



MUNICIPAL EMPLOYEES' RETIREMENT SYSTEM OF MICHIGAN
ANNUAL ACTUARIAL VALUATION REPORT DECEMBER 31, 2017
BATTLE CREEK, CITY OF (1302)



Spring, 2018

Battle Creek, 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, 2017. The report includes the determination of liabilities and contribution rates resulting from the participation of Battle Creek, City of (1302) 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. Battle Creek, 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, 2017 annual actuarial valuation is to:

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

TABLE OF CONTENTS

	Page
Executive Summary	5
Employer Contribution Details	16
Table 1	
Benefit Provisions	18
Table 2	
Participant Summary	22
Table 3	
Reported Assets (Market Value)	24
Table 4	
Flow of Valuation Assets	25
Table 5	
Actuarial Accrued Liabilities and Valuation Assets	26
Table 6	
Actuarial Accrued Liabilities - Comparative Schedule	29
Table 7	
Division-Based Comparative Schedules	30
Tables 8 and 9	
Division-Based Layered Amortization Schedule	44
Table 10	
GASB 68 Information	57
Benefit Provision History	58
Plan Provisions, Actuarial Assumptions, and Actuarial Funding Method	64

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	60%	61%

* 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:	July 1, 2019	July 1, 2019	July 1, 2018	July 1, 2018	July 1, 2019	July 1, 2019	July 1, 2018	July 1, 2018
Division								
01 - Gnrl NonUn.	33.12%	34.66%	32.28%	34.68%	\$ 138,318	\$ 144,734	\$ 129,232	\$ 138,856
10 - General AFSCME	-	-	-	-	79,681	85,715	77,192	86,243
11 - Gnl Transit	-	-	-	-	19,021	20,135	18,634	20,305
12 - Gnrl BCSA	-	-	-	-	82,258	86,042	73,279	78,955
13 - Gnl Housing	-	-	-	-	11,059	11,927	10,572	11,874
14 - SEIU Local	-	-	-	-	67,078	72,286	60,918	68,730
15 - City Mngr.	143.67%	143.67%	152.10%	152.10%	35,172	35,172	36,297	36,297
16 - Cntrl Disp.	-	-	-	-	1,982	2,292	17	482
17 - Corr.Offrcs	0.00%	0.00%	0.00%	0.00%	0	0	0	0
18 - General AFSCME after 1	5.13%	5.26%	5.12%	5.36%	15,351	15,755	13,143	13,749
19 - Gen. SEIU hired after	4.68%	4.73%	4.55%	4.64%	10,174	10,290	8,792	8,966
20 - Gen. BCSA hired after	5.41%	5.50%	5.31%	5.45%	2,884	2,932	2,660	2,732
HA - GNL Trans hired after	6.47%	6.56%	6.18%	6.37%	6,327	6,419	4,456	4,594
Municipality Total					\$ 469,305	\$ 493,699	\$ 435,192	\$ 471,783

Employee contribution rates reflected in the valuations are shown below:

Valuation Date:	Employee Contribution Rate	
	12/31/2017	12/31/2016
Division		
01 - Gnrl NonUn.	4.00%	3.00%
10 - General AFSCME	2.75%	2.75%
11 - Gnl Transit	2.50%	2.50%
12 - Gnrl BCSA	5.16%	5.16%

Valuation Date:	Employee Contribution Rate	
	12/31/2017	12/31/2016
Division		
13 - Gnl Housing	1.50%	1.50%
14 - SEIU Local	3.00%	3.00%
15 - City Mngr.	0.00%	0.00%
16 - Cntrl Disp.	7.20%	7.20%
17 - Corr.Offrcs	3.12%	3.12%
18 - General AFSCME after 1	2.50%	2.50%
19 - Gen. SEIU hired after	3.00%	3.00%
20 - Gen. BCSA hired after	2.50%	2.50%
HA - GNL Trans hired after	0.00%	0.00%

The employer may contribute more than the minimum required contributions, as these additional contributions will earn investment income and may result in lower future contribution requirements. 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 \$747,802, instead of \$493,699.

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:
 - o Lower actual investment returns would result in higher required employer contributions, and vice-versa.
 - o Smaller than assumed pay increases would lower required employer contributions.
 - o 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.
 - o Retirements at earlier ages than assumed would usually increase required employer contributions.
 - o 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 59% (instead of 60%); and
- Your total employer contribution requirement for the fiscal year starting July 1, 2019 would be \$6,003,084 (instead of \$5,924,388).

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
	5.75%	6.75%	7.75%	8.75%
12/31/2017 Valuation Results				
Accrued Liability	\$ 180,402,002	\$ 162,747,612	\$ 147,753,489	\$ 134,925,929
Valuation Assets ¹	\$ 88,440,686	\$ 88,440,686	\$ 88,440,686	\$ 88,440,686
Unfunded Accrued Liability	\$ 91,961,316	\$ 74,306,926	\$ 59,312,803	\$ 46,485,243
Funded Ratio	49%	54%	60%	66%
Monthly Normal Cost	\$ 235,663	\$ 179,011	\$ 134,812	\$ 100,424
Monthly Amortization Payment	\$ 457,587	\$ 404,435	\$ 357,074	\$ 298,900
Total Employer Contribution²	\$ 693,250	\$ 583,948	\$ 493,699	\$ 402,156

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.

Your municipality includes one or more Surplus divisions. The assets in a Surplus division may be used to reduce future employer contributions or to accelerate the date by which the municipality becomes 100% funded. The timing and use of these Surplus assets is discretionary.

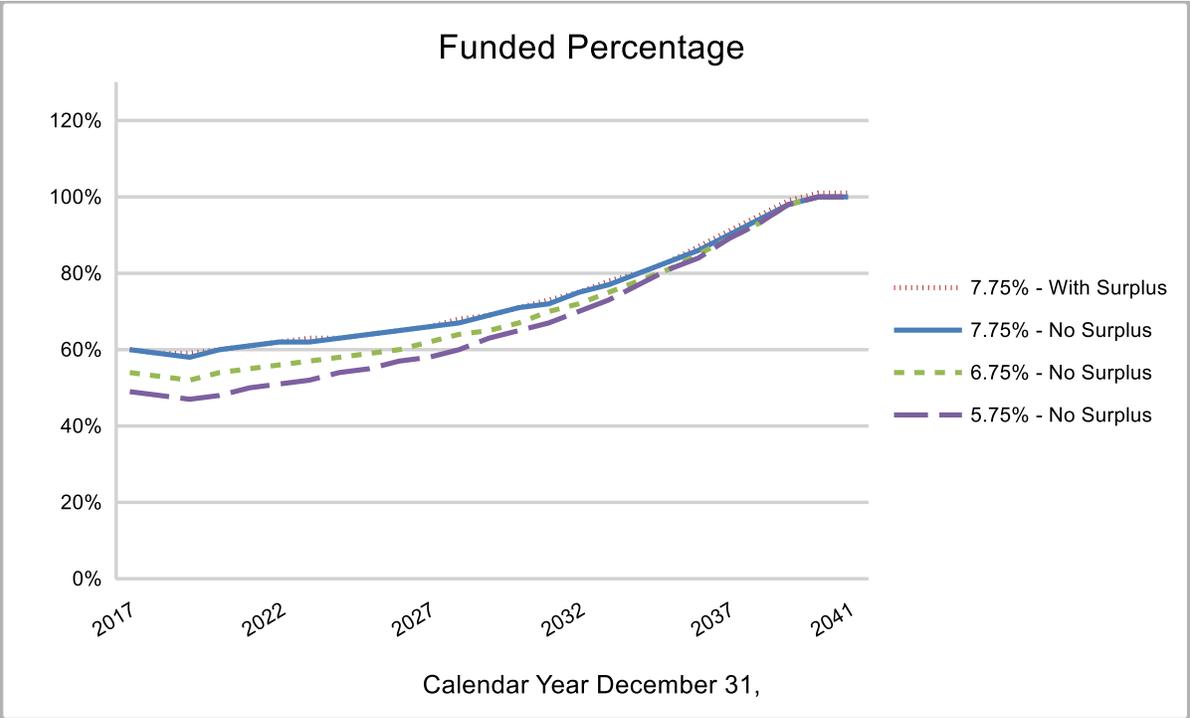
The Funded Percentage graph shows projections of funded status under the 7.75% investment return assumption, both including the Surplus assets (contributed as of the valuation date), and without the Surplus assets. The graph including the Surplus assets assumes these Surplus assets grow with interest and are not used to lower future employer contributions. We modeled the projections including the Surplus assets in this fashion because the use of these assets is discretionary by the employer and we do not know when and how the employer will use them. Once the employer uses these Surplus assets, any future employer contributions are expected to be lower than those shown in the projections.

Please note that one or more of your divisions trigger the 3 times benefit payout minimum contribution requirement during the projection period (see table following the projections and the graphs). This contribution requirement was designed so that a plan does not run out of money. This means that if assets in the plan are not enough to pay 3 years of benefit payouts, a minimum contribution is required to raise the level of the assets to be equal to at least 3 years of benefit payments. For a full description of this contribution requirement see the [Appendix](#) on the MERS website.

Valuation Year Ending 12/31	Fiscal Year Beginning 7/1	Actuarial Accrued Liability	Valuation Assets ²	Funded Percentage	Computed Annual Employer Contribution
7.75%¹					
WITH 5-YEAR PHASE-IN					
2017	2019	\$ 147,753,489	\$ 88,146,249	60%	\$ 5,631,660
2018	2020	150,400,000	89,100,000	59%	6,120,000
2019	2021	153,000,000	89,200,000	58%	6,600,000
2020	2022	155,500,000	92,300,000	59%	6,710,000
2021	2023	157,800,000	95,400,000	61%	6,830,000
2022	2024	160,000,000	97,900,000	61%	7,030,000
NO 5-YEAR PHASE-IN					
2017	2019	\$ 147,753,489	\$ 88,146,249	60%	\$ 5,924,388
2018	2020	150,400,000	89,100,000	59%	6,240,000
2019	2021	153,000,000	89,400,000	58%	6,570,000
2020	2022	155,500,000	92,600,000	60%	6,680,000
2021	2023	157,800,000	95,900,000	61%	6,790,000
2022	2024	160,000,000	98,300,000	62%	6,990,000
6.75%¹					
NO 5-YEAR PHASE-IN					
2017	2019	\$ 162,747,612	\$ 88,146,249	54%	\$ 7,007,376
2018	2020	165,500,000	88,300,000	53%	7,530,000
2019	2021	168,200,000	88,200,000	52%	7,880,000
2020	2022	170,800,000	91,700,000	54%	8,040,000
2021	2023	173,200,000	95,300,000	55%	8,200,000
2022	2024	175,400,000	98,200,000	56%	8,440,000
5.75%¹					
NO 5-YEAR PHASE-IN					
2017	2019	\$ 180,402,002	\$ 88,146,249	49%	\$ 8,319,000
2018	2020	183,300,000	87,400,000	48%	8,960,000
2019	2021	186,100,000	87,100,000	47%	9,340,000
2020	2022	188,800,000	91,100,000	48%	9,560,000
2021	2023	191,300,000	95,200,000	50%	9,770,000
2022	2024	193,600,000	98,700,000	51%	10,100,000

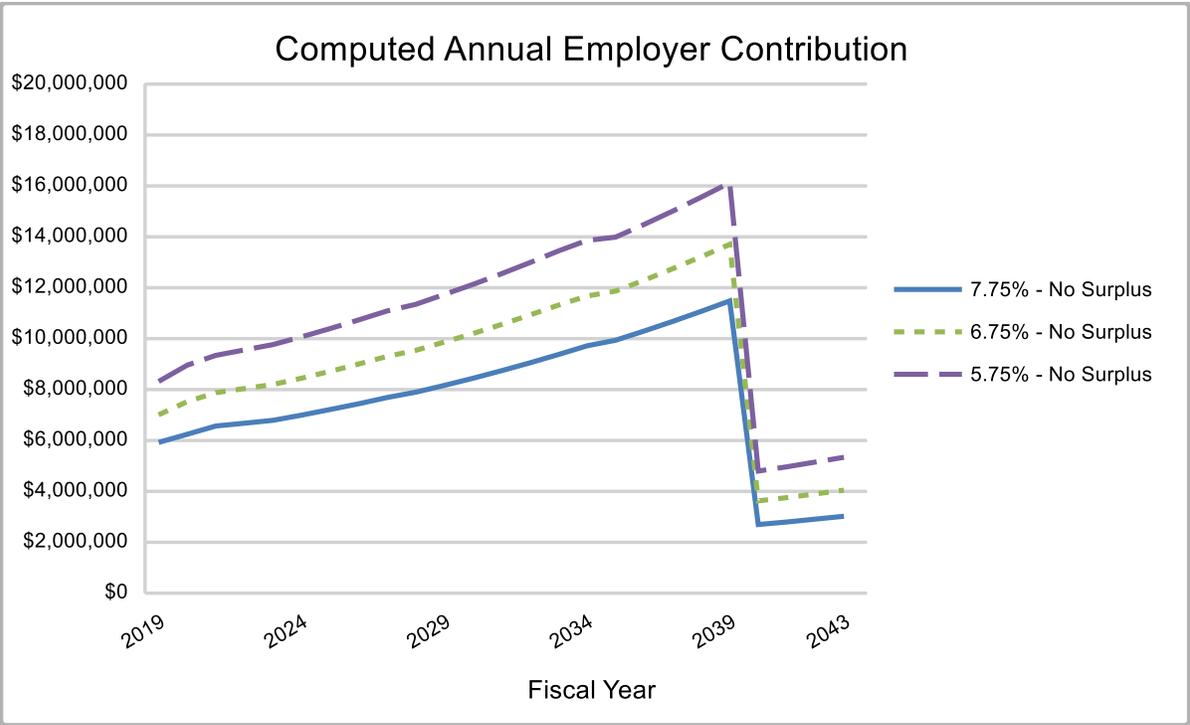
¹ Represents both the interest rate for discounting liabilities and the future investment return assumption on the Market Value of assets.

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



Notes:

All projected funded percentages are shown with no phase-in.
 Assumes assets from Surplus divisions will not be used to lower employer contributions during the projection period.



Notes:

All projected contributions are shown with no phase-in.
 Projected employer contributions do not reflect the use of any assets from the Surplus divisions.

Valuation Year Ending 12/31	Fiscal Year Beginning 7/1	7.75% Phase-In	7.75% No Phase-In	6.75% No Phase-In	5.75% No Phase-In
2017	2019	15	15	15	No
2018	2020	15	15	15	15
2019	2021	15	15	15	15
2020	2022	15	15	15	15
2021	2023	15	15	15	15
2022	2024	15	15	15	No

This table shows in any given year which division(s) are impacted by the 3 times benefit payout minimum required contribution. If “No” appears in the table, it means none of the divisions are impacted.

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

Table 1

Division	Total Normal Cost	Employee Contribut. Rate	Employer Contributions ¹			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
			Employer Normal Cost	Payment of the Unfunded Accrued Liability ⁴	Computed Employer Contribut. No Phase-In				
Percentage of Payroll									
01 - Gnrl NonUn.	13.53%	4.00%	9.53%	25.13%	34.66%	33.12%			0.87%
10 - General AFSCME	12.75%	2.75%	-	-	-	-	20.53%	19.23%	
11 - Gnl Transit	13.43%	2.50%	-	-	-	-	19.59%	18.70%	
12 - Gnrl BCSA	13.61%	5.16%	-	-	-	-	52.53%	50.27%	
13 - Gnl Housing	15.76%	1.50%	-	-	-	-			
14 - SEIU Local	13.11%	3.00%	-	-	-	-	22.40%	20.96%	
15 - City Mngr.	16.76%	0.00%	16.76%	126.91%	143.67%	143.67%			0.92%
16 - Cntrl Disp.	0.00%	7.20%	-	-	-	-			
17 - Corr.Offrcs	10.68%	3.12%	7.56%	-24.29%	0.00%	0.00%			0.95%
18 - General AFSCME aft	7.71%	2.50%	5.21%	0.05%	5.26%	5.13%	20.53%	19.23%	0.90%
19 - Gen. SEIU hired af	7.59%	3.00%	4.59%	0.14%	4.73%	4.68%	22.40%	20.96%	0.89%
20 - Gen. BCSA hired af	7.84%	2.50%	5.34%	0.16%	5.50%	5.41%	52.53%	50.27%	0.84%
HA - GNL Trans hired af	6.84%	0.00%	6.84%	-0.28%	6.56%	6.47%	19.59%	18.70%	0.93%
Estimated Monthly Contribution³									
01 - Gnrl NonUn.			\$ 39,796	\$ 104,938	\$ 144,734	\$ 138,318			
10 - General AFSCME			19,478	66,237	85,715	79,681			
11 - Gnl Transit			4,122	16,013	20,135	19,021			
12 - Gnrl BCSA			9,804	76,238	86,042	82,258			
13 - Gnl Housing			6,292	5,635	11,927	11,059			
14 - SEIU Local			15,258	57,028	72,286	67,078			
15 - City Mngr.			4,103	31,069	35,172	35,172			
16 - Cntrl Disp.			0	2,292	2,292	1,982			
17 - Corr.Offrcs			820	(2,633)	0	0			
18 - General AFSCME aft			15,600	155	15,755	15,351			

Table 1 (continued)

Division	Total Normal Cost	Employee Contribut. Rate	Employer Contributions ¹			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
			Employer Normal Cost	Payment of the Unfunded Accrued Liability ⁴	Computed Employer Contribut. No Phase-In				
19 - Gen. SEIU hired af			9,995	295	10,290	10,174			
20 - Gen. BCSA hired af			2,849	83	2,932	2,884			
HA - GNL Trans hired af			6,695	(276)	6,419	6,327			
Total Municipality			\$ 134,812	\$ 357,074	\$ 493,699	\$ 469,305			
Estimated Annual Contribution³			\$ 1,617,744	\$ 4,284,888	\$ 5,924,388	\$ 5,631,660			

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 July 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 - Gnrl NonUn.: Open Division

	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	4%	3%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

10 - General AFSCME: Closed to new hires, linked to Division 18

	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	2.75%	2.75%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

11 - Gnl Transit: Closed to new hires, linked to Division HA

	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	2.50%	2.50%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

Table 2 (continued)

12 - Gnrl BCSA: Closed to new hires, linked to Division 20

	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	5.16%	5.16%
RS50% Percentage:	50%	50%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

13 - Gnrl Housing: Closed to new hires

	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	1.50%	1.50%
DC Plan for New Hires:	12/1/2013	12/1/2013
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

14 - SEIU Local: Closed to new hires, linked to Division 19

	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25	50/25
	55/15	55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	3%	3%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

Table 2 (continued)

15 - City Mngr.: Open Division		
	2017 Valuation	2016 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 55/15	50/25 55/15
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0%	0%
RS50% Percentage:	50%	50%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)
16 - Cntrl Disp.: Closed to new hires		
	2017 Valuation	2016 Valuation
Benefit Multiplier:	2.50% Multiplier (80% max)	2.50% Multiplier (80% max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
COLA for Future Retirees:	2.50% (Non-Compound)	2.50% (Non-Compound)
Employee Contributions:	7.20%	7.20%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)
17 - Corr.Offrcs: Open Division		
	2017 Valuation	2016 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):	55/25	55/25
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	3.12%	3.12%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

Table 2 (continued)

18 - General AFSCME after 12/1/10: Open Division, linked to Division 10

	2017 Valuation	2016 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	2.50%	2.50%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

19 - Gen. SEIU hired after 7/1/2011: Open Division, linked to Division 14

	2017 Valuation	2016 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	5 years	5 years
Employee Contributions:	3%	3%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

20 - Gen. BCSA hired after 1/1/2012: Open Division, linked to Division 12

	2017 Valuation	2016 Valuation
Benefit Multiplier:	1.50% Multiplier (no max)	1.50% Multiplier (no max)
Normal Retirement Age:	60	60
Vesting:	10 years	10 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	50/25 55/15	50/25 55/15
Final Average Compensation:	3 years	3 years
Employee Contributions:	2.50%	2.50%
Act 88:	Yes (Adopted 7/10/1973)	Yes (Adopted 7/10/1973)

HA - GNL Trans hired after 3/1/10: Open Division, linked to Division 11

	2017 Valuation	2016 Valuation
Benefit Multiplier:	Hybrid Plan - 1.25% Multiplier	Hybrid Plan - 1.25% Multiplier
Normal Retirement Age:	60	60
Vesting:	6 years	6 years
Early Retirement (Unreduced):	-	-
Early Retirement (Reduced):	-	-
Final Average Compensation:	3 years	3 years
Employee Contributions:	0%	0%
Act 88:	Yes (Adopted 7/10/1983)	Yes (Adopted 7/10/1983)

Participant Summary

Table 3

Division	2017 Valuation		2016 Valuation		2017 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
01 - Gnrl NonUn.							
Active Employees	62	\$ 4,569,675	60	\$ 4,381,947	47.0	11.2	12.8
Vested Former Employees	14	299,213	15	311,505	52.4	11.6	14.8
Retirees and Beneficiaries	90	2,423,124	90	2,349,302	74.8		
10 - General AFSCME							
Active Employees	52	\$ 2,534,173	59	\$ 2,871,821	51.6	18.5	18.7
Vested Former Employees	6	94,361	5	67,288	47.4	12.3	15.2
Retirees and Beneficiaries	137	2,642,747	135	2,552,502	68.3		
11 - Gnl Transit							
Active Employees	11	\$ 568,014	14	\$ 654,579	57.2	17.3	17.3
Vested Former Employees	1	19,700	1	19,700	57.0	17.0	17.0
Retirees and Beneficiaries	32	564,890	32	556,914	66.5		
12 - Gnrl BCSA							
Active Employees	22	\$ 1,636,242	22	\$ 1,464,338	52.3	20.6	20.6
Vested Former Employees	4	66,404	4	66,404	53.9	13.1	17.4
Retirees and Beneficiaries	38	1,453,260	36	1,385,748	67.3		
13 - Gnl Housing							
Active Employees	9	\$ 581,402	10	\$ 613,062	53.9	16.1	16.1
Vested Former Employees	1	23,380	0	0	54.8	18.6	18.6
Retirees and Beneficiaries	7	256,704	7	251,846	72.8		
14 - SEIU Local							
Active Employees	41	\$ 2,046,849	47	\$ 2,255,302	52.8	16.7	16.9
Vested Former Employees	10	109,511	10	109,678	50.4	11.6	14.4
Retirees and Beneficiaries	93	2,166,383	89	2,046,571	68.4		
15 - City Mngr.							
Active Employees	2	\$ 267,898	2	\$ 261,147	52.7	6.0	7.9
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	9	522,213	9	522,213	65.6		
16 - Cntrl Disp.							
Active Employees	0	\$ 0	0	\$ 0	0.0	0.0	0.0
Vested Former Employees	5	53,928	4	40,566	54.9	10.2	13.7
Retirees and Beneficiaries	4	105,783	4	103,657	69.4		
17 - Corr.Offrcs							
Active Employees	2	\$ 118,639	1	\$ 70,915	30.7	4.4	4.4
Vested Former Employees	4	35,257	4	35,257	47.8	7.4	16.0
Retirees and Beneficiaries	1	28,471	1	28,471	62.3		

Table 3 (continued)

Division	2017 Valuation		2016 Valuation		2017 Valuation		
	Number	Annual Payroll ¹	Number	Annual Payroll ¹	Average Age	Average Benefit Service ²	Average Eligibility Service ²
18 - General AFSCME after							
Active Employees	64	\$ 2,873,816	56	\$ 2,351,415	41.3	3.1	4.6
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	1	2,649	0	0	62.6		
19 - Gen. SEIU hired afte							
Active Employees	50	\$ 1,987,507	43	\$ 1,680,900	39.9	3.1	4.3
Vested Former Employees	1	2,266	1	1,738	52.9	3.1	3.7
Retirees and Beneficiaries	0	0	0	0	0.0		
20 - Gen. BCSA hired afte							
Active Employees	3	\$ 217,191	3	\$ 212,173	50.1	5.4	5.4
Vested Former Employees	0	0	0	0	0.0	0.0	0.0
Retirees and Beneficiaries	0	0	0	0	0.0		
HA - GNL Trans hired afte							
Active Employees	22	\$ 915,691	15	\$ 635,176	44.1	2.2	2.2
Vested Former Employees	2	1,942	1	663	25.2	2.3	3.9
Retirees and Beneficiaries	0	0	0	0	0.0		
Total Municipality							
Active Employees	340	\$ 18,317,097	332	\$ 17,452,775	46.9	10.5	11.3
Vested Former Employees	48	705,962	45	652,799	50.4	11.0	14.4
Retirees and Beneficiaries	412	10,166,224	403	9,797,224	69.5		
Total Participants	800		780				

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 - Gnrl NonUn.	\$ 16,557,381	\$ 1,418,546	\$ 15,331,155	\$ 1,304,344
10 - General AFSCME	23,524,416	1,225,426	22,459,796	1,216,668
11 - Gnl Transit	5,042,750	230,181	4,801,285	247,592
12 - Gnrl BCSA	9,466,635	754,748	8,487,751	854,344
13 - Gnl Housing	4,539,643	123,156	4,131,394	112,260
14 - SEIU Local	18,399,329	916,676	17,375,500	964,943
15 - City Mngr.	825,805	7,603	580,673	7,472
16 - Cntrl Disp.	1,420,127	14,727	1,349,340	14,473
17 - Corr.Offrcs	764,265	43,573	684,503	33,605
18 - General AFSCME after 12/1/10	670,886	264,578	424,856	198,011
19 - Gen. SEIU hired after 7/1/2011	397,146	195,536	281,538	146,032
20 - Gen. BCSA hired after 1/1/2012	74,174	26,079	52,659	20,292
HA - GNL Trans hired after 3/1/10	256,130	0	174,945	0
S1 - Surplus Unassociated	291,141	0		
Municipality Total	\$ 82,229,828	\$ 5,220,829	\$ 76,135,395	\$ 5,120,036
Combined Assets	\$87,450,657		\$81,255,431	

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](#).

Assets in the Surplus division(s) are employer assets that have been reserved to be used by the employer at some point in the future to stabilize increases in contributions. These assets are not used in calculating the employer contribution for the fiscal year beginning July 1, 2019.

Flow of Valuation Assets

Table 5

Year Ended 12/31	Employer Contributions		Employee Contributions	Investment Income (Valuation Assets)	Benefit Payments	Employee Contribution Refunds	Net Transfers	Valuation Asset Balance
	Required	Additional						
2007	\$ 2,931,754		\$ 541,549	\$ 6,363,231	\$ (4,584,252)	\$ (97,397)	\$ 0	\$ 83,685,510
2008	2,968,152		551,782	3,716,560	(5,114,794)	(48,257)	0	85,758,953
2009	2,959,132		552,800	3,637,611	(5,698,007)	(39,591)	0	87,170,898
2010	2,868,331		453,617	4,281,248	(6,516,632)	(59,121)	49,333	88,247,674
2011	4,106,953	\$ 0	420,760	3,474,621	(7,369,893)	(49,719)	(2,802,205)	86,028,191
2012	3,425,331	133,259	396,893	3,504,637	(8,079,082)	(11,672)	26,998	85,424,555
2013	3,646,578	1,904,258	398,173	5,034,108	(8,415,175)	(38,371)	1	87,954,127
2014	3,776,984	0	419,888	4,832,408	(8,762,592)	(13,880)	198,983	88,405,918
2015	4,004,442	99,850	443,676	4,113,925	(9,048,762)	(56,391)	52,309	88,014,967
2016	4,353,308	16,169	487,265	4,189,261	(9,572,000)	(8,787)	39,636	87,519,819
2017	5,035,846	346,606	546,536	5,040,598	(9,983,596)	(65,125)	2	88,440,686

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 - Gnrl NonUn.				
Active Employees	\$ 11,641,635	\$ 1,163,127	10.0%	\$ 10,478,508
Vested Former Employees	2,002,659	205,956	10.3%	1,796,703
Retirees And Beneficiaries	22,129,532	16,776,600	75.8%	5,352,932
Pending Refunds	<u>33,749</u>	<u>33,749</u>	100.0%	<u>0</u>
Total	\$ 35,807,575	\$ 18,179,432	50.8%	\$ 17,628,143
10 - General AFSCME				
Active Employees	\$ 10,259,148	\$ 1,115,013	10.9%	\$ 9,144,135
Vested Former Employees	408,776	82,231	20.1%	326,545
Retirees And Beneficiaries	25,492,279	23,804,610	93.4%	1,687,669
Pending Refunds	<u>28,181</u>	<u>28,181</u>	100.0%	<u>0</u>
Total	\$ 36,188,384	\$ 25,030,035	69.2%	\$ 11,158,349
11 - Gnrl Transit				
Active Employees	\$ 2,240,825	\$ 191,359	8.5%	\$ 2,049,466
Vested Former Employees	167,870	18,079	10.8%	149,791
Retirees And Beneficiaries	5,598,554	5,102,445	91.1%	496,109
Pending Refunds	<u>20,743</u>	<u>20,743</u>	100.0%	<u>0</u>
Total	\$ 8,027,992	\$ 5,332,626	66.4%	\$ 2,695,366
12 - Gnrl BCSA				
Active Employees	\$ 7,854,413	\$ 700,864	8.9%	\$ 7,153,549
Vested Former Employees	501,595	53,884	10.7%	447,711
Retirees And Beneficiaries	14,766,700	9,582,351	64.9%	5,184,349
Pending Refunds	<u>0</u>	<u>0</u>	0.0%	<u>0</u>
Total	\$ 23,122,708	\$ 10,337,099	44.7%	\$ 12,785,609
13 - Gnrl Housing				
Active Employees	\$ 2,723,577	\$ 1,927,615	70.8%	\$ 795,962
Vested Former Employees	203,512	203,512	100.0%	0
Retirees And Beneficiaries	2,583,486	2,583,486	100.0%	0
Pending Refunds	<u>974</u>	<u>974</u>	100.0%	<u>0</u>
Total	\$ 5,511,549	\$ 4,715,587	85.6%	\$ 795,962
14 - SEIU Local				
Active Employees	\$ 7,478,315	\$ 770,838	10.3%	\$ 6,707,477
Vested Former Employees	642,754	108,368	16.9%	534,386
Retirees And Beneficiaries	20,964,974	18,618,160	88.8%	2,346,814
Pending Refunds	<u>37,315</u>	<u>37,315</u>	100.0%	<u>0</u>
Total	\$ 29,123,358	\$ 19,534,681	67.1%	\$ 9,588,677

Table 6 (continued)

Division	Actuarial Accrued Liability	Valuation Assets ¹	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
15 - City Mngr.				
Active Employees	\$ 349,146	\$ 7,603	2.2%	\$ 341,543
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	5,412,623	835,240	15.4%	4,577,383
Pending Refunds	0	0	0.0%	0
Total	\$ 5,761,769	\$ 842,843	14.6%	\$ 4,918,926
16 - Cntrl Disp.				
Active Employees	\$ 0	\$ 0	0.0%	\$ 0
Vested Former Employees	516,599	272,695	52.8%	243,904
Retirees And Beneficiaries	1,174,775	1,174,775	100.0%	0
Pending Refunds	3,628	3,628	100.0%	0
Total	\$ 1,695,002	\$ 1,451,098	85.6%	\$ 243,904
17 - Corr.Offrcs				
Active Employees	\$ 70,023	\$ 322,731	460.9%	\$ (252,708)
Vested Former Employees	152,907	152,907	100.0%	0
Retirees And Beneficiaries	337,972	337,972	100.0%	0
Pending Refunds	3,374	3,374	100.0%	0
Total	\$ 564,276	\$ 816,984	144.8%	\$ (252,708)
18 - General AFSCME after 12/1/10				
Active Employees	\$ 896,816	\$ 878,606	98.0%	\$ 18,210
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	27,053	27,053	100.0%	0
Pending Refunds	40,395	40,395	100.0%	0
Total	\$ 964,264	\$ 946,054	98.1%	\$ 18,210
19 - Gen. SEIU hired after 7/1/2011				
Active Employees	\$ 623,838	\$ 576,816	92.5%	\$ 47,022
Vested Former Employees	14,082	14,082	100.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	8,494	8,494	100.0%	0
Total	\$ 646,414	\$ 599,392	92.7%	\$ 47,022
20 - Gen. BCSA hired after 1/1/2012				
Active Employees	\$ 114,802	\$ 101,388	88.3%	\$ 13,414
Vested Former Employees	0	0	0.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 114,802	\$ 101,388	88.3%	\$ 13,414
HA - GNL Trans hired after 3/1/10				
Active Employees	\$ 223,962	\$ 257,596	115.0%	\$ (33,634)
Vested Former Employees	1,434	1,434	100.0%	0
Retirees And Beneficiaries	0	0	0.0%	0
Pending Refunds	0	0	0.0%	0
Total	\$ 225,396	\$ 259,030	114.9%	\$ (33,634)

Table 6 (continued)

Division	Actuarial Accrued Liability	Valuation Assets¹	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
S1 - Surplus Unassociated Total	\$ 0	\$ 294,437		\$ (294,437)
Total Municipality				
Active Employees	\$ 44,476,500	\$ 8,013,556	18.0%	\$ 36,462,944
Vested Former Employees	4,612,188	1,113,148	24.1%	3,499,040
Retirees and Beneficiaries	98,487,948	78,842,692	80.1%	19,645,256
Pending Refunds	176,853	176,853	100.0%	0
Surplus Assets	0	294,437		(294,437)
Total	\$ 147,753,489	\$ 88,440,686	59.9%	\$ 59,312,803
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 18, 10				
Active Employees	\$ 11,155,964	\$ 1,993,619	17.9%	\$ 9,162,345
Vested Former Employees	408,776	82,231	20.1%	326,545
Retirees and Beneficiaries	25,519,332	23,831,663	93.4%	1,687,669
Pending Refunds	68,576	68,576	100.0%	0
Total	\$ 37,152,648	\$ 25,976,089	69.9%	\$ 11,176,559
Linked Divisions HA, 11				
Active Employees	\$ 2,464,787	\$ 448,955	18.2%	\$ 2,015,832
Vested Former Employees	169,304	19,513	11.5%	149,791
Retirees and Beneficiaries	5,598,554	5,102,445	91.1%	496,109
Pending Refunds	20,743	20,743	100.0%	0
Total	\$ 8,253,388	\$ 5,591,656	67.7%	\$ 2,661,732
Linked Divisions 20, 12				
Active Employees	\$ 7,969,215	\$ 802,252	10.1%	\$ 7,166,963
Vested Former Employees	501,595	53,884	10.7%	447,711
Retirees and Beneficiaries	14,766,700	9,582,351	64.9%	5,184,349
Pending Refunds	0	0	0.0%	0
Total	\$ 23,237,510	\$ 10,438,487	44.9%	\$ 12,799,023
Linked Divisions 19, 14				
Active Employees	\$ 8,102,153	\$ 1,347,654	16.6%	\$ 6,754,499
Vested Former Employees	656,836	122,450	18.6%	534,386
Retirees and Beneficiaries	20,964,974	18,618,160	88.8%	2,346,814
Pending Refunds	45,809	45,809	100.0%	0
Total	\$ 29,769,772	\$ 20,134,073	67.6%	\$ 9,635,699

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	\$ 86,671,937	\$ 65,724,348	76%	\$ 20,947,589
2004	92,602,174	69,677,870	75%	22,924,304
2005	98,161,300	73,555,512	75%	24,605,788
2006	103,019,360	78,530,625	76%	24,488,735
2007	108,343,302	83,685,510	77%	24,657,792
2008	114,485,126	85,758,953	75%	28,726,173
2009	117,667,634	87,170,898	74%	30,496,736
2010	121,967,784	88,247,674	72%	33,720,110
2011	125,554,938	86,028,191	69%	39,526,747
2012	125,080,017	85,424,555	68%	39,655,462
2013	128,362,120	87,954,127	69%	40,407,993
2014	132,642,371	88,405,918	67%	44,236,453
2015	142,257,026	88,014,967	62%	54,242,059
2016	144,605,126	87,519,819	61%	57,085,307
2017	147,753,489	88,440,686	60%	59,312,803

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 - Gnrl NonUn.

Table 8-01: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 25,786,814	\$ 19,673,236	76%	\$ 6,113,578
2008	26,704,641	19,486,827	73%	7,217,814
2009	27,086,420	18,980,302	70%	8,106,118
2010	28,139,605	18,498,320	66%	9,641,285
2011	28,719,364	17,717,784	62%	11,001,580
2012	28,445,176	17,201,716	61%	11,243,460
2013	28,920,190	17,110,935	59%	11,809,255
2014	30,180,098	17,320,168	57%	12,859,930
2015	33,548,161	17,578,580	52%	15,969,581
2016	34,669,914	17,918,013	52%	16,751,901
2017	35,807,575	18,179,432	51%	17,628,143

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

Table 9-01: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2007	53	\$ 3,739,599	17.18%	2.00%
2008	50	3,475,062	20.49%	2.00%
2009	52	3,688,557	21.40%	2.00%
2010	48	3,321,913	25.71%	2.00%
2011	47	3,325,529	28.91%	2.00%
2012	49	3,513,560	29.29%	2.00%
2013	50	3,505,149	30.35%	2.00%
2014	52	3,749,622	30.62%	2.00%
2015	56	3,938,414	35.64%	3.00%
2016	60	4,381,947	34.68%	3.00%
2017	62	4,569,675	34.66%	4.00%

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 58 for past benefit provision changes.

Division 10 - General AFSCME

Table 8-10: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 29,391,569	\$ 24,067,849	82%	\$ 5,323,720
2008	30,476,499	24,602,751	81%	5,873,748
2009	30,931,179	25,382,663	82%	5,548,516
2010	31,695,838	26,016,328	82%	5,679,510
2011	32,153,521	25,978,676	81%	6,174,845
2012	32,140,644	26,043,511	81%	6,097,133
2013	32,923,896	26,215,800	80%	6,708,096
2014	33,785,664	26,306,791	78%	7,478,873
2015	36,066,837	26,079,521	72%	9,987,316
2016	36,467,677	25,501,801	70%	10,965,876
2017	36,188,384	25,030,035	69%	11,158,349

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	140	\$ 5,964,726	12.66%	2.50%
2008	136	6,040,939	14.00%	2.50%
2009	129	5,841,342	14.15%	2.50%
2010	113	4,907,939	15.70%	2.50%
2011	96	4,447,277	\$ 60,959	2.50%
2012	91	3,935,769	\$ 57,221	2.50%
2013	78	3,433,686	\$ 58,710	2.50%
2014	74	3,506,111	\$ 65,035	2.50%
2015	64	3,048,947	\$ 81,776	2.50%
2016	59	2,871,821	\$ 86,243	2.75%
2017	52	2,534,173	\$ 85,715	2.75%

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 58 for past benefit provision changes.

Division 11 - Gnl Transit

Table 8-11: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 5,654,231	\$ 4,645,208	82%	\$ 1,009,023
2008	6,044,798	4,831,082	80%	1,213,716
2009	6,164,769	4,961,344	80%	1,203,425
2010	6,398,996	5,089,138	80%	1,309,858
2011	6,792,528	5,220,156	77%	1,572,372
2012	7,046,884	5,309,103	75%	1,737,781
2013	7,368,535	5,405,653	73%	1,962,882
2014	7,425,844	5,507,426	74%	1,918,418
2015	7,900,780	5,491,536	70%	2,409,244
2016	8,074,463	5,438,120	67%	2,636,343
2017	8,027,992	5,332,626	66%	2,695,366

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	31	\$ 1,240,108	13.30%	2.50%
2008	32	1,264,369	14.44%	2.50%
2009	35	1,389,512	13.93%	2.50%
2010	31	1,245,573	\$ 14,966	2.50%
2011	30	1,248,167	\$ 17,132	2.50%
2012	29	1,247,665	\$ 18,161	2.50%
2013	24	1,067,838	\$ 18,189	2.50%
2014	21	922,129	\$ 16,948	2.50%
2015	19	818,690	\$ 20,243	2.50%
2016	14	654,579	\$ 20,305	2.50%
2017	11	568,014	\$ 20,135	2.50%

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 58 for past benefit provision changes.

Division 12 - Gnrl BCSA

Table 8-12: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 14,936,058	\$ 10,283,713	69%	\$ 4,652,345
2008	16,233,895	10,727,912	66%	5,505,983
2009	16,834,204	10,890,369	65%	5,943,835
2010	18,287,546	11,222,688	61%	7,064,858
2011	19,498,544	10,596,421	54%	8,902,123
2012	19,174,093	10,216,513	53%	8,957,580
2013	19,738,162	10,086,955	51%	9,651,207
2014	20,213,419	9,992,873	49%	10,220,546
2015	21,020,916	9,873,654	47%	11,147,262
2016	22,131,768	10,062,324	46%	12,069,444
2017	23,122,708	10,337,099	45%	12,785,609

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		
2007	28	\$ 1,708,339	20.73%	4.16%
2008	31	1,951,546	22.41%	4.16%
2009	31	2,054,806	23.27%	4.16%
2010	22	1,319,575	37.41%	4.16%
2011	24	1,546,987	\$ 55,466	4.16%
2012	23	1,434,721	\$ 54,268	4.16%
2013	23	1,461,271	\$ 59,354	4.16%
2014	22	1,442,714	\$ 63,841	4.16%
2015	21	1,369,555	\$ 72,746	4.16%
2016	22	1,464,338	\$ 78,955	5.16%
2017	22	1,636,242	\$ 86,042	5.16%

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 58 for past benefit provision changes.

Division 13 - Gnl Housing

Table 8-13: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 3,370,371	\$ 1,587,309	47%	\$ 1,783,062
2008	3,245,000	1,651,560	51%	1,593,440
2009	3,333,272	1,746,352	52%	1,586,920
2010	3,669,970	1,818,280	50%	1,851,690
2011	3,955,186	1,884,314	48%	2,070,872
2012	4,075,358	2,111,297	52%	1,964,061
2013	4,339,820	4,379,313	101%	(39,493)
2014	4,645,898	4,456,553	96%	189,345
2015	5,178,067	4,502,532	87%	675,535
2016	5,325,263	4,570,819	86%	754,444
2017	5,511,549	4,715,587	86%	795,962

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		
2007	12	\$ 518,413	29.43%	1.50%
2008	12	505,626	28.33%	1.50%
2009	11	530,871	27.71%	1.50%
2010	13	602,973	28.82%	1.50%
2011	13	615,755	31.57%	1.50%
2012	12	647,094	31.37%	1.50%
2013	13	703,972	9.60%	1.50%
2014	11	650,340	\$ 8,211	1.50%
2015	11	671,847	\$ 12,544	1.50%
2016	10	613,062	\$ 11,874	1.50%
2017	9	581,402	\$ 11,927	1.50%

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 58 for past benefit provision changes.

Division 14 - SEIU Local

Table 8-14: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 21,979,653	\$ 18,981,747	86%	\$ 2,997,906
2008	22,773,684	19,201,960	84%	3,571,724
2009	23,973,170	19,842,162	83%	4,131,008
2010	24,778,206	20,308,324	82%	4,469,882
2011	26,591,360	20,734,278	78%	5,857,082
2012	26,669,481	20,637,251	77%	6,032,230
2013	27,111,309	20,750,141	77%	6,361,168
2014	27,956,726	20,831,443	75%	7,125,283
2015	29,572,682	20,382,825	69%	9,189,857
2016	28,733,313	19,754,399	69%	8,978,914
2017	29,123,358	19,534,681	67%	9,588,677

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

Table 9-14: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2007	117	\$ 4,795,569	11.32%	2.50%
2008	114	4,800,746	12.93%	2.50%
2009	109	4,771,596	13.90%	2.50%
2010	100	4,298,849	15.31%	2.50%
2011	84	3,642,189	\$ 57,214	2.50%
2012	78	3,448,701	\$ 55,641	2.50%
2013	70	3,170,776	\$ 56,299	2.50%
2014	67	3,128,958	\$ 61,491	2.50%
2015	60	2,876,019	\$ 75,943	2.50%
2016	47	2,255,302	\$ 68,730	3.00%
2017	41	2,046,849	\$ 72,286	3.00%

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 58 for past benefit provision changes.

Division 15 - City Mngr.

Table 8-15: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 3,742,626	\$ 1,612,267	43%	\$ 2,130,359
2008	5,277,094	2,092,857	40%	3,184,237
2009	5,424,741	1,854,233	34%	3,570,508
2010	5,464,593	1,697,637	31%	3,766,956
2011	5,508,689	1,582,539	29%	3,926,150
2012	5,510,200	1,459,650	27%	4,050,550
2013	5,659,625	1,321,703	23%	4,337,922
2014	5,766,202	1,011,334	18%	4,754,868
2015	5,778,113	800,626	14%	4,977,487
2016	5,768,822	633,488	11%	5,135,334
2017	5,761,769	842,843	15%	4,918,926

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

Table 9-15: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2007	2	\$ 229,437	58.81%	0.00%
2008	2	206,689	94.60%	0.00%
2009	2	247,814	87.42%	0.00%
2010	2	242,478	93.59%	0.00%
2011	2	247,780	97.84%	0.00%
2012	2	256,419	106.72%	0.00%
2013	2	239,173	121.87%	0.00%
2014	2	231,433	138.91%	0.00%
2015	2	250,936	375.83%	0.00%
2016	2	261,147	152.10%	0.00%
2017	2	267,898	143.67%	0.00%

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 58 for past benefit provision changes.

Division 16 - Cntrl Disp.

Table 8-16: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 3,162,270	\$ 2,228,569	70%	\$ 933,701
2008	3,372,668	2,527,237	75%	845,431
2009	3,521,563	2,838,167	81%	683,396
2010	3,050,392	2,883,558	95%	166,834
2011	1,801,204	1,546,437	86%	254,767
2012	1,436,711	1,541,444	107%	(104,733)
2013	1,472,927	1,538,184	104%	(65,257)
2014	1,500,422	1,531,662	102%	(31,240)
2015	1,626,639	1,500,876	92%	125,763
2016	1,535,118	1,468,956	96%	66,162
2017	1,695,002	1,451,098	86%	243,904

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

Table 9-16: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2007	21	\$ 982,174	10.93%	7.20%
2008	19	922,526	11.81%	7.20%
2009	20	988,564	11.06%	7.20%
2010	0	0	\$ 67	0.00%
2011	0	0	\$ 1,156	0.00%
2012	0	0	\$ 0	0.00%
2013	0	0	\$ 0	0.00%
2014	0	0	\$ 0	0.00%
2015	0	0	\$ 995	0.00%
2016	0	0	\$ 482	7.20%
2017	0	0	\$ 2,292	7.20%

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 58 for past benefit provision changes.

Division 17 - Corr.Offrcs

Table 8-17: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2007	\$ 319,710	\$ 605,612	189%	\$ (285,902)
2008	356,847	636,767	178%	(279,920)
2009	398,316	675,306	170%	(276,990)
2010	481,556	711,082	148%	(229,526)
2011	490,940	717,874	146%	(226,934)
2012	435,200	722,728	166%	(287,528)
2013	447,884	737,311	165%	(289,427)
2014	462,403	752,232	163%	(289,829)
2015	484,089	761,040	157%	(276,951)
2016	502,874	773,471	154%	(270,597)
2017	564,276	816,984	145%	(252,708)

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

Table 9-17: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2007	2	\$ 99,204	0.00%	3.12%
2008	2	104,889	0.00%	3.12%
2009	2	115,295	0.00%	3.12%
2010	1	61,084	0.00%	3.12%
2011	1	56,073	0.00%	3.12%
2012	0	0	\$ 0	0.00%
2013	1	59,571	0.00%	3.12%
2014	1	58,695	0.00%	3.12%
2015	1	55,018	0.00%	3.12%
2016	1	70,915	0.00%	3.12%
2017	2	118,639	0.00%	3.12%

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 58 for past benefit provision changes.

Division 18 - General AFSCME after 12/1/10

Table 8-18: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 30,809	\$ 38,693	126%	\$ (7,884)
2012	97,827	114,705	117%	(16,878)
2013	224,963	232,289	103%	(7,326)
2014	378,614	363,551	96%	15,063
2015	547,342	532,171	97%	15,171
2016	651,476	670,887	103%	(19,411)
2017	964,264	946,054	98%	18,210

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

Table 9-18: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	16	\$ 631,087	4.67%	2.50%
2012	26	996,013	4.46%	2.50%
2013	34	1,365,798	4.67%	2.50%
2014	36	1,611,962	4.92%	2.50%
2015	49	2,110,015	5.29%	2.50%
2016	56	2,351,415	5.36%	2.50%
2017	64	2,873,816	5.26%	2.50%

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 58 for past benefit provision changes.

Division 19 - Gen. SEIU hired after 7/1/2011

Table 8-19: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2011	\$ 1,988	\$ 0	0%	\$ 1,988
2012	26,191	39,491	151%	(13,300)
2013	85,341	103,141	121%	(17,800)
2014	196,839	204,319	104%	(7,480)
2015	337,562	319,482	95%	18,080
2016	480,731	460,534	96%	20,197
2017	646,414	599,392	93%	47,022

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

Table 9-19: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2011	5	\$ 138,822	5.09%	2.50%
2012	16	510,841	4.86%	2.50%
2013	28	928,192	4.59%	2.50%
2014	35	1,269,348	4.78%	2.50%
2015	35	1,339,053	5.01%	2.50%
2016	43	1,680,900	4.64%	3.00%
2017	50	1,987,507	4.73%	3.00%

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 58 for past benefit provision changes.

Division 20 - Gen. BCSA hired after 1/1/2012

Table 8-20: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2013	14,554	17,078	117%	(2,524)
2014	38,187	38,604	101%	(417)
2015	62,944	57,950	92%	4,994
2016	87,530	78,575	90%	8,955
2017	114,802	101,388	88%	13,414

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		
2011	0	\$ 0	0.00%	0.00%
2013	1	65,925	4.33%	2.50%
2014	3	166,152	5.18%	2.50%
2015	3	204,667	5.44%	2.50%
2016	3	212,173	5.45%	2.50%
2017	3	217,191	5.50%	2.50%

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 58 for past benefit provision changes.

Division HA - GNL Trans hired after 3/1/10

Table 8-HA: Actuarial Accrued Liabilities - Comparative Schedule

Valuation Date December 31	Actuarial Accrued Liability	Valuation Assets	Percent Funded	Unfunded (Overfunded) Accrued Liabilities
2010	\$ 1,082	\$ 2,319	214%	\$ (1,237)
2011	10,805	11,019	102%	(214)
2012	22,252	27,146	122%	(4,894)
2013	54,914	55,624	101%	(710)
2014	92,055	88,962	97%	3,093
2015	132,894	134,174	101%	(1,280)
2016	176,177	188,432	107%	(12,255)
2017	225,396	259,030	115%	(33,634)

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

Table 9-HA: Computed Employer Contributions - Comparative Schedule

Valuation Date December 31	Active Employees		Computed Employer Contribution ¹	Employee Contribution Rate ²
	Number	Annual Payroll		
2010	2	\$ 67,555	6.26%	0.00%
2011	3	125,196	6.89%	0.00%
2012	7	266,832	7.08%	0.00%
2013	9	370,383	6.77%	0.00%
2014	12	463,172	6.38%	0.00%
2015	14	566,021	6.93%	0.00%
2016	15	635,176	6.37%	0.00%
2017	22	915,691	6.56%	0.00%

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 58 for past benefit provision changes.

Division S1 - Surplus Unassociated

Table 8-S1: Comparative Schedule

Valuation Date December 31	Valuation Assets
2017	\$ 294,437

Division 01 - Gnrl NonUn.

Table 10-01: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 15,969,581	23	\$ 16,797,358	21	\$ 1,180,560
(Gain)/Loss	12/31/2016	375,584	22	422,897	21	29,724
(Gain)/Loss	12/31/2017	639,742	21	715,535	21	50,292
Plan Amendments	12/31/2017	(16,827)	21	(18,821)	21	(1,320)
Total				\$ 17,916,969		\$ 1,259,256

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 - General AFSCME

Table 10-10: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 9,987,316	23	\$ 10,625,761	21	\$ 746,808
(Gain)/Loss	12/31/2016	653,157	22	735,425	21	51,684
Plan Amendments	12/31/2016	(3,650)	22	(4,112)	21	(288)
(Gain)/Loss	12/31/2017	(42,807)	21	(47,878)	21	(3,360)
Total				\$ 11,309,196		\$ 794,844

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 - Gnl Transit

Table 10-11: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 2,409,244	23	\$ 2,539,142	21	\$ 178,452
(Gain)/Loss	12/31/2016	162,926	22	183,444	21	12,888
(Gain)/Loss	12/31/2017	10,426	21	11,661	21	816
Total				\$ 2,734,247		\$ 192,156

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 - Gnrl BCSA

Table 10-12: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 11,147,262	23	\$ 11,661,482	21	\$ 819,600
(Gain)/Loss	12/31/2016	695,820	22	783,465	21	55,068
Plan Amendments	12/31/2016	1,542	22	1,734	21	120
(Gain)/Loss	12/31/2017	509,676	21	570,059	21	40,068
Total				\$ 13,016,740		\$ 914,856

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 - Gnl Housing

Table 10-13: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 675,535	20	\$ 770,055	16	\$ 65,340
(Gain)/Loss	12/31/2016	6,402	18	7,129	16	600
(Gain)/Loss	12/31/2017	17,679	16	19,774	16	1,680
Total				\$ 796,958		\$ 67,620

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 14 - SEIU Local

Table 10-14: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 9,189,857	23	\$ 9,767,075	21	\$ 686,448
(Gain)/Loss	12/31/2016	(537,210)	22	(604,873)	21	(42,516)
Plan Amendments	12/31/2016	5,043	22	5,678	21	396
(Gain)/Loss	12/31/2017	508,934	21	569,229	21	40,008
Total				\$ 9,737,109		\$ 684,336

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 15 - City Mngr.

Table 10-15: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 4,977,487	23	\$ 4,401,249	21	\$ 361,644
(Gain)/Loss	12/31/2016	77,986	22	87,805	21	6,168
(Gain)/Loss	12/31/2017	63,871	21	71,438	21	5,016
Total				\$ 4,560,492		\$ 372,828

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 16 - Cntrl Disp.

Table 10-16: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 125,763	16	\$ 136,510	12	\$ 14,412
(Gain)/Loss	12/31/2016	(69,400)	14	(76,087)	12	(8,028)
(Gain)/Loss	12/31/2017	178,820	12	200,005	12	21,120
Total				\$ 260,428		\$ 27,504

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 17 - Corr.Offrcs

Table 10-17: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ (276,951)	10	\$ (305,658)	10	\$ (37,392)
(Gain)/Loss	12/31/2016	23,820	15	26,240	14	2,460
(Gain)/Loss	12/31/2017	33,527	15	37,499	15	3,336
Total				\$ (241,919)		\$ (31,596)

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 18 - General AFSCME after 12/1/10

Table 10-18: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2017	\$ 18,637	15	\$ 20,845	15	\$ 1,860
Total				\$ 20,845		\$ 1,860

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 19 - Gen. SEIU hired after 7/1/2011

Table 10-19: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 18,080	23	\$ 26,224	21	\$ 1,848
(Gain)/Loss	12/31/2016	(875)	22	(980)	21	(72)
Plan Amendments	12/31/2016	(5,553)	22	(6,256)	21	(444)
(Gain)/Loss	12/31/2017	28,079	21	31,406	21	2,208
Total				\$ 50,394		\$ 3,540

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 - Gen. BCSA hired after 1/1/2012

Table 10-20: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
Initial	12/31/2015	\$ 4,994	23	\$ 7,769	21	\$ 552
(Gain)/Loss	12/31/2016	1,814	22	2,037	21	144
(Gain)/Loss	12/31/2017	3,779	21	4,227	21	300
Total				\$ 14,033		\$ 996

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 HA - GNL Trans hired after 3/1/10

Table 10-HA: Layered Amortization Schedule

Type of UAL	Date Established	Original Balance ¹	Original Amortization Period ²	Amounts for Fiscal Year Beginning 7/1/2019		
				Outstanding UAL Balance ³	Remaining Amortization Period ²	Annual Amortization Payment
(Gain)/Loss	12/31/2016	\$ (11,961)	15	\$ (13,181)	14	\$ (1,236)
(Gain)/Loss	12/31/2017	(20,846)	15	(23,316)	15	(2,076)
Total				\$ (36,497)		\$ (3,312)

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:	412
Inactive employees entitled to but not yet receiving benefits:	48
Active employees:	<u>340</u>
	800

Covered employee payroll: (Needed for Required Supplementary Information)	\$ 18,317,097
---	---------------

Average expected remaining service lives of all employees (active and inactive):	4
--	---

Total Pension Liability as of 12/31/2016 measurement date:	\$ 141,255,649
--	----------------

Total Pension Liability as of 12/31/2017 measurement date:	\$ 144,360,278
--	----------------

Service Cost for the year ending on the 12/31/2017 measurement date:	\$ 1,998,172
--	--------------

Change in the Total Pension Liability due to:

- Benefit changes ¹ :	\$ (17,298)
- Differences between expected and actual experience ² :	\$ 194,046
- 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:	\$ 14,410,753	-	\$ (12,350,082)

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 - Gnrl NonUn.

7/1/2017	Participant Contribution Rate 4%
12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2015	Participant Contribution Rate 3%
4/1/2010	Non Standard Compensation Definition
7/1/2000	Temporary Benefit F55 (With 20 Years of Service) (07/01/2000 - 09/03/2000)
1/1/1996	Benefit B-4 (80% max)
1/1/1996	Member Contribution Rate 2.00%
7/1/1994	Member Contribution Rate 1.50%
6/1/1993	Temporary Benefit RS 50 (50% Post-Ret. Spouse Benefits) (06/01/1993 - 08/03/1993)
6/1/1993	Benefit FAC-3 (3 Year Final Average Compensation)
6/1/1993	Benefit B-3 (80% max)
1/1/1989	Flexible E 2% COLA Adopted (01/01/1989)
3/1/1987	Benefit F55 (With 25 Years of Service)
3/1/1987	Member Contribution Rate 0.00%
2/1/1986	Benefit C-2/Base B-1
5/6/1975	Exclude Temporary Employees
8/1/1973	Benefit C-1 (Old)
7/10/1973	Covered by Act 88
7/1/1962	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/1962	10 Year Vesting
7/1/1962	Benefit C (Old)
7/1/1962	Member Contribution Rate 3.00% Under \$4,200.00 - Then 5.00%
7/1/1962	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

10 - General AFSCME

12/1/2016	Service Credit Purchase Estimates - Yes
9/1/2016	Participant Contribution Rate 2.75%
1/1/2011	Non Standard Compensation Definition
10/1/1995	Member Contribution Rate 2.50%
6/1/1995	Benefit B-4 (80% max)
6/1/1995	Member Contribution Rate 2.00%
1/1/1994	Benefit FAC-3 (3 Year Final Average Compensation)
1/1/1994	Benefit B-3 (80% max)
1/1/1994	Member Contribution Rate 1.50%
1/1/1988	Flexible E 2% COLA Adopted (01/01/1988)
2/1/1986	Benefit FAC-5 (5 Year Final Average Compensation)
2/1/1986	10 Year Vesting
2/1/1986	Benefit C-2/Base B-1

10 - General AFSCME

2/1/1986 Benefit F55 (With 25 Years of Service)
 2/1/1986 Member Contribution Rate 0.00%
 7/10/1973 Covered by Act 88
 7/1/1962 Fiscal Month - July
 Defined Benefit Normal Retirement Age - 60
 Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

11 - Gnl Transit

12/1/2016 Service Credit Purchase Estimates - Yes
 11/1/2009 Non Standard Compensation Definition
 12/1/2001 Temporary 8 Year Vesting (12/01/2001 - 02/03/2002)
 11/1/2000 Member Contribution Rate 2.50%
 10/1/1998 Member Contribution Rate 1.75%
 9/1/1998 Benefit B-4 (80% max)
 1/1/1997 Benefit FAC-3 (3 Year Final Average Compensation)
 1/1/1997 Benefit B-3 (80% max)
 1/1/1997 Member Contribution Rate 1.50%
 1/1/1988 Flexible E 2% COLA Adopted (01/01/1988)
 11/1/1986 Benefit C-2/Base B-1
 4/1/1986 Benefit FAC-5 (5 Year Final Average Compensation)
 4/1/1986 10 Year Vesting
 4/1/1986 Benefit F55 (With 25 Years of Service)
 4/1/1986 Member Contribution Rate 0.00%
 7/10/1973 Covered by Act 88
 7/1/1962 Fiscal Month - July
 Defined Benefit Normal Retirement Age - 60
 Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

12 - Gnrl BCSA

12/1/2016 Service Credit Purchase Estimates - Yes
 9/1/2016 Participant Contribution Rate 5.16%
 6/1/2010 Non Standard Compensation Definition
 5/1/2003 Benefit RS 50 (50% Post-Ret. Spouse Benefits)
 5/1/2003 Member Contribution Rate 4.16%
 7/1/1996 Member Contribution Rate 2.50%
 1/1/1996 Benefit FAC-3 (3 Year Final Average Compensation)
 1/1/1996 Benefit B-4 (80% max)
 1/1/1996 Member Contribution Rate 2.00%
 1/1/1994 Benefit B-3 (80% max)
 1/1/1994 Member Contribution Rate 1.50%
 1/1/1989 Flexible E 2% COLA Adopted (01/01/1989)
 6/1/1987 Benefit F55 (With 25 Years of Service)
 6/1/1986 Benefit FAC-5 (5 Year Final Average Compensation)
 6/1/1986 10 Year Vesting
 6/1/1986 Benefit C-2/Base B-1

12 - Gnrl BCSA

5/11/1986 Member Contribution Rate 0.00%
 7/10/1973 Covered by Act 88
 7/1/1962 Fiscal Month - July
 Defined Benefit Normal Retirement Age - 60
 Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

13 - Gnl Housing

12/1/2016 Service Credit Purchase Estimates - Yes
 12/1/2013 Option B Yes
 12/1/2013 Accelerated to 15-year Amortization
 12/1/2013 DC Adoption Date 12-01-2013
 8/1/2005 Temporary 24 Years & Out (08/01/2005 - 10/03/2005)
 5/1/2000 E2 2.5% COLA for future retirees (05/01/2000)
 10/1/1998 Benefit B-4 (80% max)
 7/1/1994 Benefit FAC-3 (3 Year Final Average Compensation)
 7/1/1994 Benefit B-3 (80% max)
 7/1/1994 Member Contribution Rate 1.50%
 1/1/1988 Flexible E 2% COLA Adopted (01/01/1988)
 1/1/1987 Flexible E 2% COLA Adopted (01/01/1987)
 12/1/1986 Benefit F55 (With 25 Years of Service)
 5/1/1986 Benefit FAC-5 (5 Year Final Average Compensation)
 5/1/1986 10 Year Vesting
 5/1/1986 Benefit C-2/Base B-1
 5/1/1986 Member Contribution Rate 0.00%
 7/10/1973 Covered by Act 88
 7/1/1962 Fiscal Month - July
 Defined Benefit Normal Retirement Age - 60
 Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

14 - SEIU Local

12/1/2016 Service Credit Purchase Estimates - Yes
 7/1/2016 Participant Contribution Rate 3%
 1/1/2012 Non Standard Compensation Definition
 1/1/1997 Member Contribution Rate 2.50%
 1/1/1996 Member Contribution Rate 2.00%
 1/1/1996 Benefit B-4 (80% max)
 1/1/1994 Member Contribution Rate 1.50%
 1/1/1994 Benefit FAC-3 (3 Year Final Average Compensation)
 1/1/1994 Benefit B-3 (80% max)
 1/1/1989 Flexible E 2% COLA Adopted (01/01/1989)
 9/1/1987 Benefit F55 (With 25 Years of Service)
 11/1/1986 Benefit C-2/Base B-1
 10/17/1986 Benefit FAC-5 (5 Year Final Average Compensation)
 10/17/1986 10 Year Vesting
 10/17/1986 Member Contribution Rate 0.00%

14 - SEIU Local

7/10/1973 Covered by Act 88
 7/1/1962 Fiscal Month - July
 Defined Benefit Normal Retirement Age - 60
 Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

15 - City Mngr.

12/1/2016 Service Credit Purchase Estimates - Yes
 7/1/1996 Benefit RS 50 (50% Post-Ret. Spouse Benefits)
 7/1/1996 Benefit B-4 (80% max)
 7/1/1996 Benefit F50 (With 25 Years of Service)
 5/1/1993 Benefit FAC-3 (3 Year Final Average Compensation)
 5/1/1993 10 Year Vesting
 5/1/1993 Benefit B-3 (80% max)
 5/1/1993 Benefit F55 (With 15 Years of Service)
 5/1/1993 Member Contribution Rate 0.00%
 7/10/1973 Covered by Act 88
 7/1/1962 Fiscal Month - July
 Defined Benefit Normal Retirement Age - 60
 Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

16 - Cntrl Disp.

12/1/2016 Service Credit Purchase Estimates - Yes
 1/1/2004 Member Contribution Rate 7.20%
 1/1/2004 E2 2.5% COLA for future retirees (01/01/2004)
 1/1/2003 Member Contribution Rate 2.50%
 1/1/2002 Member Contribution Rate 1.75%
 1/1/2001 Benefit FAC-3 (3 Year Final Average Compensation)
 1/1/2001 Benefit B-4 (80% max)
 1/1/2001 Member Contribution Rate 1.00%
 1/1/1994 Benefit FAC-5 (5 Year Final Average Compensation)
 1/1/1994 10 Year Vesting
 1/1/1994 Benefit C-2/Base B-1
 1/1/1994 Benefit F55 (With 25 Years of Service)
 1/1/1994 Member Contribution Rate 0.00%
 7/10/1973 Covered by Act 88
 7/1/1962 Fiscal Month - July
 Defined Benefit Normal Retirement Age - 60
 Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

17 - Corr.Offrcs

12/1/2016 Service Credit Purchase Estimates - Yes
 3/1/2001 Benefit B-3 (80% max)
 3/1/2001 Member Contribution Rate 3.12%
 1/1/1994 Benefit FAC-5 (5 Year Final Average Compensation)
 1/1/1994 10 Year Vesting

17 - Corr.Offrcs

1/1/1994	Benefit C-2/Base B-1
1/1/1994	Benefit F55 (With 25 Years of Service)
1/1/1994	Member Contribution Rate 0.00%
7/10/1973	Covered by Act 88
7/1/1962	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

18 - General AFSCME after 12/1/10

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2011	Non Standard Compensation Definition
12/1/2010	10 Year Vesting
12/1/2010	Benefit C-1 (New)
12/1/2010	Member Contribution Rate 2.50%
12/1/2010	Day of work defined as 80 Hours a Month for All employees.
12/1/2010	Benefit FAC-3 (3 Year Final Average Compensation)
7/10/1973	Covered by Act 88
7/1/1962	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

19 - Gen. SEIU hired after 7/1/2011

12/1/2016	Service Credit Purchase Estimates - Yes
7/1/2016	Participant Contribution Rate 3%
1/1/2012	Non Standard Compensation Definition
7/1/2011	Day of work defined as 80 Hours a Month for All employees.
7/1/2011	Benefit FAC-5 (5 Year Final Average Compensation)
7/1/2011	10 Year Vesting
7/1/2011	Benefit C-1 (New)
7/1/2011	Member Contribution Rate 2.50%
7/10/1973	Covered by Act 88
7/1/1962	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

20 - Gen. BCSA hired after 1/1/2012

12/1/2016	Service Credit Purchase Estimates - Yes
1/1/2012	Member Contribution Rate 2.50%
7/1/2011	Benefit FAC-3 (3 Year Final Average Compensation)
7/1/2011	10 Year Vesting
7/1/2011	Benefit C-1 (New)
7/10/1973	Covered by Act 88
7/1/1962	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	Early Reduced (.5%) at Age 50 with 25 Years or Age 55 with 15 Years

HA - GNL Trans hired after 3/1/10

3/1/2010	1.25% Multiplier
3/1/2010	Benefit FAC-3 (3 Year Final Average Compensation)
3/1/2010	6 Year Vesting
7/10/1983	Covered by ACT 88
7/1/1962	Fiscal Month - July
	Defined Benefit Normal Retirement Age - 60
	No Early Reduced Conditions

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
01 - Gnrl NonUn.	2.00%
10 - General AFSCME	2.00%
11 - Gnl Transit	4.00%
12 - Gnrl BCSA	2.00%
13 - Gnl Housing	4.00%
14 - SEIU Local	2.00%
15 - City Mngr.	4.00%
17 - Corr.Offrcs	4.00%
18 - General AFSCME after 12	2.00%
19 - Gen. SEIU hired after 7	4.00%
20 - Gen. BCSA hired after 1	4.00%
HA - GNL Trans hired after 3	4.00%

Withdrawal Rate Scaling Factor

Division	Withdrawal Rate Scaling Factor
All Divisions	70%

Miscellaneous and Technical Assumptions

Loads – None.

Amortization Policy for Closed Divisions

Closed Division	Amortization Option
13 - Gnl Housing	Accelerated to 15-Year Amortization
16 - Cntrl Disp.	Accelerated to 5-Year Amortization

Please see the [Appendix](#) on the MERS website for a detailed description of the amortization options available for closed divisions within an open municipality.