0
HB - IAFF ee's hired on/aft 1/1/14	1,741	0		
HD - POAM on/after 1/1/2015	11,861	0		
HE - Non-union on/after 1/1/2015	11,346	0		
HF - TPOAM on/aft 3/30/15	2,288	0		
<b>Municipality Total</b>	<b>\$ 15,107,359</b>	<b>\$ 5,133,420</b>	<b>\$ 15,232,908</b>	<b>\$ 4,827,630</b>
<b>Combined Reserves</b>	<b>\$ 20,240,779</b>		<b>\$ 20,060,538</b>	

<sup>1</sup> Reserve for Employer Contributions and Benefit Payments

<sup>2</sup> Reserve for Employee Contributions

The December 31, 2015 valuation assets are equal to 1.135382 times the reported market value of assets (compared to 1.059937 as of December 31, 2014). 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						
2005	\$ 357,073		\$ 336,650	\$ 473,095	\$ (146,120)	\$ (15,748)	\$ 0	\$ 7,755,416
2006	416,355		353,345	654,031	(169,433)	(29,878)	36,086	9,015,922
2007	472,566		359,907	733,266	(206,619)	(96,078)	(1)	10,278,963
2008	510,445		367,989	580,155	(199,071)	(88,761)	65,728	11,515,448
2009	503,828		365,468	803,796	(310,482)	(84,863)	34,825	12,828,020
2010	742,471		432,920	1,032,060	(448,528)	(69,956)	312,836	14,829,823
2011	784,130	\$ 0	413,860	972,208	(482,536)	(39,475)	5,514	16,483,524
2012	751,402	0	415,425	929,886	(580,364)	(51,588)	26,952	17,975,237
2013	815,893	0	444,508	1,210,749	(715,656)	(15,986)	0	19,714,745
2014	808,039	0	427,000	1,197,131	(817,351)	(66,658)	0	21,262,906
2015	992,973	0	433,629	1,178,970	(911,658)	(2,733)	26,929	22,981,016

**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, 2015

Table 6

Division	Actuarial Accrued Liability	Valuation Assets <sup>1</sup>	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
01 - TPOAM				
Active Employees	\$ 738,743	\$ 563,268	76.2%	\$ 175,475
Vested Former Employees	184,964	184,964	100.0%	0
Retirees And Beneficiaries	645,105	645,105	100.0%	0
Pending Refunds	<u>25,437</u>	<u>25,437</u>	100.0%	<u>0</u>
Total	<b>\$ 1,594,249</b>	<b>\$ 1,418,774</b>	<b>89.0%</b>	<b>\$ 175,475</b>
02 - Pol Ptrl				
Active Employees	\$ 5,430,719	\$ 3,650,018	67.2%	\$ 1,780,701
Vested Former Employees	8,099	8,099	100.0%	0
Retirees And Beneficiaries	1,390,285	1,390,285	100.0%	0
Pending Refunds	<u>20,858</u>	<u>20,858</u>	100.0%	<u>0</u>
Total	<b>\$ 6,849,961</b>	<b>\$ 5,069,260</b>	<b>74.0%</b>	<b>\$ 1,780,701</b>
05 - Fire Fght				
Active Employees	\$ 3,591,296	\$ 2,791,380	77.7%	\$ 799,916
Vested Former Employees	538,570	538,570	100.0%	0
Retirees And Beneficiaries	662,793	662,793	100.0%	0
Pending Refunds	<u>2,150</u>	<u>2,150</u>	100.0%	<u>0</u>
Total	<b>\$ 4,794,809</b>	<b>\$ 3,994,893</b>	<b>83.3%</b>	<b>\$ 799,916</b>
10 - Elctd Ofc				
Active Employees	\$ 353,913	\$ 116,878	33.0%	\$ 237,035
Vested Former Employees	128,342	39,712	30.9%	88,630
Retirees And Beneficiaries	582,886	280,134	48.1%	302,752
Pending Refunds	<u>21,193</u>	<u>21,193</u>	100.0%	<u>0</u>
Total	<b>\$ 1,086,334</b>	<b>\$ 457,917</b>	<b>42.2%</b>	<b>\$ 628,417</b>
11 - Dsptrchr				
Active Employees	\$ 667,131	\$ 687,852	103.1%	\$ (20,721)
Vested Former Employees	95,007	95,007	100.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	<u>18,928</u>	<u>18,928</u>	100.0%	<u>0</u>
Total	<b>\$ 781,066</b>	<b>\$ 801,787</b>	<b>102.7%</b>	<b>\$ (20,721)</b>
14 - Adm/NonUnion				
Active Employees	\$ 3,715,075	\$ 2,999,260	80.7%	\$ 715,815
Vested Former Employees	855,887	855,887	100.0%	0
Retirees And Beneficiaries	1,967,614	1,967,614	100.0%	0
Pending Refunds	<u>107,261</u>	<u>107,261</u>	100.0%	<u>0</u>
Total	<b>\$ 6,645,837</b>	<b>\$ 5,930,022</b>	<b>89.2%</b>	<b>\$ 715,815</b>

Table 6 (continued)

Division	Actuarial Accrued Liability	Valuation Assets <sup>1</sup>	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
15 - Utilities Dr				
Active Employees	\$ 0	\$ 0	0.0%	\$ 0
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	236,208	157,220	66.6%	78,988
Pending Refunds	0	0	0.0%	0
Total	\$ 236,208	\$ 157,220	66.6%	\$ 78,988
20 - Pol Cmnd				
Active Employees	\$ 4,394,124	\$ 923,012	21.0%	\$ 3,471,112
Vested Former Employees	238,029	14,090	5.9%	223,939
Retirees And Beneficiaries	6,324,256	4,180,750	66.1%	2,143,506
Pending Refunds	0	0	0.0%	0
Total	\$ 10,956,409	\$ 5,117,852	46.7%	\$ 5,838,557
HA - POLC/cler/Dispatch aft 7/1/14				
Active Employees	\$ 0	\$ 2,367	0.0%	\$ (2,367)
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 0	\$ 2,367	0.0%	\$ (2,367)
HB - IAFF ee's hired on/aft 1/1/14				
Active Employees	\$ 3,331	\$ 1,977	59.4%	\$ 1,354
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 3,331	\$ 1,977	59.4%	\$ 1,354
HD - POAM on/after 1/1/2015				
Active Employees	\$ 11,692	\$ 13,467	115.2%	\$ (1,775)
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 11,692	\$ 13,467	115.2%	\$ (1,775)
HE - Non-union on/after 1/1/2015				
Active Employees	\$ 10,713	\$ 12,882	120.2%	\$ (2,169)
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 10,713	\$ 12,882	120.2%	\$ (2,169)
HF - TPOAM on/aft 3/30/15				
Active Employees	\$ 0	\$ 2,598	0.0%	\$ (2,598)
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 0	\$ 2,598	0.0%	\$ (2,598)

Table 6 (continued)

Division	Actuarial Accrued Liability	Valuation Assets <sup>1</sup>	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
<b>Total Municipality</b>				
Active Employees	\$ 18,916,737	\$ 11,764,959	62.2%	\$ 7,151,778
Vested Former Employees	2,048,898	1,736,329	84.7%	312,569
Retirees and Beneficiaries	11,809,147	9,283,901	78.6%	2,525,246
Pending Refunds	<u>195,827</u>	<u>195,827</u>	100.0%	<u>0</u>
<b>Total Participants</b>	<b>\$ 32,970,609</b>	<b>\$ 22,981,016</b>	<b>69.7%</b>	<b>\$ 9,989,593</b>
The following results show the combined accrued liabilities and assets for each set of linked divisions. These results are already included in the table above.				
Linked Divisions HF, 01				
Active Employees	\$ 738,743	\$ 565,866	76.6%	\$ 172,877
Vested Former Employees	184,964	184,964	100.0%	0
Retirees and Beneficiaries	645,105	645,105	100.0%	0
Pending Refunds	<u>25,437</u>	<u>25,437</u>	100.0%	<u>0</u>
<b>Total</b>	<b>\$ 1,594,249</b>	<b>\$ 1,421,372</b>	<b>89.2%</b>	<b>\$ 172,877</b>
Linked Divisions HD, 02				
Active Employees	\$ 5,442,411	\$ 3,663,485	67.3%	\$ 1,778,926
Vested Former Employees	8,099	8,099	100.0%	0
Retirees and Beneficiaries	1,390,285	1,390,285	100.0%	0
Pending Refunds	<u>20,858</u>	<u>20,858</u>	100.0%	<u>0</u>
<b>Total</b>	<b>\$ 6,861,653</b>	<b>\$ 5,082,727</b>	<b>74.1%</b>	<b>\$ 1,778,926</b>
Linked Divisions HB, 05				
Active Employees	\$ 3,594,627	\$ 2,793,357	77.7%	\$ 801,270
Vested Former Employees	538,570	538,570	100.0%	0
Retirees and Beneficiaries	662,793	662,793	100.0%	0
Pending Refunds	<u>2,150</u>	<u>2,150</u>	100.0%	<u>0</u>
<b>Total</b>	<b>\$ 4,798,140</b>	<b>\$ 3,996,870</b>	<b>83.3%</b>	<b>\$ 801,270</b>
Linked Divisions HA, 11				
Active Employees	\$ 667,131	\$ 690,219	103.5%	\$ (23,088)
Vested Former Employees	95,007	95,007	100.0%	0
Retirees and Beneficiaries	0	0	0.0%	0
Pending Refunds	<u>18,928</u>	<u>18,928</u>	100.0%	<u>0</u>
<b>Total</b>	<b>\$ 781,066</b>	<b>\$ 804,154</b>	<b>103.0%</b>	<b>\$ (23,088)</b>
Linked Divisions HE, 14				
Active Employees	\$ 3,725,788	\$ 3,012,142	80.8%	\$ 713,646
Vested Former Employees	855,887	855,887	100.0%	0
Retirees and Beneficiaries	1,967,614	1,967,614	100.0%	0
Pending Refunds	<u>107,261</u>	<u>107,261</u>	100.0%	<u>0</u>
<b>Total</b>	<b>\$ 6,656,550</b>	<b>\$ 5,942,904</b>	<b>89.3%</b>	<b>\$ 713,646</b>

<sup>1</sup> Includes both employer and employee assets.

**Please see the Comments on Asset Smoothing.**

See the MERS Fiscal Responsibility Policy on the MERS website at:

[http://www.mersofmich.com/Portals/0/Assets/PageResources/MERS/PlanDocument/Pension/MERSPlanDocument\\_Section46.pdf](http://www.mersofmich.com/Portals/0/Assets/PageResources/MERS/PlanDocument/Pension/MERSPlanDocument_Section46.pdf) .

## Actuarial Accrued Liabilities - Comparative Schedule

**Table 7**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2001	\$ 5,900,412	\$ 4,176,971	71%	\$ 1,723,441
2002	6,638,884	4,826,738	73%	1,812,146
2003	8,233,918	5,826,387	71%	2,407,531
2004	9,711,666	6,750,466	70%	2,961,200
2005	10,943,440	7,755,416	71%	3,188,024
2006	12,681,900	9,015,922	71%	3,665,978
2007	14,059,796	10,278,963	73%	3,780,833
2008	15,441,447	11,515,448	75%	3,925,999
2009	16,665,216	12,828,020	77%	3,837,196
2010	18,841,079	14,829,823	79%	4,011,256
2011	21,644,476	16,483,524	76%	5,160,952
2012	23,384,220	17,975,237	77%	5,408,983
2013	26,862,373	19,714,745	73%	7,147,628
2014	28,683,079	21,262,906	74%	7,420,173
2015	32,970,609	22,981,016	70%	9,989,593

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

## Division 01 - TPOAM

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 739,316	\$ 674,173	91%	\$ 65,143
2006	805,063	754,142	94%	50,921
2007	834,644	805,964	97%	28,680
2008	904,962	874,672	97%	30,290
2009	959,704	967,623	101%	(7,919)
2010	1,000,313	1,082,521	108%	(82,208)
2011	1,072,912	1,139,443	106%	(66,531)
2012	1,061,861	1,165,917	110%	(104,056)
2013	1,192,711	1,244,550	104%	(51,839)
2014	1,307,912	1,335,534	102%	(27,622)
2015	1,594,249	1,418,774	89%	175,475

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		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2005	24	\$ 661,076	3.93%	5.00%
2006	21	611,697	4.10%	5.00%
2007	22	646,217	4.29%	5.00%
2008	20	635,140	4.59%	5.00%
2009	21	697,600	4.23%	5.00%
2010	18	633,150	2.86%	5.00%
2011	17	602,922	4.51%	4.00%
2012	15	528,807	4.17%	3.00%
2013	20	731,576	5.40%	3.00%
2014	20	729,745	6.72%	2.00%
2015	20	822,799	\$ 5,946	2.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

## Division 02 - Pol Ptrl

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 1,746,034	\$ 1,407,152	81%	\$ 338,882
2006	2,278,522	1,637,754	72%	640,768
2007	2,420,555	1,831,922	76%	588,633
2008	2,854,451	2,127,108	75%	727,343
2009	3,131,111	2,459,798	79%	671,313
2010	3,564,633	3,303,703	93%	260,930
2011	4,885,018	3,652,191	75%	1,232,827
2012	5,203,705	3,893,073	75%	1,310,632
2013	6,076,136	4,444,933	73%	1,631,203
2014	6,051,815	4,665,236	77%	1,386,579
2015	6,849,961	5,069,260	74%	1,780,701

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 <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2005	28	\$ 1,501,642	4.82%	5.00%
2006	31	1,685,425	6.51%	5.00%
2007	28	1,635,804	6.29%	5.00%
2008	30	1,769,768	7.64%	5.00%
2009	31	1,827,777	7.28%	6.17%
2010	30	1,872,798	5.85%	6.17%
2011	30	1,860,017	11.47%	6.17%
2012	31	1,908,525	11.59%	6.17%
2013	29	1,997,648	12.58%	6.17%
2014	25	1,686,802	\$ 17,642	6.17%
2015	24	1,680,414	\$ 21,983	6.17%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

## Division 05 - Fire Fight

Table 8-05: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 1,266,466	\$ 1,029,722	81%	\$ 236,744
2006	1,500,773	1,221,594	81%	279,179
2007	1,713,134	1,419,202	83%	293,932
2008	1,867,228	1,577,772	84%	289,456
2009	2,149,803	1,849,791	86%	300,012
2010	2,522,564	2,164,526	86%	358,038
2011	2,949,361	2,489,043	84%	460,318
2012	3,288,692	2,821,512	86%	467,180
2013	3,787,941	3,230,511	85%	557,430
2014	4,136,363	3,608,244	87%	528,119
2015	4,794,809	3,994,893	83%	799,916

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

Table 9-05: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2005	20	\$ 944,419	5.28%	5.00%
2006	20	985,429	6.34%	5.00%
2007	20	1,032,601	6.31%	5.00%
2008	21	1,097,550	7.04%	5.00%
2009	21	1,270,865	7.32%	5.00%
2010	23	1,517,003	7.42%	5.00%
2011	23	1,579,022	7.84%	5.00%
2012	23	1,614,967	7.96%	5.00%
2013	26	1,792,762	8.16%	5.00%
2014	25	1,734,496	\$ 11,804	5.00%
2015	25	1,767,537	\$ 14,521	5.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.



## Division 10 - Elctd Ofc

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 665,049	\$ 299,880	45%	\$ 365,169
2006	698,520	328,649	47%	369,871
2007	745,206	356,731	48%	388,475
2008	714,664	376,269	53%	338,395
2009	755,823	382,227	51%	373,596
2010	791,255	387,897	49%	403,358
2011	825,575	394,931	48%	430,644
2012	867,718	401,319	46%	466,399
2013	924,647	419,643	45%	505,004
2014	970,282	439,268	45%	531,014
2015	1,086,334	457,917	42%	628,417

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 <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2005	3	\$ 223,722	15.28%	6.93%
2006	3	220,310	15.76%	6.93%
2007	3	225,804	16.10%	6.93%
2008	3	211,712	15.00%	6.93%
2009	3	234,513	15.83%	6.93%
2010	3	234,513	16.45%	6.93%
2011	3	234,513	18.10%	6.93%
2012	3	234,513	19.87%	6.93%
2013	3	243,533	20.46%	6.93%
2014	3	235,013	21.80%	6.93%
2015	3	235,634	26.71%	6.93%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

## Division 11 - Dsptchr

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 200,764	\$ 209,935	105%	\$ (9,171)
2006	212,728	249,975	118%	(37,247)
2007	256,874	293,504	114%	(36,630)
2008	318,643	332,202	104%	(13,559)
2009	341,413	383,701	112%	(42,288)
2010	400,978	452,270	113%	(51,292)
2011	480,487	541,624	113%	(61,137)
2012	527,855	611,780	116%	(83,925)
2013	591,020	684,209	116%	(93,189)
2014	637,549	735,554	115%	(98,005)
2015	781,066	801,787	103%	(20,721)

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 <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2005	9	\$ 339,241	2.20%	5.00%
2006	8	295,996	0.96%	5.00%
2007	9	346,806	1.31%	5.00%
2008	9	369,217	2.82%	5.00%
2009	9	390,756	1.87%	5.00%
2010	8	355,745	2.50%	5.00%
2011	9	395,048	2.54%	5.00%
2012	9	398,795	1.73%	5.00%
2013	8	381,680	1.52%	5.00%
2014	7	346,807	\$ 281	5.00%
2015	7	378,771	\$ 1,353	5.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

## Division 14 - Adm/NonUnion

Table 8-14: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 2,632,398	\$ 2,114,701	80%	\$ 517,697
2006	2,991,979	2,477,560	83%	514,419
2007	3,366,297	2,844,249	84%	522,048
2008	3,463,118	3,188,758	92%	274,360
2009	3,794,301	3,593,171	95%	201,130
2010	4,010,400	4,094,239	102%	(83,839)
2011	4,240,151	4,384,685	103%	(144,534)
2012	4,778,491	4,815,785	101%	(37,294)
2013	5,298,463	5,273,961	100%	24,502
2014	5,796,065	5,539,436	96%	256,629
2015	6,645,837	5,930,022	89%	715,815

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

Table 9-14: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2005	32	\$ 1,523,392	6.40%	6.00%
2006	33	1,628,149	6.37%	6.00%
2007	33	1,650,460	6.12%	6.00%
2008	29	1,515,248	6.62%	5.00%
2009	33	1,800,059	6.11%	5.00%
2010	34	1,981,088	5.45%	5.00%
2011	33	1,942,390	5.35%	5.00%
2012	34	1,908,244	5.52%	5.00%
2013	34	2,026,959	6.46%	5.00%
2014	35	2,111,436	\$ 11,872	5.00%
2015	32	2,025,795	\$ 15,246	5.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

## Division 15 - Utilities Dr

**Table 8-15: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 62,405	\$ 43,137	69%	\$ 19,268
2008	172,413	133,983	78%	38,430
2009	183,689	160,991	88%	22,698
2010	148,318	186,488	126%	(38,170)
2011	233,539	192,594	83%	40,945
2012	232,326	179,491	77%	52,835
2013	231,296	171,997	74%	59,299
2014	229,922	165,260	72%	64,662
2015	236,208	157,220	67%	78,988

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

**Table 9-15: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2007	1	\$ 82,054	10.46%	6.00%
2008	1	85,036	11.17%	6.00%
2009	1	88,664	10.94%	6.00%
2010	0	0	\$ 0	0.00%
2011	0	0	\$ 227	0.00%
2012	0	0	\$ 295	0.00%
2013	0	0	\$ 351	0.00%
2014	0	0	\$ 411	0.00%
2015	0	0	\$ 566	0.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

## Division 20 - Pol Cmnd

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 3,559,320	\$ 2,032,204	57%	\$ 1,527,116
2006	4,063,496	2,366,701	58%	1,696,795
2007	4,533,239	2,712,327	60%	1,820,912
2008	5,022,008	2,939,447	59%	2,082,561
2009	5,349,372	3,030,718	57%	2,318,654
2010	6,402,618	3,158,179	49%	3,244,439
2011	6,957,433	3,689,013	53%	3,268,420
2012	7,423,572	4,086,360	55%	3,337,212
2013	8,760,159	4,244,941	49%	4,515,218
2014	9,553,198	4,773,789	50%	4,779,409
2015	10,956,409	5,117,852	47%	5,838,557

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 <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2005	8	\$ 583,176	16.63%	10.06%
2006	8	581,301	18.51%	10.06%
2007	9	679,208	18.33%	9.06%
2008	8	590,492	24.39%	9.06%
2009	5	391,489	38.28%	9.06%
2010	7	559,006	37.18%	9.06%
2011	8	646,496	33.90%	9.06%
2012	9	714,115	34.63%	9.06%
2013	8	690,649	47.79%	9.06%
2014	10	830,122	\$ 30,807	9.06%
2015	11	958,619	\$ 40,054	9.06%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

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

### Table 8-HA: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2014	\$ (27)	\$ 585	0%	\$ (612)
2015	0	2,367	0%	(2,367)

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

### Table 9-HA: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2014	1	\$ 33,995	5.99%	0.00%
2015	1	35,002	5.16%	0.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

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

**Table 8-HB: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2015	3,331	1,977	59%	1,354

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

**Table 9-HB: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2015	1	45,728	6.41%	0.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

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

**Table 8-HD: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2015	11,692	13,467	115%	(1,775)

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

**Table 9-HD: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2015	5	240,367	6.79%	0.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.



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

**Table 8-HE: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2015	10,713	12,882	120%	(2,169)

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

**Table 9-HE: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2015	5	218,662	7.28%	0.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

## Division HF - TPOAM on/aft 3/30/15

### Table 8-HF: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2015	\$ 0	\$ 2,598	0%	\$ (2,598)

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

### Table 9-HF: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2015	2	\$ 66,861	9.14%	0.00%

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

<sup>2</sup> 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 valuation do **not** reflect phase-in over 5 fiscal years (beginning in 2017) 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 8.

See the Benefit Provision History on page 45 for past benefit provision changes.

## GASB 68 Information

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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](http://www.mersofmich.com).

Actuarial Valuation Date:	12/31/2015
Measurement Date of Total Pension Liability (TPL):	12/31/2015

At 12/31/2015, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits:	44
Inactive employees entitled to but not yet receiving benefits:	23
Active employees:	<u>136</u>
	203

Total Pension Liability as of 12/31/2014 measurement date:	\$ 27,740,022
Total Pension Liability as of 12/31/2015 measurement date:	\$ 31,862,556
Service Cost for the year ending on the 12/31/2015 measurement date:	\$ 935,678

Change in the Total Pension Liability due to:

- Benefit changes <sup>1</sup> :	\$ 0
- Differences between expected and actual experience <sup>2</sup> :	\$ 389,271
- Changes in assumptions <sup>2</sup> :	\$ 1,428,819

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

<sup>2</sup> 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):	8
Covered employee payroll: (Needed for Required Supplementary Information)	\$ 8,476,189

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 12/31/2015:	\$ 4,788,189	-	\$ (3,918,345)

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

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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](http://www.mersofmich.com).

Actuarial Valuation Date:	12/31/2015
Measurement Date of Total Pension Liability (TPL):	12/31/2016

At 12/31/2015, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits:	44
Inactive employees entitled to but not yet receiving benefits:	23
Active employees:	<u>136</u>
	203

Total Pension Liability as of 12/31/2015 measurement date:	\$	29,939,615
Total Pension Liability as of 12/31/2016 measurement date:	\$	34,156,414
Service Cost for the year ending on the 12/31/2016 measurement date:	\$	977,110
Change in the Total Pension Liability due to:		
- Benefit changes <sup>1</sup> :	\$	0
- Differences between expected and actual experience <sup>2</sup> :	\$	534,889
- Changes in assumptions <sup>2</sup> :	\$	1,505,883

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

<sup>2</sup> 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):	8
Covered employee payroll: (Needed for Required Supplementary Information)	\$ 8,476,189

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:	\$ 5,067,995	-	\$ (4,154,579)

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

## Benefit Provision History

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

### 01 - TPOAM

1/1/2014	Member Contribution Rate 2.00%
1/1/2012	Member Contribution Rate 3.00%
1/1/2011	Member Contribution Rate 4.00%
1/1/2004	Benefit B-2
11/10/2003	Covered by Act 88
7/11/1995	Blanket Resolution (All Service)
8/1/1991	Benefit FAC-3 (3 Year Final Average Compensation)
8/1/1991	10 Year Vesting
8/1/1991	Benefit C-2/Base B-1
8/1/1991	Member Contribution Rate 5.00%
8/1/1991	Fiscal Month - January

### 02 - Pol Ptrl

1/1/2010	E2 2.5% COLA for future retirees (12/01/2009)
12/1/2009	Benefit F50 (With 25 Years of Service)
12/1/2009	Member Contribution Rate 6.17%
12/1/2006	Benefit B-3 (80% max)
8/1/2006	Temporary Benefit B-3 (80% max) (08/01/2006 - 09/30/2006)
8/1/2006	E2 2.5% Window COLA for future retirees (08/01/2006) to (09/30/2006)
11/10/2003	Covered by Act 88
1/1/2001	Benefit B-2
7/11/1995	Blanket Resolution (All Service)
8/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
8/1/1992	10 Year Vesting
8/1/1992	Benefit C-2/Base B-1
8/1/1992	Benefit F55 (With 15 Years of Service)
8/1/1992	Member Contribution Rate 5.00%
8/1/1991	Fiscal Month - January

### 05 - Fire Fight

1/1/2007	Benefit B-3 (80% max)
11/10/2003	Covered by Act 88
3/1/2003	Benefit B-2
7/11/1995	Blanket Resolution (All Service)
8/1/1992	Day of work defined as 96 Hours a Month for All employees.
8/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
8/1/1992	10 Year Vesting
8/1/1992	Benefit C-2/Base B-1
8/1/1992	Benefit F55 (With 15 Years of Service)
8/1/1992	Member Contribution Rate 5.00%

**05 - Fire Fight**

8/1/1991 Fiscal Month - January

**10 - Elctd Ofc**

1/1/2005 E2 2.5% COLA for future retirees (11/01/2004)  
 11/10/2003 Covered by Act 88  
 5/1/1996 Benefit B-3 (80% max)  
 5/1/1996 Member Contribution Rate 6.93%  
 4/30/1996 Member Contribution Rate 0.00%  
 4/1/1996 2.0% multiplier (80% max)  
 7/11/1995 Blanket Resolution (All Service)  
 8/1/1991 Benefit FAC-3 (3 Year Final Average Compensation)  
 8/1/1991 8 Year Vesting  
 8/1/1991 Benefit B-2  
 8/1/1991 Member Contribution Rate 5.00%  
 8/1/1991 Fiscal Month - January

**11 - Dsptchr**

12/1/2009 Benefit B-3 (80% max)  
 11/10/2003 Covered by Act 88  
 1/1/2003 Benefit B-2  
 7/11/1995 Blanket Resolution (All Service)  
 10/1/1992 Benefit FAC-3 (3 Year Final Average Compensation)  
 10/1/1992 10 Year Vesting  
 10/1/1992 Benefit C-2/Base B-1  
 10/1/1992 Member Contribution Rate 5.00%  
 8/1/1991 Fiscal Month - January

**14 - Adm/NonUnion**

8/1/2008 Member Contribution Rate 5.00%  
 8/1/2005 Temporary 25 Years & Out (08/01/2005 - 11/03/2005)  
 1/1/2005 Benefit B-3 (80% max)  
 1/1/2005 Member Contribution Rate 6.00%  
 11/10/2003 Covered by Act 88  
 1/1/2000 Benefit FAC-3 (3 Year Final Average Compensation)  
 1/1/2000 10 Year Vesting  
 1/1/2000 Benefit B-2  
 1/1/2000 Member Contribution Rate 5.00%  
 7/11/1995 Blanket Resolution (All Service)  
 8/1/1991 Fiscal Month - January

**15 - Utilities Dr**

10/1/2007 Blanket Resolution (All Service)  
 10/1/2007 Covered by Act 88  
 10/1/2007 Benefit FAC-3 (3 Year Final Average Compensation)

**15 - Utilities Dr**

10/1/2007	10 Year Vesting
10/1/2007	Benefit B-3 (80% max)
10/1/2007	Benefit F55 (With 25 Years of Service)
10/1/2007	Member Contribution Rate 6.00%
8/1/1991	Fiscal Month - January

**20 - Pol Cmnd**

10/1/2009	Temporary 20 Years & Out (10/01/2009 - 01/31/2010)
2/1/2007	Member Contribution Rate 9.06%
7/1/2005	Member Contribution Rate 10.06%
11/10/2003	Covered by Act 88
1/1/2001	E2 2.5% COLA for future retirees (01/01/2001)
1/1/1999	Benefit B-4 (80% max)
1/1/1999	Benefit F50 (With 25 Years of Service)
1/1/1999	Member Contribution Rate 11.06%
7/11/1995	Blanket Resolution (All Service)
6/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
6/1/1992	10 Year Vesting
6/1/1992	Benefit C-2/Base B-1
6/1/1992	Benefit F55 (With 15 Years of Service)
6/1/1992	Member Contribution Rate 5.00%
8/1/1991	Fiscal Month - January

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

10/1/2015	Hybrid Elapsed Time
7/1/2014	Day of work defined as 8 Hours a Day for All employees.
7/1/2014	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2014	Loans
7/1/2014	Pickup
7/1/2014	Rollovers
7/1/2014	6 Year Vesting
7/1/2014	1.5% Multiplier
11/10/2003	Covered by ACT 88
8/1/1991	Fiscal Month - January

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

10/1/2015	Hybrid Elapsed Time
1/1/2014	Day of work defined as 96 Hours a Month for All employees.
1/1/2014	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2014	Loans
1/1/2014	Pickup
1/1/2014	Rollovers
1/1/2014	6 Year Vesting
1/1/2014	1.5% Multiplier
1/1/2014	Benefit F55 (With 25 Years of Service)

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

11/10/2003	Covered by ACT 88
8/1/1991	Fiscal Month - January

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

10/1/2015	Hybrid Elapsed Time
1/1/2015	Day of work defined as 8 Hours a Day for All employees.
1/1/2015	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2015	Loans
1/1/2015	6 Year Vesting
1/1/2015	1.5% Multiplier
1/1/2015	Benefit F55 (With 25 Years of Service)
1/1/2015	60
8/1/1991	Fiscal Month - January

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

10/1/2015	Hybrid Elapsed Time
1/1/2015	60
1/1/2015	Day of work defined as 8 Hours a Day for All employees.
1/1/2015	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/2015	Loans
1/1/2015	Pickup
1/1/2015	6 Year Vesting
1/1/2015	1.5% Multiplier
8/1/1991	Fiscal Month - January

**HF - TPOAM on/aft 3/30/15**

10/1/2015	Hybrid Elapsed Time
4/1/2015	60
4/1/2015	Day of work defined as 8 Hours a Day for All employees.
4/1/2015	Benefit FAC-3 (3 Year Final Average Compensation)
4/1/2015	Loans
4/1/2015	Pickup
4/1/2015	Rollovers
4/1/2015	6 Year Vesting
4/1/2015	1.5% Multiplier
8/1/1991	Fiscal Month - January



## Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

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

### Increase in Final Average Compensation

Division	FAC Increase Assumption
All Divisions	1.00%

### Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	94%

### Miscellaneous and Technical Assumptions

Loads – None.

### Amortization Policy for Closed Divisions

Closed Division	Amortization Option
All Closed Divisions	Option A