



AGENDA
CHARTER TOWNSHIP OF MERIDIAN
TOWNSHIP BOARD –STUDY SESSION
CENTRAL FIRE STATION
April 25, 2017 6:00 PM



1. CALL MEETING TO ORDER*
2. ROLL CALL
3. CITIZENS ADDRESS AGENDA ITEMS AND NON-AGENDA ITEMS*
4. APPROVAL OF AGENDA
5. BOARD DISCUSSION ITEMS (ORCHID)
 - A. Review Minute Taking Process
 - B. Review Master Plan Process
 - C. MERS Pension Debt: Charting a Course
6. COMMENTS FROM THE PUBLIC*
7. OTHER MATTERS AND BOARD MEMBER COMMENTS
8. ADJOURNMENT

All comments limited to 3 minutes, unless prior approval for additional time for good cause is obtained from the Supervisor.
Appointment of Supervisor Pro Tem and/ or Temporary Clerk if necessary.

Individuals with disabilities requiring auxiliary aids or services should contact the Meridian Township Board by contacting:
Township Manager Frank L. Walsh, 5151 Marsh Road, Okemos, MI 48864 or 517.853.4258 - Ten Day Notice is Required.
Meeting Location: 5151 Marsh Road, Okemos, MI 48864 Township Hall



To: Township Board

From:

Mark Kieselbach

Mark Kieselbach

Director of Community Planning and Development

Gail Oranchak

Gail Oranchak

Date: April 20, 2017

Re: Status of the 2017 Master Plan

The Township Board authorized distribution of the Master Plan at its February 21, 2017 meeting and letters were mailed, e-mailed and faxed to neighboring communities, public agencies, utilities, and railroads on March 2, 2017. The 63-day (nine week) review period expires on May 5, 2017. To date, one comment has been received from East Lansing Public Schools.

During this interim period, staff has been reviewing the technical aspects of the document, creating and selecting replacement photographs, updating the Acknowledgements page, and assembling source information and data that support the Plan's conclusions to populate Chapter 5 Attachments.

The Urban Services District Map, Map #2, is not wholly consistent with the Township Board's preferred route. Areas #3 and #6 on the preferred map have not been included within the boundary.

- #3 is approximately 135 acres located north of Haslett Road and west of the Township's border with Williamstown Township.
- #6 is approximately 228 acres located north of Ponderosa subdivision, south of the Shoals subdivision, east of Sylvan Glen and generally west of the Consumers right-of-way.

Township Board members please bring your copy of the 2017 Master Plan to the meeting.

Attachment

1. Urban Services District Map
2. Master Plan Adoption Process

G:\planning\master plan updates\memos>Status of the 2017 Master Plan 4-20-17

MEMORANDUM

TO: Township Board

FROM:


Mark Kieselbach
Director of Community Planning and Development


Gail Oranchak, AICP

DATE: January 19, 2017

RE: Master Plan Adoption Process

The Planning Commission completed its work on the Master Plan and approved sending it to the Township Board to begin the adoption process once final edits were completed and necessary corrections made. The Michigan Planning Enabling Act, Public Act 33 of 2008 as amended, lays out the process for a Master Plan's adoption and a summary follows.

After preparing a Master Plan, the Planning Commission must send it to the Township Board for review and comment. The adoption process continues if the Township Board authorizes distribution to neighboring communities, Ingham County Board of Commissioners, Tri-County Regional Planning Agency, public transportation system providers, public utility companies, and railroad companies. The organizations notified have 63-days to review the Master Plan and provide comments. Comments are advisory.

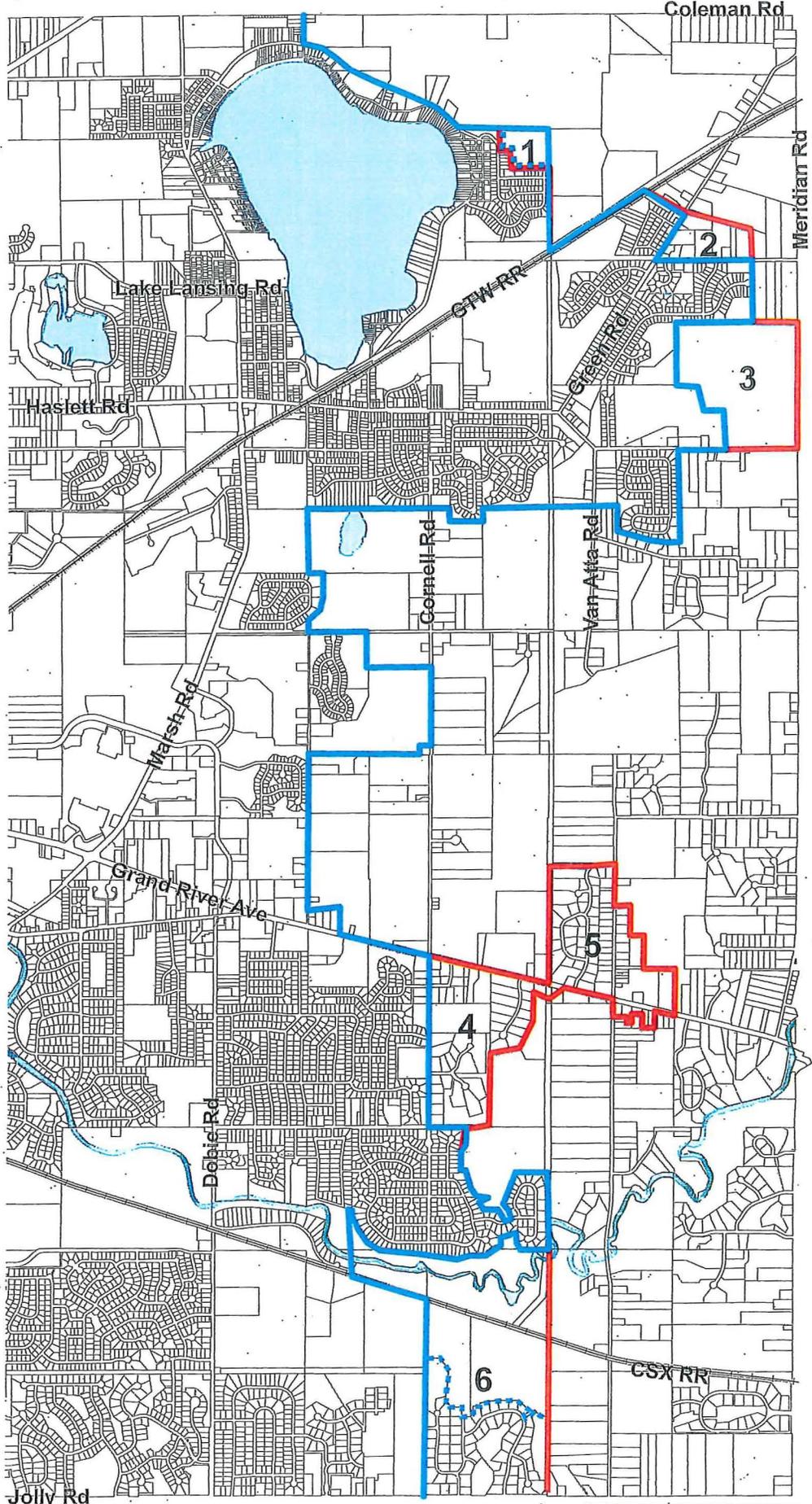
After the 63-day comment period expires, the Planning Commission is required to hold at least one public hearing before adoption. At least 15-days prior to the public hearing, a standard hearing notification placed in a newspaper and distributed to all entities previously notified of the 63-day review is required.

The Planning Commission may modify the plan based on comments received either in response to the mandatory review or made at the public hearing.

Support of two-thirds (2/3) of the Planning Commission's members is required to adopt the Master Plan. After approval by the Planning Commission, the document will be transmitted to the Township Board for its decision. If the Board does not adopt the Plan, it shall provide the Planning Commission with a statement of its concern, which the Planning Commission shall consider and revise the Plan to address them.

Each time the Planning Commission revises the plan in response to Township Board concerns, a new public hearing precedes action by the Planning Commission and Township Board.

URBAN SERVICES DISTRICT



	Planning Commission Revision
	Planning Commission recommendation
	Township Board recommendation



To: Board Members
From: Frank L. Walsh
Frank L. Walsh, Township Manager
Date: April 21, 2017
Re: MERS Pension Debt: Charting a Course

Over the past 18 months the Township Board, both former and current, have reviewed our Municipal Employees' Retirement System of Michigan (MERS) to gain a better understanding of our significant pension debt. It is common knowledge that Meridian Township is \$26,812,454 underfunded with a 2015 funding ratio of 57%. The state average is 74% and our position ranks us near the bottom as compared to the other 841 members of MERS. It is worth reiterating that our departmental funding position is as follows:

- Public Works \$830,763 underfunded
- Police Patrol \$3,049,689 underfunded
- Fire Department \$14,659,664 underfunded
- Administrative Professional \$1,305,984 underfunded
- Teamsters \$1,381,974 underfunded
- Police Command \$5,593,380 underfunded

The 2015 MERS Annual Actuarial Valuation Report depicts a need to begin contributing an additional \$1,454,568 per year for 10 years to reach 100% funding by 2027. This is in addition to the \$2,629,968 we contribute annually to the fund. If approved, the August 8, 2017 1.483 police-fire ballot question will allow us to pay down the \$23,302,733 police and fire unfunded liability in less than 10 years. Let me explain how.

The MERS figure of \$1,454,568 covers the entire pension fund. Our millage will not allow us to pay down the remaining \$3,518,721 of DPW, Administrative Professional and Teamsters legacy costs. However, it is important to note that due to the significant negotiated pension reductions, the amount needed to pay off the non-public safety debt will be far less than \$3,518,721. We will need to formulate a pay-as-you-go system to pay down the non-public safety debt by 2027. We may be able to rev up that process this year. If our budget remains positive we may be able to pay down \$500,000-\$800,000 towards the \$3,518,721 by December 31, 2017. There is no question we will be able to pay off the non-public safety pension debt by 2027.

The good news is if we are successful in securing appropriate police-fire funding we will contribute the full \$1,454,568 in additional dollars to the police-fire pension. This will allow us to retire our police-fire debt at an accelerated rate based on benefit modifications and additional funds. If the plan coalesces, I firmly believe we will pay off our \$26,812,454 by 2025. I'm hopeful at that time the Township Board will be in a position to greatly reduce the 1.483 mill in 2025 and 2026.

Memo to Township Board

April 21, 2017

Re: MERS Pension Debt: Charting a Course

Page 2

Now, what happens if we are not successful on August 8? We must have a plan to deal with our pension debt.

Based on our experts' analysis, Meridian Township will save over \$15,000,000 by paying off our \$26,812,454 MERS debt by 2027, rather than 2037. The question for the governing body is do you expect to make the initial MERS payment of \$1,454,568 in 2018 regardless of the August outcome? If you don't wish to move forward, we are signing on for an additional \$15,000,000 in costs. If you do move forward, the reductions will ripple through the organization. Our team needs to know soon whether or not you plan to heed the advice of MERS and our financial consultant. Our team is ready to move in the direction that mirrors the majority of the Township Board.

It is crucial that we have a thorough discussion of the merits and define a plan. Without a plan we are likely to see the pension abyss in the very near future.

Attachment:

1. 2015 MERS Actuarial Valuation Report



MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN
ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2015
MERIDIAN CHTR TWP (3315)



Spring, 2016

Meridian 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 Meridian Chtr Twp (3315) 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. Meridian 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.



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

	Page
Executive Summary	5
Employer Contribution Details Table 1	15
Benefit Provisions Table 2	17
Participant Summary Table 3	19
Reported Assets (Market Value) Table 4	20
Flow of Valuation Assets Table 5	21
Actuarial Accrued Liabilities and Valuation Assets Table 6	22
Actuarial Accrued Liabilities - Comparative Schedule Table 7	24
Division-Based Comparative Schedules Tables 8 and 9	25
GASB 68 Information	31
Benefit Provision History	33
Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method	36

Executive Summary

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, 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 59% to 57%, a change of -2%.

The new assumptions changed your total monthly employer contribution requirement, before any phase-in, from \$198,319 to \$219,164, a change of \$20,845 (a 11% increase). Under the 5-year phase-in the first year increase is instead 2% (from \$198,319 to \$202,488 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
Funded Ratio	57%	59%	59%

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
Division								
01 - AFSCME	13.61%	15.07%	13.25%	12.08%	\$ 11,004	\$ 12,180	\$ 10,708	\$ 9,361
02 - Plc POAM	20.66%	22.66%	20.16%	20.72%	30,570	33,530	29,829	27,406
05 - Firefighters IAFF	51.32%	55.69%	50.23%	49.38%	93,800	101,788	91,804	84,831
10 - Clerical	17.74%	19.68%	17.26%	17.51%	12,042	13,358	11,715	10,202
11 - Teamsters	351.87%	352.21%	351.78%	58.89%	20,989	21,009	20,982	6,698
20 - Police Cmnd	53.47%	58.51%	52.21%	49.49%	34,083	37,299	33,281	28,284
Municipality Total					\$ 202,488	\$ 219,164	\$ 198,319	\$ 166,782

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
Division		
01 - AFSCME	2.30%	2.30%
02 - Plc POAM	8.29%	8.29%
05 - Firefighters IAFF	7.76%	7.76%
10 - Clerical	3.90%	3.90%
11 - Teamsters	2.00%	2.00%
20 - Police Cmnd	11.24%	11.24%

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 \$ 340,378, instead of \$ 219,164.
- To accelerate to a 100% funding ratio in 20 years, estimated monthly employer contributions for the entire employer would be \$ 232,770, instead of \$ 219,164.

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 50% (instead of

57%); and ii) your total employer contribution requirement for the fiscal year starting January 1, 2017 would be \$ 2,924,448 (instead of \$ 2,629,968).

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%
12/31/2015 Valuation Results				
Accrued Liability	\$ 79,878,849	\$ 69,929,730	\$ 61,743,003	\$ 54,955,606
Valuation Assets	\$ 34,930,549	\$ 34,930,549	\$ 34,930,549	\$ 34,930,549
Unfunded Accrued Liability	\$ 44,948,300	\$ 34,999,181	\$ 26,812,454	\$ 20,025,057
Funded Ratio	44%	50%	57%	64%
Monthly Normal Cost	\$ 113,959	\$ 80,356	\$ 55,227	\$ 36,365
Monthly Amortization Payment	\$ 225,857	\$ 194,644	\$ 163,937	\$ 133,592
Total Employer Contribution¹	\$ 339,816	\$ 275,000	\$ 219,164	\$ 169,957

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

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
7.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return WITH 5-YEAR PHASE-IN					
2015	2017	\$ 61,743,003	\$ 34,930,549	57%	\$ 2,429,856
2016	2018	64,357,654	35,888,854	56%	2,549,676
2017	2019	67,199,351	37,259,695	55%	2,784,708
2018	2020	70,126,384	38,595,733	55%	3,036,336
2019	2021	73,141,996	40,014,808	55%	3,303,684
2020	2022	76,219,789	42,716,359	56%	3,437,844
NO 5-YEAR PHASE-IN					
2015	2017	\$ 61,743,003	\$ 34,930,549	57%	\$ 2,629,968
2016	2018	64,357,654	35,888,854	56%	2,685,336
2017	2019	67,199,351	37,483,206	56%	2,857,896
2018	2020	70,126,384	38,976,461	56%	3,050,940
2019	2021	73,141,996	40,489,021	55%	3,264,012
2020	2022	76,219,789	43,240,270	57%	3,397,020
6.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return NO 5-YEAR PHASE-IN					
2015	2017	\$ 69,929,730	\$ 34,930,549	50%	\$ 3,300,000
2016	2018	72,790,890	35,552,070	49%	3,372,408
2017	2019	75,880,440	37,525,229	50%	3,559,752
2018	2020	79,056,390	39,385,425	50%	3,769,164
2019	2021	82,321,422	41,241,587	50%	4,002,708
2020	2022	85,649,098	44,404,899	52%	4,160,352
5.75% Assumed Interest Discount Rate and Future Annual Market Rate of Return NO 5-YEAR PHASE-IN					
2015	2017	\$ 79,878,849	\$ 34,930,549	44%	\$ 4,077,792
2016	2018	83,022,661	35,215,198	42%	4,173,696
2017	2019	86,397,250	37,685,339	44%	4,381,032
2018	2020	89,860,484	40,028,917	45%	4,612,008
2019	2021	93,414,673	42,339,520	45%	4,870,416
2020	2022	97,033,665	45,827,516	47%	5,073,348

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. ^{4,5}	Employer Contributions ¹			Blended Employer Contribut. ⁶	Employee Contribution Rate	Employee Contribut. Conversion Factor ²
		Normal Cost	Unfunded Accrued Liability	Total Computed Employer Contribut.			
Percentage of Payroll							
01 - AFSCME	23	9.15%	5.92%	15.07%		2.30%	0.91%
02 - Plc POAM	23	11.07%	11.59%	22.66%		8.29%	0.80%
05 - Firefighters IAFF	23	10.52%	45.17%	55.69%		7.76%	0.80%
10 - Clerical	23	8.80%	10.88%	19.68%		3.90%	0.84%
11 - Teamsters	23	8.93%	343.28%	352.21%		2.00%	0.89%
20 - Police Cmnd	23	8.97%	49.54%	58.51%		11.24%	0.73%
Estimated Monthly Contribution³							
01 - AFSCME	23	\$ 7,395	\$ 4,785	\$ 12,180			
02 - Plc POAM	23	16,380	17,150	33,530			
05 - Firefighters IAFF	23	19,228	82,560	101,788			
10 - Clerical	23	5,973	7,385	13,358			
11 - Teamsters	23	533	20,476	21,009			
20 - Police Cmnd	23	5,718	31,581	37,299			
Total Municipality		\$ 55,227	\$ 163,937	\$ 219,164			
Estimated Annual Contribution³		\$ 662,724	\$ 1,967,244	\$ 2,629,968			

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

² If employee contributions are increased/decreased by 1.00% of pay, the employer contribution requirement will decrease/increase by the Employee Contribution Conversion Factor. The conversion factor is usually under 1%, because employee contributions may be refunded at termination of employment, and not used to fund retirement pensions. Employer contributions will all be used to fund pensions.

³ For divisions that are open to new hires, estimated contributions are based on projected fiscal year payroll. Actual contributions will be based on actual reported monthly pays, and will be different from the above amounts. For divisions that will have no new hires, invoices will be based on the above dollar amounts which are based on projected fiscal year payroll. See description of Open Divisions and Closed Divisions in the [Appendix](#).

⁴ If projected assets exceed projected liabilities as of the beginning of the January 1, 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.

⁵ 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.

⁶ 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 - AFSCME: Open Division

	2015 Valuation	2014 Valuation
Benefit Multiplier:	2.25% Multiplier (80% max)	2.25% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	2.30%	2.30%
Act 88:	Yes (Adopted 7/10/2001)	Yes (Adopted 7/10/2001)

02 - Plc POAM: Open Division

	2015 Valuation	2014 Valuation
Benefit Multiplier:	2.75% Multiplier (80% max)	2.75% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	8.29%	8.29%
D-2:	D-2 (25%)	D-2 (25%)
Act 88:	Yes (Adopted 7/10/2001)	Yes (Adopted 7/10/2001)

05 - Firefighters IAFF: Open Division

	2015 Valuation	2014 Valuation
Benefit Multiplier:	2.75% Multiplier (80% max)	2.75% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	7.76%	7.76%
D-2:	D-2 (25%)	D-2 (25%)
Act 88:	Yes (Adopted 7/10/2001)	Yes (Adopted 7/10/2001)

Table 2 (continued)

10 - Clerical: Open Division

	2015 Valuation	2014 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	3.90%	3.90%
Act 88:	Yes (Adopted 7/10/2001)	Yes (Adopted 7/10/2001)

11 - Teamsters: Open Division

	2015 Valuation	2014 Valuation
Benefit Multiplier:	2.00% Multiplier (no max)	2.00% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	55/20	55/20
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	2%	2%
Act 88:	Yes (Adopted 7/10/2001)	Yes (Adopted 7/10/2001)

20 - Police Cmnd: Open Division

	2015 Valuation	2014 Valuation
Benefit Multiplier:	2.75% Multiplier (80% max)	2.75% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	50/25	50/25
Early Retirement (Reduced):	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	11.24%	11.24%
D-2:	D-2 (25%)	D-2 (25%)
Act 88:	Yes (Adopted 7/10/2001)	Yes (Adopted 7/10/2001)

Participant Summary

Table 3

Division	2015 Valuation		2014 Valuation		2015 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
01 - AFSCME							
Active Employees	20	\$ 901,017	20	\$ 929,958	43.9	10.4	10.7
Vested Former Employees	3	18,596	3	18,596	57.5	9.8	9.8
Retirees and Beneficiaries	15	282,449	12	224,064	65.6		
02 - Plc POAM							
Active Employees	27	\$ 1,649,619	25	\$ 1,587,254	38.9	10.7	12.3
Vested Former Employees	9	124,095	7	73,567	43.4	8.7	13.5
Retirees and Beneficiaries	11	422,166	11	413,190	56.9		
05 - Firefighters IAFF							
Active Employees	32	\$ 2,037,634	32	\$ 2,061,494	40.3	12.3	12.4
Vested Former Employees	2	60,599	2	60,599	52.7	16.3	16.3
Retirees and Beneficiaries	27	1,340,112	26	1,273,340	60.0		
10 - Clerical							
Active Employees	19	\$ 756,724	17	\$ 699,196	49.6	12.0	13.0
Vested Former Employees	10	61,240	9	57,994	48.5	8.4	14.8
Retirees and Beneficiaries	10	215,251	10	202,165	66.8		
11 - Teamsters							
Active Employees	1	\$ 66,496	2	\$ 136,484	59.7	13.6	13.6
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	6	152,594	5	101,802	69.7		
20 - Police Cmnd							
Active Employees	9	\$ 710,674	9	\$ 685,804	43.1	18.0	19.0
Vested Former Employees	0	0	1	30,450	0.0	0.0	0.0
Retirees and Beneficiaries	11	550,537	8	455,831	58.8		
Total Municipality							
Active Employees	108	\$ 6,122,164	105	\$ 6,100,190	42.7	12.0	12.7
Vested Former Employees	24	264,530	22	241,206	48.1	9.4	13.8
Retirees and Beneficiaries	80	2,963,109	72	2,670,392	62.0		
Total Participants	212		199				

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

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

Reported Assets (Market Value)

Table 4

Division	2015 Valuation		2014 Valuation	
	Employer and Retiree ¹	Employee ²	Employer and Retiree ¹	Employee ²
01 - AFSCME	\$ 3,566,043	\$ 164,185	\$ 3,722,765	\$ 187,803
02 - Plc POAM	6,607,304	1,565,529	6,895,965	1,474,279
05 - Firefighters IAFF	8,771,907	1,731,095	9,145,653	1,710,797
10 - Clerical	2,386,408	275,873	2,471,145	260,923
11 - Teamsters	295,961	17,080	383,726	33,743
20 - Police Cmnd	4,416,733	967,342	4,437,079	966,227
Municipality Total	\$ 26,044,356	\$ 4,721,104	\$ 27,056,333	\$ 4,633,772
Combined Reserves	\$ 30,765,460		\$ 31,690,105	

¹ Reserve for Employer Contributions and Benefit Payments

² 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	\$ 1,113,402		\$ 341,332	\$ 1,023,282	\$ (821,078)	\$ (14,750)	\$ 16,459	\$ 16,753,818
2006	1,293,473		463,686	1,385,132	(948,381)	(1,857)	20,749	18,966,620
2007	1,385,814		489,937	1,544,121	(1,093,021)	(1,831)	69,288	21,360,928
2008	1,450,200		501,174	1,138,015	(1,206,537)	(16,764)	17,703	23,244,719
2009	1,506,924		515,452	1,458,907	(1,394,003)	(1,362)	0	25,330,637
2010	1,587,121		463,721	1,569,522	(1,730,326)	(27,856)	0	27,192,819
2011	1,443,888	\$ 0	447,636	1,497,200	(1,930,596)	(15,477)	0	28,635,470
2012	1,502,982	0	440,059	1,394,558	(2,073,753)	0	0	29,899,316
2013	1,727,389	0	446,814	1,873,685	(2,184,485)	(7,344)	0	31,755,375
2014	1,863,475	0	445,419	1,878,815	(2,457,430)	(3,012)	106,873	33,589,515
2015	2,065,675	0	434,297	1,678,089	(2,837,027)	0	0	34,930,549

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 ¹	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
01 - AFSCME				
Active Employees	\$ 1,767,447	\$ 936,684	53.0%	\$ 830,763
Vested Former Employees	161,843	161,843	100.0%	0
Retirees And Beneficiaries	3,131,306	3,131,306	100.0%	0
Pending Refunds	<u>5,401</u>	<u>5,401</u>	100.0%	<u>0</u>
Total	\$ 5,065,997	\$ 4,235,234	83.6%	\$ 830,763
02 - Plc POAM				
Active Employees	\$ 5,762,583	\$ 2,721,894	47.2%	\$ 3,040,689
Vested Former Employees	464,328	464,328	100.0%	0
Retirees And Beneficiaries	6,017,452	6,017,452	100.0%	0
Pending Refunds	<u>75,613</u>	<u>75,613</u>	100.0%	<u>0</u>
Total	\$ 12,319,976	\$ 9,279,287	75.3%	\$ 3,040,689
05 - Firefighters IAFF				
Active Employees	\$ 8,040,416	\$ 1,620,178	20.2%	\$ 6,420,238
Vested Former Employees	451,114	63,578	14.1%	387,536
Retirees And Beneficiaries	18,045,714	10,193,824	56.5%	7,851,890
Pending Refunds	<u>47,339</u>	<u>47,339</u>	100.0%	<u>0</u>
Total	\$ 26,584,583	\$ 11,924,919	44.9%	\$ 14,659,664
10 - Clerical				
Active Employees	\$ 1,987,627	\$ 681,643	34.3%	\$ 1,305,984
Vested Former Employees	262,123	262,123	100.0%	0
Retirees And Beneficiaries	2,074,194	2,074,194	100.0%	0
Pending Refunds	<u>4,746</u>	<u>4,746</u>	100.0%	<u>0</u>
Total	\$ 4,328,690	\$ 3,022,706	69.8%	\$ 1,305,984
11 - Teamsters				
Active Employees	\$ 159,753	\$ 17,080	10.7%	\$ 142,673
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	1,577,642	338,341	21.4%	1,239,301
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	\$ 1,737,395	\$ 355,421	20.5%	\$ 1,381,974
20 - Police Cmnd				
Active Employees	\$ 4,164,817	\$ 967,342	23.2%	\$ 3,197,475
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	7,541,545	5,145,640	68.2%	2,395,905
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	\$ 11,706,362	\$ 6,112,982	52.2%	\$ 5,593,380

Table 6 (continued)

Division	Actuarial Accrued Liability	Valuation Assets ¹	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
Total Municipality				
Active Employees	\$ 21,882,643	\$ 6,944,821	31.7%	\$ 14,937,822
Vested Former Employees	1,339,408	951,872	71.1%	387,536
Retirees and Beneficiaries	38,387,853	26,900,757	70.1%	11,487,096
Pending Refunds	<u>133,099</u>	<u>133,099</u>	100.0%	<u>0</u>
Total Participants	\$ 61,743,003	\$ 34,930,549	56.6%	\$ 26,812,454

¹ 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.

Actuarial Accrued Liabilities - Comparative Schedule

Table 7

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2001	\$ 19,530,981	\$ 10,371,873	53%	\$ 9,159,108
2002	21,773,929	11,553,892	53%	10,220,037
2003	25,405,098	13,321,401	52%	12,083,697
2004	29,239,691	15,095,171	52%	14,144,520
2005	32,944,186	16,753,818	51%	16,190,368
2006	35,846,996	18,966,620	53%	16,880,376
2007	38,924,237	21,360,928	55%	17,563,309
2008	42,180,888	23,244,719	55%	18,936,169
2009	43,641,255	25,330,637	58%	18,310,618
2010	45,576,292	27,192,819	60%	18,383,473
2011	48,645,859	28,635,470	59%	20,010,389
2012	50,274,592	29,899,316	60%	20,375,276
2013	53,345,909	31,755,375	60%	21,590,534
2014	56,783,968	33,589,515	59%	23,194,453
2015	61,743,003	34,930,549	57%	26,812,454

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

Division 01 - AFSCME

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 2,755,669	\$ 2,432,173	88%	\$ 323,496
2006	2,941,314	2,697,818	92%	243,496
2007	3,308,203	2,988,480	90%	319,723
2008	3,700,981	3,126,906	84%	574,075
2009	3,879,049	3,266,522	84%	612,527
2010	4,005,919	3,442,780	86%	563,139
2011	4,234,114	3,605,216	85%	628,898
2012	4,028,810	3,732,886	93%	295,924
2013	4,289,392	3,964,718	92%	324,674
2014	4,594,329	4,144,956	90%	449,373
2015	5,065,997	4,235,234	84%	830,763

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 ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2005	23	\$ 854,987	9.27%	2.30%
2006	24	927,216	8.72%	2.30%
2007	24	959,423	9.34%	2.30%
2008	22	946,132	11.80%	2.30%
2009	22	1,007,657	11.82%	2.30%
2010	21	950,103	11.70%	2.30%
2011	19	881,149	12.86%	2.30%
2012	19	856,300	10.97%	2.30%
2013	20	946,020	11.06%	2.30%
2014	20	929,958	12.08%	2.30%
2015	20	901,017	15.07%	2.30%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 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 33 for past benefit provision changes.

Division 02 - Plc POAM

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 5,816,665	\$ 3,345,108	58%	\$ 2,471,557
2006	6,447,361	3,839,744	60%	2,607,617
2007	7,124,288	4,454,469	63%	2,669,819
2008	7,792,075	5,053,259	65%	2,738,816
2009	8,015,481	5,848,382	73%	2,167,099
2010	8,103,472	6,513,330	80%	1,590,142
2011	9,045,395	7,155,998	79%	1,889,397
2012	9,936,249	7,733,715	78%	2,202,534
2013	10,905,480	8,360,322	77%	2,545,158
2014	11,449,292	8,871,931	78%	2,577,361
2015	12,319,976	9,279,287	75%	3,040,689

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

Table 9-02: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2005	33	\$ 1,798,794	13.63%	8.79%
2006	33	1,845,659	13.92%	8.79%
2007	31	1,828,311	14.78%	8.29%
2008	33	1,960,107	17.20%	8.29%
2009	32	2,054,030	14.82%	8.29%
2010	29	1,806,921	14.01%	8.29%
2011	28	1,754,080	16.25%	8.29%
2012	27	1,723,624	17.93%	8.29%
2013	28	1,773,779	19.10%	8.29%
2014	25	1,587,254	20.72%	8.29%
2015	27	1,649,619	22.66%	8.29%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 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 33 for past benefit provision changes.

Division 05 - Firefighters IAFF

Table 8-05: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 15,023,530	\$ 6,187,978	41%	\$ 8,835,552
2006	16,066,257	6,944,833	43%	9,121,424
2007	17,262,341	7,740,255	45%	9,522,086
2008	18,666,323	8,365,960	45%	10,300,363
2009	19,137,933	9,053,047	47%	10,084,886
2010	20,287,429	9,632,575	47%	10,654,854
2011	21,458,833	9,979,003	47%	11,479,830
2012	21,924,381	10,296,036	47%	11,628,345
2013	23,137,298	10,871,647	47%	12,265,651
2014	24,841,557	11,507,153	46%	13,334,404
2015	26,584,583	11,924,919	45%	14,659,664

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 ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2005	39	\$ 2,193,159	27.86%	7.76%
2006	39	2,238,308	28.53%	7.76%
2007	39	2,321,595	29.10%	7.76%
2008	38	2,322,212	33.44%	7.76%
2009	38	2,434,749	31.21%	7.76%
2010	33	2,183,250	35.34%	7.76%
2011	32	2,115,390	39.70%	7.76%
2012	32	2,070,575	43.48%	7.76%
2013	32	2,123,299	44.85%	7.76%
2014	32	2,061,494	49.38%	7.76%
2015	32	2,037,634	55.69%	7.76%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 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 33 for past benefit provision changes.

Division 10 - Clerical

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 1,970,576	\$ 1,319,211	67%	\$ 651,365
2006	2,264,723	1,576,319	70%	688,404
2007	2,666,756	1,828,488	69%	838,268
2008	2,937,447	2,058,781	70%	878,666
2009	3,089,490	2,286,939	74%	802,551
2010	3,277,716	2,449,430	75%	828,286
2011	3,520,950	2,556,521	73%	964,429
2012	3,642,837	2,618,706	72%	1,024,131
2013	3,803,228	2,748,191	72%	1,055,037
2014	3,943,903	2,895,820	73%	1,048,083
2015	4,328,690	3,022,706	70%	1,305,984

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

Table 9-10: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2005	25	\$ 860,146	12.10%	1.50%
2006	24	886,025	12.31%	1.50%
2007	25	931,023	12.08%	3.90%
2008	22	880,757	13.28%	3.90%
2009	22	895,714	12.83%	3.90%
2010	18	723,841	14.20%	3.90%
2011	18	704,419	15.99%	3.90%
2012	18	696,170	17.13%	3.90%
2013	19	770,061	16.56%	3.90%
2014	17	699,196	17.51%	3.90%
2015	19	756,724	19.68%	3.90%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 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 33 for past benefit provision changes.

Division 11 - Teamsters

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2005	\$ 1,627,234	\$ 560,508	34%	\$ 1,066,726
2006	1,649,829	540,523	33%	1,109,306
2007	1,678,705	538,980	32%	1,139,725
2008	1,669,879	517,738	31%	1,152,141
2009	1,701,009	488,720	29%	1,212,289
2010	1,597,765	462,443	29%	1,135,322
2011	1,580,710	451,619	29%	1,129,091
2012	1,584,636	439,610	28%	1,145,026
2013	1,593,999	436,926	27%	1,157,073
2014	1,605,233	442,491	28%	1,162,742
2015	1,737,395	355,421	21%	1,381,974

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

Table 9-11: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2005	2	\$ 119,070	51.75%	2.00%
2006	2	122,757	52.54%	2.00%
2007	2	129,447	52.29%	2.00%
2008	2	131,960	53.18%	2.00%
2009	2	137,611	53.68%	2.00%
2010	2	129,971	53.28%	2.00%
2011	2	131,835	53.91%	2.00%
2012	2	132,347	58.92%	2.00%
2013	2	135,314	58.76%	2.00%
2014	2	136,484	58.89%	2.00%
2015	1	66,496	352.21%	2.00%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 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 33 for past benefit provision changes.

Division 20 - Police 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	\$ 5,750,512	\$ 2,908,840	51%	\$ 2,841,672
2006	6,477,512	3,367,383	52%	3,110,129
2007	6,883,944	3,810,256	55%	3,073,688
2008	7,414,183	4,122,075	56%	3,292,108
2009	7,818,293	4,387,027	56%	3,431,266
2010	8,303,991	4,692,261	57%	3,611,730
2011	8,805,857	4,887,113	56%	3,918,744
2012	9,157,679	5,078,363	56%	4,079,316
2013	9,616,512	5,373,571	56%	4,242,941
2014	10,349,654	5,727,164	55%	4,622,490
2015	11,706,362	6,112,982	52%	5,593,380

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

Table 9-20: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2005	10	\$ 705,634	25.44%	11.24%
2006	11	783,516	25.47%	11.24%
2007	11	802,787	25.21%	11.24%
2008	10	742,790	31.55%	11.24%
2009	9	705,851	33.42%	11.24%
2010	9	675,028	35.90%	11.24%
2011	9	681,394	39.51%	11.24%
2012	9	687,414	43.46%	11.24%
2013	9	695,724	45.30%	11.24%
2014	9	685,804	49.49%	11.24%
2015	9	710,674	58.51%	11.24%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 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 33 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.

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:	80
Inactive employees entitled to but not yet receiving benefits:	24
Active employees:	<u>108</u>
	212

Total Pension Liability as of 12/31/2014 measurement date:	\$ 55,157,362
Total Pension Liability as of 12/31/2015 measurement date:	\$ 59,926,624
Service Cost for the year ending on the 12/31/2015 measurement date:	\$ 981,161

Change in the Total Pension Liability due to:

- Benefit changes ¹ :	\$ 0
- Differences between expected and actual experience ² :	\$ (344,829)
- Changes in assumptions ² :	\$ 2,496,029

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

² Changes in liability due to differences between actual and expected experience, and changes in assumptions, are recognized in pension expense over the average remaining service lives of all employees.

Average expected remaining service lives of all employees (active and inactive):	5
Covered employee payroll: (Needed for Required Supplementary Information)	\$ 6,122,164

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:	\$ 7,807,173	-	\$ (6,480,928)

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

GASB 68 Information

This page is for those municipalities who need to “roll-forward” their total pension liability due to the timing of completion of the actuarial valuation in relation to their fiscal year-end.

The following information has been prepared to provide some of the information necessary to complete GASB Statement No. 68 disclosures. Statement 68 is effective for fiscal years beginning after June 15, 2014. Additional resources, including an Implementation Guide, are available at www.mersofmich.com.

Actuarial Valuation Date:	12/31/2015
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:	80
Inactive employees entitled to but not yet receiving benefits:	24
Active employees:	<u>108</u>
	212

Total Pension Liability as of 12/31/2015 measurement date:	\$ 57,830,230
Total Pension Liability as of 12/31/2016 measurement date:	\$ 62,483,775
Service Cost for the year ending on the 12/31/2016 measurement date:	\$ 1,011,588
Change in the Total Pension Liability due to:	
- Benefit changes ¹ :	\$ 0
- Differences between expected and actual experience ² :	\$ (432,606)
- Changes in assumptions ² :	\$ 2,564,656

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

² Changes in liability due to differences between actual and expected experience, and changes in assumptions, are recognized in pension expense over the average remaining service lives of all employees.

Average expected remaining service lives of all employees (active and inactive):	5
Covered employee payroll: (Needed for Required Supplementary Information)	\$ 6,122,164

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

	1% Decrease <u>(7.00%)</u>	Current Discount Rate <u>(8.00%)</u>	1% Increase <u>(9.00%)</u>
Change in Net Pension Liability as of 12/31/2016:	\$ 8,044,581	-	\$ (6,687,776)

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 - AFSCME

7/1/2005	Benefit B-3 (80% max)
7/1/2005	Member Contribution Rate 2.30%
7/10/2001	Covered by Act 88
7/1/1997	Benefit B-2
7/1/1997	Benefit F55 (With 20 Years of Service)
7/1/1995	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1995	6 Year Vesting
7/1/1995	Benefit C-1 (New)
7/1/1995	Member Contribution Rate 0.00%
7/1/1995	Fiscal Month - January

02 - Plc POAM

1/1/2007	Member Contribution Rate 8.29%
12/1/2005	Benefit D2 Plan
12/1/2005	Benefit FAC-3 (3 Year Final Average Compensation)
12/1/2005	2.75% Multiplier (80% max)
12/1/2005	Member Contribution Rate 8.79%
1/1/2002	Member Contribution Rate 4.50%
7/10/2001	Covered by Act 88
1/1/2000	Benefit B-4 (80% max)
1/1/2000	Member Contribution Rate 6.50%
1/1/2000	E2 2.5% COLA for future retirees (01/01/2000)
1/1/1999	Member Contribution Rate 2.50%
7/1/1996	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1996	10 Year Vesting
7/1/1996	Benefit B-3 (80% max)
7/1/1996	Benefit F50 (With 25 Years of Service)
7/1/1996	Member Contribution Rate 3.50%
7/1/1995	Fiscal Month - January

05 - Firefighters IAFF

1/1/2005	Member Contribution Rate 7.76%
1/1/2004	2.75% Multiplier (80% max)
1/1/2004	Member Contribution Rate 8.07%
7/10/2001	Covered by Act 88
7/1/1999	Benefit D2 Plan
7/1/1999	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/1999	10 Year Vesting
7/1/1999	Benefit B-4 (80% max)
7/1/1999	Benefit F50 (With 25 Years of Service)

05 - Firefighters IAFF

7/1/1999	Member Contribution Rate 4.19%
7/1/1999	E2 2.5% COLA for future retirees (07/01/1999)
7/1/1995	Fiscal Month - January

10 - Clerical

1/1/2007	Benefit B-4 (80% max)
1/1/2007	Member Contribution Rate 3.90%
1/1/2004	Benefit B-3 (80% max)
1/1/2004	Member Contribution Rate 1.50%
7/10/2001	Covered by Act 88
7/1/2000	Benefit B-2
7/1/2000	Member Contribution Rate 0.60%
1/1/1998	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/1998	10 Year Vesting
1/1/1998	Benefit C-1 (New)
1/1/1998	Benefit F55 (With 25 Years of Service)
1/1/1998	Member Contribution Rate 0.00%
7/1/1995	Fiscal Month - January

11 - Teamsters

1/1/2004	6 Year Vesting
1/1/2002	Member Contribution Rate 2.00%
7/10/2001	Covered by Act 88
7/1/2000	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/2000	10 Year Vesting
7/1/2000	Benefit B-2
7/1/2000	Benefit F55 (With 20 Years of Service)
7/1/2000	Member Contribution Rate 0.00%
7/1/1995	Fiscal Month - January

20 - Police Cmnd

8/1/2005	2.75% Multiplier (80% max)
8/1/2005	Member Contribution Rate 11.24%
1/1/2005	Member Contribution Rate 5.50%
1/1/2003	Member Contribution Rate 8.00%
1/1/2002	Member Contribution Rate 7.00%
1/1/2002	E2 2.5% COLA for future retirees (07/01/2001)
7/10/2001	Covered by Act 88
7/1/2001	Benefit D2 Plan
7/1/2001	Benefit B-4 (80% max)
7/1/2001	Benefit F50 (With 25 Years of Service)
7/1/2001	Member Contribution Rate 6.00%
1/1/2001	Member Contribution Rate 4.50%
1/1/1998	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1998	10 Year Vesting

20 - Police Cmnd

1/1/1998	Benefit B-3 (80% max)
1/1/1998	Benefit F55 (With 15 Years of Service)
1/1/1998	Eligible at Age 52 (With 25 Years of Service)
1/1/1998	Member Contribution Rate 5.50%
7/1/1995	Fiscal Month - January

Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method

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

Increase in Final Average Compensation

Division	FAC Increase Assumption
All Divisions	1.00%

Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	80%

Miscellaneous and Technical Assumptions

Loads – None.