



**MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN**  
ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2015  
PORT HURON, CITY OF (7702)



Spring, 2016

Port Huron, City of

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

This report presents the results of the Annual Actuarial Valuation, prepared as of December 31, 2015. The report includes the determination of liabilities and contribution rates resulting from the participation of Port Huron, City of (7702) 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. Port Huron, City of is responsible for the employer contributions needed to provide MERS benefits for its employees and former employees under the Michigan Constitution and the MERS Plan Document.

The purpose of the December 31, 2015 annual actuarial valuation is to:

- Measure funding progress
- Establish contribution requirements for the fiscal year beginning July 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

## TABLE OF CONTENTS

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	<b>Page</b>
Executive Summary	5
Employer Contribution Details	15
Table 1	
Benefit Provisions	17
Table 2	
Participant Summary	20
Table 3	
Reported Assets (Market Value)	22
Table 4	
Flow of Valuation Assets	23
Table 5	
Actuarial Accrued Liabilities and Valuation Assets	24
Table 6	
Actuarial Accrued Liabilities - Comparative Schedule	27
Table 7	
Division-Based Comparative Schedules	28
Tables 8 and 9	
GASB 68 Information	38
Benefit Provision History	39
Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method	43

## 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 60% to 57%, a change of -3%.

The new assumptions changed your total monthly employer contribution requirement, before any phase-in, from \$394,133 to \$460,094, a change of \$65,961 (a 17% increase). Under the 5-year phase-in the first year increase is instead 3% (from \$394,133 to \$407,326 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>	57%	60%	63%

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:	July 1, 2017	July 1, 2017	July 1, 2017	July 1, 2016	July 1, 2017	July 1, 2017	July 1, 2017	July 1, 2016
<b>Division</b>								
10 - NonUnion	-	-	-	-	\$ 128,548	\$ 145,156	\$ 124,395	\$ 107,893
12 - UWUA - Gen Local 532	-	-	-	-	67,159	77,175	64,653	60,240
13 - Police,Lts,Sgt	153.42%	167.99%	149.25%	143.09%	56,205	61,541	54,873	47,340
14 - Police Commun.	-	-	-	-	994	1,006	990	657
15 - McMorrانPlace	-	-	-	-	3,592	4,292	3,416	2,562
16 - FireFighters	-	-	-	-	97,784	109,540	94,845	85,153
17 - Police Patrol	-	-	-	-	42,554	49,950	40,706	36,235
HA - Non-Union after 7/1/08	2.28%	2.67%	2.16%	0.12%	3,455	4,047	3,305	79
HB - UWUA - Local 532 after	3.69%	3.94%	3.59%	3.00%	4,019	4,295	3,951	1,343
HD - Police Patrol after 7/	9.88%	10.13%	9.48%	9.37%	3,016	3,092	2,999	431
<b>Municipality Total</b>					<b>\$ 407,326</b>	<b>\$ 460,094</b>	<b>\$ 394,133</b>	<b>\$ 341,933</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>		
10 - NonUnion	8.00%	8.00%
12 - UWUA - Gen Local 532	8.00%	8.00%
13 - Police,Lts,Sgt	11.71%	11.71%
14 - Police Commun.	0.00%	0.00%
15 - McMorrانPlace	0.00%	0.00%
16 - FireFighters	10.00%	10.00%

Valuation Date:	Employee Contribution Rate	
	12/31/2015	12/31/2014
<b>Division</b>		
17 - Police Patrol	10.00%	10.00%
HA - Non-Union after 7/1/08	0.00%	0.00%
HB - UWUA - Local 532 after	0.00%	0.00%
HD - Police Patrol after 7/	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 \$ 787,922, instead of \$ 460,094.
- To accelerate to a 100% funding ratio in 20 years, estimated monthly employer contributions for the entire employer would be \$ 496,573, instead of \$ 460,094.

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 51% (instead of 57%); and ii) your total employer contribution requirement for the fiscal year starting July 1, 2017 would be \$ 6,325,680 (instead of \$ 5,521,128).

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	\$ 193,416,704	\$ 173,255,119	\$ 156,289,777	\$ 141,925,247
Valuation Assets	\$ 89,706,697	\$ 89,706,697	\$ 89,706,697	\$ 89,706,697
Unfunded Accrued Liability	\$ 103,710,007	\$ 83,548,422	\$ 66,583,080	\$ 52,218,550
<b>Funded Ratio</b>	46%	52%	57%	63%
Monthly Normal Cost	\$ 176,718	\$ 120,910	\$ 78,786	\$ 46,888
Monthly Amortization Payment	\$ 499,487	\$ 440,917	\$ 381,308	\$ 320,357
<b>Total Employer Contribution<sup>1</sup></b>	\$ 676,205	\$ 561,827	\$ 460,094	\$ 367,245

<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 7/1	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	\$ 156,289,777	\$ 89,706,697	57%	\$ 4,911,864
2016	2018	159,109,022	87,378,584	55%	5,586,420
2017	2019	162,016,776	85,425,637	53%	6,268,584
2018	2020	164,896,642	83,829,886	51%	6,967,656
2019	2021	167,657,505	82,485,320	49%	7,680,852
2020	2022	170,268,592	83,776,507	49%	8,038,824
<b>NO 5-YEAR PHASE-IN</b>					
2015	2017	\$ 156,289,777	\$ 89,706,697	57%	\$ 5,545,080
2016	2018	159,109,022	87,378,584	55%	6,015,996
2017	2019	162,016,776	85,779,263	53%	6,500,688
2018	2020	164,896,642	84,775,562	51%	7,013,172
2019	2021	167,657,505	83,819,686	50%	7,554,360
2020	2022	170,268,592	85,352,832	50%	7,907,688
<b>6.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return</b>					
<b>NO 5-YEAR PHASE-IN</b>					
2015	2017	\$ 173,255,119	\$ 89,706,697	52%	\$ 6,771,804
2016	2018	176,217,527	86,536,089	49%	7,252,392
2017	2019	179,259,338	84,755,260	47%	7,742,292
2018	2020	182,262,623	84,208,246	46%	8,263,368
2019	2021	185,135,836	83,677,050	45%	8,817,456
2020	2022	187,849,726	85,729,483	46%	9,201,768
<b>5.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return</b>					
<b>NO 5-YEAR PHASE-IN</b>					
2015	2017	\$ 193,416,704	\$ 89,706,697	46%	\$ 8,152,320
2016	2018	196,530,581	85,693,307	44%	8,646,492
2017	2019	199,715,187	83,825,348	42%	9,147,072
2018	2020	202,851,049	83,910,161	41%	9,681,468
2019	2021	205,846,076	83,970,172	41%	10,254,612
2020	2022	208,672,896	86,325,059	41%	10,707,876

## Employer Contribution Details (Without a 5-year Phase-In) For the Fiscal Year Beginning July 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>							
10 - NonUnion	23	-	-	-	39.05%	8.00%	
12 - UWUA - Gen Local 5	23	-	-	-	28.21%	8.00%	
13 - Police,Lts,Sgt	23	6.01%	161.98%	167.99%		11.71%	0.71%
14 - Police Commun.	12	-	-	-		0.00%	
15 - McMorranPlace	20	-	-	-		0.00%	
16 - FireFighters	23	-	-	-		10.00%	
17 - Police Patrol	23	-	-	-	17.25%	10.00%	
HA - Non-Union after 7/	23	6.75%	-4.08%	2.67%	39.05%	0.00%	0.92%
HB - UWUA - Local 532 a	23	6.09%	-2.15%	3.94%	28.21%	0.00%	0.94%
HD - Police Patrol afte	23	10.16%	-0.03%	10.13%	17.25%	0.00%	0.94%
<b>Estimated Monthly Contribution<sup>3</sup></b>							
10 - NonUnion	23	\$ 15,576	\$ 129,580	\$ 145,156			
12 - UWUA - Gen Local 5	23	11,496	65,679	77,175			
13 - Police,Lts,Sgt	23	2,202	59,339	61,541			
14 - Police Commun.	12	0	1,006	1,006			
15 - McMorranPlace	20	0	4,292	4,292			
16 - FireFighters	23	13,004	96,536	109,540			
17 - Police Patrol	23	16,537	33,413	49,950			
HA - Non-Union after 7/	23	10,232	(6,185)	4,047			
HB - UWUA - Local 532 a	23	6,638	(2,343)	4,295			
HD - Police Patrol afte	23	3,101	(9)	3,092			
<b>Total Municipality</b>		<b>\$ 78,786</b>	<b>\$ 381,308</b>	<b>\$ 460,094</b>			
<b>Estimated Annual Contribution<sup>3</sup></b>		<b>\$ 945,432</b>	<b>\$ 4,575,696</b>	<b>\$ 5,521,128</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 July 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

<b>10 - NonUnion: Closed to new hires, linked to Division HA</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>	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>	8%	8%
<b>RS50% Percentage:</b>	50%	50%
<b>Act 88:</b>	Yes (Adopted 12/13/1965)	Yes (Adopted 12/13/1965)
<b>12 - UWUA - Gen Local 532: Closed to new hires, linked to Division HB</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>	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>	8%	8%
<b>RS50% Percentage:</b>	50%	50%
<b>Act 88:</b>	Yes (Adopted 12/13/1965)	Yes (Adopted 12/13/1965)
<b>13 - Police,Lts,Sgt: Open Division</b>		
	<b>2015 Valuation</b>	<b>2014 Valuation</b>
<b>Benefit Multiplier:</b>	2.75% Multiplier (80% max)	2.75% 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>Employee Contributions:</b>	11.71%	11.71%
<b>RS50% Percentage:</b>	50%	50%
<b>D-2:</b>	D-2 (25%)	D-2 (25%)
<b>Act 88:</b>	Yes (Adopted 12/13/1965)	Yes (Adopted 12/13/1965)

Table 2 (continued)

**14 - Police Commun.: Closed to new hires**

	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>	55/25	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>	0%	0%
<b>Act 88:</b>	Yes (Adopted 12/13/1965)	Yes (Adopted 12/13/1965)

**15 - McMorrانPlace: Closed to new hires**

	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>	55/25	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>	0%	0%
<b>Act 88:</b>	Yes (Adopted 12/13/1965)	Yes (Adopted 12/13/1965)

**16 - FireFighters: Closed to new hires, linked to Division HC**

	2015 Valuation	2014 Valuation
<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>Employee Contributions:</b>	10%	10%
<b>RS50% Percentage:</b>	50%	50%
<b>D-2:</b>	D-2 (25%)	D-2 (25%)
<b>Act 88:</b>	Yes (Adopted 12/13/1965)	Yes (Adopted 12/13/1965)

Table 2 (continued)

**17 - Police Patrol: Closed to new hires, linked to Division HD**

	2015 Valuation	2014 Valuation
<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>Employee Contributions:</b>	10%	10%
<b>RS50% Percentage:</b>	50%	50%
<b>D-2:</b>	D-2 (25%)	D-2 (25%)
<b>Act 88:</b>	Yes (Adopted 12/13/1965)	Yes (Adopted 12/13/1965)

**HA - Non-Union after 7/1/08: Open Division, linked to Division 10**

	2015 Valuation	2014 Valuation
<b>Benefit Multiplier:</b>	Hybrid Plan - 1.25% Multiplier	Hybrid Plan - 1.25% 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 12/13/1965)	Yes (Adopted 12/13/1965)

**HB - UWUA - Local 532 after 5/1/10: Open Division, linked to Division 12**

	2015 Valuation	2014 Valuation
<b>Benefit Multiplier:</b>	Hybrid Plan - 1.25% Multiplier	Hybrid Plan - 1.25% 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 5/1/2010)	Yes (Adopted 5/1/2010)

**HD - Police Patrol after 7/1/2014: Open Division, linked to Division 17**

	2015 Valuation	2014 Valuation
<b>Benefit Multiplier:</b>	Hybrid Plan - 2.00% Multiplier	2.00% Multiplier (no max)
<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 5/27/2008)	Yes (Adopted 5/27/2008)

## 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>
10 - NonUnion							
Active Employees	57	\$ 3,182,161	64	\$ 3,473,674	52.3	18.8	18.8
Vested Former Employees	16	206,410	17	206,369	53.0	12.2	14.2
Retirees and Beneficiaries	132	3,748,596	124	3,429,395	71.9		
12 - UWUA - Gen Local 532							
Active Employees	45	\$ 2,360,002	49	\$ 2,502,621	50.1	18.1	18.2
Vested Former Employees	8	122,759	9	143,501	48.3	12.4	14.8
Retirees and Beneficiaries	91	2,041,675	88	1,973,699	69.2		
13 - Police,Lts,Sgt							
Active Employees	4	\$ 400,878	4	\$ 397,007	48.0	22.6	22.6
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	29	1,364,973	30	1,371,362	69.5		
14 - Police Commun.							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	2	2,886	1	2,145	49.6	2.4	12.5
Retirees and Beneficiaries	3	22,315	3	22,315	65.3		
15 - McMorranPlace							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	9	70,180	9	70,180	51.5	10.3	12.3
Retirees and Beneficiaries	10	219,339	10	219,339	73.4		
16 - FireFighters							
Active Employees	35	\$ 2,578,808	41	\$ 2,841,031	41.8	14.1	14.3
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	73	2,496,342	70	2,236,951	69.9		
17 - Police Patrol							
Active Employees	41	\$ 3,177,938	43	\$ 3,180,983	40.1	14.4	14.5
Vested Former Employees	3	27,082	2	24,037	38.5	6.2	8.8
Retirees and Beneficiaries	31	800,184	30	752,067	71.3		
HA - Non-Union after 7/1/							
Active Employees	23	\$ 1,079,024	19	\$ 792,244	40.7	2.7	2.7
Vested Former Employees	1	906	1	906	29.8	1.8	7.4
Retirees and Beneficiaries	0	0	0	0	0.0		
HB - UWUA - Local 532 aft							
Active Employees	20	\$ 842,274	14	\$ 537,307	34.7	2.2	2.3
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>
HD - Police Patrol after							
Active Employees	4	\$ 187,261	2	\$ 55,209	28.7	1.0	1.0
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
<b>Total Municipality</b>							
<b>Active Employees</b>	<b>229</b>	<b>\$ 13,808,346</b>	<b>236</b>	<b>\$ 13,780,076</b>	<b>44.9</b>	<b>13.8</b>	<b>13.9</b>
<b>Vested Former Employees</b>	<b>39</b>	<b>430,223</b>	<b>39</b>	<b>447,138</b>	<b>49.8</b>	<b>10.6</b>	<b>13.2</b>
<b>Retirees and Beneficiaries</b>	<b>369</b>	<b>10,693,424</b>	<b>355</b>	<b>10,005,128</b>	<b>70.6</b>		
<b>Total Participants</b>	<b>637</b>		<b>630</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>
10 - NonUnion	\$ 24,414,101	\$ 1,169,619	\$ 26,939,163	\$ 1,080,563
12 - UWUA - Gen Local 532	16,831,952	795,732	18,708,739	658,907
13 - Police,Lts,Sgt	5,587,019	481,434	6,567,270	431,685
14 - Police Commun.	30,722	0	(5,838)	0
15 - McMorrانPlace	1,513,373	0	1,700,721	0
16 - FireFighters	13,716,580	1,666,383	14,562,239	1,827,115
17 - Police Patrol	9,253,526	2,377,993	9,753,563	2,117,046
HA - Non-Union after 7/1/08	798,671	0	542,944	0
HB - UWUA - Local 532 after 5/1/10	351,401	0	198,437	0
HD - Police Patrol after 7/1/2014	21,641	0	673	0
<b>Municipality Total</b>	<b>\$ 72,518,986</b>	<b>\$ 6,491,161</b>	<b>\$ 78,967,911</b>	<b>\$ 6,115,316</b>
<b>Combined Reserves</b>	<b>\$ 79,010,147</b>		<b>\$ 85,083,227</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	\$ 1,892,420		\$ 209,268	\$ 6,067,151	\$ (6,086,770)	\$ 0	\$ 1	\$ 99,665,528
2006	2,229,338		183,302	7,878,550	(6,891,358)	(12,363)	0	103,052,997
2007	2,381,062		171,760	8,398,485	(7,445,590)	0	(3,659,930)	102,898,784
2008	2,216,237		209,303	3,775,027	(7,894,389)	(13,856)	(698,392)	100,492,714
2009	2,259,733		293,446	2,990,622	(8,408,984)	(499)	28,109	97,655,141
2010	2,387,055		402,624	4,133,834	(8,834,732)	0	0	95,743,922
2011	2,652,709	\$ 0	756,651	4,105,589	(9,299,977)	(812)	0	93,958,082
2012	2,679,344	0	997,424	3,581,621	(9,595,864)	0	23,107	91,643,714
2013	2,887,520	0	1,097,180	4,922,317	(9,747,601)	(51,553)	20,413	90,771,990
2014	3,266,049	0	1,153,294	4,915,721	(9,920,566)	(3,627)	(1)	90,182,860
2015	3,755,543	500,000	1,138,153	4,189,200	(10,334,726)	(30,548)	306,215	89,706,697

**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
10 - NonUnion				
Active Employees	\$ 14,025,760	\$ 1,129,284	8.1%	\$ 12,896,476
Vested Former Employees	1,557,380	37,990	2.4%	1,519,390
Retirees And Beneficiaries	35,907,123	27,877,677	77.6%	8,029,446
Pending Refunds	<u>2,344</u>	<u>2,344</u>	100.0%	<u>0</u>
Total	<b>\$ 51,492,607</b>	<b>\$ 29,047,295</b>	<b>56.4%</b>	<b>\$ 22,445,312</b>
12 - UWUA - Gen Local 532				
Active Employees	\$ 10,099,778	\$ 783,214	7.8%	\$ 9,316,564
Vested Former Employees	699,373	12,518	1.8%	686,855
Retirees And Beneficiaries	20,615,307	19,218,423	93.2%	1,396,884
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	<b>\$ 31,414,458</b>	<b>\$ 20,014,155</b>	<b>63.7%</b>	<b>\$ 11,400,303</b>
13 - Police,Lts,Sgt				
Active Employees	\$ 2,666,498	\$ 481,434	18.1%	\$ 2,185,064
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	14,562,426	6,408,578	44.0%	8,153,848
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	<b>\$ 17,228,924</b>	<b>\$ 6,890,012</b>	<b>40.0%</b>	<b>\$ 10,338,912</b>
14 - Police Commun.				
Active Employees	\$ 0	\$ 0	0.0%	\$ 0
Vested Former Employees	17,164	0	0.0%	17,164
Retirees And Beneficiaries	149,151	34,881	23.4%	114,270
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	<b>\$ 166,315</b>	<b>\$ 34,881</b>	<b>21.0%</b>	<b>\$ 131,434</b>
15 - McMorranPlace				
Active Employees	\$ 0	\$ 0	0.0%	\$ 0
Vested Former Employees	475,068	0	0.0%	475,068
Retirees And Beneficiaries	1,933,637	1,718,256	88.9%	215,381
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	<b>\$ 2,408,705</b>	<b>\$ 1,718,256</b>	<b>71.3%</b>	<b>\$ 690,449</b>
16 - FireFighters				
Active Employees	\$ 8,598,787	\$ 1,657,075	19.3%	\$ 6,941,712
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	25,639,922	15,799,156	61.6%	9,840,766
Pending Refunds	<u>9,308</u>	<u>9,308</u>	100.0%	<u>0</u>
Total	<b>\$ 34,248,017</b>	<b>\$ 17,465,539</b>	<b>51.0%</b>	<b>\$ 16,782,478</b>

**Table 6 (continued)**

<b>Division</b>	<b>Actuarial Accrued Liability</b>	<b>Valuation Assets<sup>1</sup></b>	<b>Percent Funded</b>	<b>Unfunded (Overfunded) Accrued Liabilities</b>
<b>17 - Police Patrol</b>				
Active Employees	\$ 11,363,531	\$ 5,651,482	49.7%	\$ 5,712,049
Vested Former Employees	96,743	96,743	100.0%	0
Retirees And Beneficiaries	7,391,806	7,391,806	100.0%	0
Pending Refunds	<u>66,186</u>	<u>66,186</u>	100.0%	<u>0</u>
<b>Total</b>	<b>\$ 18,918,266</b>	<b>\$ 13,206,217</b>	<b>69.8%</b>	<b>\$ 5,712,049</b>
<b>HA - Non-Union after 7/1/08</b>				
Active Employees	\$ 240,473	\$ 905,819	376.7%	\$ (665,346)
Vested Former Employees	978	978	100.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
<b>Total</b>	<b>\$ 241,451</b>	<b>\$ 906,797</b>	<b>375.6%</b>	<b>\$ (665,346)</b>
<b>HB - UWUA - Local 532 after 5/1/10</b>				
Active Employees	\$ 149,817	\$ 398,974	266.3%	\$ (249,157)
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
<b>Total</b>	<b>\$ 149,817</b>	<b>\$ 398,974</b>	<b>266.3%</b>	<b>\$ (249,157)</b>
<b>HD - Police Patrol after 7/1/2014</b>				
Active Employees	\$ 21,217	\$ 24,571	115.8%	\$ (3,354)
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
<b>Total</b>	<b>\$ 21,217</b>	<b>\$ 24,571</b>	<b>115.8%</b>	<b>\$ (3,354)</b>
<b>Total Municipality</b>				
<b>Active Employees</b>	<b>\$ 47,165,861</b>	<b>\$ 11,031,853</b>	<b>23.4%</b>	<b>\$ 36,134,008</b>
<b>Vested Former Employees</b>	<b>2,846,706</b>	<b>148,229</b>	<b>5.2%</b>	<b>2,698,477</b>
<b>Retirees and Beneficiaries</b>	<b>106,199,372</b>	<b>78,448,777</b>	<b>73.9%</b>	<b>27,750,595</b>
<b>Pending Refunds</b>	<b><u>77,838</u></b>	<b><u>77,838</u></b>	<b>100.0%</b>	<b><u>0</u></b>
<b>Total Participants</b>	<b>\$ 156,289,777</b>	<b>\$ 89,706,697</b>	<b>57.4%</b>	<b>\$ 66,583,080</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.				
<b>Linked Divisions HA, 10</b>				
Active Employees	\$ 14,266,233	\$ 2,035,103	14.3%	\$ 12,231,130
Vested Former Employees	1,558,358	38,968	2.5%	1,519,390
Retirees and Beneficiaries	35,907,123	27,877,677	77.6%	8,029,446
Pending Refunds	<u>2,344</u>	<u>2,344</u>	100.0%	<u>0</u>
<b>Total</b>	<b>\$ 51,734,058</b>	<b>\$ 29,954,092</b>	<b>57.9%</b>	<b>\$ 21,779,966</b>

**Table 6 (continued)**

<b>Division</b>	<b>Actuarial Accrued Liability</b>	<b>Valuation Assets<sup>1</sup></b>	<b>Percent Funded</b>	<b>Unfunded (Overfunded) Accrued Liabilities</b>
Linked Divisions HB, 12				
Active Employees	\$ 10,249,595	\$ 1,182,188	11.5%	\$ 9,067,407
Vested Former Employees	699,373	12,518	1.8%	686,855
Retirees and Beneficiaries	20,615,307	19,218,423	93.2%	1,396,884
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
<b>Total</b>	<b>\$ 31,564,275</b>	<b>\$ 20,413,129</b>	<b>64.7%</b>	<b>\$ 11,151,146</b>
Linked Divisions HD, 17				
Active Employees	\$ 11,384,748	\$ 5,676,053	49.9%	\$ 5,708,695
Vested Former Employees	96,743	96,743	100.0%	0
Retirees and Beneficiaries	7,391,806	7,391,806	100.0%	0
Pending Refunds	<u>66,186</u>	<u>66,186</u>	100.0%	<u>0</u>
<b>Total</b>	<b>\$ 18,939,483</b>	<b>\$ 13,230,788</b>	<b>69.9%</b>	<b>\$ 5,708,695</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	\$ 93,745,562	\$ 94,037,784	100%	\$ (292,222)
2002	98,059,731	92,848,491	95%	5,211,240
2003	104,161,022	95,492,304	92%	8,668,718
2004	111,866,998	97,583,458	87%	14,283,540
2005	115,703,663	99,665,528	86%	16,038,135
2006	121,765,351	103,052,997	85%	18,712,354
2007	122,399,730	102,898,784	84%	19,500,946
2008	125,503,862	100,492,714	80%	25,011,148
2009	128,001,517	97,655,141	76%	30,346,376
2010	131,215,696	95,743,922	73%	35,471,774
2011	134,781,198	93,958,082	70%	40,823,116
2012	137,393,051	91,643,714	67%	45,749,337
2013	139,863,624	90,771,990	65%	49,091,634
2014	143,854,928	90,182,860	63%	53,672,068
2015	156,289,777	89,706,697	57%	66,583,080

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

## Division 10 - NonUnion

**Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 39,999,886	\$ 35,493,706	89%	\$ 4,506,180
2006	37,962,765	33,811,173	89%	4,151,592
2007	39,850,097	35,200,245	88%	4,649,852
2008	40,702,710	34,047,238	84%	6,655,472
2009	41,552,516	33,058,275	80%	8,494,241
2010	42,927,454	32,326,541	75%	10,600,913
2011	43,964,877	31,596,448	72%	12,368,429
2012	44,786,205	30,626,071	68%	14,160,134
2013	46,130,438	30,219,332	66%	15,911,106
2014	47,124,545	29,699,144	63%	17,425,401
2015	51,492,607	29,047,295	56%	22,445,312

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	130	\$ 6,221,212	14.00%	0.00%
2006	108	5,459,288	14.64%	0.00%
2007	100	5,144,152	15.48%	0.00%
2008	90	4,583,037	\$ 71,998	1.00%
2009	86	4,435,498	\$ 74,770	2.00%
2010	82	4,281,175	\$ 80,909	3.00%
2011	77	4,041,168	\$ 83,205	6.00%
2012	69	3,562,483	\$ 89,193	7.00%
2013	65	3,463,458	\$ 97,954	8.00%
2014	64	3,473,674	\$ 107,893	8.00%
2015	57	3,182,161	\$ 145,156	8.00%

<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 39 for past benefit provision changes.

## Division 12 - UWUA - Gen Local 532

### Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 23,173,580	\$ 20,604,835	89%	\$ 2,568,745
2006	24,298,965	21,592,987	89%	2,705,978
2007	25,624,733	22,377,409	87%	3,247,324
2008	26,756,067	22,231,629	83%	4,524,438
2009	26,925,646	21,728,018	81%	5,197,628
2010	27,693,148	21,430,409	77%	6,262,739
2011	28,264,340	21,374,637	76%	6,889,703
2012	28,706,241	21,106,271	74%	7,599,970
2013	28,994,919	20,839,788	72%	8,155,131
2014	29,742,312	20,528,485	69%	9,213,827
2015	31,414,458	20,014,155	64%	11,400,303

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

### Table 9-12: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2005	89	\$ 3,942,063	13.22%	0.00%
2006	88	3,931,490	13.61%	0.00%
2007	80	3,794,554	14.63%	0.00%
2008	72	3,459,525	18.35%	0.00%
2009	66	3,179,675	20.34%	0.00%
2010	66	3,211,928	\$ 60,393	0.00%
2011	63	3,125,610	\$ 50,995	6.00%
2012	60	2,924,492	\$ 52,332	7.00%
2013	53	2,633,819	\$ 53,538	8.00%
2014	49	2,502,621	\$ 60,240	8.00%
2015	45	2,360,002	\$ 77,175	8.00%

<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 39 for past benefit provision changes.

## Division 13 - Police,Lts,Sgt

**Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 10,596,225	\$ 8,225,708	78%	\$ 2,370,517
2006	13,487,234	9,858,503	73%	3,628,731
2007	13,799,320	10,116,083	73%	3,683,237
2008	14,429,897	10,298,677	71%	4,131,220
2009	14,828,681	10,145,042	68%	4,683,639
2010	15,640,806	9,831,825	63%	5,808,981
2011	16,104,357	9,123,150	57%	6,981,207
2012	16,097,978	8,372,102	52%	7,725,876
2013	16,217,723	7,878,127	49%	8,339,596
2014	16,474,536	7,418,451	45%	9,056,085
2015	17,228,924	6,890,012	40%	10,338,912

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

**Table 9-13: Computed Employer Contributions - Comparative Schedule**

Valuation Date December 31	Active Employees		Computed Employer Contribution <sup>1</sup>	Employee Contribution Rate <sup>2</sup>
	Number	Annual Payroll		
2005	11	\$ 816,300	20.09%	7.21%
2006	12	944,337	25.65%	6.71%
2007	12	956,614	25.71%	6.71%
2008	13	1,044,892	29.02%	6.71%
2009	9	805,129	39.03%	6.71%
2010	6	574,091	62.80%	6.71%
2011	5	482,598	85.46%	9.71%
2012	5	484,226	100.81%	10.71%
2013	5	493,043	106.02%	11.71%
2014	4	397,007	143.09%	11.71%
2015	4	400,878	167.99%	11.71%

<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 39 for past benefit provision changes.

## Division 14 - Police Commun.

Table 8-14: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 503,872	\$ 509,975	101%	\$ (6,103)
2006	542,618	553,538	102%	(10,920)
2007	535,174	613,361	115%	(78,187)
2008	190,792	48,209	25%	142,583
2009	186,441	41,782	22%	144,659
2010	181,828	33,728	19%	148,100
2011	177,428	17,768	10%	159,660
2012	172,579	3,260	2%	169,319
2013	166,980	(9,954)	-6%	176,934
2014	162,035	(6,188)	-4%	168,223
2015	166,315	34,881	21%	131,434

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	11	\$ 352,478	8.88%	0.00%
2006	10	408,994	9.13%	0.00%
2007	9	348,716	6.22%	0.00%
2008	0	0	\$ 571	0.00%
2009	0	0	\$ 736	0.00%
2010	0	0	\$ 835	0.00%
2011	0	0	\$ 954	0.00%
2012	0	0	\$ 3,481	0.00%
2013	0	0	\$ 6,360	0.00%
2014	0	0	\$ 657	0.00%
2015	0	0	\$ 1,006	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 39 for past benefit provision changes.

## Division 15 - McMorranPlace

Table 8-15: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 1,998,743	\$ 1,983,810	99%	\$ 14,933
2006	2,085,428	2,124,994	102%	(39,566)
2007	2,245,011	2,265,529	101%	(20,518)
2008	2,566,361	2,493,141	97%	73,220
2009	2,673,889	2,335,431	87%	338,458
2010	2,659,896	2,172,671	82%	487,225
2011	2,573,265	2,040,823	79%	532,442
2012	2,494,437	1,930,502	77%	563,935
2013	2,360,132	1,864,334	79%	495,798
2014	2,304,822	1,802,657	78%	502,165
2015	2,408,705	1,718,256	71%	690,449

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		
2005	15	\$ 502,219	9.53%	0.00%
2006	14	496,195	8.41%	0.00%
2007	10	348,848	9.18%	0.00%
2008	10	353,122	11.46%	0.00%
2009	7	224,823	18.75%	0.00%
2010	6	186,198	24.80%	0.00%
2011	7	241,680	22.62%	0.00%
2012	7	253,439	24.17%	0.00%
2013	7	253,508	22.55%	0.00%
2014	0	0	\$ 2,562	0.00%
2015	0	0	\$ 4,292	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 39 for past benefit provision changes.

## Division 16 - FireFighters

**Table 8-16: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 25,849,363	\$ 20,957,638	81%	\$ 4,891,725
2006	26,682,220	21,300,207	80%	5,382,013
2007	27,792,685	21,607,096	78%	6,185,589
2008	28,385,796	20,877,889	74%	7,507,907
2009	28,619,595	19,815,906	69%	8,803,689
2010	29,322,705	19,239,515	66%	10,083,190
2011	30,025,517	18,633,047	62%	11,392,470
2012	30,527,750	17,933,263	59%	12,594,487
2013	30,369,495	17,557,359	58%	12,812,136
2014	31,155,148	17,371,683	56%	13,783,465
2015	34,248,017	17,465,539	51%	16,782,478

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

**Table 9-16: 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	47	\$ 2,822,702	16.71%	2.50%
2006	49	2,918,538	17.86%	2.00%
2007	44	2,693,581	20.43%	2.00%
2008	41	2,654,412	\$ 58,497	3.00%
2009	40	2,700,460	\$ 62,368	4.00%
2010	43	2,825,582	29.18%	5.00%
2011	42	2,777,835	28.81%	8.00%
2012	41	2,831,577	31.89%	9.00%
2013	41	2,757,277	32.76%	10.00%
2014	41	2,841,031	\$ 85,153	10.00%
2015	35	2,578,808	\$ 109,540	10.00%

<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 39 for past benefit provision changes.

## Division 17 - Police Patrol

**Table 8-17: Actuarial Accrued Liabilities - Comparative Schedule**

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 11,944,755	\$ 10,608,869	89%	\$ 1,335,886
2006	12,141,808	10,403,365	86%	1,738,443
2007	12,552,710	10,719,061	85%	1,833,649
2008	12,461,831	10,485,872	84%	1,975,959
2009	13,181,376	10,480,952	80%	2,700,424
2010	12,766,860	10,659,062	83%	2,107,798
2011	13,616,952	11,043,765	81%	2,573,187
2012	14,528,341	11,415,159	79%	3,113,182
2013	15,474,581	11,954,038	77%	3,520,543
2014	16,657,238	12,582,098	76%	4,075,140
2015	18,918,266	13,206,217	70%	5,712,049

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

**Table 9-17: 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	37	\$ 2,240,118	11.02%	2.50%
2006	38	2,345,112	12.16%	2.00%
2007	38	2,430,258	12.17%	2.00%
2008	37	2,352,577	14.84%	2.00%
2009	38	2,660,114	16.08%	2.00%
2010	42	2,921,025	11.90%	5.00%
2011	41	2,928,650	11.04%	8.00%
2012	41	3,002,156	11.82%	9.00%
2013	43	3,141,594	11.96%	10.00%
2014	43	3,180,983	\$ 36,235	10.00%
2015	41	3,177,938	\$ 49,950	10.00%

<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 39 for past benefit provision changes.

## Division HA - Non-Union after 7/1/08

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

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2008	\$ 5,306	\$ 4,485	85%	\$ 821
2009	14,559	19,378	133%	(4,819)
2010	21,967	48,289	220%	(26,322)
2011	44,909	106,815	238%	(61,906)
2012	59,560	205,774	346%	(146,214)
2013	108,804	365,736	336%	(256,932)
2014	157,690	575,486	365%	(417,796)
2015	241,451	906,797	376%	(665,346)

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		
2008	5	\$ 171,332	5.52%	0.00%
2009	6	209,933	5.20%	0.00%
2010	5	172,913	4.47%	0.00%
2011	7	294,832	3.98%	0.00%
2012	11	437,121	2.01%	0.00%
2013	15	625,802	1.29%	0.00%
2014	19	792,244	0.12%	0.00%
2015	23	1,079,024	2.67%	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 39 for past benefit provision changes.

## Division HB - UWUA - Local 532 after 5/1/10

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

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 1,032	\$ 1,882	182%	\$ (850)
2011	9,553	21,629	226%	(12,076)
2012	19,960	51,312	257%	(31,352)
2013	40,552	103,230	255%	(62,678)
2014	76,671	210,331	274%	(133,660)
2015	149,817	398,974	266%	(249,157)

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		
2010	2	\$ 82,592	7.13%	0.00%
2011	3	109,392	5.49%	0.00%
2012	4	152,627	3.73%	0.00%
2013	9	324,420	3.43%	0.00%
2014	14	537,307	3.00%	0.00%
2015	20	842,274	3.94%	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 39 for past benefit provision changes.

**Division HD - Police Patrol after 7/1/2014**

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

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2014	\$ (69)	\$ 713	0%	\$ (782)
2015	21,217	24,571	116%	(3,354)

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		
2014	2	\$ 55,209	9.37%	0.00%
2015	4	187,261	10.13%	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 39 for past benefit provision changes.

## 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](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:	369
Inactive employees entitled to but not yet receiving benefits:	39
Active employees:	<u>229</u>
	637

Total Pension Liability as of 12/31/2014 measurement date:	\$ 140,411,894
Total Pension Liability as of 12/31/2015 measurement date:	\$ 152,475,815
Service Cost for the year ending on the 12/31/2015 measurement date:	\$ 1,757,827

Change in the Total Pension Liability due to:

- Benefit changes <sup>1</sup> :	\$ 0
- Differences between expected and actual experience <sup>2</sup> :	\$ 2,491,086
- Changes in assumptions <sup>2</sup> :	\$ 6,951,357

<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):	4
Covered employee payroll: (Needed for Required Supplementary Information)	\$ 13,808,346

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:	\$ 16,263,726	-	\$ (13,793,836)

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.

### 10 - NonUnion

7/1/2013	Member Contribution Rate 8.00%
7/1/2012	Member Contribution Rate 7.00%
7/1/2011	Member Contribution Rate 6.00%
6/1/2011	Exclude Temporary Employees requiring less than 10 months
7/1/2010	Member Contribution Rate 3.00%
7/1/2009	Member Contribution Rate 2.00%
7/1/2008	Member Contribution Rate 1.00%
7/1/2000	Benefit B-4 (80% max)
7/1/1990	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
7/1/1987	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/1987	Benefit B-3 (80% max)
7/1/1987	Benefit F55 (With 25 Years of Service)
1/1/1983	Flexible E 2% COLA Adopted (01/01/1983)
3/28/1977	Blanket Resolution (Military Service)
7/1/1976	Member Contribution Rate 0.00%
7/1/1975	Benefit C-2/Base C-1 (Old)
7/1/1968	Benefit C-1 (Old)
1/1/1967	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1967	10 Year Vesting
1/1/1967	Benefit C (Old)
1/1/1967	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
12/13/1965	Covered by Act 88
	Fiscal Month - July

### 12 - UWUA - Gen Local 532

7/1/2013	Member Contribution Rate 8.00%
7/1/2012	Member Contribution Rate 7.00%
7/1/2011	Member Contribution Rate 6.00%
6/1/2011	Exclude Temporary Employees requiring less than 10 months
1/1/2011	Member Contribution Rate 3.00%
7/1/2000	Benefit B-4 (80% max)
9/1/1992	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
1/1/1989	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1989	10 Year Vesting
1/1/1989	Benefit B-3 (80% max)
1/1/1989	Benefit F55 (With 25 Years of Service)
1/1/1983	Flexible E 2% COLA Adopted (01/01/1983)
7/1/1980	Member Contribution Rate 0.00%
12/13/1965	Covered by Act 88
	Fiscal Month - July

**13 - Police,Lts,Sgt**

7/1/2013	Member Contribution Rate 11.71%
7/1/2012	Member Contribution Rate 10.71%
7/1/2011	Member Contribution Rate 9.71%
6/1/2011	Exclude Temporary Employees requiring less than 10 months
7/1/2006	Member Contribution Rate 6.71%
7/1/2005	Member Contribution Rate 7.21%
7/1/2004	Member Contribution Rate 7.71%
7/1/2003	Member Contribution Rate 8.21%
7/1/2002	Benefit D2 Plan
7/1/1999	2.75% Multiplier (80% max)
7/1/1999	Member Contribution Rate 8.71%
1/1/1999	Benefit F50 (With 25 Years of Service)
7/1/1993	Blanket Resolution (Military Service)
7/1/1993	Benefit B-4 (80% max)
7/1/1989	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/1989	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
7/1/1989	10 Year Vesting
7/1/1989	Benefit B-3 (80% max)
7/1/1989	Benefit F55 (With 25 Years of Service)
7/1/1989	Member Contribution Rate 4.00%
1/1/1983	Flexible E 2% COLA Adopted (01/01/1983)
12/13/1965	Covered by Act 88
	Fiscal Month - July

**14 - Police Commun.**

6/1/2011	Exclude Temporary Employees requiring less than 10 months
1/1/1990	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1990	10 Year Vesting
1/1/1990	Benefit B-3 (80% max)
1/1/1990	Benefit F55 (With 25 Years of Service)
1/1/1990	Member Contribution Rate 0.00%
1/1/1983	Flexible E 2% COLA Adopted (01/01/1983)
12/13/1965	Covered by Act 88
	Fiscal Month - July

**15 - McMorrانPlace**

6/1/2011	Exclude Temporary Employees requiring less than 10 months
9/1/1991	Benefit FAC-3 (3 Year Final Average Compensation)
9/1/1991	10 Year Vesting
9/1/1991	Benefit B-3 (80% max)
7/1/1987	Member Contribution Rate 0.00%
7/1/1973	Benefit F55 (With 25 Years of Service)
12/13/1965	Covered by Act 88
	Fiscal Month - July

**16 - FireFighters**

7/1/2013	Member Contribution Rate 10.00%
7/1/2012	Member Contribution Rate 9.00%
7/1/2011	Member Contribution Rate 8.00%
6/1/2011	Exclude Temporary Employees requiring less than 10 months
7/1/2010	Member Contribution Rate 5.00%
7/1/2009	Member Contribution Rate 4.00%
7/1/2008	Member Contribution Rate 3.00%
7/1/2006	Member Contribution Rate 2.00%
7/1/2005	Member Contribution Rate 2.50%
7/1/2004	Member Contribution Rate 3.00%
7/1/2003	Member Contribution Rate 3.50%
7/1/2002	Benefit D2 Plan
7/1/1996	Blanket Resolution (Military Service)
7/1/1996	Benefit B-4 (80% max)
7/1/1992	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/1992	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
7/1/1992	10 Year Vesting
7/1/1992	Benefit B-3 (80% max)
7/1/1992	Benefit F50 (With 25 Years of Service)
7/1/1992	Member Contribution Rate 4.00%
12/13/1965	Covered by Act 88
	Fiscal Month - July

**17 - Police Patrol**

7/1/2013	Member Contribution Rate 10.00%
7/1/2012	Member Contribution Rate 9.00%
7/1/2011	Member Contribution Rate 8.00%
6/1/2011	Exclude Temporary Employees requiring less than 10 months
7/1/2010	Member Contribution Rate 5.00%
7/1/2006	Member Contribution Rate 2.00%
7/1/2005	Member Contribution Rate 2.50%
7/1/2004	Member Contribution Rate 3.00%
7/1/2003	Member Contribution Rate 3.50%
7/1/2002	Benefit D2 Plan
1/1/1995	Member Contribution Rate 4.00%
1/1/1994	Benefit B-4 (80% max)
2/1/1993	Benefit FAC-3 (3 Year Final Average Compensation)
2/1/1993	Benefit RS 50 (50% Post-Ret. Spouse Benefits)
2/1/1993	10 Year Vesting
2/1/1993	Benefit B-3 (80% max)
2/1/1993	Benefit F50 (With 25 Years of Service)
2/1/1993	Member Contribution Rate 4.80%
12/13/1965	Covered by Act 88
	Fiscal Month - July

**HA - Non-Union after 7/1/08**

10/1/2015	Hybrid Elapsed Time
6/1/2011	Exclude Temporary Employees requiring less than 10 months
7/1/2008	60
7/1/2008	Day of work defined as 7.5 Hours a Day for All employees.
7/1/2008	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2008	Loans
7/1/2008	Pickup
7/1/2008	Rollovers
7/1/2008	6 Year Vesting
7/1/2008	1.25% Multiplier
12/13/1965	Covered by ACT 88
	Fiscal Month - July

**HB - UWUA - Local 532 after 5/1/10**

10/1/2015	Hybrid Elapsed Time
6/1/2011	Exclude Temporary Employees requiring less than 10 months
5/1/2010	Rollovers
5/1/2010	6 Year Vesting
5/1/2010	1.25% Multiplier
5/1/2010	Covered by ACT 88
5/1/2010	60
5/1/2010	Day of work defined as 8 Hours a Day for Group employees.
5/1/2010	Benefit FAC-3 (3 Year Final Average Compensation)
5/1/2010	Loans
5/1/2010	Pickup
	Fiscal Month - July

**HD - Police Patrol after 7/1/2014**

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	Exclude Temporary Employees requiring less than 10 months
7/1/2014	Rollovers
7/1/2014	6 Year Vesting
7/1/2014	2.0% Multiplier
7/1/2014	Benefit F55 (With 25 Years of Service)
5/27/2008	Covered by ACT 88
	Fiscal Month - July

## 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	4.00%

### Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	68%

### Miscellaneous and Technical Assumptions

Loads – None.

### Amortization Policy for Closed Divisions

Closed Division	Amortization Option
All Closed Divisions	Option A