# MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN

ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2013

YPSILANTI, CITY OF (8101)

Spring, 2014

Ypsilanti, 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, 2013. The report includes the determination of liabilities and contribution rates resulting from the participation of Ypsilanti, City of (8101) in the Municipal Employees' Retirement System of Michigan ("MERS"). MERS is an independent public nonprofit organization that has partnered with Michigan municipalities for more than 65 years, helping them provide safe, secure retirement plans for their employees. Ypsilanti, 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, 2013 annual actuarial valuation is to:

- measure funding progress,
- establish contribution requirements for the fiscal year beginning July 1, 2015, and
- provide actuarial information in connection with applicable Governmental Accounting Standards Board 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, 2013 furnished by MERS' administrative staff. 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. Tegrit Group 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 Retirement Board. 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-2013AnnualActuarialValuation-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).

Our advice 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 related third parties such as the auditor for the municipality). Tegrit Group 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 MERS at: http://www.mersofmich.com/MERS/About-MERS/Contact-Us

Sincerely,

Alan Sonnanstine, MAAA, ASA
Cathy Nagy, MAAA, FSA
Jim Koss, MAAA, ASA
Rebecca Stouffer, MAAA, ASA

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## Executive Summary

### 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 trusts are maintained for each individual employer. Each municipality is responsible for their own plan liabilities; MERS does not borrow from one municipality's account to pay for another.

The funded ratio of a plan is the percentage of the dollar value of the accrued benefits that is covered by the actuarial value of assets.

**Your Funded Ratio:**

| | 12/31/2013 | 12/31/2012 |
|---|---|---|
| **Funded Ratio** | 144% | 145% |

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.

As a result of the plan's funding policy, the funded ratio is expected to approach 100% over time. How quickly a plan attains the 100% goal depends on many factors such as:

- The current funded ratio,
- The future experience of the plan, and
- 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 minimum required employer contributions are shown on the following page. Employee contributions, if any, are shown in Table 2, and are in addition to the required employer contribution on the next page.

| | Percentage of Payroll | | Monthly $ Based on Valuation Payroll | |
|---|---|---|---|---|
| **Valuation Date:** | **12/31/2013** | **12/31/2012** | **12/31/2013** | **12/31/2012** |
| **Fiscal Year Beginning:** | **July 1, 2015** | **July 1, 2014** | **July 1, 2015** | **July 1, 2014** |
| **Division** | | | | |
| 01 - Gnrl Non Un | - | - | $ 0 | $ 0 |
| 10 - Gnrl AFSCME | - | - | 0 | 0 |
| 11 - Gnrl Dsptch | - | - | 0 | 0 |
| 14 - Cty Mgr | - | - | 0 | 0 |
| 15 - City Mgr. aft. 7/1/201 | 0.00% | 0.00% | 0 | 0 |
| 16 - AFSCME after 7/1/2010 | 0.00% | 0.00% | 0 | 0 |
| 17 - Non-Union after 1/1/20 | 6.13% | 7.37% | 1,439 | 151 |
| **Municipality Total** | | | **$ 1,439** | **$ 151** |

You may contribute more than the minimum required contributions, as these additional contributions will earn investment income, and later you may have to contribute less than otherwise. MERS strongly encourages employers to contribute more than the minimum contribution shown above.

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), and
- 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 the Investment Markets

At this time, MERS maintains the 8% annual return assumption in the belief that over the long-term this is achievable. For example, MERS' 30 year return was 9.3% on December 31, 2013. The MERS portfolio returned 14.8% in 2013; the two year (12.9%), three year (9.2%), four year (10.4%), and five year (11.7%) returns all exceed the 8% annual return assumption. It has now been five years since the peak of the financial crisis and the stock market decline still weighs down MERS' medium term returns. This was a one in fifty year event comparable only to the Stock Market Crash of 1929 during the Great Depression. The stock market and economy have stabilized since 2008 and are on the long road to recovery. MERS regularly monitors the investment return assumption to make sure it is reasonable compared to long term expectations.

The actuarial value of assets, used to determine both your funded ratio and your required employer contribution, is based on a 10-year smoothed value of assets. Only a portion (six-tenths, for 2008 - 2013) of the 2008 investment market losses was recognized in this actuarial valuation report. This reduces the volatility of the valuation results, which affects your required employer contribution and funded ratio.

As of December 31, 2013 the actuarial value of assets is 106% of market value. This means that meeting the actuarial assumption in the next few years will require average annual market returns that exceed the 8% investment return assumption.

If the December 31, 2013 valuation results were based on market value on that date instead of 10-year smoothed funding value: i) the funded percent of your entire municipality would be 136% (instead of 144%); and ii) your total employer contribution requirement for the fiscal year starting July 1, 2015 would be $ 18,168 (instead of $ 17,268).

The asset smoothing method is a powerful tool for reducing the volatility of your required employer contributions. **However, if the current 6% 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).**

## Alternate Scenarios to Estimate the Potential Volatility of Results ("What If Scenarios")

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.

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.

Other assumptions are also important in determining the required employer contributions.

For example:

- 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 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.

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, 2013 valuation, and are for the municipality in total, not by division.

| | Assumed Future Annual Smoothed Rate of Investment Return | | | |
|---|---|---|---|---|
| | Lower Future Annual Returns | | Valuation Assumption | Higher Returns |
| **12/31/2013 Valuation Results** | **6%** | **7%** | **8%** | **9%** |
| Accrued Liability | $ 15,787,031 | $ 14,181,362 | $ 12,834,271 | $ 11,705,386 |
| Valuation Assets | $ 18,461,521 | $ 18,461,521 | $ 18,461,521 | $ 18,461,521 |
| Unfunded Accrued Liability | $ (2,674,490) | $ (4,280,159) | $ (5,627,250) | $ (6,756,135) |
| **Funded Ratio** | 117% | 130% | 144% | 158% |
| Monthly Normal Cost | $ 21,593 | $ 16,369 | $ 12,247 | $ 9,007 |
| Monthly Amortization Payment | $ (23,375) | $ (42,368) | $ (60,861) | $ (78,576) |
| **Total Employer Contribution[1]** | $ 6,997 | $ 2,305 | $ 1,439 | $ 929 |

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.

# Employer Contribution Details
# For the Fiscal Year Beginning July 1, 2015

## Table 1

| Division | Amort. Period for Unfund. Liab.[4,5] | Employer Contributions[1] Normal Cost | Unfunded Accrued Liability | Total Required Employer Contribut. | Blended Employer Contribut.[7] | GASB ARC[6] | Member Contribut. Conversion Factor[2] |
|---|---|---|---|---|---|---|---|
| **Percentage of Payroll** | | | | | | | |
| 01 - Gnrl Non Un | 25 | - | - | - | 0.00% | | |
| 10 - Gnrl AFSCME | 25 | - | - | - | 0.00% | | |
| 11 - Gnrl Dsptch | 20 | - | - | - | | | |
| 14 - Cty Mgr | 25 | - | - | - | 0.00% | | |
| 15 - City Mgr. aft. 7/1 | 25 | 13.25% | -13.75% | 0.00% | 0.00% | | |
| 16 - AFSCME after 7/1/2 | 25 | 7.67% | -18.95% | 0.00% | 0.00% | | |
| 17 - Non-Union after 1/ | 25 | 6.74% | -0.61% | 6.13% | 0.00% | | |
| **Estimated Monthly Contribution[3]** | | | | | | | |
| 01 - Gnrl Non Un | 25 | $ 4,650 | $ (34,231) | $ 0 | | | |
| 10 - Gnrl AFSCME | 25 | 4,314 | (19,851) | 0 | | | |
| 11 - Gnrl Dsptch | 20 | 0 | (3,352) | 0 | | | |
| 14 - Cty Mgr | 25 | 0 | (561) | 0 | | | |
| 15 - City Mgr. aft. 7/1 | 25 | 1,032 | (1,071) | 0 | | | 0.97% |
| 16 - AFSCME after 7/1/2 | 25 | 669 | (1,652) | 0 | | | 0.91% |
| 17 - Non-Union after 1/ | 25 | 1,582 | (143) | 1,439 | | | 0.85% |
| **Total Municipality** | | **$ 12,247** | **$ (60,861)** | **$ 1,439** | | | |
| **Estimated Annual Contribution[3]** | | **$ 146,964** | **$ (730,332)** | **$ 17,268** | | | |

1 The above Employer contribution requirements are in addition to the Member contributions, if any, shown in Table 2.

2 If Member contributions are increased/decreased by 1.00% of pay, the Employer contribution requirement will decrease/increase by the Member Contribution Conversion Factor.

3 For divisions that are open to new hires, estimated contributions are based on valuation payroll. Actual contributions will be based on actual reported monthly pays, and will be different from the above amounts (usually higher). 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 July 1, 2015 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 a minimum 5-year amortization is attained. Under Amortization Option B, the period will decrease by 2 years each valuation year, until reaching 15 years. Thereafter, the period will reduce by 1 year each valuation year, until a minimum 5-year amortization is attained. This will result in amortization payments that increase faster than the usual 4.5% 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 reporting and disclosure purposes under Statement Nos. 25 and 27 of the Governmental Accounting Standards Board, the annual required contribution (ARC) for this division is based on a 30 year level dollar amortization.

7 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.

**Please see the Comments on the Investment Markets.**

## Benefit Provisions

### Table 2

**01 - Gnrl Non Un: Closed to new hires, linked to Division 17**

| | 2013 Valuation | 2012 Valuation |
|---|---|---|
| **Benefit Multiplier:** | 2.50% Multiplier (80% max) | 2.50% Multiplier (80% max) |
| **Normal Retirement Age:** | 60 | 60 |
| **Vesting:** | 10 years | 10 years |
| **Early Retirement (Unreduced):** | 50/25 | 50/25 |
| | 55/15 | 55/15 |
| **Early Retirement (Reduced):** | - | - |
| **Final Average Compensation:** | 3 years | 3 years |
| **Member Contributions:** | 5% | 5% |
| **Act 88:** | Yes (Adopted 2/7/1972) | Yes (Adopted 2/7/1972) |

**10 - Gnrl AFSCME: Closed to new hires, linked to Division 16**

| | 2013 Valuation | 2012 Valuation |
|---|---|---|
| **Benefit Multiplier:** | 2.50% Multiplier (80% max) | 2.50% Multiplier (80% max) |
| **Normal Retirement Age:** | 60 | 60 |
| **Vesting:** | 10 years | 10 years |
| **Early Retirement (Unreduced):** | 50/25 | 50/25 |
| | 55/15 | 55/15 |
| **Early Retirement (Reduced):** | - | - |
| **Final Average Compensation:** | 3 years | 3 years |
| **Member Contributions:** | 5% | 5% |
| **Act 88:** | Yes (Adopted 2/7/1972) | Yes (Adopted 2/7/1972) |

**11 - Gnrl Dsptch: Closed to new hires**

| | 2013 Valuation | 2012 Valuation |
|---|---|---|
| **Benefit Multiplier:** | 2.25% Multiplier (80% max) | 2.25% Multiplier (80% max) |
| **Normal Retirement Age:** | 60 | 60 |
| **Vesting:** | 10 years | 10 years |
| **Early Retirement (Unreduced):** | 55/15 | 55/15 |
| | 20 and Out | 20 and Out |
| **Early Retirement (Reduced):** | - | - |
| **Final Average Compensation:** | 3 years | 3 years |
| **Member Contributions:** | 10% | 10% |
| **Act 88:** | Yes (Adopted 2/7/1972) | Yes (Adopted 2/7/1972) |

**Table 2** (continued)

### 14 - Cty Mgr: Closed to new hires, linked to Division 15

| | 2013 Valuation | 2012 Valuation |
|---|---|---|
| **Benefit Multiplier:** | 2.50% Multiplier (80% max) | 2.50% Multiplier (80% max) |
| **Normal Retirement Age:** | 60 | 60 |
| **Vesting:** | 8 years | 8 years |
| **Early Retirement (Unreduced):** | 55/15 | 55/15 |
| **Early Retirement (Reduced):** | 50/25 | 50/25 |
| **Final Average Compensation:** | 3 years | 3 years |
| **COLA for Future Retirees:** | 2.50% (Non-Compound) | 2.50% (Non-Compound) |
| **Member Contributions:** | 0% | 0% |
| **RS50% Percentage:** | 50% | 50% |
| **Act 88:** | Yes (Adopted 10/1/2005) | Yes (Adopted 10/1/2005) |

### 15 - City Mgr. aft. 7/1/2012: Open Division, linked to Division 14

| | 2013 Valuation | 2012 Valuation |
|---|---|---|
| **Benefit Multiplier:** | 2.25% Multiplier (80% max) | 2.25% Multiplier (80% max) |
| **Normal Retirement Age:** | 60 | 60 |
| **Vesting:** | 8 years | 8 years |
| **Early Retirement (Unreduced):** | - | - |
| **Early Retirement (Reduced):** | 50/25<br>55/15 | 50/25<br>55/15 |
| **Final Average Compensation:** | 3 years | 3 years |
| **Member Contributions:** | 5% | 5% |
| **RS50% Percentage:** | 50% | 50% |
| **Act 88:** | Yes (Adopted 10/1/2005) | Yes (Adopted 10/1/2005) |

### 16 - AFSCME after 7/1/2010: Open Division, linked to Division 10

| | 2013 Valuation | 2012 Valuation |
|---|---|---|
| **Benefit Multiplier:** | 2.00% Multiplier (no max) | 2.00% Multiplier (no max) |
| **Normal Retirement Age:** | 60 | 60 |
| **Vesting:** | 10 years | 10 years |
| **Early Retirement (Unreduced):** | 50/25<br>55/15 | 50/25<br>55/15 |
| **Early Retirement (Reduced):** | - | - |
| **Final Average Compensation:** | 3 years | 3 years |
| **Member Contributions:** | 5% | 5% |
| **Act 88:** | Yes (Adopted 2/7/1972) | Yes (Adopted 2/7/1972) |

**Table 2** (continued)

## 17 - Non-Union after 1/1/2013: Open Division, linked to Division 01

| | 2013 Valuation | 2012 Valuation |
|---|---|---|
| **Benefit Multiplier:** | 2.00% Multiplier (no max) | 2.00% Multiplier (no max) |
| **Normal Retirement Age:** | 60 | 60 |
| **Vesting:** | 10 years | 10 years |
| **Early Retirement (Unreduced):** | 55/25 | 55/25 |
| **Early Retirement (Reduced):** | 50/25<br>55/15 | 50/25<br>55/15 |
| **Final Average Compensation:** | 3 years | 3 years |
| **Member Contributions:** | 5% | 5% |
| **Act 88:** | Yes (Adopted 2/7/1972) | Yes (Adopted 2/7/1972) |

## Membership Summary

### Table 3

| Division | 2013 Valuation Number | 2013 Valuation Annual Payroll[1] | 2012 Valuation Number | 2012 Valuation Annual Payroll[1] | 2013 Valuation Average Age | 2013 Valuation Average Benefit Service[2] | 2013 Valuation Average Eligibility Service[2] |
|---|---|---|---|---|---|---|---|
| 01 - Gnrl Non Un | | | | | | | |
| Active Members | 15 | $ 904,114 | 16 | $ 924,909 | 51.9 | 14.6 | 14.6 |
| Vested Former Members | 11 | 114,123 | 11 | 114,124 | 44.6 | 8.6 | 12.9 |
| Retirees and Beneficiaries | 29 | 368,192 | 28 | 354,009 | 73.8 | | |
| 10 - Gnrl AFSCME | | | | | | | |
| Active Members | 17 | $ 726,722 | 22 | $ 906,353 | 46.0 | 10.4 | 10.4 |
| Vested Former Members | 1 | 10,884 | 1 | 10,884 | 37.4 | 11.1 | 11.1 |
| Retirees and Beneficiaries | 23 | 382,412 | 21 | 370,116 | 68.1 | | |
| 11 - Gnrl Dsptch | | | | | | | |
| Active Members | 0 | $ 0 | 0 | $ 0 | 0.0 | 0.0 | 0.0 |
| Vested Former Members | 5 | 26,082 | 5 | 26,082 | 37.8 | 5.3 | 10.1 |
| Retirees and Beneficiaries | 2 | 21,489 | 2 | 21,488 | 70.9 | | |
| 14 - Cty Mgr | | | | | | | |
| Active Members | 0 | $ 0 | 0 | $ 0 | 0.0 | 0.0 | 0.0 |
| Vested Former Members | 0 | 0 | 0 | 0 | 0.0 | 0.0 | 0.0 |
| Retirees and Beneficiaries | 1 | 44,478 | 1 | 43,419 | 61.8 | | |
| 15 - City Mgr. aft. 7/1/2 | | | | | | | |
| Active Members | 1 | $ 93,500 | 1 | $ 90,619 | 61.4 | 1.4 | 6.8 |
| Vested Former Members | 0 | 0 | 0 | 0 | 0.0 | 0.0 | 0.0 |
| Retirees and Beneficiaries | 0 | 0 | 0 | 0 | 0.0 | | |
| 16 - AFSCME after 7/1/201 | | | | | | | |
| Active Members | 3 | $ 104,597 | 0 | $ 0 | 36.2 | 2.2 | 6.8 |
| Vested Former Members | 1 | 4,192 | 0 | 0 | 40.6 | 5.8 | 9.9 |
| Retirees and Beneficiaries | 0 | 0 | 0 | 0 | 0.0 | | |
| 17 - Non-Union after 1/1/ | | | | | | | |
| Active Members | 6 | $ 281,732 | 1 | $ 24,723 | 45.1 | 1.2 | 5.7 |
| Vested Former Members | 0 | 0 | 0 | 0 | 0.0 | 0.0 | 0.0 |
| Retirees and Beneficiaries | 0 | 0 | 0 | 0 | 0.0 | | |
| **Total Municipality** | | | | | | | |
| **Active Members** | **42** | **$ 2,110,665** | **40** | **$ 1,946,604** | **47.7** | **9.8** | **10.9** |
| **Vested Former Members** | **18** | **155,281** | **17** | **151,090** | **42.1** | **7.7** | **11.9** |
| **Retirees and Beneficiaries** | **55** | **816,571** | **52** | **789,032** | **71.1** | | |
| **Total Particpants** | **115** | | **109** | | | | |

[1] Annual payroll for active members; annual deferred benefits payable for vested former members; 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 | 2013 Valuation | | 2012 Valuation | |
|---|---|---|---|---|
| | Employer and Retiree[1] | Employee[2] | Employer and Retiree[1] | Employee[2] |
| 01 - Gnrl Non Un | $ 8,407,806 | $ 821,962 | $ 7,578,736 | $ 805,590 |
| 10 - Gnrl AFSCME | 6,275,787 | 371,747 | 5,717,256 | 413,048 |
| 11 - Gnrl Dsptch | 457,107 | 92,426 | 407,752 | 92,325 |
| 14 - Cty Mgr | 579,035 | 0 | 546,532 | 0 |
| 15 - City Mgr. aft. 7/1/2012 | 119,824 | 6,565 | 104,080 | 1,888 |
| 16 - AFSCME after 7/1/2010 | 172,035 | 34,564 | 133,995 | 0 |
| 17 - Non-Union after 1/1/2013 | 32,132 | 15,358 | 34 | 4,291 |
| **Municipality Total** | **$ 16,043,726** | **$ 1,342,622** | **$ 14,488,385** | **$ 1,317,142** |
| **Combined Reserves** | **$ 17,386,348** | | **$ 15,805,527** | |

1 Reserve for Employer Contributions and Benefit Payments

2 Reserve for Employee Contributions

The December 31, 2013 valuation assets are equal to 1.061840 times the reported market value of assets (compared to 1.143563 as of December 31, 2012). 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 | Contributions: Employer | Contributions: Member | Investment Income | Benefit Payments | Member Contrib. Refunds | Net Transfers | Valuation Asset Balance |
|---|---|---|---|---|---|---|---|
| 2003 | $ 9,904 | $ 147,696 | $ 1,067,498 | $ (470,384) | $ (51,289) | $ 0 | $ 15,107,484 |
| 2004 | 27,439 | 142,985 | 998,107 | (529,123) | (68,171) | 0 | 15,678,721 |
| 2005 | 19,024 | 250,465 | 976,590 | (569,556) | (24,812) | (299,496) | 16,030,936 |
| 2006 | 44,478 | 118,994 | 1,284,635 | (628,348) | (35,205) | 1 | 16,815,491 |
| 2007 | 26,695 | 123,481 | 1,363,331 | (789,419) | (84,876) | 0 | 17,454,703 |
| 2008 | 0 | 125,096 | 722,207 | (771,554) | (9,105) | 12,177 | 17,533,524 |
| 2009 | 0 | 121,435 | 679,741 | (733,569) | (24,365) | 0 | 17,576,766 |
| 2010 | 222 | 102,227 | 872,649 | (732,612) | (23,580) | 0 | 17,795,672 |
| 2011 | 222 | 99,202 | 857,598 | (739,837) | (2,812) | 0 | 18,010,045 |
| 2012 | 1,963 | 99,414 | 771,282 | (804,123) | (3,964) | 0 | 18,074,617 |
| 2013 | 0 | 108,988 | 1,049,864 | (786,836) | (2,697) | 17,585 | 18,461,521 |

Note: Transfers in and out are usually related to the transfer of participants between municipalities, and to employer and member payments for service credit purchases (if any) that the governing body has approved.

# Actuarial Accrued Liabilities and Valuation Assets
# As of December 31, 2013

## Table 6

| Division | Actuarial Accrued Liability | Valuation Assets[1] | Percent Funded | Unfunded (Overfunded) Accrued Liabilities |
|---|---|---|---|---|
| 01 - Gnrl Non Un | | | | |
| Active Members | $ 2,811,645 | $ 5,951,575 | 211.7% | $ (3,139,930) |
| Vested Former Members | 483,636 | 483,636 | 100.0% | 0 |
| Retirees And Beneficiaries | 3,287,436 | 3,287,436 | 100.0% | 0 |
| Pending Refunds | 77,890 | 77,890 | 100.0% | 0 |
| Total | **$ 6,660,607** | **$ 9,800,537** | **147.1%** | **$ (3,139,930)** |
| 10 - Gnrl AFSCME | | | | |
| Active Members | $ 1,539,560 | $ 3,384,594 | 219.8% | $ (1,845,034) |
| Vested Former Members | 20,635 | 20,635 | 100.0% | 0 |
| Retirees And Beneficiaries | 3,642,705 | 3,642,705 | 100.0% | 0 |
| Pending Refunds | 10,684 | 10,684 | 100.0% | 0 |
| Total | **$ 5,213,584** | **$ 7,058,618** | **135.4%** | **$ (1,845,034)** |
| 11 - Gnrl Dsptch | | | | |
| Active Members | $ 0 | $ 298,486 | 0.0% | $ (298,486) |
| Vested Former Members | 85,710 | 85,710 | 100.0% | 0 |
| Retirees And Beneficiaries | 182,025 | 182,025 | 100.0% | 0 |
| Pending Refunds | 17,295 | 17,295 | 100.0% | 0 |
| Total | **$ 285,030** | **$ 583,516** | **204.7%** | **$ (298,486)** |
| 14 - Cty Mgr | | | | |
| Active Members | $ 0 | $ 49,991 | 0.0% | $ (49,991) |
| Vested Former Members | 0 | 0 | 0.0% | 0 |
| Retirees And Beneficiaries | 564,852 | 564,852 | 100.0% | 0 |
| Pending Refunds | 0 | 0 | 0.0% | 0 |
| Total | **$ 564,852** | **$ 614,843** | **108.9%** | **$ (49,991)** |
| 15 - City Mgr. aft. 7/1/2012 | | | | |
| Active Members | $ 16,596 | $ 134,205 | 808.7% | $ (117,609) |
| Vested Former Members | 0 | 0 | 0.0% | 0 |
| Retirees And Beneficiaries | 0 | 0 | 0.0% | 0 |
| Pending Refunds | 0 | 0 | 0.0% | 0 |
| Total | **$ 16,596** | **$ 134,205** | **808.7%** | **$ (117,609)** |
| 16 - AFSCME after 7/1/2010 | | | | |
| Active Members | $ 31,350 | $ 196,730 | 627.5% | $ (165,380) |
| Vested Former Members | 22,645 | 22,645 | 100.0% | 0 |
| Retirees And Beneficiaries | 0 | 0 | 0.0% | 0 |
| Pending Refunds | 0 | 0 | 0.0% | 0 |
| Total | **$ 53,995** | **$ 219,375** | **406.3%** | **$ (165,380)** |

**Table 6** (continued)

| Division | Actuarial Accrued Liability | Valuation Assets[1] | Percent Funded | Unfunded (Overfunded) Accrued Liabilities |
|---|---|---|---|---|
| 17 - Non-Union after 1/1/2013 | | | | |
| Active Members | $ 38,975 | $ 49,795 | 127.8% | $ (10,820) |
| Vested Former Members | 0 | 0 | 0.0% | 0 |
| Retirees And Beneficiaries | 0 | 0 | 0.0% | 0 |
| Pending Refunds | 632 | 632 | 100.0% | 0 |
| Total | **$ 39,607** | **$ 50,427** | **127.3%** | **$ (10,820)** |
| **Total Municipality** | | | | |
| **Active Members** | **$ 4,438,126** | **$ 10,065,376** | **226.8%** | **$ (5,627,250)** |
| **Vested Former Members** | **612,626** | **612,626** | **100.0%** | **0** |
| **Retirees and Beneficiaries** | **7,677,018** | **7,677,018** | **100.0%** | **0** |
| **Pending Refunds** | **106,501** | **106,501** | **100.0%** | **0** |
| **Total Participants** | **$ 12,834,271** | **$ 18,461,521** | **143.8%** | **$ (5,627,250)** |
| The following results show the combined accrued liabilities and assets for each set of linked divisions. These results are already included in the table above. | | | | |
| Linked Divisions 17, 01 | | | | |
| Active Members | $ 2,850,620 | $ 6,001,370 | 210.5% | $ (3,150,750) |
| Vested Former Members | 483,636 | 483,636 | 100.0% | 0 |
| Retirees and Beneficiaries | 3,287,436 | 3,287,436 | 100.0% | 0 |
| Pending Refunds | 78,522 | 78,522 | 100.0% | 0 |
| Total | **$ 6,700,214** | **$ 9,850,964** | **147.0%** | **$ (3,150,750)** |
| Linked Divisions 16, 10 | | | | |
| Active Members | $ 1,570,910 | $ 3,581,324 | 228.0% | $ (2,010,414) |
| Vested Former Members | 43,280 | 43,280 | 100.0% | 0 |
| Retirees and Beneficiaries | 3,642,705 | 3,642,705 | 100.0% | 0 |
| Pending Refunds | 10,684 | 10,684 | 100.0% | 0 |
| Total | **$ 5,267,579** | **$ 7,277,993** | **138.2%** | **$ (2,010,414)** |
| Linked Divisions 15, 14 | | | | |
| Active Members | $ 16,596 | $ 184,196 | 1,109.9% | $ (167,600) |
| Vested Former Members | 0 | 0 | 0.0% | 0 |
| Retirees and Beneficiaries | 564,852 | 564,852 | 100.0% | 0 |
| Pending Refunds | 0 | 0 | 0.0% | 0 |
| Total | **$ 581,448** | **$ 749,048** | **128.8%** | **$ (167,600)** |

[1] Includes both employer and member assets.

**Please see the Comments on the Investment Markets.**

See the MERS Fiscal Responsibility Policy on the MERS website at:
http://www.mersofmich.com/Portals/0/Assets/PageResources/MERS/PlanDocument/Pension/sec_43c.pdf.

## Actuarial Accrued Liabilities - Comparative Schedule

### Table 7

| Valuation Date December 31 | Actuarial Accrued Liability | Valuation Assets | Percent Funded | Unfunded (Overfunded) Accrued Liabilities | UAL as Percent of Annual Payroll |
|---|---|---|---|---|---|
| 1999 | $ 7,564,364 | $ 12,719,197 | 168% | $ (5,154,832) | |
| 2000 | 8,043,197 | 13,701,381 | 170% | (5,658,183) | |
| 2001 | 8,991,957 | 14,367,886 | 160% | (5,375,929) | |
| 2002 | 9,556,377 | 14,404,059 | 151% | (4,847,682) | |
| 2003 | 9,888,040 | 15,107,484 | 153% | (5,219,444) | |
| 2004 | 10,303,544 | 15,678,721 | 152% | (5,375,177) | |
| 2005 | 10,301,827 | 16,030,936 | 156% | (5,729,109) | |
| 2006 | 11,271,094 | 16,815,491 | 149% | (5,544,397) | |
| 2007 | 11,905,095 | 17,454,703 | 147% | (5,549,608) | |
| 2008 | 11,975,264 | 17,533,524 | 146% | (5,558,260) | |
| 2009 | 11,686,193 | 17,576,766 | 150% | (5,890,573) | |
| 2010 | 11,787,614 | 17,795,672 | 151% | (6,008,058) | |
| 2011 | 12,209,422 | 18,010,045 | 148% | (5,800,623) | |
| 2012 | 12,460,118 | 18,074,617 | 145% | (5,614,499) | |
| 2013 | 12,834,271 | 18,461,521 | 144% | (5,627,250) | |

Notes: Actuarial assumptions were revised for the 2000, 2004, 2008, 2009, 2010, 2011, and 2012 actuarial valuations.

## GASB 25 and GASB 27 Information

The following information has been prepared to provide the information necessary to comply with GASB Statements Number 25 and 27. Statement 25 is effective for fiscal years beginning after June 15, 1996 and Statement 27 is effective for fiscal years beginning after June 15, 1997.

All entries and the annual employer contribution amount were based on the actuarial methods and assumptions used in the December 31, 2013 actuarial valuation. The entry age normal actuarial method was used to determine the disclosure entries.

**GASB 25 Information (as of 12/31/2013)**

| | | |
|---|---|---|
| Actuarial Accrued Liability | | |
| Retirees and beneficiaries currently receiving benefits | $ | 7,677,018 |
| Terminated employees (vested former members) not yet receiving benefits | | 612,626 |
| Non-Vested terminated employees (pending refunds of accumulated member contributions) | | 106,501 |
| Current employees - | | |
| Accumulated employee contributions including allocated investment income | | 921,017 |
| Employer financed | | 3,517,109 |
| Total Actuarial Accrued Liability | $ | 12,834,271 |
| Net Assets Available for Benefits at Actuarial Value | $ | 18,461,521 |
| (Market Value is 17,386,348) | | |
| Unfunded (Overfunded) Actuarial Accrued Liability | $ | (5,627,250) |

**GASB 27 Information (as of 12/31/2013)**

| | | |
|---|---|---|
| Fiscal Year Beginning | | July 1, 2015 |
| Annual Required Contribution (ARC) | $ | 17,268[1] |

[1] Based on valuation payroll (based on projected fiscal year payroll for divisions that will have no new hires). For divisions that are open to new hires the actual required contribution will be based on current monthly payroll (during the fiscal year beginning July 1, 2015) times the computed employer contribution rate(s) shown in Table 1. The ARC shown here is the sum of the ARC's calculated separately for each division.

## GASB 27 Information (Used in the 12/31/2013 Annual Actuarial Valuation)

### Amortization Factors Used to Compute Employer Contribution Requirements
### Used for Funding Calculations and Most ARC Calculations (see below)
### (Payments Increase 4.5% per Year)

| | |
|---|---|
| Amortization Factor Used - Underfunded or Overfunded Liabilities (5 years) | 0.221706 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (6 years) | 0.187731 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (7 years) | 0.163488 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (8 years) | 0.145330 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (9 years) | 0.131227 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (10 years) | 0.119963 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (11 years) | 0.110763 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (12 years) | 0.103112 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (13 years) | 0.096652 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (14 years) | 0.091128 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (15 years) | 0.086353 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (16 years) | 0.082185 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (17 years) | 0.078519 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (18 years) | 0.075270 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (19 years) | 0.072372 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (20 years) | 0.069773 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (21 years) | 0.067430 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (22 years) | 0.065308 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (23 years) | 0.063378 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (24 years) | 0.061616 |
| Amortization Factor Used - Underfunded or Overfunded Liabilities (25 years) | 0.060002 |

### Amortization Factor Used to Compute the GASB Annual Required Contribution (ARC)
### For Divisions that are Closed to New Hires
### (and new hires are not covered by MERS DB or Hybrid provisions in a linked division)
### If Division is Less than 100% Funded, and Uses a Funding Period over 15 Years

| | |
|---|---|
| Amortization Factor Used - Underfunded Liabilities (30 year level $) | 0.085453 |

Assumptions: Continuous Payments; Interest at 8% Per Year

## 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 - Gnrl Non Un

| | |
|---|---|
| 1/1/2013 | A day of work is defined as 8 hrs in a day |
| 4/1/2006 | Benefit B-4 (80% max) |
| 4/1/2006 | Member Contribution Rate 5.00% |
| 9/1/2000 | Temporary Benefit B-4 (80% max) (09/01/2000 - 12/03/2000) |
| 1/1/1999 | Benefit F50 (With 25 Years of Service) |
| 1/1/1994 | Benefit FAC-3 (3 Year Final Average Compensation) |
| 1/1/1990 | Benefit B-3 (80% max) |
| 3/1/1985 | Benefit F55 (With 15 Years of Service) |
| 2/7/1972 | Covered by Act 88 |
| 6/1/1967 | Benefit C-1 (Old) |
| 5/1/1946 | 10 Year Vesting |
| 5/1/1946 | Benefit FAC-5 (5 Year Final Average Compensation) |
| 5/1/1946 | Benefit C (Old) |
| 5/1/1946 | Member Contribution Rate 3.00% Under $4,200.00 - Then 5.00% |
| 5/1/1946 | Fiscal Month - July |

### 10 - Gnrl AFSCME

| | |
|---|---|
| 1/1/2006 | Benefit B-4 (80% max) |
| 1/1/2006 | Member Contribution Rate 5.00% |
| 9/1/2000 | Temporary Benefit B-4 (80% max) (09/01/2000 - 12/03/2000) |
| 1/1/1999 | Benefit F50 (With 25 Years of Service) |
| 7/1/1991 | Benefit FAC-3 (3 Year Final Average Compensation) |
| 1/1/1990 | 10 Year Vesting |
| 1/1/1990 | Benefit FAC-5 (5 Year Final Average Compensation) |
| 1/1/1990 | Benefit B-3 (80% max) |
| 1/1/1990 | Member Contribution Rate 3.00% Under $4,200.00 - Then 5.00% |
| 1/1/1985 | Benefit F55 (With 15 Years of Service) |
| 2/7/1972 | Covered by Act 88 |
| 5/1/1946 | Fiscal Month - July |

### 11 - Gnrl Dsptch

| | |
|---|---|
| 5/1/2007 | Member Contribution Rate 10.00% |
| 1/1/2000 | Benefit FAC-3 (3 Year Final Average Compensation) |
| 1/1/1999 | 20 Years & Out |
| 7/1/1991 | Benefit B-3 (80% max) |
| 7/1/1991 | Member Contribution Rate 3.00% Under $4,200.00 - Then 5.00% |
| 7/1/1990 | Benefit FAC-5 (5 Year Final Average Compensation) |
| 7/1/1990 | 10 Year Vesting |
| 7/1/1990 | Benefit B-3 |
| 10/1/1985 | Benefit F55 (With 15 Years of Service) |

## 11 - Gnrl Dsptch

| | |
|---|---|
| 2/7/1972 | Covered by Act 88 |
| 5/1/1946 | Fiscal Month - July |

## 14 - Cty Mgr

| | |
|---|---|
| 1/1/2006 | E2 2.5% COLA for future retirees (10/01/2005) |
| 10/1/2005 | Covered by Act 88 |
| 10/1/2005 | Benefit RS 50 (50% Post-Ret. Spouse Benefits) |
| 10/1/2005 | Benefit FAC-3 (3 Year Final Average Compensation) |
| 10/1/2005 | 8 Year Vesting |
| 10/1/2005 | Benefit B-4 (80% max) |
| 10/1/2005 | Day of work defined as 8 Hours a Day for all employees |
| 10/1/2005 | Member Contribution Rate 0.00% |
| 10/1/2005 | Benefit F55 (With 15 Years of Service) |
| 5/1/1946 | Fiscal Month - July |

## 15 - City Mgr. aft. 7/1/2012

| | |
|---|---|
| 7/1/2012 | Member Contribution Rate 5.00% |
| 7/1/2012 | A day of work is defined as 8 hrs. in a day |
| 7/1/2012 | Benefit RS 50 (50% Post-Ret. Spouse Benefits) |
| 7/1/2012 | 8 Year Vesting |
| 7/1/2012 | Benefit FAC-3 (3 Year Final Average Compensation) |
| 7/1/2012 | Benefit B-3 (80% max) |
| 10/1/2005 | Covered by Act 88 |
| 5/1/1946 | Fiscal Month - July |

## 16 - AFSCME after 7/1/2010

| | |
|---|---|
| 7/1/2010 | Benefit B-2 |
| 7/1/2010 | A day of work is defined as 8 hrs in a day |
| 7/1/2010 | Benefit F50 (With 25 Years of Service) |
| 7/1/2010 | Benefit F55 (With 15 Years of Service) |
| 7/1/2010 | Benefit FAC-3 (3 Year Final Average Compensation) |
| 1/1/2010 | Member Contribution Rate 5.00% |
| 1/1/2010 | 10 Year Vesting |
| 2/7/1972 | Covered by Act 88 |
| 5/1/1946 | Fiscal Month - July |

## 17 - Non-Union after 1/1/2013

| | |
|---|---|
| 1/1/2013 | 10 Year Vesting |
| 1/1/2013 | Benefit FAC-3 (3 Year Final Average Compensation) |
| 1/1/2013 | Benefit B-2 |
| 1/1/2013 | Member Contribution Rate 5.00% |
| 1/1/2013 | Benefit F55 (With 25 Years of Service) |
| 2/7/1972 | Covered by Act 88 |
| 5/1/1946 | Fiscal Month - July |

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

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

### Increase in Final Average Compensation

| Division | FAC Increase Assumption |
|---|---|
| All Divisions | 1.00% |

### Withdrawal Rate Scaling Factor

| Division | Withdrawal Rate Scaling Factor |
|---|---|
| All Divisions | 100% |

### Miscellaneous and Technical Assumptions

Loads – None.

### Amortization Policy for Closed Divisions

| Closed Division | Amortization Option |
|---|---|
| All Closed Divisions | Option A |