MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN

ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2017

MERIDIAN CHTR TWP (3315)

Spring, 2018

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, 2017. 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 an independent, professional retirement services company that was created to administer retirement plans for Michigan municipalities on a not-for-profit basis. This report contains the minimum actuarially determined contribution requirement, in alignment with the MERS Plan Documents, funding policy and Michigan Constitution. 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, 2017 annual actuarial valuation is to:

- Measure funding progress
- Establish contribution requirements for the fiscal year beginning January 1, 2019
- 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, 2017 furnished by MERS. In accordance with Actuarial Standards of Practice No. 23, the data was checked for internal and year to year consistency as well as general reasonableness, but was not otherwise audited. CBIZ Retirement Plan Services does not assume responsibility for the accuracy or completeness of the data used in this valuation.

The actuarial assumptions and methods are adopted by the MERS Retirement Board, and are reviewed every five years in an Experience Study. The most recent study was completed in 2015. Please refer to the division-specific assumptions described in table(s) in this report, and to the Appendix on the MERS website at:
www.mersofmich.com/Portals/0/Assets/Resources/AAV-Appendix/MERS-2017AnnualActuarialValuation-Appendix.pdf.

The actuarial assumptions used for this valuation produce results that we believe are reasonable.

To the best of our knowledge, this report is complete and accurate, was prepared in conformity with generally recognized actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and is in compliance with Act No. 220 of the Public Acts of 1996, as amended, and the MERS Plan Document as revised. All of the undersigned are members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. The Retirement Board of the Municipal Employees' Retirement System of Michigan confirms that the System provides for payment of the required employer contribution as described in Section 20m of Act No. 314 of 1965 (MCL 38.1140m).

This information is purely actuarial in nature. It is not intended to serve as a substitute for legal, accounting or investment advice.

This report was prepared at the request of the Retirement Board and may be provided only in its entirety by the municipality to other interested parties (MERS customarily provides the full report on request to associated third parties such as the auditor for the municipality). CBIZ Retirement Plan Services is not responsible for the consequences of any unauthorized use.

You should notify MERS if you disagree with anything contained in the report or are aware of any information that would affect the results of the report that have not been communicated to us. If you have reason to believe that the plan provisions are incorrectly described, that important plan provisions relevant to this valuation are not described, that conditions have changed since the calculations were made, that the information provided in this report is inaccurate or is in anyway incomplete, or if you need further information in order to make an informed decision on the subject matter in this report, please contact your Regional Manager at 1.800.767.MERS (6377).

Sincerely,

Cathy Nagy, MAAA, FSA
Jim Koss, MAAA, ASA
Curtis Powell, MAAA, EA

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Executive Summary

Funded Ratio and Required Employer Contributions

The MERS Defined Benefit Plan is an agent multiple-employer plan, meaning that assets are pooled for investment purposes but separate accounts are maintained for each individual employer. Each municipality is responsible for their own plan liabilities; MERS does not borrow from one municipality's account to pay for another.

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

Your Funded Ratio:

	12/31/2017 *	12/31/2016
Funded Ratio	61%	58%

* Reflects assets from Surplus divisions, if any.

Michigan Law requires that pension plans be pre-funded, meaning money is set aside now to pay for future benefits. Pension plans are usually funded by employer and employee contributions, and investment income.

How quickly a plan attains the 100% funding goal depends on many factors such as:

- The current funded ratio
- The future experience of the plan
- The amortization period

It is more important to look at the trend in the funded ratio over a period of time than at a particular point in time.

Your Required Employer Contributions:

Your computed employer contributions are shown in the following table. Employee contributions, if any, are in addition to the computed employer contributions. Changes to the assumptions and methods based on the 2015 Experience Study were first reflected in the December 31, 2015 valuations. The impact of these changes is being phased-in over a 5 year period. The phase-in allows the employer to spread the impact of the new assumptions over 5 fiscal years. This valuation reflects the third year of the phase-in.

Your minimum required contribution is the amount in the “Phase-in” columns. By default, MERS will invoice you the phased-in contribution amount, but strongly encourages you to contribute more than the minimum required contribution. If for 2018 your municipality is making employer contributions based on rates without the phase-in applied, contact MERS to ensure the No Phase-in rate is used again for 2019 and not the defaulted phase-in rates.

	Percentage of Payroll				Monthly $ Based on Projected Payroll			
	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in	Phase-in	No Phase-in
Valuation Date:	12/31/2017	12/31/2017	12/31/2016	12/31/2016	12/31/2017	12/31/2017	12/31/2016	12/31/2016
Fiscal Year Beginning:	January 1, 2019	January 1, 2019	January 1, 2018	January 1, 2018	January 1, 2019	January 1, 2019	January 1, 2018	January 1, 2018
Division								
01 - DPW	-	-	13.90%	15.08%	$ 8,592	$ 9,180	$ 10,395	$ 11,277
02 - Police Patrol	21.60%	22.53%	20.13%	21.59%	34,452	35,932	30,691	32,911
05 - Firefighters	-	-	53.00%	56.20%	98,556	101,798	99,208	105,199
10 - Admin Professional	-	-	17.27%	18.67%	7,267	7,925	12,135	13,122
11 - Teamsters	13.48%	13.62%	121.72%	121.95%	947	957	8,081	8,096
12 - Admin Prof on/aft 1/1/	5.59%	5.59%			819	819		
13 - DPW on/aft 01/1/17	2.87%	2.87%			458	458		
20 - Police Command	58.22%	60.62%	55.76%	59.49%	39,084	40,692	36,043	38,455
Municipality Total					**$ 190,175**	**$ 197,761**	**$ 196,553**	**$ 209,060**

Employee contribution rates reflected in the valuations are shown below:

	Employee Contribution Rate	
Valuation Date:	12/31/2017	12/31/2016
Division		
01 - DPW	5.00%	2.30%
02 - Police Patrol	8.29%	8.29%
05 - Firefighters	7.76%	7.76%
10 - Admin Professional	5.00%	3.90%
11 - Teamsters	5.00%	2.00%
12 - Admin Prof on/aft 1/1/	5.00%	0.00%
13 - DPW on/aft 01/1/17	5.00%	0.00%
20 - Police Command	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. Employers making contributions in excess of the minimum requirements may elect to apply the excess contribution immediately to a particular division, or segregate the excess into one or more of what MERS calls ”Surplus” divisions. An election in the first case would immediately reduce any unfunded accrued liability and lower the amortization payments throughout the remaining amortization period. An election to set up Surplus divisions would not immediately lower future contributions, however the assets from the Surplus divisions could be transferred to an unfunded division in the future to reduce the unfunded liability in future years, or to be used to pay all or a portion of the minimum required contribution in a future year. For purposes of this report, the assets in any Surplus division have been included in the municipality’s total assets, unfunded accrued liability and funded status, however, these assets are not used in calculating the minimum required contribution.

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 fiscal year beginning in 2019 for the entire employer would be $308,100, instead of $197,761.

If you are interested in making additional contributions, please contact MERS and they can assist you with evaluating your options.

How and Why Do These Numbers Change?

In a defined benefit plan, contributions vary from one annual actuarial valuation to the next as a result of the following:

- Changes in benefit provisions (see Table 2)
- Changes in actuarial assumptions and methods (see the Appendix)
- Experience of the plan (investment experience and demographic experience); this is the difference between actual experience of the plan and the actuarial assumptions. For example:
  - Lower actual investment returns would result in higher required employer contributions, and vice-versa.
  - Smaller than assumed 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 assumed would usually increase required employer contributions.
  - More non-vested terminations of employment than assumed would decrease required contributions.

- o More disabilities or survivor (death) benefits than assumed would increase required contributions.
- o Longer lifetimes after retirement than assumed would increase required employer contributions.

Actuarial valuations do not affect the ultimate cost of the plan; the benefit payments (current and future) determine the cost of the plan. Actuarial valuations only affect the timing of the contributions into the plan. Because assumptions are for the long term, plan experience will not match the actuarial assumptions in any given year (except by coincidence). Each annual actuarial valuation will adjust the required employer contributions up or down based on the prior year's actual experience.

Comments on Investment Return Assumption and Asset Smoothing

A defined benefit plan is funded by employer contributions, participant contributions, and investment earnings. Investment earnings have historically provided **more than half** of the funding. The larger the share of benefits being provided from investment returns, the smaller the required contributions, and vice versa. Determining the contributions required to prefund the promised retirement benefits requires an assumption of what investment earnings are expected to add to the fund over a long period of time. This is called the **Investment Return Assumption**.

The MERS Investment Return Assumption is **7.75%** per year. This, along with all of our other actuarial assumptions, is reviewed every five years in an Experience Study that compares the assumptions used against actual experience and recommends adjustments if necessary. If your municipality would like to explore contributions at lower investment return assumptions, please review the budget projection scenarios later in this report.

To avoid dramatic spikes and dips in annual contribution requirements due to short term fluctuations in asset markets, MERS applies a technique called **asset smoothing**. This spreads out each year's investment gains or losses over the prior year and the following four years. This smoothing method is used to determine your actuarial value of assets (valuation assets), which is then used to determine both your funded ratio and your required contributions. The (smoothed) **actuarial rate of return for 2017 was 6.08%, while the actual market rate of return was 13.07%**. To see historical details of the market rate of return, compared to the smoothed actuarial rate of return, refer to this report's Appendix, or visit our Defined Benefit resource page on the MERS website.

As of December 31, 2017 the actuarial value of assets is 101% of market value due to asset smoothing. 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, or contribution requirements will continue to increase.

If the December 31, 2017 valuation results were based on market value instead of the actuarial value:

- The funded percent of your entire municipality would be 61% (instead of 61%); and

- Your total employer contribution requirement for the fiscal year starting January 1, 2019 would be $2,407,452 (instead of $2,373,132).

Risk Characteristics of Defined Benefit Plans

It is important to understand that Defined Benefit retirement plans, the plan sponsor, and the plan participants are exposed to certain risks. While risks cannot be eliminated entirely, they can be managed through various strategies. Below are a few examples of risk (this is not an all-inclusive list):

- Economic - investment return, wage inflation, etc.
- Demographic - longevity, disability, retirement, etc.
- Plan Sponsor and Employees - contribution volatility, attract/retain employees, etc.

The MERS Retirement Board adopts certain assumptions and methods to manage the economic and demographic risks, and the contribution volatility risks. For example, the investment risk is the largest economic risk and is managed by having a balanced portfolio and a clearly defined investment strategy. Demographic risks are managed by preparing special studies called experience studies on a regular basis to determine if the assumptions used are reasonable compared to the experience. An Experience Study is completed every five years to review the assumptions and methods. The next Experience Study will be completed in 2020.

Risk can also be managed through a plan design that provides benefits that are sustainable in the long run.

The Actuarial Standards Board has issued Actuarial Standards of Practice (ASOP) No. 51. This standard will be effective for any actuarial work with a measurement date on or after November 1, 2018. This means, the December 31, 2018 and later annual actuarial valuation reports for MERS will have to comply with this standard. This standard will require the actuary to identify risks that, in the actuary’s professional judgment may significantly impact the plan’s future financial condition. The actuary will have to assess the potential effects of the identified risks on the plan’s future financial condition. The assessment may or may not be based on numerical calculations. However, the assessment should reflect the specifics of the plan (i.e. funded status, plan demographics, funding policy, etc.). If the actuary concludes that numerical calculations are necessary to assess the risk, the actuary can use various methods to quantify the risk such as scenario tests, sensitivity tests, stress tests, etc.

Some of these risk assessment measures have already been incorporated in the MERS annual valuation reports. For example, the projections of funded percentage and employer contributions shown on the following pages could be used to gauge the risk associated with long term investment rates of return different than the assumed 7.75% annual rate. A history of the municipality’s funded percentage as shown in Table 7, could indicate the trend in funded status over time.

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

The calculations in this report are based on assumptions about long-term economic and demographic behavior. These assumptions will never materialize in a given year, except by coincidence. Therefore the results will vary from one year to the next. The volatility of the results depends upon the characteristics of the plan. For example:

- Open divisions that have substantial assets compared to their active employee payroll will have more volatile employer contribution rates due to investment return fluctuations.
- Open divisions that have substantial accrued liability compared to their active employee payroll will have more volatile employer contribution rates due to demographic experience fluctuations.
- Small divisions will have more volatile contribution patterns than larger divisions because statistical fluctuations are relatively larger among small populations.
- Shorter amortization periods result in more volatile contribution patterns.

The analysis in this section is intended to review the potential volatility of the actuarial valuation results. It is important to note that calculations in this report are mathematical estimates based upon assumptions regarding future events, which may or may not materialize. Actuarial calculations can and do vary from one valuation to the next, sometimes significantly depending on the group's size.

Many assumptions are important in determining the required employer contributions. In the table below, we show the impact of varying the Investment Return Assumption. 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, 2017 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 Investment Return Assumption			
	Lower Future Annual Returns		**Valuation Assumption**	**Higher Returns**
12/31/2017 Valuation Results	**5.75%**	**6.75%**	**7.75%**	**8.75%**
Accrued Liability	$ 84,648,927	$ 74,341,900	$ 65,850,156	$ 58,791,169
Valuation Assets[1]	$ 40,461,002	$ 40,461,002	$ 40,461,002	$ 40,461,002
Unfunded Accrued Liability	$ 44,187,925	$ 33,880,898	$ 25,389,154	$ 18,330,167
Funded Ratio	48%	54%	61%	69%
Monthly Normal Cost	$ 105,686	$ 73,043	$ 48,735	$ 30,600
Monthly Amortization Payment	$ 216,764	$ 181,961	$ 149,026	$ 116,602
Total Employer Contribution[2]	$ 322,450	$ 255,004	$ 197,761	$ 147,202

1 The Valuation Assets include assets from Surplus divisions, if any.

2 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.

Projection Scenarios

The next two pages show projections of the plan's funded ratio and computed employer contributions under the actuarial assumptions used in the valuation and alternate assumed long-term investment return assumption scenarios. All four projections take into account the past investment losses that will continue to affect the actuarial rate of return in the short term. Under the 7.75% scenarios in the table on the next page, 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.

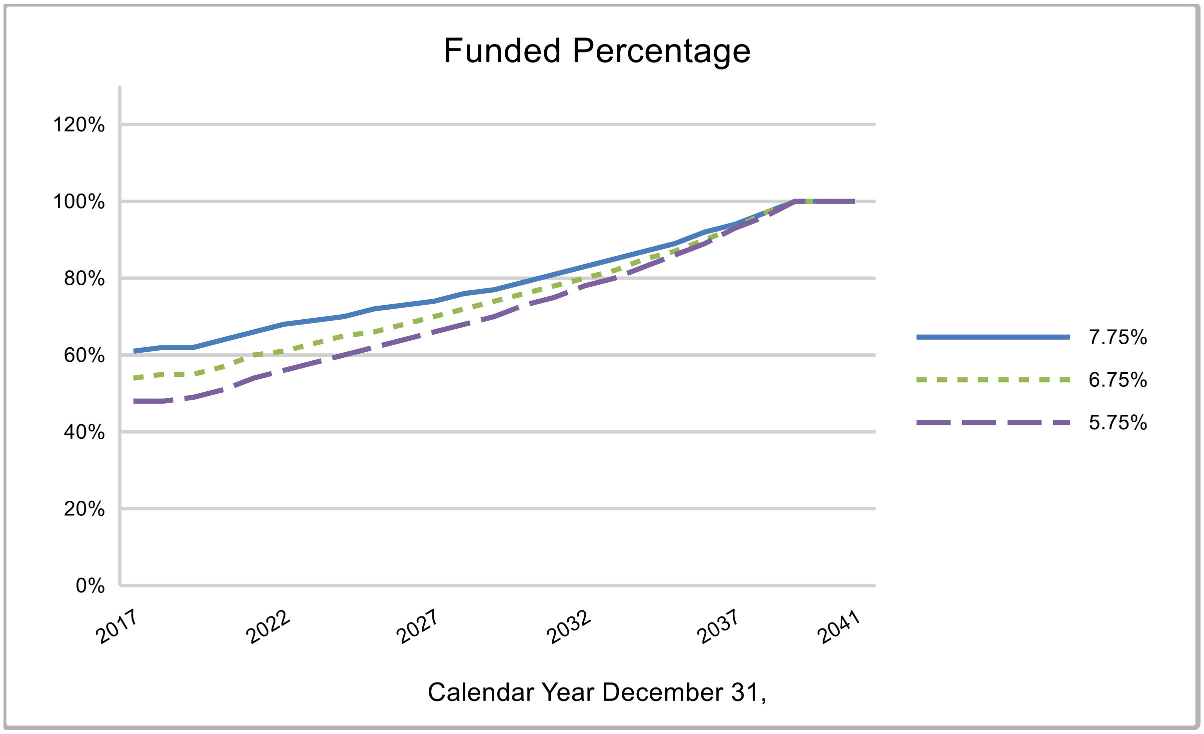
The 7.75% scenarios provide an estimate of computed employer contributions based on current actuarial assumptions, and a projected 7.75% market return. The other two scenarios may be useful if the municipality chooses to budget more conservatively, and make contributions in addition to the minimum requirements. The 6.75% and 5.75% projections provide an indication of the potential required employer contribution if MERS were to realize annual investment returns of 6.75% and 5.75% over the long-term.

The projections are shown both in tabular and graphical form in total for the employer. The tables show projections for six years. The graphs show projections for twenty five years.

Valuation Year Ending 12/31	Fiscal Year Beginning 1/1	Actuarial Accrued Liability	Valuation Assets[2]	Funded Percentage	Computed Annual Employer Contribution
7.75%[1]					
WITH 5-YEAR PHASE-IN					
2017	2019	$ 65,850,156	$ 40,461,002	61%	$ 2,282,100
2018	2020	68,500,000	42,500,000	62%	2,460,000
2019	2021	71,300,000	44,200,000	62%	2,660,000
2020	2022	74,200,000	47,400,000	64%	2,710,000
2021	2023	77,000,000	50,800,000	66%	2,750,000
2022	2024	79,900,000	53,700,000	67%	2,840,000
NO 5-YEAR PHASE-IN					
2017	2019	$ 65,850,156	$ 40,461,002	61%	$ 2,373,132
2018	2020	68,500,000	42,500,000	62%	2,500,000
2019	2021	71,300,000	44,300,000	62%	2,650,000
2020	2022	74,200,000	47,600,000	64%	2,690,000
2021	2023	77,000,000	50,900,000	66%	2,740,000
2022	2024	79,900,000	53,900,000	68%	2,830,000
6.75%[1]					
NO 5-YEAR PHASE-IN					
2017	2019	$ 74,341,900	$ 40,461,002	54%	$ 3,060,048
2018	2020	77,200,000	42,100,000	55%	3,250,000
2019	2021	80,300,000	44,200,000	55%	3,430,000
2020	2022	83,300,000	47,800,000	57%	3,500,000
2021	2023	86,400,000	51,400,000	60%	3,580,000
2022	2024	89,400,000	54,800,000	61%	3,690,000
5.75%[1]					
NO 5-YEAR PHASE-IN					
2017	2019	$ 84,648,927	$ 40,461,002	48%	$ 3,869,400
2018	2020	87,800,000	41,700,000	48%	4,130,000
2019	2021	91,100,000	44,200,000	49%	4,320,000
2020	2022	94,400,000	48,200,000	51%	4,420,000
2021	2023	97,700,000	52,300,000	54%	4,530,000
2022	2024	101,000,000	56,200,000	56%	4,670,000

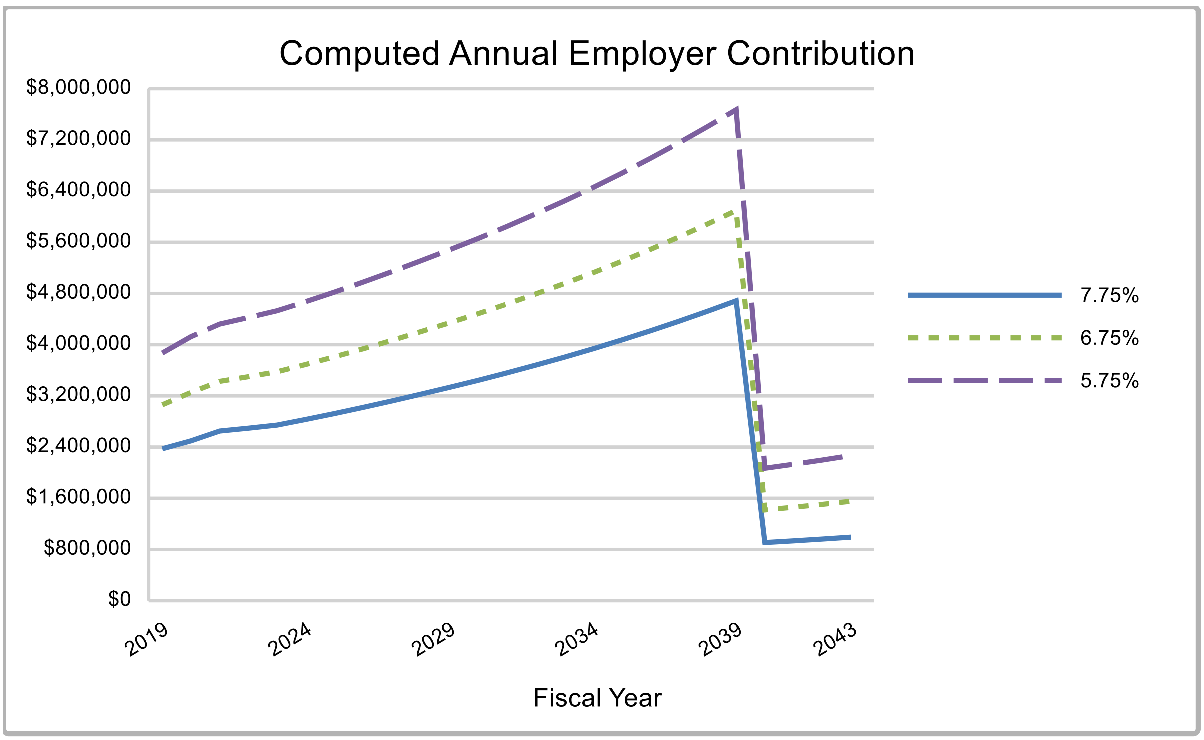
1 Represents both the interest rate for discounting liabilities and the future investment return assumption on the Market Value of assets.

2 Valuation Assets do not include assets from Surplus divisions, if any.



Notes:

All projected funded percentages are shown with no phase-in.



Notes:

All projected contributions are shown with no phase-in.

Employer Contribution Details For the Fiscal Year Beginning January 1, 2019

Table 1

Division	Total Normal Cost	Employee Contribut. Rate	Employer Contributions[1]: Employer Normal Cost	Employer Contributions[1]: Payment of the Unfunded Accrued Liability[4]	Employer Contributions[1]: Computed Employer Contribut. No Phase-In	Computed Employer Contribut. With Phase-In	Blended ER Rate No Phase-In[5]	Blended ER Rate With Phase-In[5]	Employee Contribut. Conversion Factor[2]
Percentage of Payroll									
01 - DPW	11.73%	5.00%	-	-	-	-	11.50%	10.80%	
02 - Police Patrol	19.33%	8.29%	11.04%	11.49%	22.53%	21.60%			0.79%
05 - Firefighters	16.62%	7.76%	-	-	-	-			
10 - Admin Professional	11.20%	5.00%	-	-	-	-	12.97%	12.00%	
11 - Teamsters	11.33%	5.00%	6.33%	7.29%	13.62%	13.48%			0.89%
12 - Admin Prof on/aft	10.79%	5.00%	5.79%	-0.20%	5.59%	5.59%	12.97%	12.00%	0.90%
13 - DPW on/aft 01/1/17	7.83%	5.00%	2.83%	0.04%	2.87%	2.87%	11.50%	10.80%	0.85%
20 - Police Command	20.21%	11.24%	8.97%	51.65%	60.62%	58.22%			0.70%
Estimated Monthly Contribution[3]									
01 - DPW			$ 4,569	$ 4,611	$ 9,180	$ 8,592			
02 - Police Patrol			17,604	18,328	35,932	34,452			
05 - Firefighters			15,525	86,273	101,798	98,556			
10 - Admin Professional			3,270	4,655	7,925	7,267			
11 - Teamsters			445	512	957	947			
12 - Admin Prof on/aft			849	(30)	819	819			
13 - DPW on/aft 01/1/17			452	6	458	458			
20 - Police Command			6,021	34,671	40,692	39,084			
Total Municipality			**$ 48,735**	**$ 149,026**	**$ 197,761**	**$ 190,175**			
Estimated Annual Contribution[3]			**$ 584,820**	**$ 1,788,312**	**$ 2,373,132**	**$ 2,282,100**			

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 (i.e. closed divisions), invoices will be based on the above dollar amounts which are based on projected fiscal year payroll. See description of Open Divisions and Closed Divisions in the Appendix.

4 If projected assets exceed projected liabilities as of the beginning of the January 1, 2019 fiscal year, the negative unfunded accrued liability is treated as overfunding credit and is used to reduce the contribution. This amortization is used to reduce the employer contribution rate. Note that if the overfunding credit is larger than the normal cost, the full credit is shown above but the total contribution requirement is zero. This will cause the displayed normal cost and unfunded accrued liability contributions to not add across.

5 For linked divisions, the employer will be invoiced the Computed Employer Contribution with Phase-in rate shown above for each linked division (a contribution rate for the open division; a contribution dollar for the closed-but-linked division), unless the employer elects to contribute the Blended Employer Contribution rate shown above, by contacting MERS at 800-767-MERS (6377).

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

Benefit Provisions

Table 2

01 - DPW: Closed to new hires, linked to Division 13

	2017 Valuation	2016 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 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	5%	2.30%
Act 88:	Yes (Adopted 7/10/2001)	Yes (Adopted 7/10/2001)

02 - Police Patrol: Open Division

	2017 Valuation	2016 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: Closed to new hires, linked to Division 50

	2017 Valuation	2016 Valuation
Benefit Multiplier:	Bridged Benefit: 2.75% Multiplier (80% max) Termination FAC; to 2.50% Multiplier (80% max)	2.75% Multiplier (80% max)
Bridged Benefit Date:	12/31/2016	
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 - Admin Professional: Closed to new hires, linked to Division 12

	2017 Valuation	2016 Valuation
Benefit Multiplier:	Bridged Benefit: 2.50% Multiplier (80% max) Termination FAC; to 2.25% Multiplier (80% max)	2.50% Multiplier (80% max)
Bridged Benefit Date:	12/31/2016	
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	5%	3.90%
Act 88:	Yes (Adopted 7/10/2001)	Yes (Adopted 7/10/2001)

11 - Teamsters: Open Division

	2017 Valuation	2016 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 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	5%	2%
Act 88:	Yes (Adopted 7/10/2001)	Yes (Adopted 7/10/2001)

12 - Admin Prof on/aft 1/1/17: Open Division, linked to Division 10

	2017 Valuation	2016 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	-
Normal Retirement Age:	60	-
Vesting:	10 years	-
Early Retirement (Unreduced):	55/25	-
Early Retirement (Reduced):	50/25 55/15	-
Final Average Compensation:	5 years	-
Employee Contributions:	5%	-
Act 88:	Yes (Adopted 7/10/2001)	

Table 2 (continued)

13 - DPW on/aft 01/1/17: Open Division, linked to Division 01

	2017 Valuation	2016 Valuation
Benefit Multiplier:	1.50% Multiplier (80% max)	-
Normal Retirement Age:	60	-
Vesting:	6 years	-
Early Retirement (Unreduced):	55/20	-
Early Retirement (Reduced):	50/25 55/15	-
Final Average Compensation:	5 years	-
Employee Contributions:	5%	-
Act 88:	Yes (Adopted 7/10/2001)	

20 - Police Command: Open Division

	2017 Valuation	2016 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	2017 Valuation Number	2017 Valuation Annual Payroll[1]	2016 Valuation Number	2016 Valuation Annual Payroll[1]	2017 Valuation Average Age	2017 Valuation Average Benefit Service[2]	2017 Valuation Average Eligibility Service[2]
01 - DPW							
Active Employees	18	$ 851,342	19	$ 833,791	44.1	10.8	11.1
Vested Former Employees	5	43,156	5	43,156	51.1	10.0	10.0
Retirees and Beneficiaries	17	310,015	17	310,015	67.2		
02 - Police Patrol							
Active Employees	28	$ 1,777,631	27	$ 1,699,331	38.1	11.1	12.3
Vested Former Employees	10	144,600	10	144,600	44.6	8.9	13.7
Retirees and Beneficiaries	12	471,601	11	431,143	58.7		
05 - Firefighters							
Active Employees	32	$ 2,033,490	32	$ 2,086,805	41.7	13.4	13.5
Vested Former Employees	3	63,358	3	63,358	47.5	11.6	12.3
Retirees and Beneficiaries	29	1,446,955	29	1,417,295	61.7		
10 - Admin Professional							
Active Employees	17	$ 673,625	19	$ 783,370	48.2	12.4	12.8
Vested Former Employees	10	64,680	10	64,680	52.4	8.6	16.1
Retirees and Beneficiaries	11	246,014	10	215,251	69.3		
11 - Teamsters							
Active Employees	1	$ 78,313	1	$ 74,010	61.7	15.6	15.6
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	5	137,161	6	157,412	71.4		
12 - Admin Prof on/aft 1/							
Active Employees	2	$ 77,819		$	48.7	0.5	8.3
Vested Former Employees	0	0			0.0	0.0	0.0
Retirees and Beneficiaries	0	0			0.0		
13 - DPW on/aft 01/1/17							
Active Employees	3	$ 83,530		$	38.8	0.5	0.6
Vested Former Employees	0	0			0.0	0.0	0.0
Retirees and Beneficiaries	0	0			0.0		
20 - Police Command							
Active Employees	9	$ 748,325	9	$ 720,662	45.1	20.0	21.0
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	12	581,640	11	561,858	59.9		
Total Municipality							
Active Employees	**110**	**$ 6,324,075**	**107**	**$ 6,197,969**	**42.7**	**12.2**	**12.9**
Vested Former Employees	**28**	**315,794**	**28**	**315,794**	**48.9**	**9.3**	**13.8**
Retirees and Beneficiaries	**86**	**3,193,386**	**84**	**3,092,974**	**63.7**		
Total Participants	**224**		**219**				

[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	2017 Valuation		2016 Valuation	
	Employer and Retiree[1]	Employee[2]	Employer and Retiree[1]	Employee[2]
01 - DPW	$ 4,201,624	$ 210,749	$ 3,874,528	$ 165,084
02 - Police Patrol	8,870,200	1,778,404	7,619,098	1,677,971
05 - Firefighters	11,340,457	2,024,531	10,170,259	1,834,735
10 - Admin Professional	3,211,011	283,535	2,661,822	295,576
11 - Teamsters	1,345,901	20,591	232,552	18,705
12 - Admin Prof on/aft 1/1/17	1,949	1,922		
13 - DPW on/aft 01/1/17	1,794	3,365		
20 - Police Command	5,552,763	1,159,275	4,950,745	1,056,567
Municipality Total	**$ 34,525,699**	**$ 5,482,372**	**$ 29,509,004**	**$ 5,048,638**
Combined Assets	**$40,008,071**		**$34,557,642**	

1 Reserve for Employer Contributions and Benefit Payments

2 Reserve for Employee Contributions

The December 31, 2017 valuation assets (actuarial value of assets) are equal to 1.011321 times the reported market value of assets (compared to 1.077095 as of December 31, 2016). The derivation of valuation assets is described, and detailed calculations of valuation assets are shown, in the Appendix.

Flow of Valuation Assets

Table 5

Year Ended 12/31	Employer Contributions Required	Employer Contributions Additional	Employee Contributions	Investment Income (Valuation Assets)	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
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
2016	1,835,443	999,999	442,227	2,065,803	(3,002,485)	(62,383)	12,712	37,221,865
2017	2,318,478	1,141,890	473,016	2,351,814	(3,092,898)	0	46,837	40,461,002

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.

The investment income column reflects the recognized investment income based on Valuation Assets. It does not reflect the market value investment return in any given year.

The Valuation Assets include assets from Surplus divisions, if any.

Actuarial Accrued Liabilities and Valuation Assets
As of December 31, 2017

Table 6

Division	Actuarial Accrued Liability	Valuation Assets[1]	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
01 - DPW				
Active Employees	$ 1,654,700	$ 872,639	52.7%	$ 782,061
Vested Former Employees	232,819	232,819	100.0%	0
Retirees And Beneficiaries	3,346,380	3,346,380	100.0%	0
Pending Refunds	10,487	10,487	100.0%	0
Total	**$ 5,244,386**	**$ 4,462,325**	**85.1%**	**$ 782,061**
02 - Police Patrol				
Active Employees	$ 6,666,684	$ 3,576,570	53.6%	$ 3,090,114
Vested Former Employees	589,732	589,732	100.0%	0
Retirees And Beneficiaries	6,551,094	6,551,094	100.0%	0
Pending Refunds	51,761	51,761	100.0%	0
Total	**$ 13,859,271**	**$ 10,769,157**	**77.7%**	**$ 3,090,114**
05 - Firefighters				
Active Employees	$ 8,614,367	$ 1,902,973	22.1%	$ 6,711,394
Vested Former Employees	534,788	72,976	13.6%	461,812
Retirees And Beneficiaries	18,979,486	11,491,762	60.5%	7,487,724
Pending Refunds	48,582	48,582	100.0%	0
Total	**$ 28,177,223**	**$ 13,516,293**	**48.0%**	**$ 14,660,930**
10 - Admin Professional				
Active Employees	$ 1,692,025	$ 872,290	51.6%	$ 819,735
Vested Former Employees	407,369	407,369	100.0%	0
Retirees And Beneficiaries	2,246,586	2,246,586	100.0%	0
Pending Refunds	7,863	7,863	100.0%	0
Total	**$ 4,353,843**	**$ 3,534,108**	**81.2%**	**$ 819,735**
11 - Teamsters				
Active Employees	$ 200,820	$ 32,894	16.4%	$ 167,926
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	1,349,068	1,349,068	100.0%	0
Pending Refunds	0	0	0.0%	0
Total	**$ 1,549,888**	**$ 1,381,962**	**89.2%**	**$ 167,926**
12 - Admin Prof on/aft 1/1/17				
Active Employees	$ 222	$ 3,915	1,763.5%	$ (3,693)
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	0	0	0.0%	0
Total	**$ 222**	**$ 3,915**	**1,763.5%**	**$ (3,693)**

Table 6 (continued)

Division		Actuarial Accrued Liability		Valuation Assets[1]	Percent Funded		Unfunded (Overfunded) Accrued Liabilities
13 - DPW on/aft 01/1/17							
Active Employees	$	5,023	$	4,273	85.1%	$	750
Vested Former Employees		0		0	0.0%		0
Retirees And Beneficiaries		0		0	0.0%		0
Pending Refunds		944		944	100.0%		0
Total	**$**	**5,967**	**$**	**5,217**	**87.4%**	**$**	**750**
20 - Police Command							
Active Employees	$	4,905,709	$	1,159,275	23.6%	$	3,746,434
Vested Former Employees		0		0	0.0%		0
Retirees And Beneficiaries		7,753,647		5,628,750	72.6%		2,124,897
Pending Refunds		0		0	0.0%		0
Total	**$**	**12,659,356**	**$**	**6,788,025**	**53.6%**	**$**	**5,871,331**
Total Municipality							
Active Employees	**$**	**23,739,550**	**$**	**8,424,829**	**35.5%**	**$**	**15,314,721**
Vested Former Employees		**1,764,708**		**1,302,896**	**73.8%**		**461,812**
Retirees and Beneficiaries		**40,226,261**		**30,613,640**	**76.1%**		**9,612,621**
Pending Refunds		**119,637**		**119,637**	**100.0%**		**0**
Total	**$**	**65,850,156**	**$**	**40,461,002**	**61.4%**	**$**	**25,389,154**
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 13, 01							
Active Employees	$	1,659,723	$	876,912	52.8%	$	782,811
Vested Former Employees		232,819		232,819	100.0%		0
Retirees and Beneficiaries		3,346,380		3,346,380	100.0%		0
Pending Refunds		11,431		11,431	100.0%		0
Total	**$**	**5,250,353**	**$**	**4,467,542**	**85.1%**	**$**	**782,811**
Linked Divisions 12, 10							
Active Employees	$	1,692,247	$	876,205	51.8%	$	816,042
Vested Former Employees		407,369		407,369	100.0%		0
Retirees and Beneficiaries		2,246,586		2,246,586	100.0%		0
Pending Refunds		7,863		7,863	100.0%		0
Total	**$**	**4,354,065**	**$**	**3,538,023**	**81.3%**	**$**	**816,042**

[1] Includes both employer and employee assets.

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

Actuarial Accrued Liabilities - Comparative Schedule

Table 7

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
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
2016	64,160,503	37,221,865	58%	26,938,638
2017	65,850,156	40,461,002	61%	25,389,154

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

The Valuation Assets include assets from Surplus divisions, if any.

Division 01 - DPW

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
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
2016	5,135,243	4,351,046	85%	784,197
2017	5,244,386	4,462,325	85%	782,061

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	Active Employees		Computed	Employee
December 31	Number	Annual Payroll	Employer Contribution[1]	Contribution Rate[2]
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%
2016	19	833,791	15.08%	2.30%
2017	18	851,342	$ 9,180	5.00%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 44 for past benefit provision changes.

Division 02 - Police Patrol

Table 8-02: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
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
2016	12,838,642	10,013,827	78%	2,824,815
2017	13,859,271	10,769,157	78%	3,090,114

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 Number	Active Employees Annual Payroll	Computed Employer Contribution[1]	Employee Contribution Rate[2]
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%
2016	27	1,699,331	21.59%	8.29%
2017	28	1,777,631	22.53%	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 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 44 for past benefit provision changes.

Division 05 - Firefighters

Table 8-05: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
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
2016	27,867,803	12,930,519	46%	14,937,284
2017	28,177,223	13,516,293	48%	14,660,930

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		
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%
2016	32	2,086,805	56.20%	7.76%
2017	32	2,033,490	$ 101,798	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 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 44 for past benefit provision changes.

Division 10 - Admin Professional

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
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
2016	4,429,119	3,185,399	72%	1,243,720
2017	4,353,843	3,534,108	81%	819,735

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		
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%
2016	19	783,370	18.67%	3.90%
2017	17	673,625	$ 7,925	5.00%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 44 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
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
2016	1,724,994	270,628	16%	1,454,366
2017	1,549,888	1,381,962	89%	167,926

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		
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%
2016	1	74,010	121.95%	2.00%
2017	1	78,313	13.62%	5.00%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 44 for past benefit provision changes.

Division 12 - Admin Prof on/aft 1/1/17

Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2017	$ 222	$ 3,915	1764%	$ (3,693)

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

Table 9-12: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution[1]	Employee Contribution Rate[2]
	Number	Annual Payroll		
2017	2	$ 77,819	5.59%	5.00%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 44 for past benefit provision changes.

Division 13 - DPW on/aft 01/1/17

Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2017	$ 5,967	$ 5,217	87%	$ 750

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

Table 9-13: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution[1]	Employee Contribution Rate[2]
	Number	Annual Payroll		
2017	3	$ 83,530	2.87%	5.00%

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

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

Note: The contributions shown in Table 9 for the 12/31/2015 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 44 for past benefit provision changes.

Division 20 - Police Command

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
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
2016	12,164,702	6,470,446	53%	5,694,256
2017	12,659,356	6,788,025	54%	5,871,331

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		
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%
2016	9	720,662	59.49%	11.24%
2017	9	748,325	60.62%	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 through 12/31/2019 valuations do **not** reflect the phase-in of the increased contribution requirements associated with the new actuarial assumptions. The full contribution without phase-in is shown in Table 9 above. The contribution requirements including the 5-year phase-in are shown on page 6.

See the Benefit Provision History on page 44 for past benefit provision changes.

Division 01 - DPW

Table 10-01: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance[1]	Original Amortization Period[2]	Amounts for Fiscal Year Beginning 1/1/2019: Outstanding UAL Balance[3]	Remaining Amortization Period[2]	Annual Amortization Payment
Initial	12/31/2015	$ 830,763	23	$ 880,106	21	$ 61,860
(Gain)/Loss	12/31/2016	(82,526)	22	(89,522)	21	(6,288)
(Gain)/Loss	12/31/2017	5,781	21	6,229	21	444
Plan Amendments	12/31/2017	(9,047)	21	(9,748)	21	(684)
Total				**$ 787,065**		**$ 55,332**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Division 02 - Police Patrol

Table 10-02: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance[1]	Original Amortization Period[2]	Amounts for Fiscal Year Beginning 1/1/2019: Outstanding UAL Balance[3]	Remaining Amortization Period[2]	Annual Amortization Payment
Initial	12/31/2015	$ 3,040,689	23	$ 3,152,690	21	$ 221,580
(Gain)/Loss	12/31/2016	(280,062)	22	(303,786)	21	(21,348)
(Gain)/Loss	12/31/2017	260,150	21	280,312	21	19,704
Total				**$ 3,129,216**		**$ 219,936**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Division 05 - Firefighters

Table 10-05: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance[1]	Original Amortization Period[2]	Amounts for Fiscal Year Beginning 1/1/2019: Outstanding UAL Balance[3]	Remaining Amortization Period[2]	Annual Amortization Payment
Initial	12/31/2015	$ 14,659,664	23	$ 15,172,742	21	$ 1,066,380
(Gain)/Loss	12/31/2016	(5,596)	22	(6,074)	21	(432)
(Gain)/Loss	12/31/2017	(236,519)	21	(254,849)	21	(17,916)
Plan Amendments	12/31/2017	(168,365)	21	(181,413)	21	(12,756)
Total				**$ 14,730,406**		**$ 1,035,276**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Division 10 - Admin Professional

Table 10-10: Layered Amortization Schedule

				Amounts for Fiscal Year Beginning 1/1/2019		
Type of UAL	Date Established	Original Balance[1]	Original Amortization Period[2]	Outstanding UAL Balance[3]	Remaining Amortization Period[2]	Annual Amortization Payment
Initial	12/31/2015	$ 1,305,984	23	$ 1,356,730	21	$ 95,352
(Gain)/Loss	12/31/2016	(92,486)	22	(100,325)	21	(7,056)
(Gain)/Loss	12/31/2017	(403,688)	21	(434,974)	21	(30,576)
Plan Amendments	12/31/2017	(24,631)	21	(26,540)	21	(1,860)
Total				**$ 794,891**		**$ 55,860**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Division 11 - Teamsters

Table 10-11: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance[1]	Original Amortization Period[2]	Amounts for Fiscal Year Beginning 1/1/2019 Outstanding UAL Balance[3]	Remaining Amortization Period[2]	Annual Amortization Payment
Initial	12/31/2015	$ 1,381,974	23	$ 1,318,967	21	$ 92,700
(Gain)/Loss	12/31/2016	982	22	1,065	21	72
(Gain)/Loss	12/31/2017	(1,143,013)	21	(1,231,597)	21	(86,556)
Plan Amendments	12/31/2017	(907)	21	(977)	21	(72)
Total				**$ 87,458**		**$ 6,144**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Division 12 - Admin Prof on/aft 1/1/17

Table 10-12: Layered Amortization Schedule

				Amounts for Fiscal Year Beginning 1/1/2019		
Type of UAL	Date Established	Original Balance[1]	Original Amortization Period[2]	Outstanding UAL Balance[3]	Remaining Amortization Period[2]	Annual Amortization Payment
(Gain)/Loss	12/31/2017	$ (3,693)	15	$ (3,979)	15	$ (360)
Total				**$ (3,979)**		**$ (360)**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Division 13 - DPW on/aft 01/1/17

Table 10-13: Layered Amortization Schedule

				Amounts for Fiscal Year Beginning 1/1/2019		
Type of UAL	**Date Established**	**Original Balance[1]**	**Original Amortization Period[2]**	**Outstanding UAL Balance[3]**	**Remaining Amortization Period[2]**	**Annual Amortization Payment**
(Gain)/Loss	12/31/2017	$ 750	15	$ 808	15	$ 72
Total				**$ 808**		**$ 72**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

Division 20 - Police Command

Table 10-20: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance[1]	Original Amortization Period[2]	Amounts for Fiscal Year Beginning 1/1/2019: Outstanding UAL Balance[3]	Remaining Amortization Period[2]	Annual Amortization Payment
Initial	12/31/2015	$ 5,593,380	23	$ 5,804,690	21	$ 407,964
(Gain)/Loss	12/31/2016	(22,439)	22	(24,345)	21	(1,716)
(Gain)/Loss	12/31/2017	129,426	21	139,457	21	9,804
Total				**$ 5,919,802**		**$ 416,052**

1 For each type of UAL (layer), this is the original balance as of the date the layer was established.

2 According to the MERS amortization policy, each type of UAL (layer) is amortized over a specific period (see Appendix on MERS website).

3 This is the remaining balance as of the valuation date, projected to the beginning of the fiscal year shown above.

The unfunded accrued liability (UAL) as of December 31, 2017 (see Table 6) is projected to the beginning of the fiscal year for which the contributions are being calculated. This allows the 2017 valuation to take into account the expected future contributions that are based on past valuations. Each type of UAL (layer) is amortized over the appropriate period. Please see the Appendix on the MERS website for a detailed description of the amortization policy.

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:		12/31/2017
Measurement Date of Total Pension Liability (TPL):		12/31/2017

At 12/31/2017, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits:	86
Inactive employees entitled to but not yet receiving benefits:	28
Active employees:	110
	224

Covered employee payroll: (Needed for Required Supplementary Information)	$	6,324,075
Average expected remaining service lives of all employees (active and inactive):		5
Total Pension Liability as of 12/31/2016 measurement date:	$	62,305,206
Total Pension Liability as of 12/31/2017 measurement date:	$	63,964,145
Service Cost for the year ending on the 12/31/2017 measurement date:	$	1,010,514

Change in the Total Pension Liability due to:

- Benefit changes[1]:	$	(201,785)
- Differences between expected and actual experience[2]:	$	(948,982)
- Changes in assumptions[2]:	$	0

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

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

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

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Change in Net Pension Liability as of 12/31/2017:	$ 8,101,033	-	$ (6,748,956)

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:		12/31/2017
Measurement Date of Total Pension Liability (TPL):		12/31/2018

At 12/31/2017, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits:	86
Inactive employees entitled to but not yet receiving benefits:	28
Active employees:	110
	224

Covered employee payroll: (Needed for Required Supplementary Information)	$	6,324,075
Average expected remaining service lives of all employees (active and inactive):		5
Total Pension Liability as of 12/31/2017 measurement date:	$	65,038,753
Total Pension Liability as of 12/31/2018 measurement date:	$	66,685,618
Service Cost for the year ending on the 12/31/2018 measurement date:	$	1,035,168
Change in the Total Pension Liability due to:		
- Benefit changes[1]:	$	(253,149)
- Differences between expected and actual experience[2]:	$	(949,045)
- Changes in assumptions[2]:	$	0

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

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

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 12/31/2018:	$ 8,313,100	-	$ (6,934,159)

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 - DPW

1/1/2017	Participant Contribution Rate 5%
1/1/2017	Day of Work defined as 10 8 hour days
1/1/2017	Non Standard Compensation Definition
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2005	Member Contribution Rate 2.30%
7/1/2005	Benefit B-3 (80% max)
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	Member Contribution Rate 0.00%
7/1/1995	Fiscal Month - January
7/1/1995	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1995	6 Year Vesting
7/1/1995	Benefit C-1 (New)
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
	Defined Benefit Normal Retirement Age - 60

02 - Police Patrol

12/1/2016	Service Credit Purchase Estimates - Yes
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
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

05 - Firefighters

1/1/2017	Day of work defined as 100.8 hours in a month
1/1/2017	Non Standard Compensation Definition
1/1/2017	Benefit B-4 (80% max)
12/31/2016	Current FAC
12/1/2016	Service Credit Purchase Estimates - Yes
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)
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
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

10 - Admin Professional

4/1/2017	Participant Contribution Rate 5%
1/1/2017	Day of Work defined as 10 8 hour days
1/1/2017	Non Standard Compensation Definition
1/1/2017	Benefit B-3 (80% max)
12/31/2016	Current FAC
12/1/2016	Service Credit Purchase Estimates - Yes
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
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

11 - Teamsters

1/1/2018	Participant Contribution Rate 5%

11 - Teamsters

12/1/2016	Service Credit Purchase Estimates - Yes
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
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

12 - Admin Prof on/aft 1/1/17

1/1/2017	Day of Work defined as 10 8 hour days
1/1/2017	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/2017	Non Standard Compensation Definition
1/1/2017	10 Year Vesting
1/1/2017	Benefit F55 (With 25 Years of Service)
1/1/2017	Defined Benefit Normal Retirement Age - 60
1/1/2017	Service Credit Purchase Estimates - Yes
1/1/2017	Benefit C-1 (New)
1/1/2017	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
1/1/2017	Participant Contribution Rate 5%
7/10/2001	Covered by Act 88
7/1/1995	Fiscal Month - January

13 - DPW on/aft 01/1/17

1/1/2017	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
1/1/2017	Participant Contribution Rate 5%
1/1/2017	Day of Work defined as 10 8 hour days
1/1/2017	Benefit FAC-5 (5 Year Final Average Compensation)
1/1/2017	Non Standard Compensation Definition
1/1/2017	6 Year Vesting
1/1/2017	Defined Benefit Normal Retirement Age - 60
1/1/2017	Service Credit Purchase Estimates - Yes
1/1/2017	1.5% multiplier (80% max)
1/1/2017	Benefit F55 (With 20 Years of Service)
1/1/2017	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years
7/10/2001	Covered by Act 88
7/1/1995	Fiscal Month - January

20 - Police Command

12/1/2016	Service Credit Purchase Estimates - Yes
8/1/2005	2.75% Multiplier (80% max)

20 - Police Command

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
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
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

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.